



ENVIRONMENTAL AUDIT STATEMENT

2021-22

For

SHARDA OPEN CAST MINE

Under

(SOHAGPUR AREA)

South Eastern Coalfields Limited

(A Mini Ratna Company)

Year of establishment – 1987

Capacity of Mine - 0.85 MTPA (As per EC)

Project Area – 871.205 ha

**Central Mine Planning & Design Institute Limited
Regional Institute – V, CMPDI Complex, Seepat Road,
BILASPUR (C.G.)**

ENVIRONMENTAL AUDIT STATEMENT (2021-22)

SHARDA OPENCAST MINE

CHAPTER-I

TABLE-1.1

1.0	General Information:		
	Sharda OCM is located between latitude N23-12'-15" & N23-13'-45" and longitude E81-15'-12" & E81-18"-08" approx. 6km from Burhar town in Shahdol, Madhya Pradesh		
a)	Extractable Reserves (as on 01.04.2022)	:	5.30 MT
b)	Target output & grade of coal (2022-23)	:	Grade G6 & Target 8,50,000 Te
c)	Seams Worked	:	Burhar VIT & VIB, Burhar IV and Burhar II
d)	Thickness of Seam Worked (in metres.)	:	3m-5m for Burhar VIT seam and for rest of the seam it varies between 0.9 to 1.5m.
e)	Depth of Seams from the surface Minimum: Maximum:	:	15 m 55 m
f)	Av. Stripping ratio mining purpose	:	NA
g)	No. of villages/ families	:	2 Villages
h)	(i) Mining area (in Ha.)	:	871.205 ha
	(ii) Leasehold area other than mining purpose (in Ha.)	:	---
	(iii) Total Leasehold Area (in Ha.)	:	871.205 ha

1.1	Brief Geology of Mine:														
	SOCM is located in eastern part of Burhar-Amlai sub-basin of Sohagpur coalfields and have four coal seams as Burhar VIT & VIB, Burhar IV and Burhar II. The coal bed of the block has NE-SW strike and sub-horizontal to 4o westerly dip. Five nos. of fault trending NE-SW and E-W have been deciphered in the area with throw ranging from 1-22m along with thin dykes														
1.2	Mining Method Description	:	Highwall Mining method has been adopted here at SOCM in which a trench is made by conventional drilling and blasting. This followed by extraction of coal by HW Miner making parallel drivages in the coal seam.												
1.3	Present Status of the mine	:													
1.	Production Figures	:													
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Year</th> <th>COAL PRODUCTION (in Tonnes)</th> </tr> </thead> <tbody> <tr> <td>2018-19</td> <td>568322</td> </tr> <tr> <td>2019-20</td> <td>843396</td> </tr> <tr> <td>2020-21</td> <td>649423</td> </tr> <tr> <td>2021-22</td> <td>320113</td> </tr> <tr> <td>2022-23 (Target)</td> <td>850000</td> </tr> </tbody> </table>			Year	COAL PRODUCTION (in Tonnes)	2018-19	568322	2019-20	843396	2020-21	649423	2021-22	320113	2022-23 (Target)	850000
Year	COAL PRODUCTION (in Tonnes)														
2018-19	568322														
2019-20	843396														
2020-21	649423														
2021-22	320113														
2022-23 (Target)	850000														
2.	No. of Inclines (Running)	:	NA												
3.	Shafts	:	NA												
4.	No. of quarries	:	01 Trenches												
5.	Overburden	:	19,14,494 m3 (for FY 2021-22)												
6.	Main Consumers	:	Power Plants/ Cement Plants												
7.	Mode of dispatch	:	Road and Rail, Road transport up to Burhar siding (approx. 8 kms).												

CHAPTER-II

FORM-V
(See rule 14)

Environmental Statement for the Financial Year ending

31st March 2022

PART-A

(i)	Name and address of the mine	:	Office of Sub-Area Manager, Sharda OCM, PO- Amlai Paper Mills, Distt.- Shahdol (MP) PIN- 484117
(ii)	Industry category Primary (SIC Code) or Secondary (SIC Code)	:	Primary
(iii)	Production capacity units	:	0.85 MTPA
(iv)	Year of establishment	:	24-04-1987 (26-10-2010 for Highwall Operation)
(v)	Date of the last environmental Statement Submitted	:	September' 2021

PART-B
Water and Raw Materials Consumption

(i) Water Consumption (KLD)

Industrial consumption: 447 KLD

Domestic consumption: 16 KLD

Name of Products	Process water consumption per product output	
	During the previous financial year 2020-21	During the current financial year 2021-22
Coal	Water is not needed in any coal mining process. It is only needed in Environment Management Processes.	

(ii) Raw materials consumption

*Name of raw materials	Name of products	Consumption of raw material per unit of output	
		During the current financial year 2020-21	During the current financial year 2021-22
Explosive	Coal	NIL	NIL
	OB	1.72 m3/kg	1.34 M3/Kg
P.O.L	Coal	0.001 lit/tonne**	0.001 Lit/tonne**

*Industry may use codes if disclosing details of raw materials would violate contractual obligations, otherwise all industries have to name the raw materials used.

** POL Consumption data given exclusively for Parent Company i.e. Sharda OCM (SECL).

PART-C
POLLUTANT DISCHARGED TO ENVIRONMENT/ UNIT OF OUTPUT
(Parameters as specified in the consent issued)

Pollutants (Including mine & colony discharge of water)	Quantity of pollutants discharged (mass/day)	Concentrations of pollutants in discharges (mass/ volume)	Percentage of variation from prescribed standards with reasons
(a) Air	1386 KLD water is being stored in trench T-1 and a part of it is discharged to Natural Water body after treatment as per the standard norms. (Monitoring Reports are Enclosed)		Environmental Monitoring Report Enclosed.
(b) Water			
(i) Mine water pumped out			
(ii) Industrial water discharged			
(iii) Colony water discharged			
(c) Noise			

PART-D

HAZARDOUS WASTES

(As specified under Hazardous Wastes/ Management Handling Rule, 1989)

Hazardous Wastes	Total quantity	
	During the current financial year 2020-21	During the current financial year 2021-22
From Process	0.450 KL for Cat 5.1	0.260 KL for Cat 5.1
From Pollution control facilities	-	-

Neither liquid nor solid hazardous wastes are generated during underground coal mining.

PART-E

SOLID WASTES

Removal of overburden	Total quantity	
	During the current financial year 2020-21	During the current financial year 2021-22
Total O.B.	2702737 m ³	1914494 m ³
Total O.B. For back filling	631680 m ³	991310 m ³
Total O.B. disposed	6750 m ³ top soil was used for plantation and 631680 m ³ overburden dump along river sone for further plantation	A major portion of OB is utilized for creating embankment along river sone running along the mine boundary.

PART-F

Please specify the characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

Description	Qty. MT / Year(21-22)	Collection Method
Steel Scrap	Nil	Nil
Copper Scrap		
Aluminum Scrap		
Used Oil	0.26 KL for Cat 5.1 is disposed through authorized recycler.	Collected in air tight sealed Container & sent to Regional Store Sohagpur Area for further disposal Through Registered Agency.

PART-G

Impact of the pollution abatement measure taken on conservation of natural resources and on the cost of production.

- The mine is being worked with highwall mining technology which is the most eco friendly technology in the field of open cast mining. This has helped in reducing pollution to a great extent.
 - Monitoring of Environment Parameters is being done, These pollution control measures have helped to a great extent in conservation of natural resource like water, soil, air, flora and fauna.
 - Plantation has helped in reducing pollution and also in preventing soil erosion from OB dumps. Green cover is steadily increasing as a result of yearly plantation.
 - One truck mounted mist fog canon of Rs. 38 Lakhs has been procured exclusively for Sharda OC Mine for continuous water sprinkling at stock yard and at haul road.
 - One mobile water tanker of 10KL Capacity is being used for dust suppression at Haul road.
 - One Oil and Grease Trap of capacity 10 KL has has been constructed and is functioning for treatment of workshop water as per the standard norms.
 - Plantations activity of 40,000 nos. of saplings was carried out during this financial year 21-22.
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PART-H

Additional measures/ investment proposals for environmental protection including abatement of pollution, prevention of pollution.

- One wind breaking wall is proposed to be constructed at Coal stock yard for minimization of Air borne Dust.
 - One concrete road is about to be constructed from main gate to mine office.
 - Extension of Fix Sprinkler is proposed at Coal stock yard for continuous water sprinkling at stock yard.
-

PART-I

Any other particulars for improving the quality of the environment.

- 100% coal transportation is being done through optimally loaded tarpaulin covered trucks to railway siding and to road sale.
 - Regular monitoring of Air, Water and Noise is being done at core and buffer zone of the mine at the cost of Rs. 61.47 Lakhs annually.
 - Fixed type water sprinkler has been installed around the stock yard and along black topped main roadways to suppress dust more effectively.
 - Celebration of World Environment Day to increase awareness on Environment Conservation.
-

ENVIRONMENTAL MONITORING REPORT

**CENTRAL MINE PLANNING AND DESIGN INSTITUTE LIMITED**

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A Mini Ratna Company

AIR QUALITY REPORT

Month	January	Area	Sohagpur	Report No	01
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	15.02.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/JAN

Parameter					SPM	PM10	PM2.5	SO ₂	NO ₂	Remarks
Limit (in µg/m ³)-24 hrs.	Industrial Zone -(G.S.R. 742(E), dated 25.9.2000)		A-O		600	300	60	120	120	
			A-N		500	250	60	120	120	
	Residential Zone-(G.S.R. 826(E), dated 16.11.2009 and GSR 176 (E), April 02, 1996)		B		200	100	60	80	80	
Method of analysis					IS-5182 PART 4	IS-5182 PART 23	CPCB Vol-I	IS-5182 PART 2	IS-5182 PART 6	
Station Name	St. Code	St. cat.	Date of sampling	Date of analysis	SPM	PM10	PM2.5	SO ₂	NO ₂	
MINE SITE OFFICE	19	A-O	04.01.22	10.01.22	345	159	56	20	30	-
			06.01.22	10.01.22	-	-	55	-	-	-
			11.01.22	18.01.22	-	-	51	-	-	-
			13.01.22	18.01.22	-	-	53	-	-	-
			18.01.22	24.01.22	353	166	59	21	32	-
			20.01.22	24.01.22	-	-	54	-	-	-
			25.01.22	31.01.22	-	-	57	-	-	-
			29.01.22	31.01.22	-	-	53	-	-	-
NEAR LOADING POINT	20	A-O	04.01.22	10.01.22	367	175	58	26	41	-
			06.01.22	10.01.22	-	-	51	-	-	-
			11.01.22	18.01.22	-	-	50	-	-	-
			13.01.22	18.01.22	-	-	55	-	-	-
			18.01.22	24.01.22	360	170	51	28	39	-
			20.01.22	24.01.22	-	-	59	-	-	-
			25.01.22	31.01.22	-	-	53	-	-	-
			29.01.22	31.01.22	-	-	58	-	-	-

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Officer In-charge

Note: 1) The results above relate to the samples tested.

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AIR QUALITY REPORT

Month	January	Area	Sohagpur	Report No	01
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	15.02.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/JAN

Parameter					SPM	PM10	PM2.5	SO ₂	NO ₂	Remarks
Limit (in µg/m ³)-24 hrs.	Industrial Zone -(G.S.R. 742(E), dated 25.9.2000)		A-O	600	300	60	120	120		
			A-N	500	250	60	120	120		
	Residential Zone-(G.S.R. 826(E), dated 16.11.2009 and GSR 176 (E), April 02, 1996)		B	200	100	60	80	80		
Method of analysis					IS-5182 PART 4	IS-5182 PART 23	CPCB Vol-I	IS-5182 PART 2	IS-5182 PART 6	
Station Name	St. Code	St. cat.	Date of sampling	Date of analysis	SPM	PM10	PM2.5	SO ₂	NO ₂	
RUNGTA COLONY	21	B	04.01.22	10.01.22	135	54	45	09	22	-
			06.01.22	10.01.22	-	-	48	-	-	-
			11.01.22	18.01.22	-	-	43	-	-	-
			13.01.22	18.01.22	-	-	47	-	-	-
			18.01.22	24.01.22	130	52	49	11	20	-
			20.01.22	24.01.22	-	-	41	-	-	-
			25.01.22	31.01.22	-	-	46	-	-	-
			29.01.22	31.01.22	-	-	44	-	-	-
BAKHO VILLAGE	22	B	04.01.22	10.01.22	150	63	50	11	23	-
			06.01.22	10.01.22	-	-	56	-	-	-
			11.01.22	18.01.22	-	-	58	-	-	-
			13.01.22	18.01.22	-	-	53	-	-	-
			18.01.22	24.01.22	157	67	51	10	21	-
			20.01.22	24.01.22	-	-	56	-	-	-
			25.01.22	31.01.22	-	-	51	-	-	-
			29.01.22	31.01.22	-	-	59	-	-	-

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NOISE QUALITY REPORT

Month	January	Area	Sohagpur	Report No	01
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	15.02.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/JAN

Parameter			The Noise Pollution (R & C) rules, 2000		Remarks	
			Day Time	Night Time		
Limit in dB(a) Leq	Industrial area	A	75	70		
	Commercial area	B	65	55		
	Residential Area	C	55	45		
	Silence Zone	D	50	40		
Method of analysis	CPCB Protocol For Ambient Level Noise Monitoring					
Station Name	Station Code	Station category	Date of measurement	Value in dB(a)	Value in dB(a)	
MINE SITE OFFICE	22	A	12.01.2022	50.5	42.6	-
			28.01.2022	51.1	41.8	-
NEAR LOADING POINT	23	A	12.01.2022	53.7	41.1	-
			28.01.2022	52.3	40.9	-
RUNGTA COLONY	24	C	12.01.2022	46.2	43.0	-
			28.01.2022	47.9	44.4	-
BAKHO VILLAGE	25	C	12.01.2022	45.4	43.7	-
			28.01.2022	45.6	42.5	-

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EFFLUENT WATER QUALITY REPORT


Month	January	Area	Sohagpur	Report No	01
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	15.02.2022
Name of the Project	SHARDA O.C.M.	Sample reference No.	CMPDI/HSD/SGP/JAN

Parameter				pH Value, LDL	Total suspended Solids, mg/l, max	C.O.D, mg/l, max	Oil & Grease, mg/l, max	B.O.D. (3 days 27°C)mg/l, max
Lower detection Limit				0.01	25.0	4.0	2.0	2.0
General Standards for Discharge of Environmental Pollution (Part A: Effluent) as per Schedule VI, Environment (Protection) Rules				5.5 to 9.0	100.0	250.0	10.0	30.0
Station name	St. Code	Date of Sampling	Date of Analysis					
MINE DISCHARGE	12	10.01.22	10.01.22 to 25.01.22	7.52	50	16	<2.0	-
		29.01.22	29.01.22 to 13.02.22	7.57	55	16	<2.0	-
UP STREAM OF SON RIVER	13	10.01.22	10.01.22 to 25.01.22	8.28	43	12	<2.0	-
		29.01.22	29.01.22 to 13.02.22	8.24	47	12	<2.0	-
DOWN STREAM OF SON RIVER	14	10.01.22	10.01.22 to 25.01.22	7.68	52	16	<2.0	-
		29.01.22	29.01.22 to 13.02.22	7.73	48	16	<2.0	-


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AIR QUALITY REPORT

Month	February	Area	Sohagpur	Report No	02
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	14.03.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/FEB

Parameter					SPM	PM10	PM2.5	SO ₂	NO ₂	Remarks
Limit (in $\mu\text{g}/\text{m}^3$)-24 hrs.	Industrial Zone -(G.S.R. 742(E), dated 25.9.2000)		A-O	600	300	60	120	120		
			A-N	500	250	60	120	120		
Residential Zone-(G.S.R. 826(E), dated 16.11.2009 and GSR 176 (E), April 02, 1996)		B	200	100	60	80	80			
		Method of analysis					IS-5182 PART 4	IS-5182 PART 23	CPCB Vol-I	IS-5182 PART 2
Station Name	St. Code	St. cat.	Date of sampling	Date of analysis	SPM	PM10	PM2.5	SO ₂	NO ₂	
MINE SITE OFFICE	19	A-O	02.02.22	08.02.22	351	163	54	21	28	-
			04.02.22	08.02.22	-	-	57	-	-	-
			08.02.22	14.02.22	-	-	51	-	-	-
			10.02.22	14.02.22	-	-	58	-	-	-
			15.02.22	18.02.22	-	-	56	-	-	-
			17.02.22	18.02.22	358	169	52	19	31	-
			22.02.22	28.02.22	-	-	53	-	-	-
			24.02.22	28.02.22	-	-	54	-	-	-
NEAR LOADING POINT	20	A-O	02.02.22	08.02.22	363	174	50	24	35	-
			04.02.22	08.02.22	-	-	56	-	-	-
			08.02.22	14.02.22	-	-	58	-	-	-
			10.02.22	14.02.22	-	-	54	-	-	-
			15.02.22	18.02.22	-	-	52	-	-	-
			17.02.22	18.02.22	369	177	57	27	38	-
			22.02.22	28.02.22	-	-	51	-	-	-
			24.02.22	28.02.22	-	-	55	-	-	-

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AIR QUALITY REPORT

Month	February	Area	Sohagpur	Report No	02
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	14.03.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/FEB

Parameter					SPM	PM10	PM2.5	SO ₂	NO ₂	Remarks
Limit (in µg/m ³)-24 hrs.	Industrial Zone -(G.S.R. 742(E), dated 25.9.2000)		A-O	600	300	60	120	120		
			A-N	500	250	60	120	120		
	Residential Zone-(G.S.R. 826(E), dated 16.11.2009 and GSR 176 (E), April 02, 1996)		B	200	100	60	80	80		
Method of analysis					IS-5182 PART 4	IS-5182 PART 23	CPCB Vol-I	IS-5182 PART 2	IS-5182 PART 6	
Station Name	St. Code	St. cat.	Date of sampling	Date of analysis	SPM	PM10	PM2.5	SO ₂	NO ₂	
RUNGTA COLONY	21	B	02.02.22	08.02.22	133	56	46	10	20	-
			04.02.22	08.02.22	-	-	41	-	-	-
			08.02.22	14.02.22	-	-	48	-	-	-
			10.02.22	14.02.22	-	-	43	-	-	-
			15.02.22	18.02.22	-	-	41	-	-	-
			17.02.22	18.02.22	128	53	44	08	17	-
			22.02.22	28.02.22	-	-	40	-	-	-
			24.02.22	28.02.22	-	-	45	-	-	-
BAKHO VILLAGE	22	B	02.02.22	08.02.22	155	66	54	10	19	-
			04.02.22	08.02.22	-	-	57	-	-	-
			08.02.22	14.02.22	-	-	59	-	-	-
			10.02.22	14.02.22	-	-	53	-	-	-
			15.02.22	18.02.22	-	-	56	-	-	-
			17.02.22	18.02.22	151	62	55	09	20	-
			22.02.22	28.02.22	-	-	57	-	-	-
			24.02.22	28.02.22	-	-	54	-	-	-

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NOISE QUALITY REPORT

Month	February	Area	Sohagpur	Report No	02
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	14.03.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/FEB

Parameter			The Noise Pollution (R & C) rules, 2000		Remarks	
			Day Time	Night Time		
Limit in dB(a) Leq	Industrial area	A	75	70		
	Commercial area	B	65	55		
	Residential Area	C	55	45		
	Silence Zone	D	50	40		
Method of analysis	CPCB Protocol For Ambient Level Noise Monitoring					
Station Name	Station Code	Station category	Date of measurement	Value in dB(a)	Value in dB(a)	
MINE SITE OFFICE	22	A	04.02.2022	51.3	41.0	-
			25.02.2022	51.8	41.8	-
NEAR LOADING POINT	23	A	04.02.2022	53.4	41.5	-
			25.02.2022	52.9	40.1	-
RUNGTA COLONY	24	C	04.02.2022	46.1	43.7	-
			25.02.2022	47.6	44.3	-
BAKHO VILLAGE	25	C	04.02.2022	45.4	43.9	-
			25.02.2022	45.8	42.5	-

Prepared by

Checked by

Officer In-charge

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EFFLUENT WATER QUALITY REPORT

Month	February	Area	Sohagpur	Report No	02
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	14.03.2022
Name of the Project	SHARDA O.C.M.	Sample reference No.	CMPDI/HSD/SGP/FEB

Parameter				pH Value, LDL	Total suspended Solids, mg/l, max	C.O.D, mg/l, max	Oil & Grease, mg/l, max	B.O.D. (3 days 27°C)mg/l, max
Lower detection Limit				0.01	25.0	4.0	2.0	2.0
General Standards for Discharge of Environmental Pollution (Part A: Effluent) as per Schedule VI, Environment (Protection) Rules				5.5 to 9.0	100.0	250.0	10.0	30.0
Station name	St. Code	Date of Sampling	Date of Analysis					
MINE DISCHARGE	12	02.02.22	02.02.22 to 17.02.22	7.55	53	16	<2.0	-
		26.02.22	26.02.22 to 12.03.22	7.58	58	16	<2.0	-
UP STREAM OF SON RIVER	13	02.02.22	02.02.22 to 17.02.22	8.26	44	12	<2.0	-
		26.02.22	26.02.22 to 12.03.22	8.21	47	12	<2.0	-
DOWN STREAM OF SON RIVER	14	02.02.22	02.02.22 to 17.02.22	7.71	49	16	<2.0	-
		26.02.22	26.02.22 to 12.03.22	7.67	44	16	<2.0	-

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AIR QUALITY REPORT

Month	March	Area	Sohagpur	Report No	03
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	02.04.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/MAR

Parameter					SPM	PM10	PM2.5	SO ₂	NO ₂	Remarks
Limit (in µg/m ³)-24 hrs.	Industrial Zone -(G.S.R. 742(E), dated 25.9.2000)		A-O		600	300	60	120	120	
			A-N		500	250	60	120	120	
	Residential Zone-(G.S.R. 826(E), dated 16.11.2009 and GSR 176 (E), April 02, 1996)		B		200	100	60	80	80	
Method of analysis					IS-5182 PART 4	IS-5182 PART 23	CPCB Vol-I	IS-5182 PART 2	IS-5182 PART 6	
Station Name	St. Code	St. cat.	Date of sampling	Date of analysis	SPM	PM10	PM2.5	SO ₂	NO ₂	
MINE SITE OFFICE	19	A-O	01.03.22	07.03.22	363	167	55	17	29	-
			03.03.22	07.03.22	-	-	51	-	-	-
			08.03.22	12.03.22	-	-	58	-	-	-
			10.03.22	12.03.22	-	-	53	-	-	-
			15.03.22	20.03.22	-	-	57	-	-	-
			17.03.22	20.03.22	368	173	52	19	26	-
			22.03.22	25.03.22	-	-	59	-	-	-
			24.03.22	27.03.22	-	-	55	-	-	-
			31.03.22	01.04.22	-	-	50	-	-	-
NEAR LOADING POINT	20	A-O	01.03.22	07.03.22	370	181	54	27	36	-
			03.03.22	07.03.22	-	-	51	-	-	-
			08.03.22	12.03.22	-	-	56	-	-	-
			10.03.22	12.03.22	-	-	57	-	-	-
			15.03.22	20.03.22	-	-	50	-	-	-
			17.03.22	20.03.22	376	185	55	24	33	-
			22.03.22	25.03.22	-	-	54	-	-	-
			24.03.22	27.03.22	-	-	57	-	-	-
			31.03.22	01.04.22	-	-	58	-	-	-

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AIR QUALITY REPORT

Month	March	Area	Sohagpur	Report No	03
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	02.04.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/MAR

Parameter					SPM	PM10	PM2.5	SO ₂	NO ₂	Remarks
Limit (in µg/m ³)-24 hrs.	Industrial Zone -(G.S.R. 742(E), dated 25.9.2000)		A-O	600	300	60	120	120		
			A-N	500	250	60	120	120		
	Residential Zone-(G.S.R. 826(E), dated 16.11.2009 and GSR 176 (E), April 02, 1996)		B	200	100	60	80	80		
Method of analysis					IS-5182 PART 4	IS-5182 PART 23	CPCB Vol-I	IS-5182 PART 2	IS-5182 PART 6	
Station Name	St. Code	St. cat.	Date of sampling	Date of analysis	SPM	PM10	PM2.5	SO ₂	NO ₂	
RUNGTA COLONY	21	B	01.03.22	07.03.22	135	58	45	10	18	-
			03.03.22	07.03.22	-	-	48	-	-	-
			08.03.22	12.03.22	-	-	44	-	-	-
			10.03.22	12.03.22	-	-	49	-	-	-
			15.03.22	20.03.22	-	-	43	-	-	-
			17.03.22	20.03.22	139	62	47	11	20	-
			22.03.22	25.03.22	-	-	40	-	-	-
			24.03.22	27.03.22	-	-	43	-	-	-
31.03.22	01.04.22	-	-	45	-	-	-			
BAKHO VILLAGE	22	B	01.03.22	07.03.22	153	64	51	09	21	-
			03.03.22	07.03.22	-	-	58	-	-	-
			08.03.22	12.03.22	-	-	53	-	-	-
			10.03.22	12.03.22	-	-	59	-	-	-
			15.03.22	20.03.22	-	-	54	-	-	-
			17.03.22	20.03.22	157	67	56	11	19	-
			22.03.22	25.03.22	-	-	51	-	-	-
			24.03.22	27.03.22	-	-	54	-	-	-
31.03.22	01.04.22	-	-	55	-	-	-			

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NOISE QUALITY REPORT

Month	March	Area	Sohagpur	Report No	03
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	02.04.2022
Name of the Project	SHARDA O.C.M.	Sample Reference No.	CMPDI/HSD/SGP/MAR

Parameter			The Noise Pollution (R & C) rules, 2000		Remarks	
			Day Time	Night Time		
Limit in dB(a) Leq	Industrial area	A	75	70		
	Commercial area	B	65	55		
	Residential Area	C	55	45		
	Silence Zone	D	50	40		
Method of analysis	CPCB Protocol For Ambient Level Noise Monitoring					
Station Name	Station Code	Station category	Date of measurement	Value in dB(a)	Value in dB(a)	
MINE SITE OFFICE	22	A	09.03.2022	50.3	40.9	-
			22.03.2022	49.9	41.4	-
NEAR LOADING POINT	23	A	09.03.2022	53.0	40.0	-
			22.03.2022	54.4	41.7	-
RUNGTA COLONY	24	C	09.03.2022	46.7	40.3	-
			22.03.2022	45.6	39.5	-
BAKHO VILLAGE	25	C	09.03.2022	44.8	37.8	-
			22.03.2022	45.4	38.1	-

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EFFLUENT WATER QUALITY REPORT

Month	March	Area	Sohagpur	Report No	03
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Name of the Customer	South Eastern Coalfields Ltd, Bilaspur	Date of Issue	02.04.2022
Name of the Project	SHARDA O.C.M.	Sample reference No.	CMPDI/HSD/SGP/MAR

Parameter	pH Value, LDL	Total suspended Solids, mg/l, max	C.O.D, mg/l, max	Oil & Grease, mg/l, max	B.O.D. (3 days 27°C)mg/l, max			
Lower detection Limit	0.01	25.0	4.0	2.0	2.0			
General Standards for Discharge of Environmental Pollution (Part A: Effluent) as per Schedule VI, Environment (Protection) Rules	5.5 to 9.0	100.0	250.0	10.0	30.0			
Station name	St. Code	Date of Sampling	Date of Analysis					
MINE DISCHARGE	12	07.03.22	07.03.22 to 21.03.22	7.57	55	16	<2.0	-
		23.03.22	23.03.22 to 01.04.22	7.53	58	16	<2.0	-
UP STREAM OF SON RIVER	13	07.03.22	07.03.22 to 21.03.22	8.25	46	12	<2.0	-
		23.03.22	23.03.22 to 01.04.22	8.23	43	12	<2.0	-
DOWN STREAM OF SON RIVER	14	07.03.22	07.03.22 to 21.03.22	7.70	50	12	<2.0	-
		23.03.22	23.03.22 to 01.04.22	7.76	53	12	<2.0	-

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Month	January	2022	Area	Sohagpur	Report No.	JN22SH	
Customer	South Eastern Coalfields Ltd (SECL), Bilaspur			Date of Issue	15-02-22 16:10		
Project	Sharda OC		Sample Ref. No.	CMPDI/ENV/HSD/2022/35, Date-16/01/2022			
Sampling Stations	xi	Input of Rungta Colony filter plant		Date of Sampling	15-Jan-2022		
	xii	Output of Rungta Colony filter plant		Date of Sampling	15-Jan-2022		
			Date of Analysis	15-Jan-2022	to	5-Feb-2021	
Sl. No.	Parameter	Method of Analysis	Observed Values		IS 10500: 2012		Uncertainty of Measurement (at 95% Confidence Level & K= 1.96)
			xi	xii	Acceptable Limit (Max)*	Permissible Limit in the Absence of Alternate Source (Max)	
1	Colour, Hazen LDL: 1.0 Hazen	APHA, 23rd Edition, 2017, 2120. C. Spectrometric single wavelength method	3	2	5	15	±1.05 Hazen at 49.86 Hazen
2	Odour	IS 3025 (Part 5):1983, Physical (Qualitative)	Agreeable	Agreeable	Agreeable	Agreeable	None
3	Phenolic compounds, mg/l LDL: 0.001 mg/l	APHA, 23rd Edition, 2017, 5530. C, Chloroform Extraction Method	BDL	BDL	0.001	0.002	±0.0204 mg/l at 0.100 mg/l
4	Turbidity, NTU LDL: 1.0 NTU	IS 3025 (Part 10):1984, R : 2006, Nephelometric Method	2	3	1	5	±0.855 NTU at 41.58 NTU
5	pH LDL: 4.00	IS 3025 (Part 11):1983, R : 2012, Electrometric Method	6.43	7.05	6.5-8.5	No relaxation	±0.1272 at 7.01
6	Alkalinity, mg/l as CaCO ₃ LDL: 5.0 mg/l	IS 3025(Part 23):1986,R 2003 Titration Method	190	200	200	600	±0.19696 mg/l at 10.0 mg/l
7	Total Hardness, mg/l as CaCO ₃ LDL: 4.0 mg/l	IS 3025 (Part 21):2009, EDTA Method	454	436	200	600	±11.545 mg/l at 612.8 mg/l
8	Iron, mg/l LDL: 0.05 mg/l	IS 3025 (Part 53) :2003, R:2009 AAS-Flame Method	0.09	0.15	0.3	No relaxation	±0.0782 mg/l at 7.95 mg/l
9	Chlorides, mg/l LDL: 5.0 mg/l	IS 3025(Part 32):1988 , R : 2007, Argentometric Method	207.5	193.0	250	1000	±6.551 mg/l at 253.5 mg/l
10	Residual Free Chlorine, mg/l LDL: 0.1 mg/l	APHA, 23rd Edition, 2017, 4500G, DPD Colorimetric Method	BDL	0.1	0.2	1	±0.0082 mg/l at 0.1 mg/l
11	Total Dissolved Solids, mg/l LDL: 30.0 mg/l	IS 3025 (Part 16):1984 R : 2006, Gravimetric Method	1060	1155	500	2000	±4.473 mg/l at 592.0 mg/l
12	Calcium, mg/l LDL: 5.0 mg/l	IS 3025 (Part 40): 1991, R : 2009, EDTA Method	102	98	75	200	±2.512 mg/l at 99.8 mg/l
13	Copper, mg/l LDL: 0.03 mg/l	IS 3025 (Part 42) : 1992 R : 2009, AAS-Flame Method	BDL	BDL	0.05	1.5	±0.131 mg/l at 4.90 mg/l
14	Manganese, mg/l LDL: 0.05 mg/l	IS 3025 (Part 59) : 2006, AAS-Flame Method	0.05	BDL	0.1	0.3	±0.026 mg/l at 2.44 mg/l
15	Sulphate, mg/l LDL: 2.0 mg/l	APHA, 23rd Edition, 2017, 4500-SO42- E Turbidimetric Method	102	100	200	400	±0.640 mg/l at 19.88 mg/l
16	Nitrate, mg/l LDL: 0.5 mg/l	APHA, 23rd Edition, 2017, 4500, B UV-Spectrophotometric Method	0.55	0.52	45	No relaxation	±0.528 mg/l at 20.41 mg/l
17	Fluoride, mg/l LDL: 0.1 mg/l	APHA, 23rd Edition, 2017, 4500, F-D SPADNS Method	0.60	0.63	1	1.5	±0.014 mg/l at 0.98 mg/l
18	Selenium, mg/l LDL: 0.001 mg/l	IS 3025 (Part 56):2003 AAS- VGA Method	BDL	BDL	0.01	No relaxation	±0.000938 mg/l at 0.001 mg/l
19	Arsenic, mg/l LDL: 0.002 mg/l	IS 3025 (Part 37):1988,R 2003, AAS- VGA Method	BDL	BDL	0.01	0.05	±0.0081 mg/l at 0.018 mg/l
20	Lead, mg/l LDL: 0.005 mg/l	APHA, 23rd Edition, 2017, 3113B, AAS-GTA Method	BDL	BDL	0.01	No relaxation	±0.000266 mg/l at 0.005 mg/l
21	Zinc, mg/l LDL: 0.01 mg/l	IS 3025 (Part 49) : 1994, R : 2009, AAS-Flame Method	0.06	0.08	5	15	±0.0013 mg/l at 0.01 mg/l
22	Total Chromium, mg/l LDL: 0.05 mg/l	IS 3025 (Part 52) : 2003, AAS-Flame Method	BDL	BDL	0.05	No relaxation	±0.004 mg/l at 0.05 mg/l
23	Total Coliform, MPN/100 ml	APHA, 22nd Edition, 9221 Multiple Tube Fermentation Tech.	NIL	NIL	Nil	No relaxation	---
24	Boron, mg/l LDL: 0.5 mg/l	APHA, 23rd Edition, 2017, 4500-B, Carmine Method	BDL	BDL	0.5	1	±0.310 mg/l at 5.16 mg/l

*Except Sl. No. 10 for which Acceptable Limit is Min

LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit

J Prasad

Junior Scientific Asst

M. Reagan Singh

Technical Manager

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Month	February	2022	Area	Sohagpur	Report No.	FB22SH	
Customer	South Eastern Coalfields Ltd (SECL), Bilaspur			Date of Issue	13-03-22 10:41		
Project	Sharda OC		Sample Ref. No.	CMPDI/ENV/HSD/2022/71, Date-04/02/2022			
Sampling Stations	xi	Input of Rungta Colony filter plant		Date of Sampling	3-Feb-2022		
	xii	Output of Rungta Colony filter plant		Date of Sampling	3-Feb-2022		
			Date of Analysis	3-Feb-2022	to	7-Mar-2022	
Sl. No.	Parameter	Method of Analysis	Observed Values		IS 10500: 2012		Uncertainty of Measurement (at 95% Confidence Level & K= 1.96)
			xi	xii	Acceptable Limit (Max)*	Permissible Limit in the Absence of Alternate Source (Max)	
1	Colour, Hazen LDL: 1.0 Hazen	APHA, 23rd Edition,2017, 2120. C. Spectrometric single wavelength method	10	12	5	15	±1.05 Hazen at 49.86 Hazen
2	Odour	IS 3025 (Part 5):1983, Physical (Qualitative)	Agreeable	Agreeable	Agreeable	Agreeable	None
3	Phenolic compounds, mg/l LDL: 0.001 mg/l	APHA, 23rd Edition,2017, 5530. C, Chloroform Extraction Method	BDL	BDL	0.001	0.002	±0.0204 mg/l at 0.100 mg/l
4	Turbidity, NTU LDL: 1.0 NTU	IS 3025 (Part 10):1984, R : 2006, Nephelometric Method	3	4	1	5	±0.855 NTU at 41.58 NTU
5	pH LDL: 4.00	IS 3025 (Part 11):1983, R : 2012, Electrometric Method	7.28	6.93	6.5-8.5	No relaxation	±0.1272 at 7.01
6	Alkalinity, mg/l as CaCO ₃ LDL: 5.0 mg/l	IS 3025(Part 23):1986,R 2003 Titration Method	341	168	200	600	±0.19696 mg/l at 10.0 mg/l
7	Total Hardness, mg/l as CaCO ₃ LDL: 4.0 mg/l	IS 3025 (Part 21):2009, EDTA Method	464	474	200	600	±11.545 mg/l at 612.8 mg/l
8	Iron, mg/l LDL: 0.05 mg/l	IS 3025 (Part 53) :2003, R:2009 AAS-Flame Method	BDL	BDL	0.3	No relaxation	±0.0782 mg/l at 7.95 mg/l
9	Chlorides, mg/l LDL: 5.0 mg/l	IS 3025(Part 32):1988 , R : 2007, Argentometric Method	206.0	187.1	250	1000	±6.551 mg/l at 253.5 mg/l
10	Residual Free Chlorine, mg/l LDL: 0.1 mg/l	APHA, 23rd Edition,2017, 4500G, DPD Colorimetric Method	BDL	BDL	0.2	1	±0.0082 mg/l at 0.1 mg/l
11	Total Dissolved Solids, mg/l LDL: 30.0 mg/l	IS 3025 (Part 16):1984 R : 2006, Gravimetric Method	982	983	500	2000	±4.473 mg/l at 592.0 mg/l
12	Calcium, mg/l LDL: 5.0 mg/l	IS 3025 (Part 40): 1991, R : 2009, EDTA Method	61	57	75	200	±2.512 mg/l at 99.8 mg/l
13	Copper, mg/l LDL: 0.03 mg/l	IS 3025 (Part 42) : 1992 R : 2009, AAS-Flame Method	BDL	BDL	0.05	1.5	±0.131 mg/l at 4.90 mg/l
14	Manganese, mg/l LDL: 0.05 mg/l	IS 3025 (Part 59) : 2006, AAS-Flame Method	0.14	0.06	0.1	0.3	±0.026 mg/l at 2.44 mg/l
15	Sulphate, mg/l LDL: 2.0 mg/l	APHA, 23rd Edition,2017, 4500-SO42- E Turbidimetric Method	45	38	200	400	±0.640 mg/l at 19.88 mg/l
16	Nitrate, mg/l LDL: 0.5 mg/l	APHA, 23rd Edition,2017, 4500, B UV-Spectrophotometric Method	1.80	18.57	45	No relaxation	±0.528 mg/l at 20.41 mg/l
17	Fluoride, mg/l LDL: 0.1 mg/l	APHA, 23rd Edition,2017, 4500, F-D SPADNS Method	0.62	0.60	1	1.5	±0.014 mg/l at 0.98 mg/l
18	Selenium, mg/l LDL: 0.001 mg/l	IS 3025 (Part 56):2003 AAS- VGA Method	BDL	BDL	0.01	No relaxation	±0.000938 mg/l at 0.001 mg/l
19	Arsenic, mg/l LDL: 0.002 mg/l	IS 3025 (Part 37):1988,R 2003, AAS- VGA Method	BDL	BDL	0.01	0.05	±0.0081 mg/l at 0.018 mg/l
20	Lead, mg/l LDL: 0.005 mg/l	APHA, 23rd Edition,2017, 3113B, AAS-GTA Method	BDL	BDL	0.01	No relaxation	±0.000266 mg/l at 0.005 mg/l
21	Zinc, mg/l LDL: 0.01 mg/l	IS 3025 (Part 49) : 1994, R : 2009, AAS-Flame Method	BDL	BDL	5	15	±0.0013 mg/l at 0.01 mg/l
22	Total Chromium, mg/l LDL: 0.05 mg/l	IS 3025 (Part 52) : 2003, AAS-Flame Method	BDL	BDL	0.05	No relaxation	±0.004 mg/l at 0.05 mg/l
23	Total Coliform, MPN/100 ml	APHA, 22nd Edition, 9221 Multiple Tube Fermentation Tech.	NIL	NIL	Nil	No relaxation	---
24	Boron, mg/l LDL: 0.5 mg/l	APHA, 23rd Edition,2017, 4500-B, Carmine Method	BDL	BDL	0.5	1	±0.310 mg/l at 5.16 mg/l

*Except Sl. No. 10 for which Acceptable Limit is Min

LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit

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Technical Manager

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Month	March	2022	Area	Sohagpur	Report No.	MR22SH	
Customer	South Eastern Coalfields Ltd (SECL), Bilaspur			Date of Issue	29-03-2022 12:38		
Project	Sharda OC		Sample Ref. No.	CMPDI/ENV/HSD/2022/151,Date-10/03/2022			
Sampling Stations	xi	Input of Rungta Colony filter plant		Date of Sampling	10-Mar-2022		
	xii	Output of Rungta Colony filter plant		Date of Sampling	10-Mar-2022		
			Date of Analysis	10-Mar-2022	to	20-Mar-2022	
Sl. No.	Parameter	Method of Analysis	Observed Values		IS 10500: 2012		Uncertainty of Measurement (at 95% Confidence Level & K= 1.96)
			xi	xii	Acceptable Limit (Max)*	Permissible Limit in the Absence of Alternate Source (Max)	
1	Colour, Hazen LDL: 1.0 Hazen	APHA, 23rd Edition,2017, 2120. C. Spectrometric single wavelength method	4	3	5	15	±1.05 Hazen at 49.86 Hazen
2	Odour	IS 3025 (Part 5):1983, Physical (Qualitative)	Agreeable	Agreeable	Agreeable	Agreeable	None
3	Phenolic compounds, mg/l LDL: 0.001 mg/l	APHA, 23rd Edition,2017, 5530. C, Chloroform Extraction Method	BDL	BDL	0.001	0.002	±0.0204 mg/l at 0.100 mg/l
4	Turbidity, NTU LDL: 1.0 NTU	IS 3025 (Part 10):1984, R : 2006, Nephelometric Method	1	2	1	5	±0.855 NTU at 41.58 NTU
5	pH LDL: 4.00	IS 3025 (Part 11):1983, R : 2012, Electrometric Method	7.19	6.76	6.5-8.5	No relaxation	±0.1272 at 7.01
6	Alkalinity, mg/l as CaCO ₃ LDL: 5.0 mg/l	IS 3025(Part 23):1986,R 2003 Titration Method	165	180	200	600	±0.19696 mg/l at 10.0 mg/l
7	Total Hardness, mg/l as CaCO ₃ LDL: 4.0 mg/l	IS 3025 (Part 21):2009, EDTA Method	428	422	200	600	±11.545 mg/l at 612.8 mg/l
8	Iron, mg/l LDL: 0.05 mg/l	IS 3025 (Part 53) :2003, R:2009 AAS-Flame Method	BDL	0.08	0.3	No relaxation	±0.0782 mg/l at 7.95 mg/l
9	Chlorides, mg/l LDL: 5.0 mg/l	IS 3025(Part 32):1988 , R : 2007, Argentometric Method	188.0	184.0	250	1000	±6.551 mg/l at 253.5 mg/l
10	Residual Free Chlorine, mg/l LDL: 0.1 mg/l	APHA, 23rd Edition,2017, 4500G, DPD Colorimetric Method	BDL	BDL	0.2	1	±0.0082 mg/l at 0.1 mg/l
11	Total Dissolved Solids, mg/l LDL: 30.0 mg/l	IS 3025 (Part 16):1984 R : 2006, Gravimetric Method	1053	1040	500	2000	±4.473 mg/l at 592.0 mg/l
12	Calcium, mg/l LDL: 5.0 mg/l	IS 3025 (Part 40): 1991, R : 2009, EDTA Method	112	104	75	200	±2.512 mg/l at 99.8 mg/l
13	Copper, mg/l LDL: 0.03 mg/l	IS 3025 (Part 42) : 1992 R : 2009, AAS-Flame Method	BDL	BDL	0.05	1.5	±0.131 mg/l at 4.90 mg/l
14	Manganese, mg/l LDL: 0.05 mg/l	IS 3025 (Part 59) : 2006, AAS-Flame Method	0.06	BDL	0.1	0.3	±0.026 mg/l at 2.44 mg/l
15	Sulphate, mg/l LDL: 2.0 mg/l	APHA, 23rd Edition,2017, 4500-SO42- E Turbidimetric Method	112	106	200	400	±0.640 mg/l at 19.88 mg/l
16	Nitrate, mg/l LDL: 0.5 mg/l	APHA, 23rd Edition,2017, 4500, B UV-Spectrophotometric Method	12.12	18.86	45	No relaxation	±0.528 mg/l at 20.41 mg/l
17	Fluoride, mg/l LDL: 0.1 mg/l	APHA, 23rd Edition,2017, 4500, F-D SPADNS Method	0.54	0.56	1	1.5	±0.014 mg/l at 0.98 mg/l
18	Selenium, mg/l LDL: 0.001 mg/l	IS 3025 (Part 56):2003 AAS- VGA Method	BDL	BDL	0.01	No relaxation	±0.000938 mg/l at 0.001 mg/l
19	Arsenic, mg/l LDL: 0.002 mg/l	IS 3025 (Part 37):1988,R 2003, AAS- VGA Method	BDL	BDL	0.01	0.05	±0.0081 mg/l at 0.018 mg/l
20	Lead, mg/l LDL: 0.005 mg/l	APHA, 23rd Edition,2017, 3113B, AAS-GTA Method	BDL	BDL	0.01	No relaxation	±0.000266 mg/l at 0.005 mg/l
21	Zinc, mg/l LDL: 0.01 mg/l	IS 3025 (Part 49) : 1994, R : 2009, AAS-Flame Method	0.02	0.02	5	15	±0.0013 mg/l at 0.01 mg/l
22	Total Chromium, mg/l LDL: 0.05 mg/l	IS 3025 (Part 52) : 2003, AAS-Flame Method	BDL	BDL	0.05	No relaxation	±0.004 mg/l at 0.05 mg/l
23	Total Coliform, MPN/100 ml	APHA, 22nd Edition, 9221 Multiple Tube Fermentation Tech.	NIL	NIL	Nil	No relaxation	---
24	Boron, mg/l LDL: 0.5 mg/l	APHA, 23rd Edition,2017, 4500-B, Carmine Method	BDL	BDL	0.5	1	±0.310 mg/l at 5.16 mg/l

*Except Sl. No. 10 for which Acceptable Limit is Min

LDL indicates Lower Detection Limit & BDL indicates Below Detection Limit

J Prasad

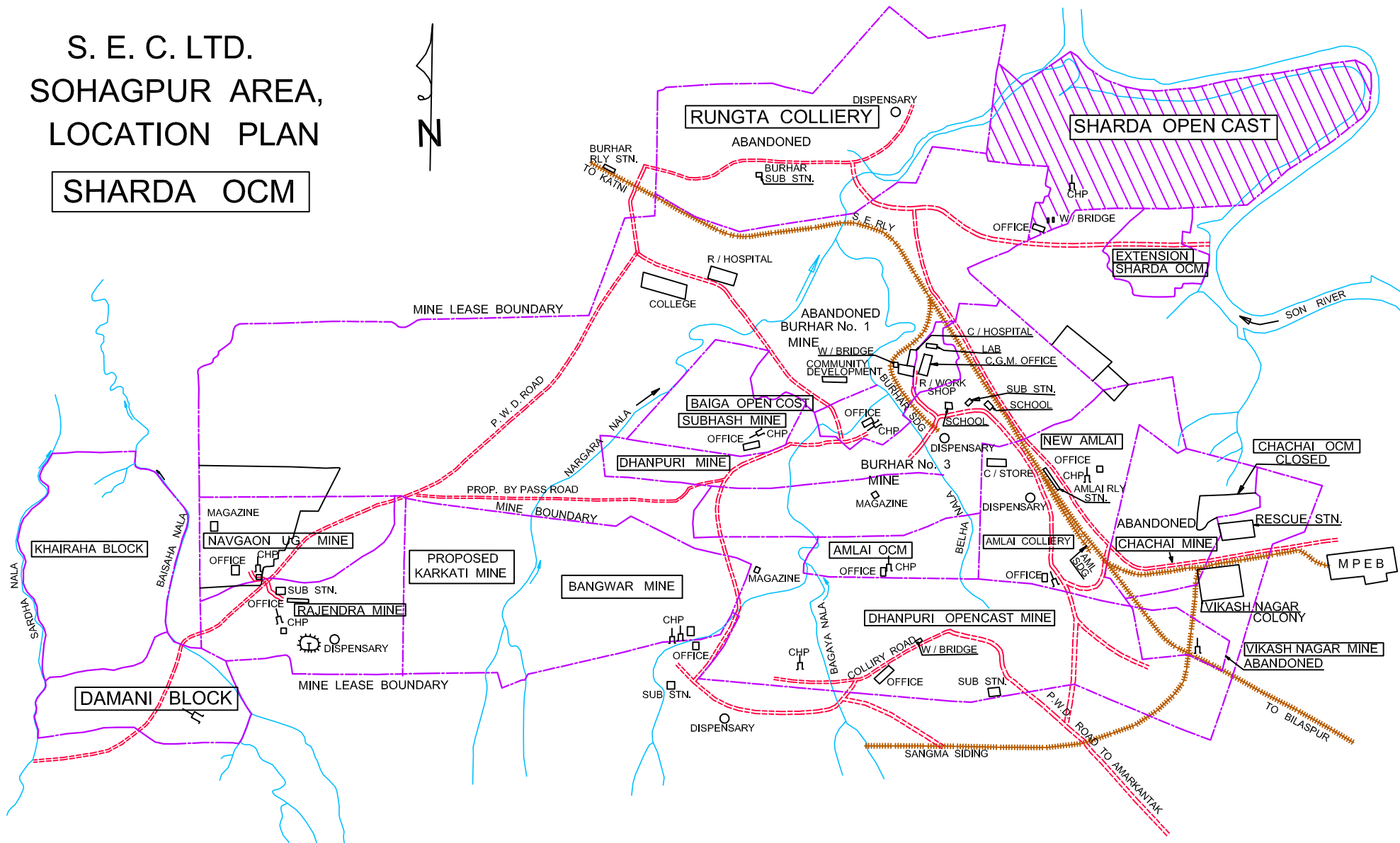
Junior Scientific Asst

Kumaravel. C
Manager (Env.)

Note: The results above relate to the samples tested as received. This report cannot be reproduced in part or full without the written permission of the HOD (Env), CMPDI, RI-V. The Green, Yellow and Red color highlights in observed values indicate acceptable values, values exceeding acceptable limits but below permissible limits and values exceeding permissible limits respectively.

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