

OCM/ENV/ 1997 /2023

Date: 29.09.2023

To

The Member Secretary  
State Pollution Control Board, Odisha  
Paribesh Bhawan, Unit-VIII  
BHUBANESWAR – 751 012

Sub: Submission of Annual Environmental Statement in Form-V for the Year 2022-23 in respect of **Ostapal Chromite Mine M/s. FACOR Ltd.**


Dear Sir,

With reference to the captioned subject, we are herewith submitting the Environmental Statement in the prescribed format Form-V, duly filled in, for the year 2022-23 in respect of **Ostapal Chromite Mines M/s. Ferro Alloys Corporation Limited** for your kind perusal.

This is for your kind information & perusal please.

Thanking you,

Yours faithfully,  
for Ferro Alloys Corporation Ltd

  
29/09/2023  
**Mines Manager**  
**Ostapal Chromite Mines**

Enclosure: As above

Copy to: 1) The Regional Officer, OSPCB, Kalinganagar – Jajpur  
2) The Joint Director, MoEF & CC Eastern Regional Office, Bhubaneswar

**M/s. Ferro Alloys Corporation Ltd. (A subsidiary of Vedanta Ltd.)**

**Registered Office:**

D.P.Nagar, PO : Randia, Dist.: Bhadrak, Odisha, India - 756 135

T +91-6784 240320/240347, Email: [facor.mines@vedanta.co.in](mailto:facor.mines@vedanta.co.in) / [facor.ccp@vedanta.co.in](mailto:facor.ccp@vedanta.co.in)

Website: [www.facorgroup.in](http://www.facorgroup.in), CIN: U45201OR1955PLC008400.

Sensitivity: Internal (C3)

## FORM –V

### ENVIRONMENTAL STATEMENT OF OSTAPAL CHROMITE MINES OF M/S.FACOR LTD., ENVIRONMENT STATEMENT FOR THE FINANCIAL YEAR ENDING ON 31<sup>ST</sup> MARCH 2023

#### (PART –A)

i)	Name & Address of the Owner/Occupier of the Industry operation or Process	M/s. FERRO ALLOYS CORPORATION LTD., D.P.Nagar, Randia Bhadrak
ii)	Industry Category Primary – (SIC Code) Secondary – (SIC Code)	CHROMITE MINING INDUSTRY
iii)	Production Capacity – Unit	2.4 Lakh TPA Chrome Ore from Mines 1 Lakh TPA Beneficiated Chrome Ore From COB Plant
iv)	Year of Establishment	13 <sup>th</sup> August, 1985
v)	Date of last Environmental Statement submitted	29.09.2022 (For the Financial Year 2021-22)

#### (PART – B)

#### WATER & RAW MATERIAL CONSUMPTION

(i) Water Consumption M<sup>3</sup>/day:

A	<b>WATER CONSUMPTION: FY 2022-23</b>		
	<b>Water Consumption M3/day</b>	<b>Total In a Year (Cub Mt)</b>	<b>Avg Cub mt/Day</b>
	a) Process (Beneficiation plant)	4,02,804	1103.6
	b) Cooling, dust suppression, afforestation, wheel washing etc	43,559	119.3
	c) Domestic	13,454	36.9
<b>Total Consumption</b>		<b>4,56,817</b>	<b>1259.8</b>

B	<b>PROCESS WATER CONSUMPTION PER PRODUCT OUTPUT</b>		
	Name of the Products	During the Previous Financial Year 2021-22	During the Current Financial Year 2022-23
	a) Chrome ore Concentrate from COB Plant (Cub Mt /MT )	6.51M3/MT ( for 48606 MT CONCENTRATE)	8.13 m3/ MT (for 49500 MT of Concentrate)
	b) Chrome ore from Mines (Cub Mt /MT )	1.67 (199999 MT of ore)	1.91 ( 239951 MT of ore)

ii) Raw Material Consumption:

FACOR is involved in extraction of Chrome Ore from Mine /quarry .Mining is not a Manufacturing Process thus there are no such raw materials involved in the process. However, there are number of Indirect raw materials/Consumables used to support the process of Mining & beneficiation of Ore. The details consumable raw materials as follows:

Sl No.	Indirect Raw Materials /consumables	During 2022-23
	Name of the Raw materail/Consumable	
1	Disel (Kilo Liters)	1625
2	LPG (Kg)	5586
3	Lubricant Oil (Litres)	1940
4	Grease (Kg)	1996
5	Electricity (Consumed) (MWh)	2166
6	Electricity (Generated) (MWh)	69
7	Explosive (Kg) (Detonator, Safety fuse)	31000 kg
8	Tyre Nos.	11

**(PART – C)**  
**POLLUTION DISCHARGED TO ENVIRONMENT/UNIT OF OUTPUT**  
**(PARAMETER AS SPECIFIED IN THE CONSENT ISSUED)**

a)	Water *	Annual Avg. in Kg/day	Annual Avg. in mg/l	Annual Avg. (%)
1	Suspended Solids	24	10	Below prescribed standard
2	Oil & Grease	19.2	8	-do-
3.	B.O.D	11.8	4.6	-do-
4.	C.O.D	81.6	34	-do-
5.	Hexavalent Chromium (Cr <sup>+6</sup> )	0.05	0.02	-do-
6.	Total Chromium (Cr)	0.48	0.2	-do-

b) AIR \*\* - Not applicable. since it is a Mining Industry.

NOTE \* All the analyzed parameters of Mines pumped out water are well within the prescribed limit except hexavalent Chromium, for which ETP has been commissioned. Analysis report of Inlet water and final discharge water (after treatment) is enclosed as **ANNEXURE – I**.

\*\* Air quality analysis report of core & Buffer Zone is enclosed as **ANNEXURE – 2**

**(PART – D)**  
**HAZARDOUS WASTES**

AS SPECIFIED UNDER HAZARDOUS WASTES/MANAGEMENT & HANDLING RULES, 2008

Sl.No.	Hazardous Wastes	TOTAL QUANTITY (Kg.)	
		During the previous Financial Year 2021-22	During the Current Financial Year 2022-23
(a)	<u>FROM PROCESS:</u>		
I)	Filter & filter materials containing oil	30.0	206.8 Kg
II)	Used oil/waste oil from vehicles	345	1240 Kg
III)	Empty Barrels	-	110 Kg
(b)	From Pollution Control facilities (ETP Sludge)	24,600	10170 Kg

**(PART – E)**  
**SOLID WASTES**

Sl.No.	P A R T I C U L A R S	TOTAL QUANTITY	
		During the previous Financial Year 2021-22	During the Current Financial Year 2022-23
(a)	<u>FROM PROCESS:</u>		
I)	Overburden	4.75 Lac M <sup>3</sup>	6.46 Lac M <sup>3</sup>
II)	Tailings	0.624 Lac Tons	0.624 Lac Tons
(b)	Qty. Recycled/or reutilized within the Unit Sold	NIL	NIL
(c)	Disposed – Overburden	4.75 Lac M <sup>3</sup>	6.46 Lac M <sup>3</sup>
	Disposed - Tailings	0.624 Lac Tons	0.603 Lac Tons

**(PART – F)**

Please specify the characteristics (in terms of composition and quantity) of Hazardous as well as Solid wastes and indicate disposal practice adopted for both these categories of wastes.

Sl.No.	Name of Hazardous/ Solid Wastes	Composition	Quantity	Disposal Practice
a) i)	<u>HAZARDOUS WASTES:</u> Filter & filter materials containing oil	-	0.52 Tons	Filter materials generated during repairing & maintenance of vehicles are being stored of in an impervious lined pit
ii)	Used Oil/Waste oil	-	2.99 Tons	Used oil/waste oil from vehicles & transformers have been collected in barrels and kept under a covered shed to sell to a Regd. Authorized Dealer.
iii)	ETP Sludge		10.17 Tons	ETP sludge is being disposed of in impervious lined pit for onward disposed to authorized agency by SPCB.
iv)	Empty Barrel		14 Nos(0.14MT)	Used As Captive reuse as per guidelines inside the mines (11 from current year & 3 from opening balance)
b) i)	<u>SOLID WASTES:</u> Overburden	Laterite & weathered ultra-basic rock	6.46 Lac M <sup>3</sup>	The solid wastes are generated as overburden is dumped in specified area of non-mineralized zones. After terracing and benching, massive afforestation is being carried out over these dumps.
ii)	Tailings	Sandy with Clay	0.603 Lac Tons	Tailings are being disposed of in Tailing Ponds after treatment with FeSO <sub>4</sub> solution.

**(PART – G)**

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

- Fully utilization of Low Grade ore by Beneficiation, use of mine drainage water in beneficiation, recovery of tailing water & recirculation in beneficiation plant. Mine water discharge to outside after treatment.

**(PART – H)**

**ADDITIONAL MEASURES/INVESTMENT PROPOSAL FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT OF POLLUTION, PREVENTION OF POLLUTION**

- (a) Expense of Rs. 212.3 lakh during the year 2022-23 for environmental protection including abatement of pollution & prevention of pollution. Expenses and acknowledgment is Attached as **Annexure 3**

- (b) Action taken to monitor the Environmental Parameters Monitoring is being carried out for various Environmental parameters like air ,water , waste water & Noise Level on a regular level.
- (c) Online Ambient Air Quality Monitoring System (AAQMS) has been installed in the mines for continuous and real time monitoring of Various parameters like PM10 ,PM 2.5 , NOx , SO2, CO inside the mines. The photograph of same has been attached as **Annexure 4**
- (d) Effluent Quality Monitoring System (EQMS) has been installed inside the mines for continuous real time monitoring of ETP Inlet and Outlet Parameters like pH , TSS , Cr6+ .
- (e) Two Sewage Treatment Plant (STP) of Capacity of 20 KLD and 10 KLD has been installed inside mines for Treatment of Domestic Waste Water. The photo of the same has been attached as **Annexure 5**
- (f) Effluent Treatment Plant (ETP) of capacity 600 m3/hr has been installed inside our mines for treatment of mine seepage water and to safely discharge the treated water outside the mine premises. The details of the same has been attached with photo as **Annexure 6**

### (PART – I)

#### ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF THE ENVIRONMENT

Action taken for massive afforestation	Extensive plantation program has been done and shall be taken upon available spaces, on dumps, roads, and also surrounding areas. More than 2500 trees has been planted inside mines for better stability of dump and increase of green belt inside the mines.
Measures taken to control of the fugitive emission at different places of Mines.	In order to suppress the air borne dust from the haulage roads and mine roads, there are arrangements for water spraying system through water tankers and spraying of water is being done in regular intervals in both inside and outside of mine premises
Action taken for disposal of the excavated material not required for industrial purpose	The overburden waste which are not required for industrial purpose are dumped within the leasehold area at the earmarked site and terraced by forming benches and reclaimed with different plant species.
Method adopted for controlling of dust pollution due to drilling	<ul style="list-style-type: none"> <li>Wet drilling is being practiced with a jet of water which is continuously directed at the cutting edge to suppress dust generation.</li> <li>The cutting tools are being regularly grinded to maintain its sharpness by cross checking against gauges.</li> <li>Compressed air pressure is being adequately supplied to the cutting tools.</li> <li>Drill cutting are being regularly cleaned</li> </ul>
Method adopted for controlling of dust pollution due to blasting	Water spraying before & after blasting is being practiced to reduce the possible dust generation.
Action taken to remove Cr <sup>+6</sup> from Quarry pumped out water and surface runoff water.	An upgraded ETP is being operating to reduce Cr <sup>+6</sup> from Quarry pumped out water and surface runoff water by dosing FeSO <sub>4</sub> solution. Also enhanced the ETP capacity from 400 KL/Hr to 600 KL/hr for higher amount of water Treatment of mine discharge water.

# ANNEXURES FOR ENVIRONMENT STATEMENT

## ANNEXURE -1 (ETP INLET AND FINAL DISCHARGE REPORT)



## Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

● Infrastructure Engineering  
● Water Resource Management  
● Environmental & Social Study

● Surface & Sub-Surface Investigation  
● Quality Control & Project Management  
● Renewable Energy

● Agricultural Development  
● Information Technology  
● Public Health Engineering

● Mine Planning & Design  
● Mineral/Sub-Soil Exploration  
● Waste Management Services

**Laboratory Services**  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/23-24/R-00566

Date : 08.04.2023

### EFFLUENT WATER ANALYSIS REPORT MAR 2022

1. Name of the Client : M/s FERRO ALLOYS CORPORATION LIMITED , BHADRAK
2. Name of the Project : OSTAPAL CHROMITE MINES , KALIAPANI, JAJPUR
3. Sampling Location : WW-1: ETP Inlet
4. Method of sampling : APHA 1060 B
5. Date of Sampling : 11.03.2023
6. Date of Analysis : 13.03.2023 to 18.03.2023
7. Sample Collected by : VCSPL Representative in presence of Client representative

Sl No	Test Parameter	Test Method	Unit	WW-1
1	Color	Visual Comparison Method APHA 23 <sup>RD</sup> Ed,2017 : 2120 B, C	Hazen	10
2	Odour	Threshold Odour Test APHA 23 <sup>RD</sup> Ed,2017 : 2150 B		Pungent Smell
3	pH at 25°C	pH Meter APHA 23 <sup>RD</sup> Ed,2017 : 4500H+ B	--	9.8
4	Total Suspended Solids (as TSS)	Gravimetric Method APHA 23 <sup>RD</sup> Ed,2017 : 2540 D	mg/l	59
5	Copper (as Cu)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111 B	mg/l	BDL
6	Fluoride (as F)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed,2017 : 4500F- C	mg/l	0.53
7	Total Residual Chloride	Iodometric Method APHA 23 <sup>RD</sup> Ed,2017 : 4500Cl, B	mg/l	0.22
8	Iron (as Fe)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111, B	mg/l	1.70
9	Manganese (as Mn)	Persulfate Method APHA 23 <sup>RD</sup> Ed,2017 : 3500Mn B	mg/l	BDL
10	Nitrate Nitrogen (as NO <sub>3</sub> )	By UV-Screen Method APHA 23 <sup>RD</sup> Ed,2017 : 4500 NO <sub>3</sub> E	mg/l	13.4
11	Phenolic Compound (as C <sub>6</sub> H <sub>5</sub> OH)	Chloroform Extraction by Colorimetric Method APHA 23 <sup>RD</sup> Ed,2017 : 5530 B,D	mg/l	BDL
12	Selenium (as Se)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3500 Se C	mg/l	BDL
13	Cadmium (as Cd)	AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111 B	mg/l	BDL
14	Cyanide ( as CN)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed,2017 : 4500 CN- C,D	mg/l	BDL
15	Lead (as Pb)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111 B	mg/l	BDL
16	Mercury (as Hg)	AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3112 B	mg/l	BDL
17	Nickel (as Ni)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111 B	mg/l	BDL
18	Arsenic (as As)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3114 B	mg/l	BDL
19	Total Chromium (as Cr)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111 B	mg/l	1.42
20	Zinc (as Zn)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111 B	mg/l	0.43
21	Hexavalent Chromium (as Cr <sup>+6</sup> )	Diphenyl Carbazide Method APHA 23 <sup>RD</sup> Ed,2017 : 3500Cr B	mg/l	0.68

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services



22	Vanadium (as V)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 3111 D	mg/l	BDL
23	Temperature	By Thermometer APHA 23 <sup>RD</sup> Ed,2017 2550 B	°C	34
24	Dissolved Oxygen	Modified Winkler Method APHA 23 <sup>RD</sup> Ed,2017: 4500 O, C	mg/l	5.7
25	Biochemical Oxygen Demand as BOD(3days at 27° C)	IS 3025(P-44) : 1993 RA 2003	mg/l	13.2
26	Chemical Oxygen Demand (as COD)	Open Reflux Method APHA 23 <sup>RD</sup> Ed,2017: 5220 C	mg/l	244
27	Oil & Grease (as O & G)	Gravimetric Method (Solvent Extraction) APHA 23 <sup>RD</sup> Ed,2017:5520-B	mg/l	16.0
28	Ammonical Nitrogen (as NH <sub>3</sub> -N)	TKN Instrument (Distillation) followed by Titrimetric Method APHA 23 <sup>RD</sup> Ed,2017 : 4500NH <sub>3</sub> C	mg/l	8.2
29	Total Kjeldahl Nitrogen (as N)	TKN Instrument (Digestion) APHA 23 <sup>RD</sup> Ed,2017: 4500 NORG C	mg/l	13.4
30	Sulphide (as S)	Iodometric Method APHA 23 <sup>RD</sup> Ed,2017 : 4500 S <sup>2-</sup>	mg/l	BDL
31	Free Ammonia (as NH <sub>3</sub> )	By Calculation	mg/l	18.7
32	Dissolve Phosphate	APHA 23 <sup>rd</sup> Edition 4500 P D	mg/l	10.3
33	Particulate Size of Suspended Solids	Gravimetric Method APHA 23 <sup>RD</sup> Ed,2017 : 2540 D	μ	<850
34	Bio- assay Test	IS 6582 (Part 2) 2001, Ed.2.1(2002-12)	%	No fish Survived after 96 hours in 100% effluent

CL – Colorless, ND – Not detected.

BDL (Below detection limit) Values : (Cu<0.02 mg/l, Mn<0.025 mg/l, Cd<0.01 mg/l, Hg<0.004mg/l, Se<0.001 mg/l, As<0.004 mg/l,Pb<0.02 mg/l, Zn<0.03 mg/l, Cr<0.01 mg/l, Al<0.1 mg/l, B<0.1 mg/l, NO<sub>3</sub>l mg/l)

Fagmali  
Nagar

Reviewed By



P. Patil

Approved By



Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org





# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

● Infrastructure Engineering  
● Water Resource Management  
● Environmental & Social Study

● Surface & Sub-Surface Investigation  
● Quality Control & Project Management  
● Renewable Energy

● Agricultural Development  
● Information Technology  
● Public Health Engineering

● Mine Planning & Design  
● Mineral/Sub-Soil Exploration  
● Waste Management Services

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref: Envlab/23-24/R-00567

Date : 08.04.2023

## EFFLUENT WATER DISCHARGE ANALYSIS REPORT MAR 2023

1. Name of the Client : M/s FERRO ALLOYS CORPORATION LIMITED, BHADRAK
2. Name of the Project : OSTAPAL CHROMITE MINES , KALIAPANI, JAJPUR
3. Sampling Location : WW-1: ETP Mines Final Discharge Water
4. Method of sampling : APHA 1060 B
5. Date of Sampling : 11.03.2023
6. Date of Analysis : 13.03.2023 to 18.03.2023
7. Sample Collected by : VCSPL Representative in presence of Client representative

Sl. No.	Parameters	Testing Methods	Unit	Standards As Per CTO	Analysis Results
					EW-1
1	Colour	Visual Comparison Method APHA 2120 B; 23 <sup>rd</sup> Edition, 2017	Hazen	Colourless	>5
2	Odour	Threshold Odour Method APHA 2150 B; 23 <sup>rd</sup> Edition, 2017	--	Odourless	Agreeable
3	pH at 25°C	pH Meter APHA 4500 H <sup>+</sup> B; 23 <sup>rd</sup> Edition, 2017	--	5.5-9.0	7.68
4	Total Suspended Solids	Gravimetric Method APHA 2540 D; 23 <sup>rd</sup> Edition, 2017	mg/l	100	40
5	Copper as Cu	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	3	BDL
6	Fluoride as F	Distillation followed by Spectrophotometric Method APHA 4500 F <sup>-</sup> C,D; 23 <sup>rd</sup> Edition, 2017	mg/l	2	0.35
7	Total Residual Chlorine	Iodometric Method APHA 23RD Ed. 2017 : 4500Cl <sub>2</sub> B	mg/l	1	ND
8	Iron as Fe	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	3	0.44
9	Manganese as Mn	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	2	BDL
10	Nitrate as NO <sub>3</sub>	By UV-Screen Method APHA 4500 NO <sub>3</sub> <sup>-</sup> B; 23 <sup>rd</sup> Edition, 2017	mg/l	10	7.05
11	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH	Distillation Followed by Spectrophotometric Method APHA 5530-B, D; 23 <sup>rd</sup> Edition, 2017	mg/l	1	BDL
12	Selenium as Se	By AAS Method APHA 3500 Se C; 23 <sup>rd</sup> Edition, 2017	mg/l	0.05	BDL
13	Cadmium as Cd	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	2.0	BDL
14	Cyanide as CN	Distillation Followed by Spectrophotometric Method APHA 4500 -CN-C,E; 23 <sup>rd</sup> Edition, 2017	mg/l	0.2	BDL
15	Lead as Pb	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	0.1	BDL
16	Mercury as Hg	By AAS Method APHA 3112 B; 23 <sup>rd</sup> Edition, 2017	mg/l	0.01	BDL
17	Nickel as Ni	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	3	BDL
18	Arsenic as As	By AAS Method APHA 3114 B; 23 <sup>rd</sup> Edition, 2017	mg/l	0.2	BDL
19	Total Chromium as Cr	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	2	0.21
20	Zinc as Zn	By AAS Method APHA 3111 B; 23 <sup>rd</sup> Edition, 2017	mg/l	5	0.027
21	Hexavalent Chromium as Cr <sup>6+</sup>	By AAS Method APHA 3500 Cr B; 23 <sup>rd</sup> Edition, 2017	mg/l	0.05	BDL

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

● Infrastructure Engineering  
● Water Resource Management  
● Environmental & Social Study

● Surface & Sub-Surface Investigation  
● Quality Control & Project Management  
● Renewable Energy

● Agricultural Development  
● Information Technology  
● Public Health Engineering

● Mine Planning & Design  
● Mineral/Sub-Soil Exploration  
● Waste Management Services

**Laboratory Services**  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

22	Vanadium as V	By AAS Method APHA 3500 V; 23 <sup>rd</sup> Edition, 2017	mg/l	0.2	BDL
23	Temperature	By Thermometer APHA 2550 B; 23 <sup>rd</sup> Edition, 2017	°C	Shall not exceed 5°C above the receiving water temperature	33
24	Biochemical Oxygen Demand as BOD	Oxygen Depletion Method IS 3025 (Part 44):2003	mg/l	30	4.6
25	Chemical Oxygen Demand as COD	Open Reflux Method APHA 5220 B; 23 <sup>rd</sup> Edition, 2017	mg/l	250	34
26	Oil & Grease	Gravimetric Method (Solvent Extraction) APHA 5520 B; 23 <sup>rd</sup> Edition, 2017	mg/l	10	8.0
27	Ammonical Nitrogen as N	By TKN Method APHA 4500-NH <sub>3</sub> C; 23 <sup>rd</sup> Edition, 2017	mg/l	50	4.7
28	Total Kjeldahl Nitrogen as N	By TKN Method APHA 4500-N <sub>org</sub> C; 23 <sup>rd</sup> Edition, 2017	mg/l	100	5.1
29	Sulphide as S	By Methylene Blue Method APHA 4500-S D; 23 <sup>rd</sup> Edition, 2017	mg/l	2	BDL
30	Free Ammonia as NH <sub>3</sub>	By Calculation	mg/l	5	0.44
31	Dissolve Phosphate as PO <sub>4</sub>	APHA 23 <sup>rd</sup> Edition 4500 P D	mg/l	5	1.6
32	Particulate Size of Suspended Solids	Gravimetric Method APHA 2540 D; 23 <sup>rd</sup> Edition, 2017	μ	Shall pass 850 micron IS Sieve	<850
33	Bio-assay Test	Evaluating Acute Toxicity IS 6582 (P-2) 2008	%	90% survival of fish after 96 hours in 100% effluent	96% Survival of Fish after 96 Hrs in 100% Effluent

CL – Colorless, ND – Not detected.

BDL (Below detection limit) Values : (Cu<0.02 mg/l, Mn<0.025 mg/l, CaH<sub>2</sub>OH<0.05 mg/l, Hg<0.004mg/l, Cd<0.01 mg/l, Se<0.001 mg/l, As<0.004 mg/l, Pb<0.02 mg/l, Zn<0.03 mg/l, Cr<0.01 mg/l, Al<0.1 mg/l, B<0.1 mg/l, NO<sub>3</sub>1 mg/l)

*Fagmali*  
Reviewed By



Approved By

*P. Patil*

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721  
E-mail: visiontek@vcspl.org, visiontekin@gmail.com  
Visit us at: www.vcspl.org

## ANNEXURE -2 (AIR QUALITY MONITORING REPORT CORE & BUFFER ZONE)



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

● Infrastructure Engineering  
● Water Resource Management  
● Environmental & Social Study

● Surface & Sub-Surface Investigation  
● Quality Control & Project Management  
● Renewable Energy

● Agricultural Development  
● Information Technology  
● Public Health Engineering

● Mine Planning & Design  
● Mineral/Sub-Soil Exploration  
● Waste Management Services

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/23-24/R-00560

Date : 08.04.2023

### AMBIENT AIR QUALITY (CORE ZONE) MONITORING REPORT- MAR2023

1. Name of Client : M/s FERRO ALLOYS CORPORATION LIMITED , BHADRAK
2. Name of the Project : OSTAPAL CHROMITE MINES , KALIAPANI, JAJPUR
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample Collected by : VCSPL Representative in presence of Client's Representative

Monitoring Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-3: Middle of the Open Cast Quarry												
03.03.2023	74.1	42.5	14.2	15.7	1.22	23.6	7.8	BDL	BDL	BDL	BDL	BDL
07.03.2023	70.6	44.1	14.5	15.1	1.31	22.4	8.2	BDL	BDL	BDL	BDL	BDL
10.03.2023	72.2	43.7	13.6	14.8	1.40	20.9	8.6	BDL	BDL	BDL	BDL	BDL
14.03.2023	75.1	40.1	14.6	15.8	1.36	21.7	7.2	BDL	BDL	BDL	BDL	BDL
17.03.2023	76.2	42.5	14.4	15.3	1.33	23.5	6.9	BDL	BDL	BDL	BDL	BDL
21.03.2023	70.4	39.5	13.3	13.9	1.21	21.1	7.0	BDL	BDL	BDL	BDL	BDL
24.03.2023	68.7	33.6	12.7	14.4	1.25	20.2	6.5	BDL	BDL	BDL	BDL	BDL
28.03.2023	69.3	35.4	12.8	12.6	1.19	20.4	6.2	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	400	100	5	01	01	20	06
Monitoring Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-4: Near COB Plant												
03.03.2023	68.8	48.2	15.2	15.3	1.27	24.1	7.1	BDL	BDL	BDL	BDL	BDL
07.03.2023	69.5	47.0	14.4	14.9	1.32	23.3	6.6	BDL	BDL	BDL	BDL	BDL
10.03.2023	70.1	46.9	13.9	15.6	1.36	25.2	7.5	BDL	BDL	BDL	BDL	BDL
14.03.2023	67.4	47.5	14.7	15.2	1.40	25.7	7.2	BDL	BDL	BDL	BDL	BDL
17.03.2023	65.5	46.6	15.3	14.1	1.22	24.9	6.9	BDL	BDL	BDL	BDL	BDL
21.03.2023	66.3	44.1	13.3	13.9	1.13	20.5	6.3	BDL	BDL	BDL	BDL	BDL
24.03.2023	62.8	40.5	14.2	13.3	1.06	21.2	6.5	BDL	BDL	BDL	BDL	BDL
28.03.2023	60.4	38.4	13.4	12.5	1.11	20.7	6.6	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	400	100	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Gaeke method	Modified Jacob & Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method

BDL (Below Detection Limit) PM<sub>10</sub> <20 µg/m<sup>3</sup>, PM<sub>2.5</sub> <10 µg/m<sup>3</sup>, SO<sub>2</sub> <4 µg/m<sup>3</sup>, NO<sub>x</sub> <6 µg/m<sup>3</sup>, O<sub>3</sub> <4 µg/m<sup>3</sup>, NH<sub>3</sub> <20 µg/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub> <4 µg/m<sup>3</sup>, Bap <0.5 ng/m<sup>3</sup>, As <1 ng/m<sup>3</sup>, Ni <2.5 ng/m<sup>3</sup>, Pb <0.02 µg/m<sup>3</sup>

*Fagmali Naga*  
Reviewed By



*P. Patil*  
Approved By

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org





# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

● Infrastructure Engineering  
● Water Resource Management  
● Environmental & Social Study

● Surface & Sub-Surface Investigation  
● Quality Control & Project Management  
● Renewable Energy

● Agricultural Development  
● Information Technology  
● Public Health Engineering

● Mine Planning & Design  
● Mineral/Sub-Soil Exploration  
● Waste Management Services

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/23-24/R-00559

Date : 08.04.2023

## AMBIENT AIR QUALITY (CORE ZONE) MONITORING REPORT- MAR 2023

1. Name of Client : M/s FERRO ALLOYS CORPORATION LIMITED , BHADRAK
2. Name of the Project : OSTAPAL CHROMITE MINES , KALIAPANI, JAJPUR
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler
4. Sample Collected by : VCSPL Representative in presence of Client's Representative

Monitoring Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-1: Near Rest Shelter												
03.03.2023	47.3	30.1	14.5	18.1	1.21	21.4	7.6	BDL	BDL	BDL	BDL	BDL
07.03.2023	50.1	32.3	14.1	16.6	1.29	23.1	7.3	BDL	BDL	BDL	BDL	BDL
10.03.2023	54.2	28.9	14.8	17.4	1.31	20.6	6.9	BDL	BDL	BDL	BDL	BDL
14.03.2023	51.6	30.5	14.4	18.3	1.25	22.5	7.5	BDL	BDL	BDL	BDL	BDL
17.03.2023	52.2	31.2	13.7	18.1	1.15	24.1	7.8	BDL	BDL	BDL	BDL	BDL
21.03.2023	50.1	27.6	14.0	17.5	1.13	21.6	6.9	BDL	BDL	BDL	BDL	BDL
24.03.2023	45.6	25.5	13.2	17.2	1.09	20.5	6.5	BDL	BDL	BDL	BDL	BDL
28.03.2023	44.9	26.4	13.5	16.8	1.12	20.4	6.2	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	400	100	5	01	01	20	06
Monitoring Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-2: Near Weigh Bridge												
03.03.2023	63.3	35.7	13.8	8.4	1.21	23.4	7.3	BDL	BDL	BDL	BDL	BDL
07.03.2023	60.1	37.2	13.2	8.1	1.30	21.6	7.7	BDL	BDL	BDL	BDL	BDL
10.03.2023	64.2	36.6	12.8	8.5	1.34	22.4	7.3	BDL	BDL	BDL	BDL	BDL
14.03.2023	62.2	36.2	14.1	8.0	1.29	24.2	6.9	BDL	BDL	BDL	BDL	BDL
17.03.2023	65.1	34.2	14.5	7.8	1.25	23.7	7.4	BDL	BDL	BDL	BDL	BDL
21.03.2023	61.6	33.1	13.9	8.8	1.13	21.4	6.9	BDL	BDL	BDL	BDL	BDL
24.03.2023	59.7	31.6	12.5	7.1	1.17	20.9	6.5	BDL	BDL	BDL	BDL	BDL
28.03.2023	55.4	30.9	12.2	7.2	1.15	21.1	6.2	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	4	400	100	5	01	01	20	06
Testing Method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	NDIR Spectroscopy	Chemical Method	Indo Phenol Blue Method	Absorption & Desorption followed by GC	Solvent Extraction Followed by GC	AAS Method	AAS Method	AAS Method

BDL (Below Detection Limit) PM<sub>10</sub> < 20 µg/m<sup>3</sup>, PM<sub>2.5</sub> < 10 µg/m<sup>3</sup>, SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>2</sub> < 6 µg/m<sup>3</sup>, O<sub>3</sub> < 4 µg/m<sup>3</sup>, NH<sub>3</sub> < 20 µg/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub> < 4 µg/m<sup>3</sup>, Bap < 0.5 ng/m<sup>3</sup>, As < 1 ng/m<sup>3</sup>, Ni < 2.5 ng/m<sup>3</sup>, Pb < 0.02 µg/m<sup>3</sup>

Fagmala  
Nagar  
Reviewed By



P. Patil  
Approved By

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

• Infrastructure Engineering  
• Water Resource Management  
• Environmental & Social Study

• Surface & Sub-Surface Investigation  
• Quality Control & Project Management  
• Renewable Energy

• Agricultural Development  
• Information Technology  
• Public Health Engineering

• Mine Planning & Design  
• Mineral/Sub-Soil Exploration  
• Waste Management Services

Laboratory Services  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/23-24/R-00561

Date : 08.04.2023

## AMBIENT AIR QUALITY (BUFFER ZONE) MONITORING REPORT- MAR 2023

- 1 Name of Client : M/s FERRO ALLOYS CORPORATION LIMITED , BHADRAK
- 2 Name of the Project : OSTAPAL CHROMITE MINES , KALIAPANI, JAJPUR
- 3 Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler
- 4 Sample Collected by : VCSPL Representative in presence of Client's Representative

Monitoring Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-1: Near Village Ostia												
18.03.2023	65.2	37.5	8.6	14.2	0.52	BDL	6.5	BDL	BDL	BDL	BDL	BDL
AAQMS-2: Near Village Kaposi												
18.03.2023	57.1	36.2	8.2	15.1	0.68	BDL	6.4	BDL	BDL	BDL	BDL	BDL
AAQMS-3: Near Village Kaliapani Township												
18.03.2023	62.7	39.4	9.5	14.1	1.02	BDL	6.6	BDL	BDL	BDL	BDL	BDL
AAQMS-4: Near Village Ostapal												
18.03.2023	59.3	38.8	7.7	13.9	0.65	BDL	5.9	BDL	BDL	BDL	BDL	BDL

Fajmali  
Reviewed By



P. Pati  
Approved By

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721  
E-mail: visiontek@vcspl.org, visiontekin@gmail.com  
Visit us at: www.vcspl.org



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

Certified for : ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017

Accredited by : NABET-A Grade, MOEF & CC/CPCB & SPCB-A Grade

• Infrastructure Engineering  
• Water Resource Management  
• Environmental & Social Study

• Surface & Sub-Surface Investigation  
• Quality Control & Project Management  
• Renewable Energy

• Agricultural Development  
• Information Technology  
• Public Health Engineering

• Mine Planning & Design  
• Mineral/Sub-Soil Exploration  
• Waste Management Services

**Laboratory Services**  
Environment Lab  
Food Lab  
Material Lab  
Soil Lab  
Mineral Lab  
&  
Microbiology Lab

Ref : Envlab/23-24/R-00562

Date: 08.04.2023

## AMBIENT AIR QUALITY (BUFFER ZONE) MONITORING REPORT- MAR 23

- 1 Name of Client : M/s FERRO ALLOYS CORPORATION LIMITED , BHADRAK
- 2 Name of the Project : OSTAPAL CHROMITE MINES , KALIAPANI, JAJPUR
- 3 Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler
- 4 Sample Collected by : VCSPL Representative in presence of Client's Representative

Monit oring Date	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	Bap (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	As (ng/m <sup>3</sup> )
AAQMS-1: Near Village Ostia												
28.03.2023	64.7	34.7	8.5	13.9	0.55	BDL	6.4	BDL	BDL	BDL	BDL	BDL
AAQMS-2: Near Village Kaposi												
28.03.2023	55.8	33.2	8.2	13.5	0.68	BDL	6.0	BDL	BDL	BDL	BDL	BDL
AAQMS-3: Near Village Kaliapani Township												
28.03.2023	63.1	38.0	9.4	14.2	1.01	BDL	7.1	BDL	BDL	BDL	BDL	BDL
AAQMS-4: Near Village Ostapal												
28.03.2023	56.4	37.3	8.5	13.4	0.54	BDL	6.1	BDL	BDL	BDL	BDL	BDL

Fagmali  
Nagar  
Reviewed By



Approved By

P. Patil

Plot No.- M-22 & 23, Chandaka Industrial Estate, Patia, Bhubaneswar, Khurda, Odisha-751024, India Tel.: 0674-3511721

E-mail: visiontek@vcspl.org, visiontekin@gmail.com

Visit us at: www.vcspl.org

**ANNEXURE – 3 (ENVIRONMENT MANAGEMENT EXPENSES AND ACKNOWLEDGE LETTER)**



OCM/ENV/ 1951/2023

Dated: 13.09.2023.

To  
The Joint Director(s)  
Ministry of Environment, Forest & Climate Change,  
Eastern Regional Office,  
Bhubaneswar

Sub.: Submission of Audited Statement in connection with EC Condition no.-10, 11 & 12 of Ostapal Chromite Mines of M/s FACOR LTD.

Ref.: (I) EC Identification No.: EC228001OR120821, Dated: 04.04.2022

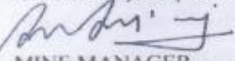
(II) Submitted Six Monthly Compliance Report Vide Ltr No. OCM/ENV. /1608 /2023, Dated 10.05.2023

Dear Sir,  
With reference to the captioned subject & cited reference, we are herewith submitting audit statement pertaining to Expenses towards CER & revised expenses amount towards EMP and Expenses towards Occupational Health FY 2022-23 in respect of Ostapal Chromite Mine of M/s FACOR LTD.

This is for your Kind consideration, Please.

Thanking You

Yours faithfully,  
for Ferro Alloys Corporation LTD

  
MINE MANAGER  
13/09/2023

Encl.: A/a







# SS JENA & CO.

CHARTERED ACCOUNTANTS

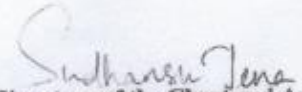
## CERTIFICATE

### TO WHOM SO EVER IT MAY CONCERN

We hereby certify from the examination of the books of accounts and other relevant records of the applicant **M/s. Ferro Alloys Corporation Limited**, GSTIN – 21AAACF1999A1Z3 that the company has incurred expenditures of **INR 3,13,94,121.27/- (Three Crore Thirteen Lakh Ninety Four Thousand One Hundred Twenty One Rupees and Twenty Seven Paise Only)** during the financial year 2022-23 for Ostapal Chromite Mines.

SL NO.	PARTICULARS	AMOUNT (INR)
1	Corporate Environment Responsibilities	78,19,116/-
2	Occupational Health & Safety	23,41,587.27/-
3	Environmental Management Expenses	2,12,33,418/-
	<b>TOTAL</b>	<b>3,13,94,121.27/-</b>

Note: The expenditures figures are certified on the basis of un-audited financial statements and the accounts maintained by the applicant.

  
Signature of the Chartered Accountant:

Name: SUDHANSU SEKHAR JENA

Membership number: 317612

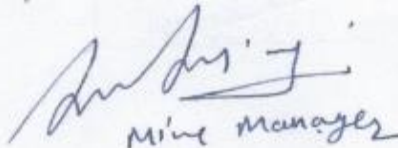
FRN: 333142E

UDIN: 23317612BGRWOR6492

Place: BHUBANESWAR

Date: 06/09/2023



  
Mine Manager  
13/09/2023





#### **ANNEXURE 4 : ONLINE AMBIENT AIR QUALITY MONITORING SYSTEM**



**Online AAQMS installed at mines for continuous monitoring of parameters like CO , SO<sub>2</sub>, PM<sub>10</sub>, PM<sub>2.5</sub> and NO<sub>x</sub>.**



## **ANNEXURE 5 (SEWAGE TREATMENT PLANT (STP) INSIDE MINE)**

### **SEWAGE TREATMENT PLANT (20KLD)**



### **SEWAGE TREATMENT PLANT (10 KLD)**



STP has been installed inside our mines premises for treatment of Domestic Waste Water



**ANNEXURE 6 (EFFLUENT TREATMENT PLANT OF CAPACITY 600M3/HR INSIDE MINE)**



**ETP OF 600M3/HR CAPACITY INSTALLED INSIDE MINES FOR TREATMENT OF HEXVALENT CHROMIUM (CR6+) WATER .**