



Date: 13/03/2017

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 February 2017.

Ref: Consent to Operate No. 5/2569/15-PCB/CI-554 dated 07/09/2015

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 **February 2017.**

Thanking you,

Yours faithfully,

For Sesa Mining Corporation Limited,

A handwritten signature in blue ink, appearing to read "Jesai".

Jagdish Desai
Manager-Environment



Sesa Mining Corporation Limited: Bicholim Iron Ore Mine, Dhabdhaba, Bicholim (Goa) 403 504 India
T +91 832 6414862

Registered Office: Sesa Ghor, 20 EDC Complex, Patto, Panaji (Goa) - 403 001 India
CIN: U13209GA1969PLC000091

M/s Sesa Environment Laboratory

Vedanta Limited, Mining Division, Codi Mines, P.O. Kirilapale, 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

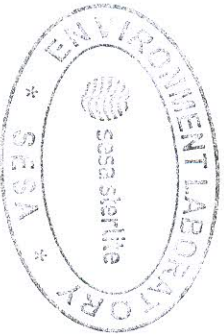
Calibration date: 28.09.2016

Validity of calibration :27.09.2017

Standard method used for analysis: Particulate Matter -Gravimetric method

Monitoring Date	Particulate Matter (24 hourly)				Emission Standards
	2 TOP Mine Face	1 Top Weigh Bridge Service Road	STOP Ore storage/Loading	NSP (Dry screening Plant)	
02.02.2017	180	320	326	467	1200 µg/m ³
06.02.2017	340	384	584	384	
10.02.2017	320	256	200	312	
13.02.2017	260	480	450	522	
15.02.2017	280	434	454	243	
20.02.2017	412	253	267	480	
24.02.2017	416	326	737	512	
27.02.2017	352	341	370	357	

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: 28.09.2016

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

SO2 - Improved west & Gaeke

NOx - Modified Jacob & Hoccheiser

Validity of calibration :27.09.2017

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)	
02.02.2017	50	67	10	14	32	64	6	11	
06.02.2017	29	58	8	14	28	51	4	10	
10.02.2017	25	33	8	12	43	63	8	12	
13.02.2017	24	45	8	10	37	71	8	16	
15.02.2017	22	50	6	12	26	58	6	14	
20.02.2017	47	74	6	10	14	57	6	11	
24.02.2017	48	56	8	14	27	55	8	10	
27.02.2017	27	61	5	10	36	73	6	10	

Location Name : C S Pilgao Village					Location Name : Sirsaim 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)	
02.02.2017	30	70	9	14	46	80	9	14	
06.02.2017	18	33	8	12	40	75	5	9	
10.02.2017	24	55	10	16	41	62	6	10	
13.02.2017	27	14	8	14	38	81	8	14	
15.02.2017	31	44	5	8	36	71	8	14	
20.02.2017	33	50	8	10	42	70	6	11	
24.02.2017	39	67	10	11	50	81	8	12	
27.02.2017	33	67	10	12	28	56	9	12	

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

Govt. Analyst

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Surface Water Analysis Report for the Month of February 2017

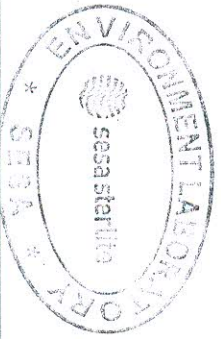
Mine Name: Bicholim Mine
 Date of Sample collection : 20.02.2017
 Standard method used for analysis: APHA Standard
 Test Report No: 244

Date of Receipt of sample: 20.02.2017
 Analysis completion date: 27.02.2017

Parameter	Unit	Permissible limits	Location						
			1 Top settling pond (Vagachiper lease Discharge)	2 Top settling pond (Langao lease Discharge)	5 Top settling pond (Totichomordon gor 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	6.61	6.23	6.12	6.81	6.75	6.83	6.87
Turbidity	NTU	----	0.9	0.9	0.9	1.0	0.9	1.0	1.0
Dissolved Solids	mg/lit	----	52	25	24	320	330	120	122
Conductivity	µS/cm	----	104	50	48	640	660	240	244
Suspended Solids	mg/lit	100	2	2	2	2	2	2	2
Chlorides	mg/lit	----	17	7	7	43	48	53	57
Total Hardness as CaCO ₃	mg/lit	----	32.0	14.0	14.0	50.0	56.0	60.0	60.0
Calcium as Ca ⁺⁺	mg/lit	----	7	2	2	12	14	16	15
Magnesium as Mg ⁺⁺	mg/lit	----	2	2	1	5	5	5	5
Sulphate as SO ₄	mg/lit	----	2.6	2.0	2.3	82	90	6	6.5
Phosphate as PO ₄	mg/lit	5	BDL	BDL	0.1	0.2	0.2	0.1	0.1
Nitrate as NO ₃	mg/lit	10	0.2	0.1	0.1	0.5	0.6	0.1	0.1
B.O.D (3days, 27°C)	mg/lit	30	<3	<3	<3	<3	<3	<3	<3
C.O.D	mg/lit	250	<10	<10	<10	18	18	<10	<10
Total Iron	mg/lit	3	0.15	0.16	0.21	0.16	0.17	0.16	0.10
Manganese as Mn	mg/lit	2	0.08	0.10	0.08	0.08	0.06	0.07	0.06
D.O	mg/lit	----	7.0	7	7	6.5	6.4	7	7
Oil & Grease	mg/lit	10	Nil	Nil	Nil	1	1	<1	<1

BDL - Below Detection Limit

Govt. Analyst



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Well Water Analysis Report

Mine Name: Bicholim Mine

Date of Sample collection :20.02.2017

Standard method used for analysis: APHA Standard

Test Report No: 245

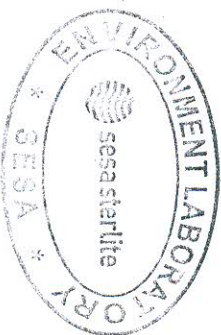
Date of Receipt of sample:20.02.2017

Analysis completion date:27.02.2017

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	6.13	6.51	6.58	6.60
Turbidity	NTU	1	0.70	1.0	1.00	1.00
Conductivity	µs/cm	-	46	28	50	78
Dissolved Solids	mg/lit	500	23	19	25	39
Suspended Solids	mg/lit	-	1	1	1	2
Chloride	mg/lit	250	8.9	6.9	9.9	16.9
Total Hardness as CaCO3	mg/lit	200	12.0	10.0	14.0	20.0
Calcium as Ca++	mg/lit	75	2.4	2.4	3.2	4.8
Magnesium as mg++	mg/lit	30	1.46	0.97	1.46	1.94
Sulphate as SO4	mg/lit	200	2.6	2.6	2.0	2.8
Nitrate as NO3	mg/lit	45	0.1	0.1	0.6	0.2
Alkalinity	mg/lit	200	18	10	15	17
Iron as Fe	mg/lit	0.3	0.11	0.08	0.06	0.07
Manganese as Mn	mg/lit	0.1	0.02	BDL	BDL	0.02
MPN/100ml	mg/lit	Absent	25	21	10	10

BDL- Below Detection Limit

Authorized Govt. Analyst

Laboratory Incharge



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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 mtrs	20.02.2017	
			Depth of Water level from the reference point in mtrs	Water Column in mtrs
1	Mulgao Village Well	7.1	5.3	1.8
2	Langao Village Well-Santosh	5.4	3.7	1.7
3	Pilgao Village Well- Ratur	5.75	4.25	1.5
4	Mayem Village-Mohan	9.25	8.5	0.75

Authorized Govt. Analyst

Laboratory Incharge

