THE SINGARENI COLLIERIES COMPANY LIMITED
(A GOVERNMENT COMPANY)
Registered Office
Kothagudem Collieries (P.O) - 507 101, Bhadradri Kothagudem Dist, Telangana State
CIN: U10102TG1920SGC000571

Environment Dept., Srirampur Area
PO:Srirampur Colony-504 303, Dist. Mancherial, Telangana State

Phone No: 08736-238039.
Fax No : 08736-238222.
e-mail:env_srp@scclmines.com
website:www.scclmines.com

Ref.No: SRP/ENV/U-004/2025/229. Date: 25.08.2025

To
The Member secretary,
Telangana State Pollution Control Board,
Paryavaran Bhavan,
A-3, Industrial Estates,
Sanath Nagar,
HYDERABAD.

Sir,

Sub: Submission of Environmental Statement in Form - V of IK-1A Inc. of Srirampur Area of S.C.C.L for the year 2024-25– Reg.
Ref: Rule: 14 of Environment Protection Rules, 1986.

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With reference to the cited above, please find enclosed herewith Environmental Statement in Form - V of IK-1A Inc. of Srirampur Area of S.C.Co.Ltd., for the year 2024-25.

Thanking you,

Office of the General Manager S.C.C.L. SRIRAMPUR

Yours Sincerely,

General Manager
Srirampur Area.
General Manager
SRIRAMPUR

Encl: As above.

C.c.: The Joint Chief Environmental Engineer,
Telangana State Pollution Control Board,
Zonal Office, Sangareddy District – 502 302.

: The Environmental Engineer,
Telangana State Pollution Control Board,
Regional Office, Nizamabad – 503 002.

: GM(Env.), Kgm.

THE SINGARENI COLLIERIES COMPANY LIMITED
(A Government Company)
SRIRAMPUR AREA

ENVIRONMENTAL STATEMENT OF INDARAM KHANI No. 1A INCLINE FOR THE YEAR 2024-25.

Name of the Project: IndaramKhani No. 1A Incline

Name of the Area: Srirampur Area **District**: Mancherial.

1.1Introduction:

The Singareni Collieries Company Ltd., (SCCL) has been exploiting coal for 135 years in thePranahita - Godavari valley Coal field in the South Indian State of Telangana. Over the years, the Company had expanded its mining activity in Komaram Bheem(Asifabad), Mancherial, Peddapalli, Jaya Shankar Bhoopalapalli, Bhadradri Kothagudem and Khammam(New) districts of Telangana State.

The Company's mining activity is divided into three regions vizRamagundam, Bellampally and Kothagudem and each region is also sub-divided into areas for administrative convenience. Srirampur area is one of the areas of the Bellampalli Region.

1.2 Srirampur Area:

Srirampur Area is well connected by road to Mancherial located at 8.5 KM and has well established communication system like telephone, telex etc. Srirampur Area is located in industrially backward area. As a direct benefit of mining activity about 8,085 persons (including OC Mines) are employed at mine level and another 1,118 persons at area level. Assuming an indirect employment of 5 persons for every person directly employed ,46015 persons are getting benefited.

There are 7 Underground mines in this area viz SRP-1, SRP-3&3A, RK-5, RK-6, RK-7, RK-NT and IK-1A Inclines. There are two opencast mines (SRP OC-II EXPANSION PROJECT & IK OCP) in this area. The production from these mines (including OC Mines) during the year 2024-25 is 57,86,282 Tonnes of coal.

1.3 Brief Description of the Mine / Project:

IK-1A Incline is lying in between North Latitude of N 18°48'00" and East Longitude of E 79°33'00". The mine is located around 12km from Mancherial Railway station on Kazipet – Ballarshah line of South Central Railway in Mancherial (New) District of Telangana State, and it is at distance of 250 KM from Hyderabad. IK-1A Incline is located in the south eastern part of Somagudem – Indaram coal belt. Mine take area is lying beside of Rajiv Rahadari Mancherial to Hyderabad high way.

The IK-1A Incline was opened on 20.02.1988. Consent for Operation (CFO) has been obtained for this mine from Telangana Pollution Control Board with a production capacity of 0.5 Million Tonnes per Annum. At present the mine is being worked with Hand section and SDL technologies.

FORM – V (Rule No.14 of EPR'1986)

PART – A

General:

Sl.No	Item	Details
1.	Name and address of Owner / Occupier of the Industry / Operation or process.	General Manager, Srirampur Area, The Singareni Collieries Company Limited, Srirampur – 504 303
2.	Industry category	Red Non-Hazardous (Coal Mine)
3.	Production capacity	0.54MTPA
4.	Year of Establishment	Feb, 1988
5.	Date of last environmental Statement submitted.	30.08.2024

Sl.No.	Item	2023-24	2024-25
1.	Total coal production (in Lakh tones)	2.77	1.94
2.	Total men on roll (as on 31st March)	1046	992

PART – B

Water and raw material consumption.

(A) Water Consumption:

Sl. No	Purpose	Water consumption during the year 2024-25 Quantity(KLD)
1.	**Water consumption :**	
	Dust suppression	70
	Water used for stowing, workshop, washing etc	400
	domestic	60
	Greenbelt/plantation	70
	Total Water consumption	**600**

(B) Raw material consumption of IK-1A Inc:

Sl. No	Description of the Material	Unit	Consumed during the year	
			2023-24	2024-25
1	i) Explosives(Permitted)	Kgs	53,825	50,849.50
	ii) Explosives (others)	Kgs	0	0
2	i) Delay detonators	Nos.	1,14,000	1,14,000
	ii) Ordinary detonators	Nos.	10,950	5,000
3	Timber (all types)	Cu.m	282	253.00
4	Tub Lubricant oils	Ltrs.	0	0
5	Gear oils & other lubricant oils.	Ltrs.	9,450	10,080
6	Hydraulic oils	Ltrs.	6,510	7,925
7	Transformer oils	Ltrs.	0	0
8	Kerosene	Ltrs.	0	0
9	H.S.D.Oil	Ltrs.	0	0
10	Petrol	Ltrs.	350	350
11	Engine oil	Ltrs.	0	0
12	Cement	Bags	1,764	1,480
13	Paint Enamel	Ltrs.	312	452
14	Paint red-oxide	Ltrs.	160	60
15	Grease	Kgs	882	1456
16	Tub paints	Ltrs.	0	0
17	Girders	Tons	16.023	20.950
18	Rails	Tons	109.86	0.00
19	Roof bolts and nuts	Nos	44,520	63,800
20	Channels	Tons	0	9.850
21	Dog nails	Kgs	4,390.102	3,949
22	Tub pedestals	Nos	240	950
23	Flat Iron	Tons	0	0
24	G.I Pipes	Mtrs	900	0
25	C.I Pipes	Mtrs	0	0
26	Fosrock capsules	Nos	2,65,520	2,05,950
27	Drill roads	Nos	539	285
28	Drill bits	Nos	7,575	8150
29	Coal baskets	Nos	140	0
30	Conveyor belt	Mtrs	0	200
31	Haulage rope	Mtrs	19,500	15000
32	Cap lamp batteries	Nos	40	100

Note: Raw material consumption like explosives, diesel oil and others are dependent upon the stripping ratio, Inclination of the seams, nature of rock strata, distance to 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 discharged to environment / unit of output.

A.*Water pollution Source & Control Measures:*

(a) ***Water pollution sources:***

The source of water pollution is mine discharge water, contaminated water from workshops and domestic waste water.

(b) ***Water pollution control:***

The following control measures are being taken up at the mine to control the water pollution.

i) The mine discharge water is being reutilized after necessary treatment for dust suppression, plantation, domestic use etc.

ii) The excess mine discharge water is being treated in settling tanks before discharge into natural drains.

iii) The domestic sewage from the mine is being treated in septic tank followed by soak pit.

iv) An effective sewerage system is being maintained to treat the colony effluents by constructing Sewage Treatment Plant at Naspur Colony with Capacity of 3 MLD.

v) Post-project water quality monitoring is being carried out by outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad (CPCB recognized and NABL accredited laboratory)]as per the frequency stipulated by MoEF&CC for coal mining industry. The water quality monitoring reports are enclosed as **Annexure -I.**

B. *Air pollution Source & Control Measures:*

(a) ***Source of air pollution:***

The activities contributing to the air pollution are mine exhaust air, transportation of coal, men & material, coal handling operations like screening, crushing, etc., The major pollutants are suspended particulate matter, dust and oxides of Nitrogen.

(b) ***Air Pollution Control:***

i) Water spraying arrangements have been made under ground at all working places, loading points and transfer points.

ii) Arrangements have been made for water spraying on the surface conveyor belt.

iii) At CHP, water spraying has been arranged at Conveyor transfer points and at loading points and the conveyor belts have been provided with covered structure.

iv) Surface is kept free of fine coal dust heaps.

v) Coal transport route has been black topped from the mine to CHP. Internal roads have also been black topped.

vi) Avenue plantation has been developed along Coal Transportation Road.

CONTROL OF EMISSION OF NOXIOUS GASES:

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

i) Coal transportation trucks and other vehicles are periodically maintained.

ii) Notice boards have been displayed on the surface; advising persons to avoid burning of coal/wood/oil grease impregnated waste cotton/garbage etc., in the mine premises as a method of disposal.

iii) Blasting operations at underground is carried out with delay action detonators and ultra safe P5 explosives, which helps in mitigating the emission of gases from explosives.

iv) Stocks of coal are not allowed to be kept on surface of the mine. If any heap has to be kept for some time, water spraying is done over it to control oxidation of coal.

v) Burning of firewood and coal for domestic purpose in colonies has been stopped due to usage of L.P Gas being distributed free of cost by the company to all the employees.

1. Total manpower of the mine as on 31.03.2025 : 992

2. Total L.P Gas connections to the workers as on 31.03.2025 : 786

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

C. *Noise pollution Source & Control Measures:*

(a) ***Source of Noise pollution:***

The source of noise pollution is due to coal dispatch arrangements and surface mine ventilation fan.

(b) ***Noise pollution Control Measures:***

i. The main mechanical ventilators are provided with evasee which dampens the noise.

ii. To dampen the noise levels at CHP, impact rollers are provided at transfer points.

iii. Height of fall is minimized at all coal transfer points and internal lining of bins and chutes are done.

iv. In the high noise intensity working areas / zones earmuffs or earplugs or any other suitable personal protective equipment is being provided to the workmen.

v. Regular noise level monitoring is being done periodically for taking corrective action, wherever required.

vi. Extensive plantation of green belt and vegetation along the roads and around the offices to create a barrier or screen between the source and the receiver so that the noise is absorbed and the exposure level is minimized.

vii. Cushioning belt liners under the tipplers are being provided under tippler resting pads to reduce the noise while tripling the tubs.

viii. Post-project Noise quality monitoring is being carried out by outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad (CPCB recognized and NABL accredited laboratory)] at the Mine pit office and surrounding villages as per the frequency stipulated by MoEF&CC for coal mining industry. The noise monitoring reports are enclosed as **Annexure-III.**

PART – D

Hazardous wastes:

The main categories of wastes generated are Metal scrap, used oils, used batteries etc. at Area Workshop. Waste materials are auctioned through M – Junction by e-Auction and disposed to S.P.C.B authorized parties on as is where basis is.

PART – E

Land degradation and Solid waste:

Land degradation:

Due to extraction of coal by underground method, surface land gets affected due to subsidence. The following measures are taken to minimize damage to land due to subsidence –

1. Subsidence is monitored periodically and records maintained as per requirements of DGMS Circular No.12 of 1962.

2. Crack filling is carried out regularly.

3. Plantation is taken-up in stabilized areas with suitable species to bind the soil.

Solid Waste:

Solid waste generated is mainly Shale / Sand Stone separated from coal at the Coal Handling Plants, Ferrous/ non-ferrous scrap at the Mines, Workshops and wooden scrap generated at Timber Yards.

***Waste Management*:**

1. Solid waste generated from CHP is transported by trucks to low-lying area in the townships and used for land filling.

2. Old haulage rope is re-used for roof stitching in underground mines.

3. Old haulage rope and tub frames are used for fencing arrangements.

4. Waste timber is used as sleepers for underground haulage track.

Solid waste generated and re-cycled / sold / disposed quantity for the year 2024-25 as compared to the previous year 2023-24 at Srirampur Area.

Sl. No.	Description	Total Quantity	
		During the year 2023-24	During the year 2024-25
I.	(a) Solid waste generated out from CSP (Shale & Stone) (in Tonnes)	8689.81	11577.400
	(b) Garbage generated from Colonies. (in Cu. Mtrs.)	3,905	4,035
II.	Quantity recycled	Nil	Nil
III.	Sold.	Nil	Nil
IV.	Disposal	(i) All the rejects at CHP are dumped in the here marked shale dump yard.	(i) All the rejects at CHP are dumped in the here marked shale dump yard.
		(ii) Garbage is disposed off in low-lying areas of the Company	(ii) Garbage is disposed off in low-lying areas of the Company.

PART – F

Characterization of solid waste and disposal practice:

Solid waste generated at Coal Handling Plant is stone, clay and shale. These waste materials are picked out from the coal manually at the picking platforms at the CHP, while coal moves on conveyor belts. After picking, these wastes are stored in the bunkers. From bunkers these solid wastes are transported by trucks for dumping in low-lying areas in the townships.

PART – G

Impact of pollution control measures taken on conservation of natural resources and on cost of production.

1) Water spraying arrangements are made and regular tuning of vehicles is done to control air pollution.

2) 1500 Nos. of saplings have been planted in the premises of IK – 1A incline to control pollution and create green environment.

3) Water spraying arrangements are made and regular tuning of vehicles is done to control air pollution

4) The annual revenue expenditure for implementation of environmental management plan in the IK-1A Incline is estimated at Rs.122.81 Lakhs i.e., Rs.24.99 per tonne of coal produced in the EIA/EMP.

Expenditure towards the Environmental protection for the year 2024-25 as Compared to the previous year 2023-24.

Sl. No.	Description	Revenue expenditure (in Rs.)	
		2023-24	2024-25
1.	Air Pollution (Prevention & Control)	140574.72	136180.8
2.	Water Pollution (Prevention & Control)	122933.32	100475.52
3.	Land Development	0	0
4.	Plantation	0	0
5.	Plant & Machinery for Environment protection.	0	0
6.	Consultancy payments / scientific studies.	0	0
7.	OB reclamation / Subsidence stabilization	0	0
8.	Environmental Awareness / Environmental education.	1500	1500
9.	Noise & Blast vibrations	23063.04	21141.12
10.	Others.	0	0
	Total Expenditure	**288071.1**	**259297.4**

Annual Revenue expenditure is Rs.1.33 per tonne of coal produced during the year 2024-25 This is excluding the cost of power, wages, stores and cess charges.

PART – H

Additional measures / investment proposals for environmental protection including abotment of pollution.

1. Provision of quarters along with civil amenities.

2. Provision of playgrounds, recreation and cultural centers and clubs.

3. Communication facilities like road, telephone, bus services etc.

4. Provision of LPG cylinders as fuel to company employees at free of cost.

5. Construction of community latrines (Sulabh toilets) to work persons who are residing outside the company quarters.

6. Green belt development has been taken up in mine premises, townships, CSP, Workshops and along mine colony roads.

7. Asphalting of the entire colony roads and mine is being taken up in a phased manner to reduce dust generation.

8. Proper care is being taken to reduce noise levels by proper lubrication of machinery, restricting falling height of coal at CHP and lining the sides of conveyor system wherever necessary and Green belt development around noise generating sources.

PART – I

Other particulars for improving the quality of the environment:

1. Employees are being educated in protecting environment by conducting environmental awareness week and quiz competitions during World Environment day and World Environment Protection day.

2. Vanamahotsavam is being organized every year and mass plantation is being taken up on a single day as per the guidance of the TSPCB.

3. For improving ground water levels 32 Nos. of Rainwater harvesting structures are constructed in the Srirampur area.

4. Compost pits are being used at mines for disposal of Bio-degradable solid wastes.

The Singareni Collieries Company Limited
SCCL
SRP AREA
AGENT, IOCP & IK-1A

Agent,

PROJECT OFFICER
IKOC & IK-1A
IK Group of Mines,
The S.C.Co.Ltd.,
Srirampur Area.

MONITORING DATA OF INDARAM KHANI –1A(IK-1A) INCLINE FOR THE PERIOD APRIL, 2024 TO MARCH, 2025.

List of Annexures:

Sl.No.	Description	Annexure No.
1	Ambient Air Quality monitoring data	I
2	Effluents, Surface & Ground Water Quality monitoring data.	II
3	Noise level monitoring data	III
4	Attitude of Phreatic Surface &Piezometric Levels	IV
5.	Meteorological data	V

POST PROJECT AMBIENT AIR QUALITY MONITORING DATA FOR THE PERIODFROM APRIL-2024 TO MARCH- 2025 OF IK-1A INCLINE.

Ambient Air Quality at IK-1 Incline Mine(CA8)

Area : Srirampur **Nature of Area** **:** Core Zone
Period of Monitoring : April 2024– MARCH 2025 **Sampling Duration** **:** 24hrs period

S.No.	Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)
Coal mine standards, GSR 742(E), Dated 25.09.2000		**250**	**-**	**120**	**120**
1	10.04.2024	189	71.5	10.7	14.6
2	22.04.2024	150	52.4	9.5	14.2
3	07.05.2024	170	75.4	11	15.6
4	22.05.2024	171	71.9	10.1	13.4
5	06.06.2024	160	51.9	11.7	18.9
6	22.06.2024	170	76.2	10.5	14.7
7	06.07.2024	187	58.3	9.3	14.1
8	22.07.2024	134	44.2	11	14.1
9	07.08.2024	129	58.2	11.6	15
10	22.08.2024	112	44.9	12.4	15.2
11	06.09.2024	132	68.2	11.5	14.6
12	23.09.2024	129	57.9	9.5	14.4
13	05.10.2024	152	66.5	11.2	14.9
14	21.10.2024	119	55.2	10.2	13.2
15	06.11.2024	189	55.5	9.3	14.1
16	30.11.2024	134	51.9	9.7	14.7
17	10.12.2024	165	54.5	10.1	13.8
18	20.12.2024	149	55.6	11	17.2
19	07.01.2025	167	57.4	11.4	15.6
20	22.01.2025	159	59.8	10	13.7
21	07.02.2025	171	57.4	11.5	15.2
22	21.02.2025	172	63.7	10.5	15.6
23	07.03.2025	137	61.6	10	13.9
24	22.03.2025	176	65.3	9.7	13.7
Min		**112.0**	**44.2**	**9.3**	**13.2**
Max		**189.0**	**76.2**	**12.4**	**18.9**
Avg		**155.1**	**59.8**	**10.6**	**14.8**
98%		**189.0**	**75.9**	**12.2**	**18.3**

Ambient Air Quality at Indaram Village (BA8)

Area : Srirampur **Nature of Area** **:** Buffer Zone
Period of Monitoring : April 2024– MARCH 2025 **Sampling Duration** **:** 24hrs period

S.No.	Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)
NAAQ Standards, CPCB Dated: 18.11.2009		**100**	**60**	**80**	**80**
1	10.04.2024	67	40.1	8.8	11.8
2	23.04.2024	79	41.9	8.6	11.8
3	08.05.2024	81	43.5	8.8	15.4
4	23.05.2024	84	44.2	10.1	13.8
5	07.06.2024	63	33.5	8.3	14.2
6	24.06.2024	76	39.8	9.1	12.2
7	08.07.2024	59	33.6	9.2	12.4
8	23.07.2024	56	30.4	10.1	12.9
9	08.08.2024	51	28.2	8.5	13.6
10	23.08.2024	54	29.5	8.3	13.4
11	07.09.2024	54	28.4	8.6	12.9
12	24.09.2024	74	39.9	9.7	14.2
13	07.10.2024	82	43.9	9.8	12.4
14	22.10.2024	76	40.7	9	14.8
15	07.11.2024	67	34.6	8.3	12.9
16	21.11.2024	66	36.3	8	12.2
17	10.12.2024	88	47.1	9	12.7
18	21.12.2024	72	38.5	9.8	13.2
19	08.01.2025	72	38.9	8.5	15.3
20	23.01.2025	88	46.5	10.6	14
21	08.02.2025	80	42.4	8.3	14.7
22	22.02.2025	69	37.4	10.1	13.6
23	08.03.2025	71	39.4	9.7	13
24	23.03.2025	79	42.7	9	13.3
Min		**51.0**	**28.2**	**8.0**	**11.8**
Max		**88.0**	**47.1**	**10.6**	**15.4**
Avg		**71.2**	**38.4**	**9.1**	**13.4**
98%		**88.0**	**46.1**	**10.1**	**15.2**

Ambient Air Quality at Nizamabad Village (BA9)

Area : Srirampur **Nature of Area** : Buffer Zone
Period of Monitoring : April 2024– MARCH 2025 **Sampling Duration** : 24hrs period

S.No.	Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)
NAAQ Standards, CPCB Dated: 18.11.2009		**100**	**60**	**80**	**80**
1	10.04.2024	62	39.7	8.3	11.4
2	23.04.2024	64	36.4	8.3	13.2
3	08.05.2024	69	37.2	11	13.9
4	23.05.2024	77	39.7	9.5	12.8
5	07.06.2024	55	39	9.6	12.4
6	24.06.2024	72	37.2	10.6	13.7
7	08.07.2024	62	34.7	8.6	14.6
8	23.07.2024	52	32.2	9	12.9
9	08.08.2024	56	30.4	10.9	13.9
10	23.08.2024	55	29.2	8.8	12.9
11	07.09.2024	53	30.5	10	13.6
12	24.09.2024	56	30.4	9.3	12.9
13	07.10.2024	67	34.5	8.5	12.5
14	26.10.2024	75	42.4	8.6	12.5
15	07.11.2024	76	38.8	9.3	13.6
16	21.11.2024	82	43.7	8.6	13.3
17	10.12.2024	82	43.3	10.1	13
18	21.12.2024	75	38.2	9.7	14.4
19	08.01.2025	77	37.1	9.2	14.6
20	23.01.2025	71	36.3	8	13.2
21	08.02.2025	74	38.5	9.6	12.9
22	22.02.2025	74	39.2	8.6	13
23	08.03.2025	59	33.5	9.7	12.4
24	22.03.2025	59	33.7	9.6	13.1
Min		**52.0**	**29.2**	**8.0**	**11.4**
Max		**82.0**	**43.7**	**11.0**	**14.6**
Avg		**66.8**	**36.5**	**9.3**	**13.2**
98%		**82.0**	**43.6**	**11.0**	**14.5**

Ambient Air Quality at Shettipalli Village (BA10)

Area : Srirampur **Nature of Area** : Buffer Zone
Period of Monitoring : April 2024– MARCH 2025 **Sampling Duration** : 24hrs period

S.No.	Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)
NAAQ Standards, CPCB Dated: 18.11.2009		**100**	**60**	**80**	**80**
1	10.04.2024	74	40.2	10	13.1
2	22.04.2024	69	38.2	9.8	12.1
3	07.05.2024	66	35.4	9	14.7
4	22.05.2024	80	47.9	9.3	12.8
5	06.06.2024	62	33.4	9.3	14.6
6	22.06.2024	69	36.6	8	12.2
7	06.07.2024	71	37.2	8	13.8
8	22.07.2024	57	27.3	9.5	12.8
9	07.08.2024	59	32.9	8.7	12.9
10	22.08.2024	53	27.7	9.5	13.7
11	06.09.2024	66	36.9	9.2	13.3
12	23.09.2024	62	33.5	10	12.1
13	05.10.2024	72	38.4	9.3	14.2
14	21.10.2024	66	33.5	10.5	13.9
15	06.11.2024	66	37.5	8	12.7
16	30.11.2024	71	35.9	8.6	13.7
17	10.12.2024	73	35.5	9.5	14.8
18	20.12.2024	69	37.1	8.1	12.8
19	07.01.2025	81	42.4	8.3	13.6
20	22.01.2025	85	45.1	9	13.7
21	07.02.2025	65	35.7	9.3	12.9
22	21.02.2025	82	43.3	8.8	12.7
23	07.03.2025	71	39.7	9.6	12.2
24	22.03.2025	67	38.5	7.7	12.2
Min		**53.0**	**27.3**	**7.7**	**12.1**
Max		**85.0**	**47.9**	**10.5**	**14.8**
Avg		**69.0**	**37.1**	**9.0**	**13.2**
98%		**83.6**	**45.3**	**10.3**	**14.8**

Ambient Air Quality at Tekumatla Village (BA11)

Area : Srirampur **Nature of Area** : Buffer Zone
Period of Monitoring : April 2024– MARCH 2025 **Sampling Duration** : 24hrs period

S.No.	Date of Sampling	PM_{10} (µg/m³)	$PM_{2.5}$ (µg/m³)	SO_2 (µg/m³)	NO_2 (µg/m³)
NAAQ Standards, CPCB Dated: 18.11.2009		**100**	**60**	**80**	**80**
1	10.04.2024	79	42.3	9.3	12.5
2	22.04.2024	62	34.3	10.1	13.1
3	07.05.2024	70	38.6	9.8	16.1
4	22.05.2024	73	39.4	8.2	12.9
5	06.06.2024	74	39.2	9.2	14.7
6	22.06.2024	82	43.9	9	13.8
7	06.07.2024	59	32.2	9.8	14.5
8	22.07.2024	61	32.1	9.7	13.6
9	07.08.2024	53	31.7	9.3	12.9
10	22.08.2024	59	33.5	8.7	13.7
11	06.09.2024	51	28.4	9.7	12.9
12	23.09.2024	55	29.9	9.6	13.3
13	05.10.2024	68	36.2	10.5	13
14	21.10.2024	59	32.4	7.7	14.7
15	06.11.2024	58	31.4	11.6	12.7
16	30.11.2024	52	29.8	9.7	12.1
17	10.12.2024	55	29.6	9.5	14.1
18	20.12.2024	58	33.2	9.2	13.6
19	07.01.2025	78	40.7	9.3	12.5
20	22.01.2025	69	37.7	8.6	13.6
21	07.02.2025	79	42.4	9.2	14.2
22	21.02.2025	69	37.4	8.7	12.5
23	07.03.2025	84	44.4	8	14.2
24	22.03.2025	79	43.2	8.5	14.1
Min		**51.0**	**28.4**	**7.7**	**12.1**
Max		**84.0**	**44.4**	**11.6**	**16.1**
Avg		**66.1**	**36.0**	**9.3**	**13.6**
98%		**83.1**	**43.4**	**11.2**	**15.6**

ANNEXURE-II

I. POST PROJECT WATER QUALITY MONITORING DATA FOR THE PERIOD FROM APRI-2024 TO MARCH- 2025 OF IK-1A INCLINE.

Characteristics of Effluents – IK-1A Incline Mine Discharge (EW8)

S.No.	Date of Sampling	pH	TSS at 105^{0}C	TDS at 180^{0}C	COD	BOD	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	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.	15.04.2024	7.1	20	789	28	6.1	<1
2.	30.04.2024	7.7	27	910	24	2.4	<1
3.	15.05.2024	7.8	34	851	31	4.1	<1
4.	30.05.2024	7.7	22	920	27	2.8	<1
5.	14.06.2024	7.8	18	855	16	2.2	<1
6.	27.06.2024	7.9	24	942	35	3.4	<1
7.	15.07.2024	7.1	16	786	23	2.4	<1
8.	30.07.2024	7.6	29	693	28	3.6	<1
9.	14.08.2024	7.6	19	813	19	2.2	<1
10.	31.08.2024	7.9	23	790	27	3.3	<1
11.	13.09.2024	8.2	23	683	24	2.4	<1
12.	30.09.2024	7.1	41	894	31	3.6	<1
13.	15.10.2024	7.6	29	756	15	2.2	<1
14.	30.10.2024	7.2	33	685	28	2.8	<1
15.	15.11.2024	7.4	24	596	19	3.4	<1
16.	30.11.2024	7.6	18	790	32	4.1	<1
17.	14.12.2024	7.8	22	695	24	3.2	<1
18.	31.12.2024	8.1	30	588	35	4.4	<1
19.	13.01.2025	7.9	23	744	20	3.8	<1
20.	31.01.2025	8.2	19	832	26	4.1	<1
21.	15.02.2025	7.5	28	756	24	3.2	<1
22.	28.02.2025	7.6	34	917	16	2.8	<1
23.	14.03.2025	7.8	29	733	27	3.6	<1
24.	31.03.2025	7.9	32	685	23	4.2	<1

Surface Water Sampling Locations

Sl. No.	Sampling code	Date of sampling		Sampling Location	Latitude	Longitude
		1st Quarter	2nd Quarter			
1.	SW-1	14.03.2024	11.06.2024	Godavari River Upstream (near sitharampalli)	N 18° 49' 33.5"	E 79° 28' 21.5"
2.	SW-2	14.03.2024	11.06.2024	Godavari River Downstream (shettipalli)	N 18° 53' 41.8"	E 79° 40' 32.6"
3.	SW-5	14.03.2024	11.06.2024	Indaram Tank	N 18° 49' 03.6"	E 79° 52' 02.4"
4.	SW-6	14.03.2024	11.06.2024	Shettipalli Tank	N 18° 47' 04.2"	E 79° 34' 28.3"

Groundwater Sampling Locations

Sl. No.	Sampling code	Date of sampling		Sampling Location	Latitude	Longitude
		1st Quarter	2nd Quarter			
1.	GW-5	14.03.2024	11.06.2024	Nizamabad Village	N $18^0$48'36"	E $79^0$32'37"
2.	GW-6	14.03.2024	11.06.2024	Shettipalli Village	N 18° 47' 06.9"	E 79° 34' 41.6"

Physico-Chemical and Bacteriological Characteristics of Surface Water

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

l.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT			
				Class A	Class B	Class C	Class D	Class E	SW-1 Godavari River Upstream		SW-2 Godavari River Downstream	
									1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
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	8.5	8.5	8.4
2	Electrical Conductivity	µmhos /cm	2510-B	-	-	-	-	2250 µmhos/cm	798	755	810	920
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	6.5	6.4	6.2	6.0
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	-	-	2.4	2.8	3.0	3.0
5	Total Coliforms	MPN/ 100mL	9221 B	50 or less	500 or less	5000 or less	-	-	170	220	220	220
6	Free Ammonia (as N)	mg/L	4500-NH_3 – F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.08	0.08	0.15	0.12
8	SAR	-	-	-	-	-	-	Less than 26	1.23	1.01	1.45	1.75

l.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT			
				Class A	Class B	Class C	Class D	Class E	SW-5 Indaram Tank		SW-6 Shettipalli Tank	
									1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
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	8.4	7.5	8.1	7.5
2	Electrical Conductivity	µmhos /cm	2510-B	-	-	-	-	2250 µmhos/cm	805	920	658	780
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	5.6	6.0	5.8
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	-	-	3.4	3.8	3.2	3.4
5	Total Coliforms	MPN/ 100mL	9221 B	50 or less	500 or less	5000 or less	-	-	280	540	220	350
6	Free Ammonia (as N)	mg/L	4500-NH_3 – F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.08	BDL	0.14	BDL
8	SAR	-	-	-	-	-	-	Less than 26	1.12	1.32	1.51	3.43

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

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream		SW-2 Godavari River Downstream	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1	Colour	Hazen	2120. B	5	5	5	5
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	ºC	2550. B	25.3	25	25.4	26.8
4	Turbidity	NTU	2130. B	1.23	2.8	2.22	4.7
5	Total Dissolved Solids at 180º C	mg/L	2540.C	466	450	485	535
6	Total Suspended Solids at 105º C	mg/L	2540. D	12	14	14	18
7	Chemical Oxygen Demand	mg/L	5220. D	10	20	10	20
8	Calcium as Ca	mg/L	3500-Ca.B	54	52	60	50
9	Magnesium as Mg	mg/L	3500-Mg.B	43	45	56	43
10	Sodium as Na	mg/L	3500-Na.B	50	41	65	70
11	Potassium as K	mg/L	3500-K.B	5.2	4.9	6.0	8.04
12	Chlorides as Cl^-	mg/L	4500-Cl^-.B	79	65	85	94
13	Sulphates as SO_4^{2-}	mg/L	4500-SO_4^{2-}.E	68	61	82	70
14	Fluoride as F^-	mg/L	4500-F^-.C	0.82	0.47	0.85	0.53
15	Nitrates as NO_3	mg/L	4500-NO_3^-.B	0.43	7.8	0.59	10
16	Nitrites as NO_2	mg/L	4500-NO_2^-.B	BDL	BDL	BDL	BDL
17	Total Phosphates	mg/L	4500-P-D	0.12	BDL	BDL	BDL
18	Ammonical Nitrogen as NH_3-N	mg/L	4500-NH_3-C	BDL	BDL	BDL	BDL
19	Phenolic compounds as C_6H_5OH	mg/L	5530-D	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/L	5520. B	<1	<1	<1	<1
21	Carbonates as CO_3	mg/L	2320. B	Nil	Nil	Nil	Nil
22	Bi-carbonates as HCO_3	mg/L	2320. B	260	280	300	305
23	Fecal Coliforms	MPN/100mL	9221 E	23	33	33	46
24	Zinc as Zn	mg/L	3120. B	0.17	0.1	0.23	0.15
25	Iron as Fe	mg/L	3120. B	0.42	0.56	0.71	0.49
26	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL	BDL

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream		SW-2 Godavari River Downstream	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
27	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL	BDL

S. No	Parameters	Unit	Test Method	SW-5 Indaram Tank		SW-6 Shettipalli Tank	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1	Colour	Hazen	2120. B	5	10	5	15
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	ºC	2550. B	25.4	25.0	25.6	25.0
4	Turbidity	NTU	2130. B	4.3	5.4	1.15	15.3
5	Total Dissolved Solids at 180º C	mg/L	2540.C	475	550	433	470
6	Total Suspended Solids at 105º C	mg/L	2540. D	18	24	14	20
7	Chemical Oxygen Demand	mg/L	5220. D	16	30	12	24
8	Calcium as Ca	mg/L	3500-Ca.B	54	60	55	26
9	Magnesium as Mg	mg/L	3500-Mg.B	42	44	30	21
10	Sodium as Na	mg/L	3500-Na.B	45	55	56	97
11	Potassium as K	mg/L	3500-K.B	8.6	10	5.0	8.2
12	Chlorides as Cl^-	mg/L	4500-Cl^-.B	102	120	67	118
13	Sulphates as SO_4^{2-}	mg/L	4500-SO_4^{2-}.E	71	84	52	97
14	Fluoride as F^-	mg/L	4500-F^-.C	0.63	0.62	0.84	0.42
15	Nitrates as NO_3	mg/L	4500-NO_3^-.B	3.4	5.6	13	9.3
16	Nitrites as NO_2	mg/L	4500-NO_2^-.B	BDL	BDL	BDL	BDL
17	Total Phosphates	mg/L	4500-P-D	0.12	BDL	0.14	BDL
18	Ammonical Nitrogen as NH_3-N	mg/L	4500-NH_3-C	BDL	BDL	BDL	BDL

S. No	Parameters	Unit	Test Method	SW-5 Indaram Tank		SW-6 Shettipalli Tank	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
19	Phenolic compounds as C_6H_5OH	mg/L	5530-D	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/L	5520. B	<1	<1	<1	<1
21	Carbonates as CO_3	mg/L	2320. B	Nil	Nil	Nil	Nil
22	Bi-carbonates as HCO_3	mg/L	2320. B	235	280	240	140
23	Fecal Coliforms	MPN/100mL	9221 E	33	79	23	23
24	Zinc as Zn	mg/L	3120. B	0.22	0.17	0.18	0.12
25	Iron as Fe	mg/L	3120. B	0.46	0.67	0.66	0.71
26	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL	BDL
27	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL	BDL

Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area

Organoleptic and Physical Parameters

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT			
						GW-5 Nizamabad Village		GW-6 Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Colour	Haze n	2120. B	5	15	<5	<5	<5	<5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.
3.	pH	-	4500-H^+B	6.5 to 8.5	No relaxation	7.7	7.3	8.1	7.7
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.
5.	Turbidity	NTU	2130. B	1	5	0.1	0.35	0.2	0.62
6.	Total Dissolved Solids at 180^o C	mg/L	2540.C	500	2000	560	478	745	615

General Parameters Concerning Substances Undesirable in Excessive Amounts

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in absence of alternate source	RESULT			
						GW-5 Nizamabad Village		GW-6 Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Calcium as Ca	mg/L	3500-Ca.B	75	200	66	54	80	56
2.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	59	43	73	47
3.	Chlorides as Cl-	mg/L	4500-Cl-.B	250	1000	74	81	108	120
4.	Sulphates as SO42-	mg/L	4500-SO42- .E	200	400	45	42	96	46
5.	Fluoride as F-	mg/L	4500-F-.C	1.0	1.5	0.82	0.68	0.79	0.5
6.	Nitrates as NO3	mg/L	4500-NO3-.B	45	No relaxation	30	25	49	52
7.	Total Alkalinity as CaCO3	mg/L	2320. B	200	600	380	280	430	320
8.	Total Hardness as CaCO3	mg/L	2340. C	200	600	408	312	500	333
9.	Sulphide as H_2S	mg/L	4500-S2-F&D	0.05	No relaxation	BDL	BDL	BDL	BDL
10.	Total Ammonia-N	mg/L	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/L	5530-D	0.001	0.002	BDL	BDL	BDL	BDL
12.	Residual free chlorine	mg/L	4500-Cl-.B	0.2	1.0	BDL	BDL	BDL	BDL
13.	Mineral oil	mg/L	IS:3025 (part 39)	0.5	No relaxation	absent	absent	absent	absent
14.	Anionic Detergents (as MBAS)	mg/L	IS:13428:2005K	0.2	1.0	<0.2	<0.2	<0.2	<0.2
15.	Aluminium as Al	mg/L	3120-B	0.03	0.2	0.08	BDL	BDL	0.07
16.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.27	0.31	0.18	0.24
17.	Boron as B	mg/L	3120-B	0.5	2.4	0.13	0.24	0.08	0.19

18.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.47	0.67	0.56	0.49
19.	Zinc as Zn	mg/L	3120-B	5	15	0.21	0.09	0.11	0.18
20.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL	0.07	BDL
21.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL	0.04	BDL
22.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL
23.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL	BDL	BDL

Parameters Concerning Toxic Substances

Sl. No.	**Parameters**	**Unit**	**Test Method**	**IS: 10500 Requirement (Acceptable Limit)**	**IS: 10500 Permissible Limit in absence of alternate source**	**RESULT**			
						GW-5 Nizamabad Village		**GW-6** Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL	BDL	BDL
2.	Cyanide as CN-	mg/L	4500-CN^-.F	0.05	No relaxation	BDL	BDL	BDL	BDL
3.	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL
4.	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL	BDL	BDL
5.	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL	BDL	BDL
6.	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL	BDL	BDL
7.	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL	BDL	BDL
8.	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	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	ND
	2,4-D, Carboryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative Analysis	6630. D	Absent	0.001	ND	ND	ND	ND
10.	**Polyaromatic Hydrocarbons (PAH's):** Acenaphthene, Acenaphthylene, Anthracene,	µg/L	6440.C	--	--	ND	ND	ND	ND

	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								

Bacteriological Quality of Drinking water

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in absence of alternate source	RESULT			
						GW-5 Nizamabad Village		GW-6 Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1	Total Coliforms	MPN/100 mL	9221 B	-	-	<1.8	<1.8	<1.8	<1.8
2	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<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 SO_4^{-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.

Surface Water Sampling Locations

Sl. No.	Sampling code	Date of Sampling		Sampling Location	Latitude	Longitude
		1st Quarter	2nd Quarter			
1	SW-1	14.10.2024	28.12.2024	Godavari River Upstream (near sitharampalli)	N 18° 49’ 33.5”	E 79° 28’ 21.5”
2	SW-2	14.10.2024	28.12.2024	Godavari River Downstream (shettipalli)	N 18° 53’ 41.8”	E 79° 40’ 32.6”
3	SW-5	14.10.2024	28.12.2024	Indaram Tank	N 18° 49’ 03.6”	E 79° 52’ 02.4”
4	SW-6	14.10.2024	28.12.2024	Shettipalli Tank	N 18° 47’ 04.2”	E 79° 34’ 28.3”

Groundwater Sampling Locations

Sl. No.	Sampling code	Date of Sampling		Sampling Location	Latitude	Longitude
		1st Quarter	2nd Quarter			
1	GW-5	14.10.2024	28.12.2024	Nizamabad Village	N $18^0$48’36”	E $79^0$32’37”
2	GW-6	14.10.2024	28.12.2024	Shettipalli Village	N 18° 47’ 06.9”	E 79° 34’ 41.6”

Physico-Chemical and Bacteriological Characteristics of Surface Water

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

S.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT			
									SW-1 Godavari River Upstream		SW-2 Godavari River downstream	
				Class A	Class B	Class C	Class D	Class E	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1	pH	-	4500-H^+B	6.5-8.5	6.5-8.5	6.0 – 9.0	6.5-8.5	6.0-8.5	8.0	8.6	8.3	8.5
2	Electrical Conductivity	µmhos/ cm	2510-B	-	-	-	-	2250 µmhos/cm	445	775	625	960
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	6.3	5.8	6.4	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	-	-	2.0	2.8	2.4	2.9
5	Total Coliforms	MPN/ 100mL	9221B	50 or less	500 or less	5000 or less	-	-	170	140	220	170
6	Free Ammonia (as N)	mg/L	4500-NH_3 –F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.12	0.09	0.15	0.12
8	SAR	-	-	-	-	-	-	Less than 26	0.65	1.69	0.87	1.63

S.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT			
									SW-5 Indaram Tank		SW-6 Shettipalli Tank	
				Class A	Class B	Class C	Class D	Class E	1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
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	8.4	8.1	7.7	7.7
2	Electrical Conductivity	µmhos/ cm	2510-B	-	-	-	-	2250 µmhos/cm	570	488	524	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	-	6.9	5.6	6.3	5.2
4	Bio chemical Oxygen Demand (3 days 27° C)	mg/L	IS: 3025	2 mg/l or less	3 mg/l or less	3 mg/l or less	-	-	1.6	2.8	2.0	2.7
5	Total Coliforms	MPN/ 100mL	9221B	50 or less	500 or less	5000 or less	-	-	140	140	170	170
6	Free Ammonia (as N)	mg/L	4500-NH_3 – F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.09	0.08	0.13	0.12
8	SAR	-	-	-	-	-	-	Less than 26	2.13	1.27	1.31	1.28

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

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream		SW-2 Godavari River Downstream	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Colour	Hazen	2120. B	5	10	5	10
2.	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed
3.	Temperature	ºC	2550. B	25	24.8	25	24.8
4.	Turbidity	NTU	2130. B	1.6	1.31	1.9	1.28
5.	Total Dissolved Solids at 180º C	mg/L	2540.C	265	464	374	580
6.	Total Suspended Solids at 105º C	mg/L	2540. D	16	18	12	16
7.	Chemical Oxygen Demand	mg/L	5220. D	20	40	24	36
8.	Calcium as Ca	mg/L	3500-Ca.B	32	44	44	60
9.	Magnesium as Mg	mg/L	3500-Mg.B	24	37	35	46
10.	Sodium as Na	mg/L	3500-Na.B	20	63	32	69
11.	Potassium as K	mg/L	3500-K.B	3.6	4.17	2.7	5.58
12.	Chlorides as Cl^-	mg/L	4500-Cl^-.B	30	70	47	68
13.	Sulphates as SO_4^{2-}	mg/L	4500-SO_4^{2-}.E	48	54	55	108
14.	Fluoride as F^-	mg/L	4500-F^-.C	0.9	0.84	0.44	0.52
15.	Nitrates as NO_3	mg/L	4500-NO_3^-.B	4.5	2.6	3.9	2.3
16.	Nitrites as NO_2	mg/L	4500-NO_2^-.B	BDL	BDL	BDL	BDL
17.	Total Phosphates	mg/L	4500-P-D	BDL	BDL	BDL	BDL
18.	Ammonical Nitrogen as NH_3-N	mg/L	4500-NH_3-C	BDL	BDL	BDL	BDL
19.	Phenolic compounds as C_6H_5OH	mg/L	5530-D	BDL	BDL	BDL	BDL
20.	Oil & Grease	mg/L	5520. B	<1	<1	<1	<1
21.	Carbonates as CO_3	mg/L	2320. B	Nil	20	Nil	5
22.	Bi-carbonates as HCO_3	mg/L	2320. B	160	300	240	350
23.	Fecal Coliforms	MPN/100mL	9221 E	21	11	27	21
24.	Zinc as Zn	mg/L	3120. B	0.14	0.13	0.09	0.09

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream		SW-2 Godavari River Downstream	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
25.	Iron as Fe	mg/L	3120. B	0.35	0.38	0.47	0.49
26.	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL	BDL
27.	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL	BDL
28.	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL	BDL
29.	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL	BDL
30.	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL	BDL
31.	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL	BDL
32.	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL	BDL

S. No	Parameters	Unit	Test Method	SW-5 Indaram Tank		SW-6 Shettipalli Tank	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Colour	Hazen	2120. B	5	10	10	10
2.	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed
3.	Temperature	ºC	2550. B	25.1	24.8	25.0	24.8
4.	Turbidity	NTU	2130. B	1.4	1.27	2.5	1.32
5.	Total Dissolved Solids at 180º C	mg/L	2540.C	345	292	310	494
6.	Total Suspended Solids at 105º C	mg/L	2540. D	12	16	15	14
7.	Chemical Oxygen Demand	mg/L	5220. D	16	24	20	24
8.	Calcium as Ca	mg/L	3500-Ca.B	27	28	30	50
9.	Magnesium as Mg	mg/L	3500-Mg.B	20	24	25	43
10.	Sodium as Na	mg/L	3500-Na.B	60	38	40	51
11.	Potassium as K	mg/L	3500-K.B	10	3.51	10	6.77
12.	Chlorides as Cl^-	mg/L	4500-Cl^-.B	75	48	58	48
13.	Sulphates as SO_4^{2-}	mg/L	4500-SO_4^{2-}.E	35	24	8.5	86
14.	Fluoride as F^-	mg/L	4500-F^-.C	0.63	0.38	0.25	0.51
15.	Nitrates as NO_3	mg/L	4500-NO_3^-.B	2.8	3.2	3.4	5.7

S. No	Parameters	Unit	Test Method	SW-5 Indaram Tank		SW-6 Shettipalli Tank	
				1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
16.	Nitrites as NO_2	mg/L	4500-NO_2^-.B	BDL	BDL	BDL	BDL
17.	Total Phosphates	mg/L	4500-P-D	BDL	BDL	BDL	BDL
18.	Ammonical Nitrogen as NH_3-N	mg/L	4500-NH_3 -C	BDL	BDL	BDL	BDL
19.	Phenolic compounds as C_6H_5OH	mg/L	5530-D	BDL	BDL	BDL	BDL
20.	Oil & Grease	mg/L	5520. B	<1	<1	<1	<1
21.	Carbonates as CO_3	mg/L	2320. B	Nil	10	Nil	25
22.	Bi-carbonates as HCO_3	mg/L	2320. B	180	200	220	320
23.	Fecal Coliforms	MPN/100mL	9221 E	11	22	14	26
24.	Zinc as Zn	mg/L	3120. B	0.35	0.13	0.17	0.09
25.	Iron as Fe	mg/L	3120. B	0.55	0.45	0.43	0.67
26.	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL	BDL
27.	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL	BDL
28.	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL	BDL
29.	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL	BDL
30.	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL	BDL
31.	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL	BDL
32.	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL	BDL

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			
						GW-5 Nizamabad Village		GW-6 Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Colour	Hazen	2120. B	5	15	<5	5	<5	5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.
3.	pH	-	4500-H^+B	6.5 to 8.5	No relaxation	7.3	7.4	7.5	7.5
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.	Agree.	Agree.
5.	Turbidity	NTU	2130. B	1	5	0.5	0.29	0.3	0.24
6.	Total Dissolved Solids at 180^o C	mg/L	2540.C	500	2000	565	550	616	640

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			
						GW-5 Nizamabad Village		GW-6 Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Calcium as Ca	mg/L	3500-Ca.B	75	200	52	48	47	39
2.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	40	39	33	28
3.	Chlorides as Cl-	mg/L	4500-Cl-.B	250	1000	84	82	142	160
4.	Sulphates as SO42-	mg/L	4500-SO42- .E	200	400	50	95	83	87
5.	Fluoride as F-	mg/L	4500-F-.C	1.0	1.5	0.94	0.68	0.45	0.55
6.	Nitrates as NO3	mg/L	4500-NO3-.B	45	No relaxation	32	38	40	32
7.	Total Alkalinity as CaCO3	mg/L	2320. B	200	600	375	260	230	200
8.	Total Hardness as CaCO3	mg/L	2340. C	200	600	295	280	253	213
9.	Sulphide as H_2S	mg/L	4500-S2-F&D	0.05	No relaxation	BDL	BDL	BDL	BDL
10.	Total Ammonia-N	mg/L	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/L	5530-D	0.001	0.002	BDL	BDL	BDL	BDL
12.	Residual free chlorine	mg/L	4500-Cl-.B	0.2	1.0	BDL	BDL	BDL	BDL
13.	Mineral oil	mg/L	IS:3025 (part 39)	0.5	No relaxation	absent	absent	absent	absent
14.	Anionic Detergents (as MBAS)	mg/L	IS:13428:2005K	0.2	1.0	<0.2	<0.2	<0.2	<0.2
15.	Aluminium as Al	mg/L	3120-B	0.03	0.2	0.06	0.07	0.1	0.1
16.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.18	0.22	0.24	0.16
17.	Boron as B	mg/L	3120-B	0.5	2.4	0.15	0.1	0.12	0.08
18.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.67	0.57	0.53	0.47
19.	Zinc as Zn	mg/L	3120-B	5	15	0.13	0.08	0.09	0.12
20.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL	BDL	BDL

21.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL	BDL	BDL
22.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL
23.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	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			
						GW-5 Nizamabad Village		GW-6 Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1.	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL	BDL	BDL
2.	Cyanide as CN-	mg/L	4500-CN-.F	0.05	No relaxation	BDL	BDL	BDL	BDL
3.	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL
4.	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL	BDL	BDL
5.	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL	BDL	BDL
6.	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL	BDL	BDL
7.	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL	BDL	BDL
8.	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	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	ND
	2,4-D, Carboryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND	ND
10.	**Polyaromatic Hydrocarbons (PAH's):** Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F,	µg/L	6440.C	--	--	ND	ND	ND	ND

	Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-(d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene								

Bacteriological Quality of Drinking water

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT			
						GW-5 Nizamabad Village		GW-6 Shettipalli Village	
						1st Quarter	2nd Quarter	1st Quarter	2nd Quarter
1	Total Coliforms	MPN/100 mL	9221B	-	-	<1.8	<1.8	<1.8	<1.8
2	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<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 SO_4^{-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.

ANNEXURE- III

NOISE LEVEL MONITORING DATA FOR THE PERIOD FROM APRIL, 2024 TO MARCH, 2025 AROUND IK- 1A INCLINE.

Location Code	Monitoring stations	Standard limits of Noise		April, 1st Fortnight			April, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	11.04.2024	48.9	39.1	23.04.2024	42.3	32.0

Location Code	Monitoring stations	Standard limits of Noise		May, 1st Fortnight			May, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	08.05.2024	43.2	37.3	23.05.2024	45.5	35.1

Location Code	Monitoring stations	Standard limits of Noise		June, 1st Fortnight			June, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	07.06.2024	45.5	38.5	24.06.2024	43.2	34.5

Location Code	Monitoring stations	Standard limits of Noise		July, 1st Fortnight			July, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	08.07.2024	50.5	42.4	23.07.2024	46.8	39.8

Location Code	Monitoring stations	Standard limits of Noise		August,1st Fortnight			August, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	08.08.2024	52.0	40.2	23.08.2024	48.9	31.6

Location Code	Monitoring stations	Standard limits of Noise		September 1st Fortnight			September 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	07.09.2024	52.3	47.5	24.09.2024	49.5	32.3

Location Code	Monitoring stations	Standard limits of Noise		October, 1st Fortnight			October, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	07.10.2024	50.5	47.8	22.10.2024	54.1	42.7

Location Code	Monitoring stations	Standard limits of Noise		November,1st Fortnight			November, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	07.11.2024	48.4	35.7	21.11.2024	48.1	35.7

Location Code	Monitoring stations	Standard limits of Noise		December, 1st Fortnight			December, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	11.12.2024	51.6	41.0	21.12.2024	45.9	37.2

Location Code	Monitoring stations	Standard limits of Noise		January, 1st Fortnight			January, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	07.01.2025	52.8	42.4	22.01.2025	46.7	39.4

Location Code	Monitoring stations	Standard limits of Noise		February,1st Fortnight			February, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	08.02.2025	51.2	41.3	22.02.2025	47.8	36.3

Location Code	Monitoring stations	Standard limits of Noise		March, 1st Fortnight			March, 2nd Fortnight		
				Noise levels in dB (A)					
Core Zone		Day time	Night Time	Date of sampling	Leq Day	Leq Night	Date of sampling	Leq Day	Leq Night
CN9	Indaram I A incline	75	70	08.03.2025	53.5	46.5	24.03.2025	50.2	41.0

Note: 1. Daytime is reckoned in between 6 a.m and 10 p.m 2. Night time is reckoned in between 10 p.m and 6 a.m

ANNEXURE-IV

ATTITUDE OF PHREATIC SURFACE IN SRIRAMPUR AREA

Well No.	Name of the Village	Location	Owner's name	Type of well	Total depth(m)	MP (m)	Dia(m)	Depth to water (m)			
									2023	2024	2025
1	Arunakka Nagar	Near GM Office, 18°51'18.38" N, 79°30'40.68"E	N. Lingaiah	DW	9.40	1.00	1.00	Winter	3.84	4.38	4.60
								Pre monsoon	5.27	5.20	5.39
								Monsoon	1.64	1.43	
								Post monsoon	2.49	3.46	
2	RK 6 Colony	Near Shiva temple, 18°52'15.84" N, 79°30'04"E	Q.No.SA-13	DW	10.00	1.20	1.20	Winter	1.74	2.52	2.60
								Pre monsoon	3.53	3.70	3.19
								monsoon	0.81	0.90	
								Post monsoon	1.53	1.20	
3	RK6Colony	Kurma wada, 18°52'14" N, 79°30'04"E	Karre Posham	DW	6.50	1.00	1.00	Winter	2.96	1.87	2.56
								Pre monsoon	1.90	2.18	AB
								Monsoon	1.28	1.30	
								Post monsoon	1.63	1.43	
5	Srirampur (Naspur X road)	Naspur X Road, 18°51'17"N, 79°28'48"E	Suddula Shankar	DW	10.00	0.60	1.00	Winter	6.18	6.24	4.23
								Pre monsoon	7.82	7.85	AB
								Monsoon	4.29	2.85	
								Post monsoon	4.68	3.35	
6	Setharampalli	On the way to Intake well, 18°50'31.72" N, 79°28'34.46"E	Surimella Lachanna	DW	8.50	1.00	1.00	Winter	2.92	3.76	4.98
								Pre monsoon	4.47	5.80	4.78
								Monsoon	2.23	1.58	
								Post monsoon	2.87	3.24	
7	Setharampalli	On the way to Tallapalli, 18°50'37.91"N, 79°29'0.81"E	M. Gopaiah	DW	15.00	1.20	1.20	Winter	10.31	10.55	10.61
								Pre monsoon	13.30	13.00	13.36
								Monsoon	5.00	3.50	
								Post monsoon	7.25	9.40	
		Roadside,18°49'59" N, 79°29'16"E	Katukuri sattaiah					Winter	2.08	2.96	3.70
								Pre monsoon	2.17	3.09	4.37

Well No.	Name of the Village	Location	Owner's name	Type of well	Total depth(m)	MP (m)	Dia(m)	Depth to water (m)			
									2023	2024	2025
8*	Tallapalli			DW	9.10	**0.80**	2.00	Monsoon	2.03	2.60*	
								Post monsoon	2.05	--	
9	Tallapalli	Towards OC, 18°50'3.60"N, 79°29'34.41"E	B.Rajaiah	DW	10.50	1.20	1.20	Winter	5.97	6.80	7.09
								Pre monsoon	9.97	7.15	7.20
								Monsoon	4.40	2.89	
								Post monsoon	6.15	5.25	
12	Ramaraopet	Nearbridge, 18°49'17.80" N, 79°30'48.89"E	GuntaChadraiah	DW	7.00	1.30	1.30	Winter	5.22	4.85	5.15
								Pre monsoon	5.67	5.60	5.45
								Monsoon	1.08	1.00	
								Post monsoon	3.53	3.60	
14	Indaram	Opp.Essar petrol bunk, 18°49'13.91" N, 79°31'39.44"E	Kokkula Bakkaiah	DW	11.50	3x4	3X4	Winter	6.17	5.60	6.05
								Pre monsoon	3.60	6.53	6.46
								Monsoon	3.44	2.00	
								Post monsoon	3.46	3.30	
18	Tekumatla	Along the road, 18°48'48.52" N, 79°32'37.20"E	Ricemill (Kamalakar)	DW	11.50	1.60	1.60	Winter	9.74	8.50	AB
								Pre monsoon	11.37	11.40	AB
								Monsoon	7.68	7.07	
								Post monsoon	8.21	3.39	
19	Tekumatla	Along the road, 18°48'40.20" N, 79°32'50.84"E	V. Ramireddy	DW	11.00	1.00	1.00	Winter	3.88	4.00	4.35
								Pre monsoon	5.07	4.70	4.80
								Monsoon	3.10	2.10	
								Post monsoon	3.19	8.93	
20	Indaram	On the way to Tekumatla, 18°49'11.71" N, 79°31'59.03"E	Govt.Well	DW	9.30	2.00	2.00	Winter	4.86	4.26	5.83
								Pre monsoon	7.37	7.30	7.32
								monsoon	3.73	3.00	
								Post monsoon	4.10	4.63	
22*	Rasulpalli	Near bus stop, 18°50'33.40" N, 79°33'8.13"E	Gomati sattaiah	DW	8.00	1.00	1.00	winter	2.98	2.85	2.15
								Pre monsoon	3.05	3.00	2.50
								monsoon	1.48	1.22*	
								Post monsoon	2.44	1.47	
		Near Village junction,						Winter	5.08	6.20	4.97

Well No.	Name of the Village	Location	Owner's name	Type of well	Total depth(m)	MP (m)	Dia(m)	Depth to water (m)			
									2023	2024	2025
23	Mudikunta	18°51'43.69" N, 79°33'18.11"E	G.Rajaiah	DW	11.40	1.20	1.00	Pre monsoon	5.51	8.20	5.25
								Monsoon	2.70	2.00	
								Post monsoon	3.28	4.60	
25	Kankur	SC Colony, 18°53'07" N, 79°32'44"E	Reguntla Posham	DW	10.00	2.30	2.30	Winter	6.82	2.63	4.00
								Pre monsoon	2.85	3.00	4.10*
								Monsoon	2.00	1.75	
								Post monsoon	2.47	3.86	
26	Jaipur	Near bus stop, 18°50'41.33" N, 79°34'43.27"E	BehindAEoff.	DW	12.00	1.00	1.00	Winter	2.99	3.45	3.80
								Pre monsoon	3.80	3.96	4.90
								Monsoon	0.88	0.83	
								Post monsoon	1.21	2.50	
29	Mittapalli	Villagecenter, 18°52'30" N, 79°33'36"E	Gaddam Suresh goud	DW	8.00	1.00	1.00	Winter	5.73	5.33	5.45
								Pre monsoon	4.39	4.44	6.30
								Monsoon	1.83	3.28	
								Post monsoon	4.10	5.27	
30	Elkanti	Village center, 18°48'07"N, 79°34'24"E	Jalampalli Poshamallu (GDK10A-Maz.)	DW	10.00	2.40	2.40	Winter	6.72	4.40	7.05
								Pre monsoon	9.70	8.20	7.15
								Monsoon	1.70	1.60	
								Post monsoon	2.73	3.60	
31	Ponnaram	Opp.to TSSWR School, 18°55'26.88" N, 79°32'31.76"E	Penchal Anjanna	DW	8.00	1.00	1.00	Winter	3.40	3.83	3.63
								Pre monsoon	4.67	4.71	4.05
								Monsoon	2.08	1.88	
								Post monsoon	3.11	2.20	
32	Gudipalli	Along the main road, 18°54'4.14"N, 79°32'25.41"E	Lingaiah	Ag.W	11.00	5.00	5.00	Winter	6.91	6.98	5.74
								Pre monsoon	7.67	7.71	8.20
								Monsoon	3.38	2.48	
								Post monsoon	5.73	--	
33	Gangipalli	Primary school road, 18°48'31.31" N, 79°35'4.60"E	Opp.Naredla Thirupathi reddy	DW	10.00	1.50	1.50	Winter	4.63	7.56	5.20
								Pre monsoon	Dry	5.28	7.70
								Monsoon	4.75	2.44	
								Post monsoon	4.88	5.13	

Well No.	Name of the Village	Location	Owner's name	Type of well	Total depth(m)	MP (m)	Dia(m)	Depth to water (m)			
									2023	2024	2025
36	Shetpalli	Near Hanuman temple, 18°46'52" N, 79°34'26"E	Rangu Kittaiah	DW	8.00	2.00	2.00	Winter	6.87	3.75	3.90
								Pre monsoon	4.10	6.50	4.70
								monsoon	3.02	1.56	
								Post monsoon	3.21	3.30	
37	Jaipur	Opp.to Post office, 18°50'45.19" N, 79°35'10.70"E	Beeskula Mallaiah	DW	10.00	1.50	1.50	Winter	6.96	6.82	2.90
								Pre monsoon	7.02	7.72	4.66
								Monsoon	4.08	3.60	
								Post monsoon	4.49	3.43	
39	Narwa	Village entrance, 18°51'09" N, 79°33'49"E	Salluri venkatesh SCCL Employee	DW	12.00	2.00	2.00	Winter	8.81	8.82	10.70
								Pre monsoon	10.50	10.69	10.50
								Monsoon	6.08	4.90	
								Post monsoon	7.75	9.00	
40	Gudipalli	OpptoSC Colony, 18°54'6.84"N, 79°32'12.90"E	Segyam rajuwell/Openland	DW	10.00	0.65	2.50	Winter	6.54	6.50	AB
								Pre monsoon	dry	8.10	AB
								Monsoon	3.23	2.49	
								Post monsoon	5.18	WD	
41	VenkataRaopalli	Villagecenter, 18°52'6.46"N, 79°34'33.74"E	Durgam Kishtaiah	DW	12.00	0.50	3.00	Winter	6.28	7.50	8.10
								Pre monsoon	7.67	8.00	8.15
								Monsoon	3.39	3.00	
								Post monsoon	4.05	5.65	
42	Narsingapur	Near Hanuman temple, 18°47'17.08" N, 79°35'17.18"E	Naskur Mallaiah	DW	12.00	1.00	1.00	Winter	5.39	6.25	6.30
								Pre monsoon	8.28	8.28	9.80
								Monsoon	2.74	1.00	
								Post monsoon	3.45	6.10	
43	Bejjala	Village Centre, 18°46'11.73" N, 79°34'53.69"E	ThotaBapu, Adj.to Grampanchayath	DW	10.00	2.00	3.00	Winter	4.91	4.30	4.67
								Pre monsoon	5.93	6.12	6.40
								Monsoon	2.56	3.00	
								Post monsoon	3.78	4.02	
	Maddulapalli	Village center,	SandhaneveniBala					Winter	5.99	3.74	5.80

Well No.	Name of the Village	Location	Owner's name	Type of well	Total depth(m)	MP (m)	Dia(m)	Depth to water (m)			
									2023	2024	2025
45		18°47'2.53"N, 79°36'12.36"E	iah/ SCCL Employee	DW	9.00	2.00	2.00	Pre monsoon	6.47	6.41	6.10
								Monsoon	0.88	2.00	
								Post monsoon	1.38	5.76	
46	Polampalli	Indirama colony, 18°50'25.66" N, 79°39'8.63"E	Dharshinala Madhukar	DW	7.50	1.00	1.00	Winter	4.64	3.54	5.50
								Pre monsoon	4.80	5.00	5.60
								Monsoon	1.80	1.00	
								Post monsoon	3.24	5.40	
47	Bhimaram	Alongthehighway, 18°50'51.85" N, 79°40'38.25"E	Bandari Ramaiah	DW	11.00	0.30	1.00	Winter	4.18	WD	4.17
								Pre monsoon	WD	WD	4.20
								Monsoon	NA	1.00	
								Post monsoon	WD	3.46	
48	Bhimaram	Padmashaliwada, 18°51'10.60" N, 79°40'18.97"E	KokkulaRamulu	DW	9.00	1.16	1.15	Winter	2.08	2.00	2.17
								Pre monsoon	2.20	2.53	2.20
								Monsoon	1.18	1.15	
								Post monsoon	1.93	1.82	
50	Kazipalli	Village Entrance, 18°55'26.98" N, 79°38'44.18"E	Kommu Devender	DW	7.00	2.00	2.00	Winter	5.51	5.80	4.90
								Pre monsoon	6.27	6.32	5.45
								Monsoon	3.10	2.00	
								Post monsoon	4.84	3.60	
51	Dampur	Gollawada, 18°54'45.59" N, 79°37'52.25"E	KoriviThirupathi	DW	10.50	1.90	1.90	Winter	4.57	4.30	4.40
								Pre monsoon	6.47	4.60	4.80
								monsoon	2.64	1.90	
								Post monsoon	3.89	4.35	
52	Reddipalli	Villagecenter, 18°55'22.45" N, 79°37'12.10"E	Kudentha Nelamma	DW	10.00	2.50	2.50	Winter	3.54	4.41	3.37
								Pre monsoon	3.97	4.60	4.40
								monsoon	2.64	2.50	
								Post monsoon	2.08	2.40	
53	Dharmaram	Villagecenter, 18°55'29.90" N, 79°36'52.94"E	SanthoshamSriram Reddy	DW	10.00	2.45	2.45	Winter	2.08	3.18	2.43
								Pre monsoon	3.22	4.03	3.18
								Monsoon	2.77	2.45	
								Post monsoon	1.80	2.00	
		Opp.to Bharat						Winter	3.18	3.20	3.63

Well No.	Name of the Village	Location	Owner's name	Type of well	Total depth(m)	MP (m)	Dia(m)	Depth to water (m)			
									2023	2024	2025
54	Theegalpahad	petroleum bunk, 18°51'23.15" N, 79°29'24.72"E	Md.Rahman S/o Kaleel	DW	10.00	2.00	2.00	Pre monsoon	4.37	5.60	3.90
								Monsoon	2.36	2.00	
								Post monsoon	3.11	2.53	
55	Mudikunta	Village center,18°51'42.63" N, 79°33'16.24"E	Pagala Shankaraiah S/o Gattaiah	DW	15.00	2.20	2.20	Winter	5.10	3.35	AB
								Pre monsoon	11.07	10.50	AB
								Monsoon	2.70	2.20	
								Post monsoon	3.65	WD	
56	Mancherial	Opp.Sunnam batti wada, 18°51'47.99" N, 79°27'25.30"E	Pesara Rayalingu	DW	15.00	2.20	2.20	Winter	8.91	8.45	9.30
								Pre monsoon	8.45	8.60	9.50
								Monsoon	4.19	2.20	
								Post monsoon	6.80	6.45	

Note: TD:Total depth, MP: Measuring point ,WD: Well Damaged. Out of 56 observation wells

Well No.:4,10,11,13,15,18,,21,24,27,28,34,35,38,40,44,49 are Abandoned.

ATTITUDE OF PIEZOMETRIC SURFACE AROUND SRIRAMPUR OC-II EXPANSION PROJECT

Piezometric well no.	Location	Depth (m)	Dia. (m)	Measuring point (m)	Depth to water (m)					
					Winter 2024	Pre monsoon 2024	Monsoon-2024	Post Monsoon-2024	Winter-2025	Pre monsoon-2025
SRP_OCP.II PW-8	Near Project Office sub-station. About 125m from N side of quarry surface limit. (N18^{0}51'4.12" – E 79^{0}29'39.90")	50	0.10	0.40	22.98	23.80	17.70	21.55	21.95	22.00
SRP_OCP.II PW-10	Road to SRP bus stand, about 300m from N side of quarry surface limit (N18^{0}51'7.10" – E 79^{0}30'11.26")	50	0.1	0.50	15.90	17.07	17.00	18.80	19.40	19.50
*SRP_CSIRO PW-12	West side External dump area. Near to Thallapalli village (N18^{0}49'50.573" - E 79^{0}29'06.202")	50	0.1	0.2	2.00	2.65	NA	NA	NA	2.27
*SRP_CSIRO PW-13	West side External dump area. Road to Godavari river (N18^{0}49'45.286" – E 79^{0}29'06.811")	50	0.1	0.2	3.25	4.22	2.20	3.80	4.00	3.36
*SRP_CSIRO PW-14	West side External dump area. Road to Godavari River (N18^{0}49'32.305" – E 79^{0}28'50.154")	50	0.1	0.2	4.55	6.48	4.24	4.80	4.85	5.90

Note:-TD: Total depth, MP: Measuring point, NA: Not Approachable and AB: Abandoned.
Piezometric well No.: SRPOCP-I_ PW_1 to 7, 9 & 11 were abandoned.

Block / Mine : **IKOCP** Area: **Srirampur**

Piezometric Well No.	Location	Depth(m)	Dia(m)	MP (m)	Depth to water(m)					
					Winter-2024	Pre Monsoon-2024	Monsoon-2024	Postmonsoon-2024	Winter-2025	Premonsoon-2025
IKOCP-PW1	On the way to PO office, adj. to coal transport road, Dip side of theproject.3057126.41,949693.45	250	0.10	1.35	15.00	16.56	14.00	13.50	42.43	19.37
IKOCP-PW2	Near Indaram village, On the way to PO office adj. to coal transport road, Dip side of the project.3056296.11,950728.54	250	0.10	1.35	28.14	30.16	25.00	26.00	26.50	43.15

ATTITUDE Of PHREATIC SURFACE IN GODAVARI VALLEY COALFIELD

Area: **CHENNUR**

Well No.	Name of the Village	Location	Owner's Name	Type of well	TD (m)	MP (m)	Dia (m)	Winter-2025	Premonsoon-2025
								DTW (m)	DTW (m)
5	Chennur	Srinagar Colony, 18°51'16.48"N, 79°46'56.91"E	Sabbani Devaiah	DW	8.50	0.50	1.20	5.60	7.80
8	Chennur	Theatre line 18°51'27"N, 79°47'18"E	Bomma Rambai	DW	10.00	0.60	0.80	9.33	9.35
14	Chennur	Bokkala gudem, 18°51'30"N, 79°48'03"E	Govt Well	DW	11.00	0.50	3.50	4.86	6.00
15	Kistampet	Opp. ZPHS School, 18°50'52.81"N, 79°45'14.11"E	Bera Chiranjeevi	DW	7.00	0.55	3.60	3.97	4.00
16	Ellakkapet	Towards Lambadipalli road, 18°51'24.53"N, 79°45'45.78"E	Opp. to Cheruvu	Ag. W	10.00	GL	8.00	4.50	4.55
17	Shivalingapur	18°52'56"N, 79°47'54"E	Sheelam Madhanaiah	DW	8.00	0.50	1.30	5.61	5.70
18	Buddaram	End of the village, 18°54'51"N, 79°42'50"E	Katavena Odelu	Ag. W	9.50	0.40	2.70	AB	AB
19	Kotapalli	Towards Vemanapalli 18°57'20.76"N, 79°47'24.35"E	Kashetti Ramaiah	DW	11.00	0.50	1.50	AB	AB

Note:- TD: Total Depth, MP: Measuring point, Ag W: Agriculture well, DW: Domestic well and out of 19 observation wells, Well no. from 1 to 4, 6, 7 & from 9 to 13 are abandoned.

ANNEXURE – V

MICRO-METEOROLOGICAL DATA OF SRIRAMPUR AREA FROM APRIL, 2024 TO MARCH, 2025.

Month	Predominant Wind direction	Wind Speed(m/s)			Temperature(ºC)			Relative Humidity (%)			Rainfall(mm)	
		Mean	Max	Calm %	Mean	Max	Min	Mean	Max	Min	Total	Hourly Highest
April, 2024	SW	1.9	5.8	9.44	33.9	45.8	18.5	27.8	60.4	8.1	0.0	0.0
May, 2024	SW	1.9	5.0	8.32	33.1	45.6	20.5	19.7	98.0	7.8	0.0	0.0
June,2024	NW	1.2	5.5	7.50	32.4	42.9	24.4	15.6	70.8	8.5	138.7	11.5
July, 2024	NW	1.2	7.5	6.45	28.4	36.9	24.2	64.8	99.9	19.0	227.4	15.8
August, 2024	N-NE	1.1	6.5	14.25	29.1	37.7	23.8	25.9	76.4	9.3	51.4	12.0
September, 2024	S	1.6	8.0	25.14	28.7	35.0	24.3	69.3	96.0	39.4	131.0	8.0
October, 2024	NW	1.7	5.0	11.02	29.6	36.1	24.1	64.4	87.4	33.0	12.6	1.0
November, 2024	SE	1.2	4.0	18.33	25.2	33.1	15.9	50.7	90.4	19.0	17.3	1.6
December, 2024	S	1.8	5.5	14.38	25.0	33.2	12.8	54.5	91.0	9.7	0.0	0.0
January, 2025	SW	1.7	4.6	21.10	23.2	31.8	14.7	45.3	82.1	9.7	0.0	0.0
February, 2025	SE	1.8	6.5	20.54	26.8	40.0	10.2	57.3	97.9	18.2	0.0	0.0
March, 2025	SE	1.9	5.5	13.84	29.4	42.7	16.3	55.9	95.3	13.3	0.0	0.0
	Total:										**578.4**	