

Date: 14/07/2017

Ref. No SMCL/ENV/2017/11

To,
The Member Secretary
Goa State Pollution Control Board
EDC, Patto Plaza
Panjim, Goa -403001

Subject: Compliance of Consent conditions of Bicholim Iron Ore Mine, T.C. Nos: 11/1941, 12/1941, 13/1941, 14/1941 & 15/1941, Village Mayem, Lamgao, Bordem, Mulgao & Shirgao of Bicholim Taluka for the month of May 2017.

Ref: Consent to Operate No. 5/2569/15-PCB/CI-2895 dated: 07/06/2017

Respected Sir,

With reference to the condition in Consent to Operate and Authorization granted to Bicholim Iron Ore Mine, we have enclosed herewith the Air and Water Analysis Report for the Month of **June 2017**.

Thanking you,

Yours faithfully,

For Sesa Mining Corporation Limited,

M. Muthumari
14/07/2017

Muthumari M
Mines Manager
Bicholim Iron Ore Mine

Goa State Pollution Control Board	
Patto, Panaji Goa	
Date: 14/07/2017	Time:
Forward to:	Received by:
Registrar's Signature:	

M/s Sesa Environment Laboratory

Vedanta Limited ,Mining Division ,Codli Mines,P.O. Kirlapale ,Goa-403727

Recognised by Ministry of Environment, Forests and Climate change, Govt. of India Vide Notification .S.O.137(E). dated 12th January 2015, Valid up to 11.01.2020

* Certified by ISO 9001:2008 and OHSAS 18001:2007

Ambient Air Quality Monitoring Report

Mine Name: Bicholim Mine

Instruments used: Respirable Dust Sampler 460BL

Calibration date: 24.01.2017

Standard method used for analysis: Particulate Matter -Gravimetric method

Validity of calibration :23.01.2018

Monitoring Date	Particulate Matter (24 hourly)				Emission Standards
	2 TOP Mine Face	1 Top Weigh Bridge Service Road	5TOP Ore storage/Loading	NSP (Dry screening Plant)	
01.06.2017	12	32	12	17	1200 µg/m ³
06.06.2017	32	15	32	18	
08.06.2017	21	13	25	14	
13.06.2017	23	26	26	23	
15.06.2017	26	33	18	16	
20.06.2017	24	24	27	34	
22.06.2017	36	19	18	19	
29.06.2017	27	26	21	28	



Authorized Govt. Analyst



Laboratory Incharge

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Ambient Air Quality Monitoring Report

Mine Name: Bicholim Mine

Instruments used: Fine Particulate Sampler APM550 MFC, Respirable Dust Sampler 460 NL, Gaseous Pollutant Sampler

Calibration date: 24.01.2017

Standard method used for analysis: PM10 & PM2.5 - Gravimetric method

SO2 - Improved west & Gaeke

Validity of calibration :23.01.2018

NOx - Modified Jacob & Hoccheiser

Location Name :Ladfem Village				Location Name : Sarvan village				
Monitoring Date	PM _{2.5} in µg/m ³ (24 hourly)	PM ₁₀ in µg/m ³ (24 hourly)	SO ₂ in µg/m ³ (24 hourly)	NOx in µg/m ³ (24 hourly)	PM _{2.5} in µg/m ³ (24 hourly)	PM ₁₀ in µg/m ³ (24 hourly)	SO ₂ in µg/m ³ (24 hourly)	NOx in µg/m ³ (24 hourly)
01.06.2017	2	4	BDL	BDL	6	12	6	11
06.06.2017	6	14	5	8	3	9	BDL	BDL
08.06.2017	5	10	BDL	6	4	8	BDL	6
13.06.2017	3	9	5	8	2	4	6	8
15.06.2017	4	12	BDL	6	5	10	BDL	BDL
20.06.2017	3	6	4	7	3	6	8	11
22.06.2017	5	7	6	10	4	8	8	10
29.06.2017	2	8	BDL	BDL	6	12	BDL	6
Location Name : C S Pilgao Village				Location Name :Lamgao Village				
01.06.2017	3	9	5	8	2	4	8	11
06.06.2017	6	12	BDL	BDL	5	10	6	9
08.06.2017	4	8	BDL	5	3	6	5	10
13.06.2017	2	6	6	11	4	8	BDL	BDL
15.06.2017	5	10	8	12	6	12	4	7
20.06.2017	6	12	BDL	6	2	6	BDL	BDL
22.06.2017	2	4	6	10	4	9	BDL	6
29.06.2017	3	5	BDL	BDL	6	11	5	9

NAAQS Limits: PM_{2.5} -60µg/m³ PM₁₀ 100 µg/m³ SO₂ 80 µg/m³ NO_x 80 µg/m³ PM_{2.5}- 60µg/m³ PM₁₀ 100 µg/m³ SO₂ 80 µg/m³ NO_x 80 µg/m³

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f. *[Signature]*
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Surface Water Analysis Report for the Month of June 2017

Mine Name: Bicholim Mine
 Date of Sample collection : 08.06.2017
 Standard method used for analysis: APHA Standard
 Test Report No: 303

Date of Receipt of sample: 08.06.2017
 Analysis completion date: 15.06.2017

Parameter	Unit	Desirable Limit	Location							
			1 Top settling pond (Vagachiper lease Discharge)	2 Top settling pond (Lamgao lease Discharge)	5 Top settling pond (Totichomordong or lease Discharge)	Upstream River Assanora	Downstream River Assanora	Upstream River Bicholim	Downstream River Bicholim	
Colour	Hazen	----	<5	<5	<5	<5	<5	<5	<5	<5
pH	----	5.5 to 9.0	6.31	6.13	6.35	6.57	6.58	6.53	6.58	6.58
Turbidity	NTU	----	2.0	6.1	5.3	4.0	4.8	5.2	5.2	5.2
Dissolved Solids	mg/lit	----	49	19	12	48	60	75	72	72
Conductivity	µS/cm	----	102	39	24	96	120	150	144	144
Suspended Solids	mg/lit	100	3	2	3	4	4	4	4	5
Chlorides	mg/lit	----	14	6	8	18	17	39	39	39
Total Hardness as CaCO ₃	mg/lit	----	27	16	16	31	31	39	37	37
Calcium as Ca ⁺⁺	mg/lit	----	6	3	4	6	6	8	8	8
Magnesium as Mg ⁺⁺	mg/lit	----	3	2	1.5	4	4	4	4	4
Sulphate as SO ₄	mg/lit	----	2.0	0.2	2	2	2	1	2	2
Phosphate as PO ₄	mg/lit	5	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Nitrate as NO ₃	mg/lit	10	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
B.O.D (3days, 30°C)	mg/lit	30	<3	<3	<3	<3	<3	<3	<3	<3
C.O.D	mg/lit	250	<10	<10	<10	<10	<10	<10	<10	<10
Total Iron	mg/lit	3	0.04	0.05	0.06	0.05	0.07	0.07	0.10	0.10
Manganese as Mn	mg/lit	2	0.02	0.02	0.03	0.01	0.03	0.03	0.05	0.05
D.O	mg/lit	----	6	6	6	6	6	6	6	6
Oil & Grease	mg/lit	10	<1	<1	Nil	<1	<1	<1	<1	<1

BDL- Below Detection Limit

Authorized Govt. Analyst



[Signature]

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Well water level Report

Mine Name: Bicholim mine

Instrument Used: Well water tape

Sr.No	Location	Total Depth of well in mtr	Depth of Water level from the reference point in mtr	
			08.06.2017	Water Column in mtr
1	Mulgao Village Well	7.1	5.08	2.02
2	Lamgao Village Well-Santosh	5.4	2.6	2.8
3	Pilgao Village Well- Ratur	5.75	2.1	3.65
4	Mayem Village-Mohan	9.25	8	1.25



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Well Water Analysis Report

Mine Name: Bicholim Mine
Date of Sample collection : 08.06.2016
Standard method used for analysis: APHA Standard
Test Report No: 304

Date of Receipt of sample: 08.06.2016
Analysis completion date: 15.06.2016

Parameter	Unit	Desirable Limit	Location			
			Mayem Village Well	Pilgaon Village Well	Mulgao Well	Lamgao Well
Colour	Hazen	<5.0	<5	<5	<5	<5
pH	-	6.5-8.5	6.32	6.54	6.68	6.62
Turbidity	NTU	1	0.6	0.50	0.8	0.7
Conductivity	µs/cm	-	78.6	72	79.7	24.7
Dissolved Solids	mg/lit	500	39.4	36	34.8	123
Suspended Solids	mg/lit	-	1	2	2	1
Chloride	mg/lit	250	15.4	11.6	11.6	53.0
Total Hardness as CaCO3	mg/lit	200	22.4	20.4	18.4	46.9
Calcium as Ca++	mg/lit	75	4.1	4.9	4.1	13.1
Magnesium as mg++	mg/lit	30	3.0	2.0	2.0	3.5
Sulphate as SO4	mg/lit	200	2.0	3.4	6.0	10.8
Nitrate as NO3	mg/lit	45	0.1	0.1	0.1	0.1
Alkalinity	mg/lit	200	15	12	25	45
Iron as Fe	mg/lit	0.3	0.06	0.04	0.07	0.05
Manganese as Mn	mg/lit	0.1	0.03	0.01	0.03	0.01
Total Coliform/100ml	-	-	11	20	40	10
E.Coli	-	Absent	Absent	Absent	Absent	Absent

BDL- Below Detection Limit



[Signature]
Laboratory Incharge

[Signature]
Authorized Govt. Analyst