



vedanta

transforming elements

sesa goa iron ore

25th September, 2019

To,
The Environment Officer,
Karnataka State Pollution Control Board,
House No. C.A-2, 3rd Main, K.H.B Colony
Behind Pragathi Gramin Bank, Near K.H.B Office,
Sadik Nagar Road, Chitradurga - 577501



Respected Sir,

Subject: Submission of Environmental Statement in form V for the year 2018-19 for Vedanta Limited Iron Ore Mine (ML: 2677)

Reference: Consent Order No. AWH-300531, Dated 30/06/2016.

With reference to the above subject we are herewith submitting duly filled Environmental Statement for the year 2018-19 in Form V for Vedanta Limited Iron Ore Mine (ML: 2677).

Kindly acknowledge the receipt of the same.

Thanking You.
For Vedanta Limited

For VEDANTA LIMITED


Manager - Mining

Authorized Signatory

Copy to:

1. Senior Environment Officer, KSPCB "Parisara Bhavana" 4th and 5th floors, 49, church Street, Bangalore- 560 001.
2. Director, MoEF & CC, Regional Office (Southern Zone) Kendriya Sadan, Bangalore- 560034.

Enclosures:

Duly filled Environment Statement along with annexures in Form V.

VEDANTA LIMITED

Sesa Goa Iron Ore, Karnataka No 15, SNS Chambers, 1st Floor, Sankey Road, Sadashivanagar, Bangalore – 560080.T: 08023612755 | www.sesagoaironore.com

Registered Office: Vedanta Limited, 1st Floor, 'C' wing, Unit 103, Corporate Avenue, Atul Projects, Chakala, Andheri (East), Mumbai 400093, Maharashtra, India.

CIN: L13209MH1965PLC291394



[FORM – V]
(See rule 14)

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Environmental Statement for the financial year ending the 31st March 2019

PART A

1	Name and address of the Owner/Occupier of the industry operations or process:	Vedanta Limited Iron Ore Mines (ML:2677) Megahalli Office Complex, Bheemasamudra, Tal & Dist: Chitradurga-577 521
2	Industry Category:	Red Category
3	Capacity- Units/year:	6.0 MT/Annum as per EC (However, current production limit is 4.51 MT/Annum as per CEC approval)
4	Production- Units/ day:	12699.32 Tonnes of iron ore per day (Total Production- 4508260 Tonnes)
5	Year of Establishment:	1952
6	Date of the Last Environmental Statement submitted:	27.09.2018

PART B

Water and Raw Material Consumption:

1	Water Consumption m³/d:		
		Process:	NIL
		Cooling:	NIL
		Domestic:	44.57 m ³ /day
		Others:	322.64 m ³ /day (For Dust suppression and Afforestation)
	Name of the Product		Process water consumption per unit of product output
			(1) (2)
	Iron Ore		NA NA
2	Raw Material Consumption:		
	Name of the Raw Material	Name of the Product	Raw material consumption per unit of output
			During the previous financial Year 2017-2018 During the financial Year 2018-2019
	NA	NA	NA NA

PART C

Pollutant discharged to Environment /unit of output (As specified in consent)

	Pollutants	Quantity of Pollutants discharged (mass/d)	Concentrations of pollutant discharged (mass/volume)	Percentage of variation from prescribed standard with reason
a	Water	No effluent are generated from Mining, however monsoon runoff is channelized in to series of Settling ponds and Checkdams to allow the silt to settle.		
b	Air	Particulate Matter is monitored regularly and is well within the permissible limit. Reports of the same are submitted to MoEF Regional office and Pollution Control Board.		

PART D**HAZARDOUS WASTE**

[Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016]

	Hazardous Waste generated	Total Quantity	
		During the previous financial Year 2017-2018	During the financial Year 2018-2019
a	Category 5.1- Used oil	15.55 KL	25.19 KL
	Category 5.2- Oil soaked cotton waste	0.132 MT	0.217 MT
	Category 5.3-Oil Filters	1.67 MT	2.23 MT
b	From Pollution control facilities	NIL	NIL

**PART E
SOLID WASTE**

	Solid Waste generated	Total Quantity in Tons	
		During the previous financial Year 2017-2018	During the financial Year 2018-2019
a	From Process (Mining)	1813876 Tonnes	2647836 Tonnes
b	From Pollution control facilities	NA	NA
c	Quantity recycled or reused within unit	NA	NA

Note : The Solid waste is of Lateritic rock, Clay and Quartzite material which is stacked separately and stabilized by planting appropriate plant species

PART F

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

The Hazardous Waste

Category 5.1- Used Oil	Used oil is recovered from Heavy Earth Moving Machineries and from processing plants. This oil is blackish liquid contains Carbon, basic in nature with metallic impurities. It is stored in empty oil barrels in an ear marked/ designated place with concrete platform and leachates collection facility and are sold to authorized vendor.
Category 5.2-Oil soaked cotton waste	Contaminated cotton rags with oil
Category 5.3-Oil Filters	Filters from HEMM contaminated with oil

The Solid waste

Overburden	It consists of Lateritic rock, Clay and Quartzite material. Overburden dumping is carried out in stepped manner by taking all required environment protective measures like garland drains, geo textiles, constructing rock walls at toe of the dump, settling ponds etc. The finalized areas are afforested by planting native species. The total plantation carried for the year 2018-19 was 31970 nos.
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<u>PART G</u>	
Impact of the pollution abatement measures taken on conservation of natural resources and on the cost of production.	Water tankers are engaged for spraying on Haulage roads to control the dust ,Dry Fog dust suppression system is installed in all processing plants and all the transfer points are covered with G.I sheets to control the dust.All the over burden dumps are covered with Geo textile to control dust emissions and soil erosion. Finalized portion of the overburden dumps are taken for plantation.Total plantation carried FY 2018 - 2019 was 31970 Nos. (Details attached as Annexure-1)
<u>PART H</u>	
Additional measures/ investment proposal for environmental protection including abatement of pollution, prevention of pollution.	All the waste dumps are covered with Geo textile, and finalized portions are taken for plantation. Coco filters are installed in the garland drianges to control the silt,Additional measures like retaining wall,Gully checks, Check dams and settling ponds are constructed. (A brief report on the same is attached as Annexure-2)
<u>PART I</u>	
Any other particulars for improving the quality of the environment.	Company has been awarded with ISO 14001 certificate for its ENVIRONMENTAL MANAGEMENT SYSTEM.
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 30%;"> <p>Date: 20.09.2019</p> <p>Place: Bheemasamudra</p> </div> <div style="width: 60%; text-align: right;"> <p>Your Faithfully</p> <p>For Vedanta limited</p> <p>For VEDANTA LIMITED</p> <p><i>[Signature]</i> 26/9/19</p> <p>Manager - Mining</p> <p>Authorized Signatory</p> </div> </div>	



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PLANTATION FOR THE YEAR 2018-19

Vedanta Iron Ore Mine (ML No. 2677)

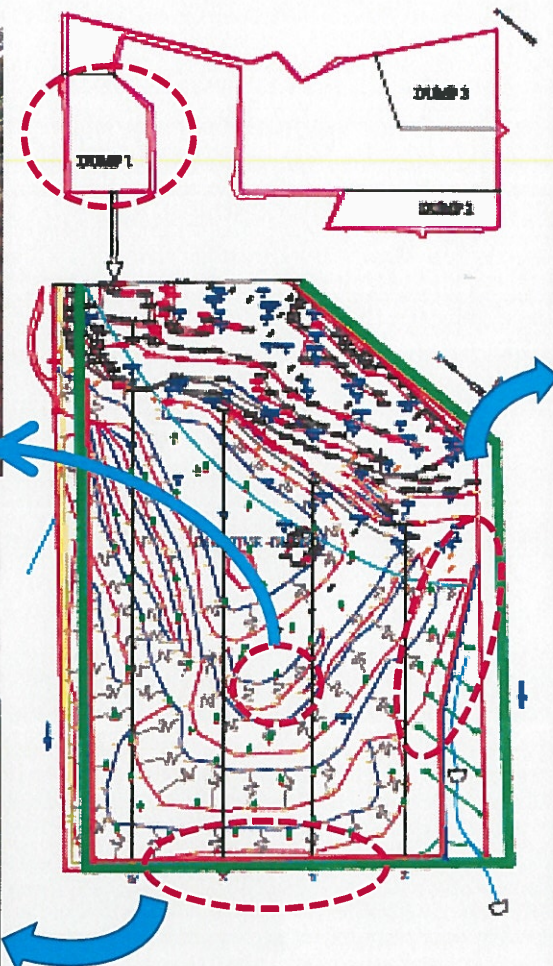
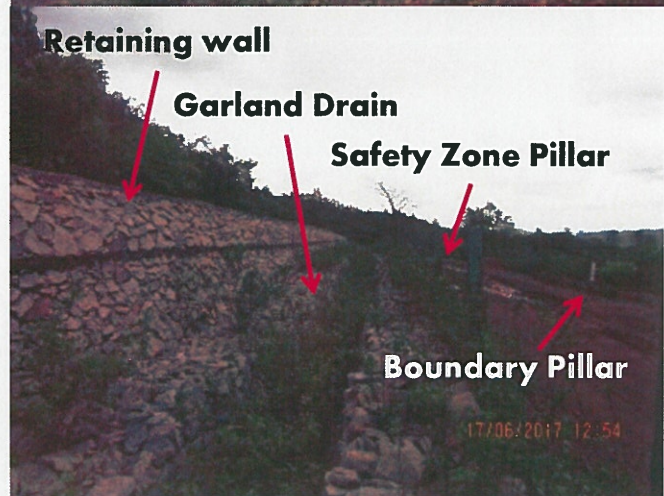
S. No.	LOCAL NAME	BOTANICAL NAME	QUANTITY (NOS)
1	Dodda mara	Ailanthus excelsa	160
2	Chujjulu	Albizia amara	180
3	Baage/Bayala	Albizia lebbeck	230
4	Bevu	Azardirachta Indica	250
5	Maddi Mara	Boswellia serrata	130
6	kakke	Cassia fistula	460
7	Booruga	Tabebuia rosea	560
8	Beete mara	Dalbergia latifolia	560
9	Briti mara/Shishta bage	Dalbergia sissoo	200
10	Arali	Ficus benghalensis	500
11	Atti mara	Ficus racemosa	2500
12	Aralimara	Ficus religiosa	1230
13	Shivani	Gmelina arborea	200
14	Asanagurgi	Hardwickia binata	230
15	Tapsi mara	Holoptelea integrifolia	180
16	Ippe	Madhuca longifolia var. latifolia	500
17	Seema hunise	Pithecellobium dulce	200
18	Honge	Pongamia pinnata	5600
19	Hunise	Tamarindus indica	200
20	Thaare	Terminalia bellirica	200
21	Dubai Plants	Conocarpus lancifolius	150
Dump stabilisation			
22	Seema thangidi	Cassia Semia	990
23	Gobbra Gidda	Gilicidia	3570
24	Seema roba	Seema Rouba Glauca	2340
25	Buggiri(oorvasi mara)	thespesia populnea	200
26	Maha Kani	Swetenia Mahagoni	200
27	Akash maliga	Millingtonia hortensis	500
28	Koranekekar	Tecoma stans	700
29	Jacaranda	Jacaranda mimosifolia	700
30	Gulmohar	Delonix regia	980
31	Haladi gulmohar	Peltophorum pterocarpum	500
32	Java Cassia	Cassia javanica	500
33	Biduru	Bamboo	500
Fruit bearing			

34	Singapore cherry	Muntingia Calabura	1650
35	Panasa	Artocarpus heterophyllus(Jack fruit)	170
36	Chiku	Manikara zapota	100
37	Seetha phala	Annona squamosa	500
38	Kaadu Baadaami	Terminalia catappa	200
39	Nimbe	Citrus limon	100
40	Nelli	Phyllanthus emblica	1800
Agave plantation			
41	Aane Katthaale	Agave americana	250
42	Boodu Katthaale	Agave sisalanu	250
43	Kolu Kalli	Euphorbia tortillis	250
Beautification (ornamental)			
44	Henna	Lawsonia inermis	100
45	Bougainvilla	Bougainvillea	500
Total			31970

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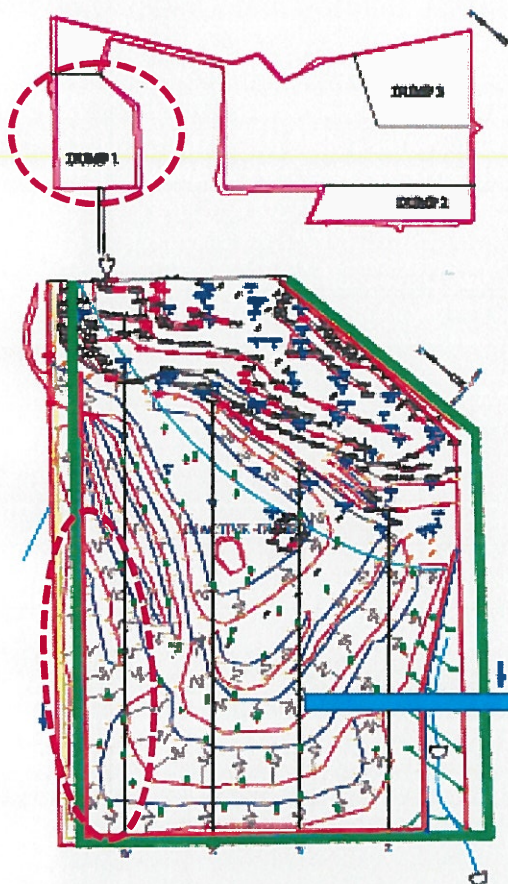
**Implementation
of
R&R plan**
ML No: 2677(RML: 2236)
**M/s. Vedanta ltd (Formerly Sesa
Sterlite ltd /Sesa Goa Ltd)**
Chitradurga- 577520





R & R measures implemented on D1 Dump

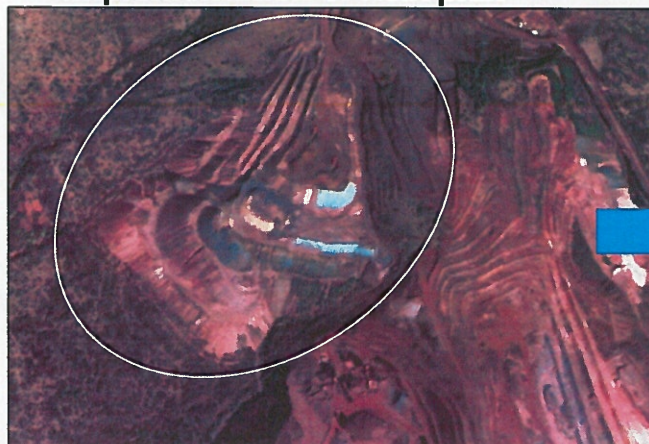
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R & R measures implemented on D1 Dump

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**Year 2012- Before
implementation of R&R plan**



**Year 2014- After successful
Implementation of R&R plan**



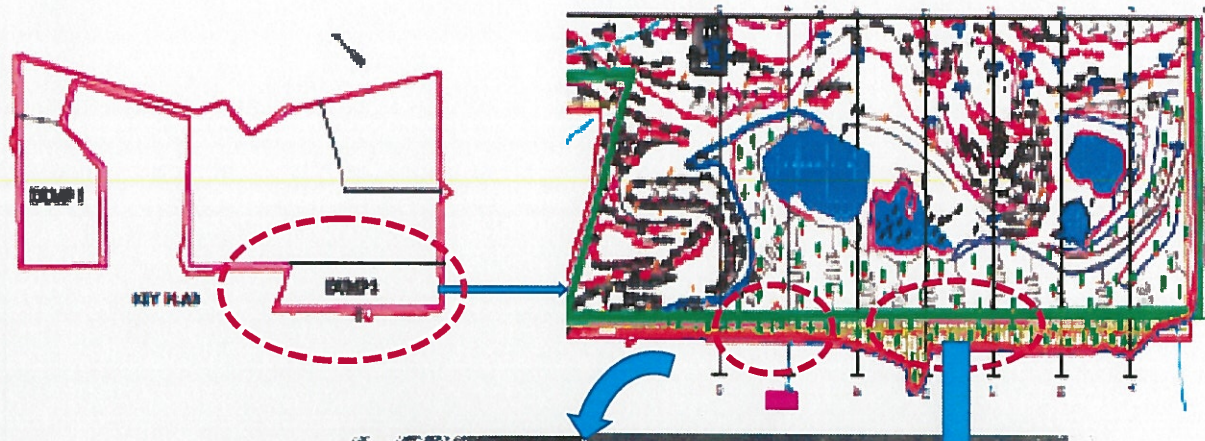
**Year 2019- Sustaining Rehabilitation
Measures**



S No.	Particulars of work		Quantity
1	Retaining walls at the toe of waste dump	R-R dry stone masonry C-C 1:4:8 in foundation	880 m
2	Garland Drain	Garland drain 1 m bottom width, 2 m top width and 1 m deep	819 m
3	Geotextile laying	Providing and fixing Geo-textile on outer surface of slope of waste dump	2.60 Ha
4	Plantation	Enrichment Plantation over waste dump area	8.50 Ha

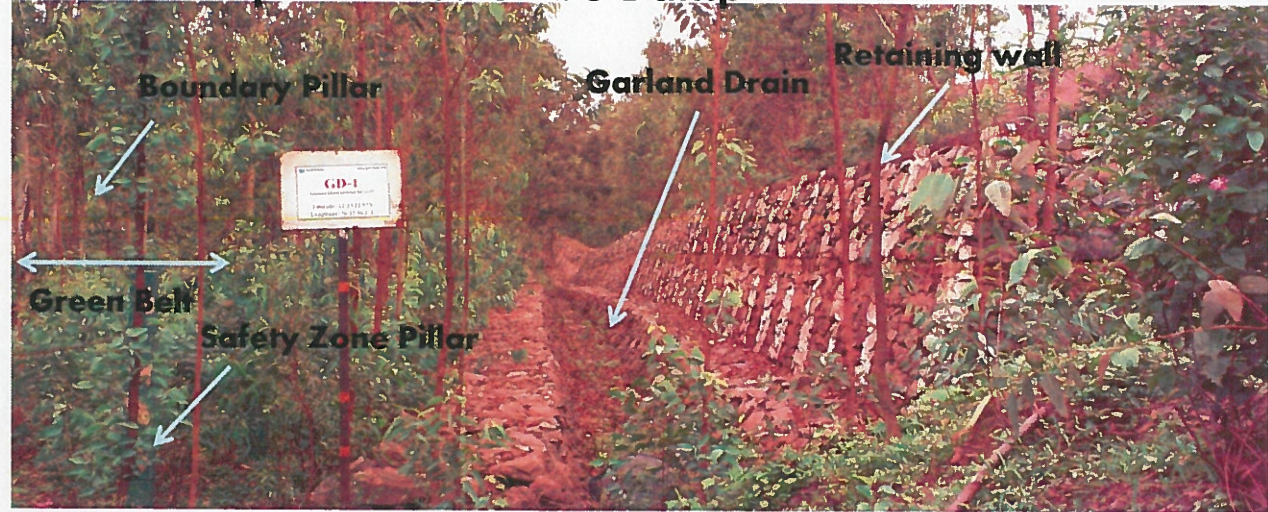
R & R measures implemented on D2 Dump

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R & R measures implemented on D3 Dump

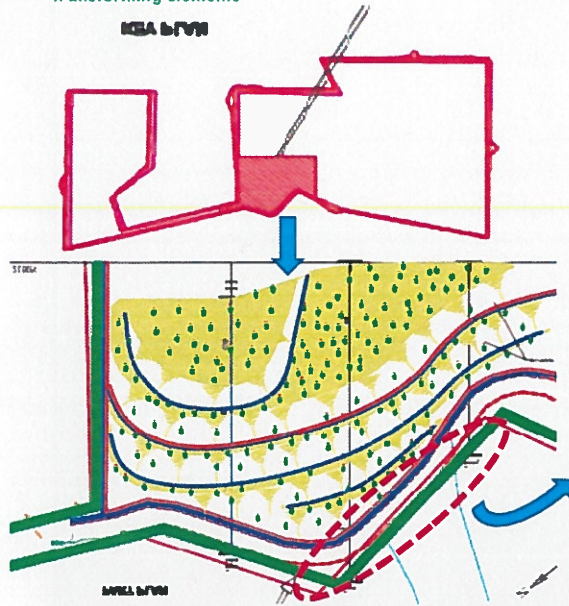
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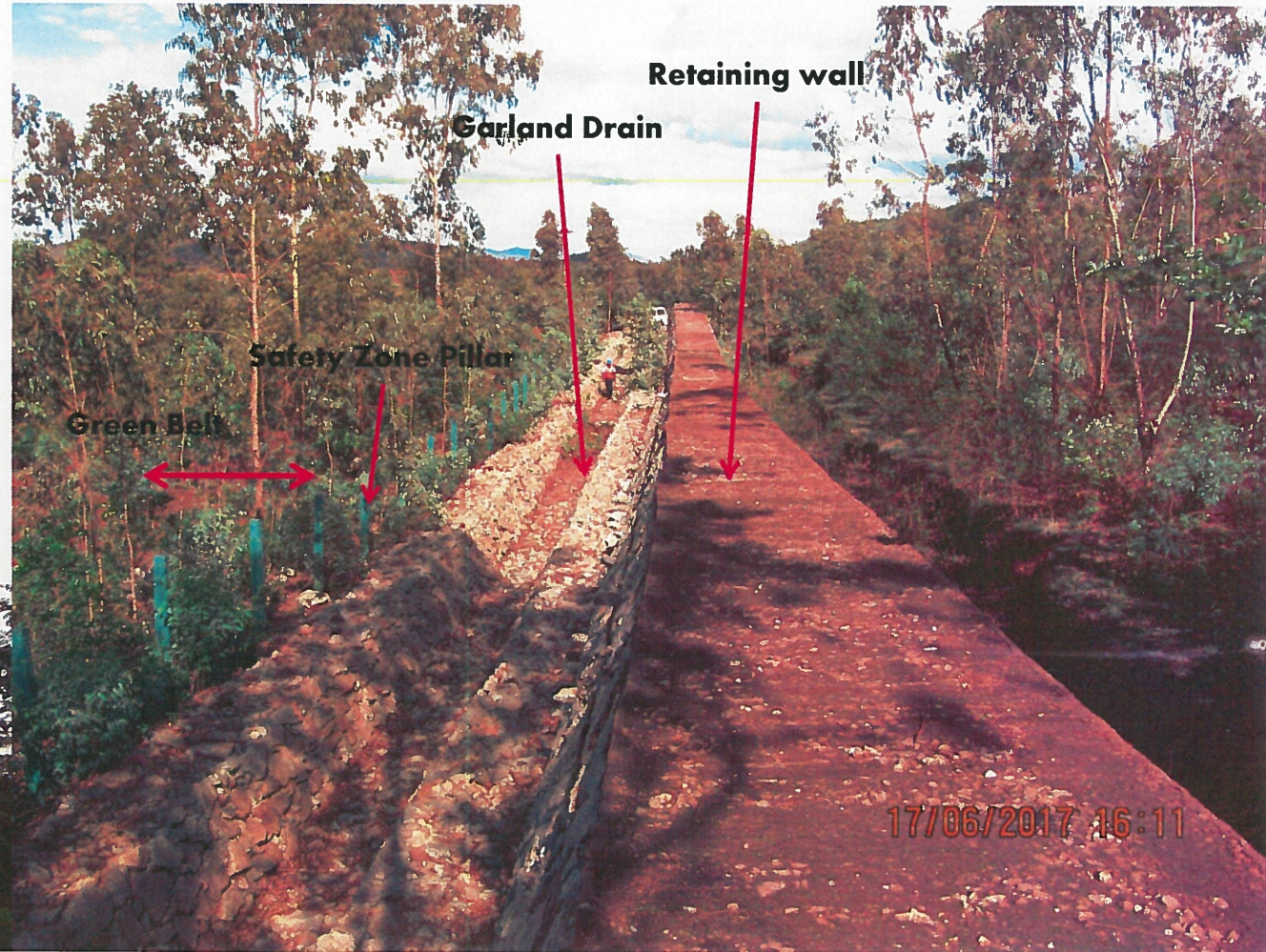
Laying of Geo-Coir Mat on Dump-3

R & R measures implemented on D4 Dump

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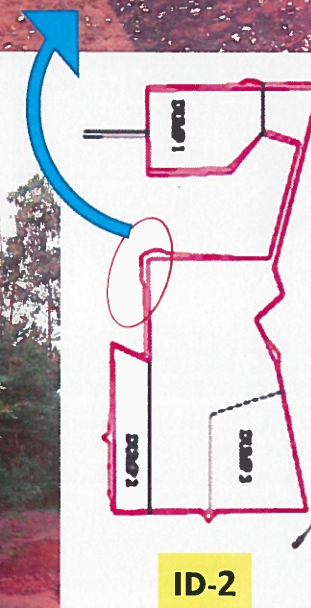
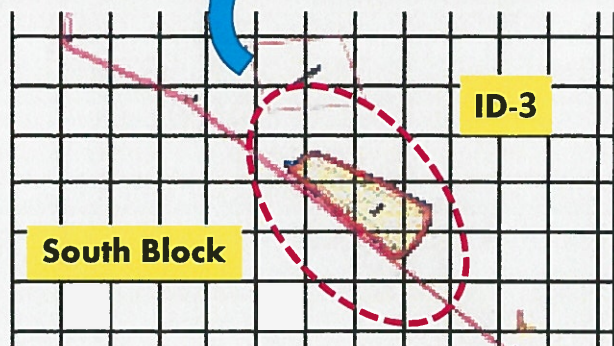
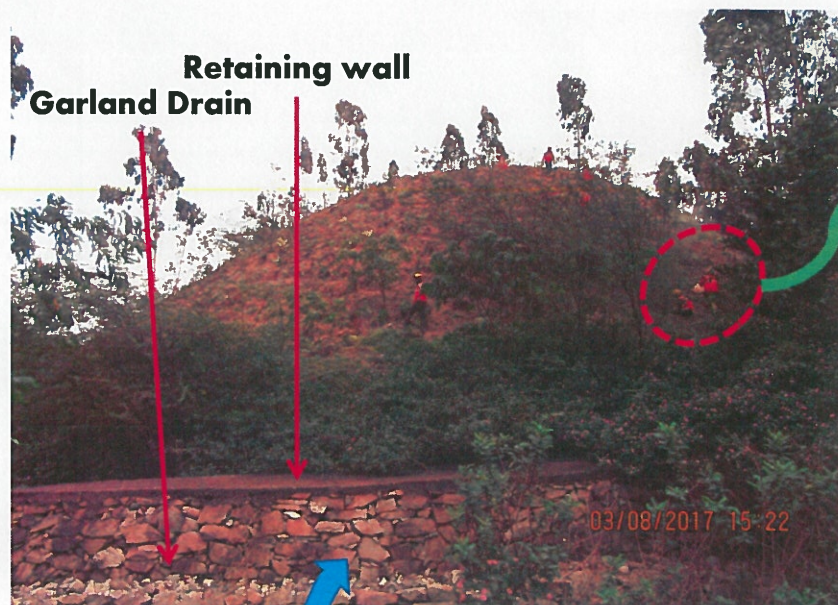


Safety Zone Plantation



R & R measures implemented on Encroached area

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Surface Water Management

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Check dam (CDR-3)



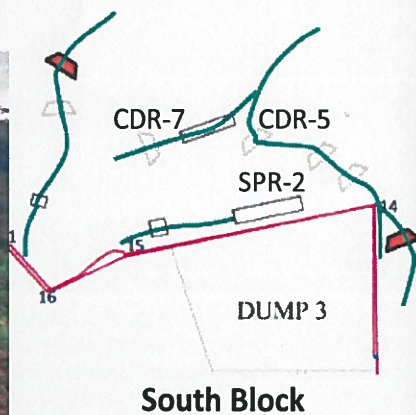
Check dam (CDR-5)



Check dam (CDR-3)

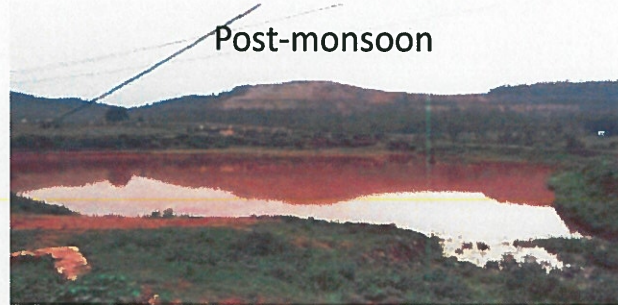


Check dam (CDR-3)



Settling Pond (SPR-2)

Megalahalli Pond



CDR-10



Kadleguddu Pond



- As a part of implementation of R&R plan, 29 check dams, 9 settling pits have been constructed to settle the silt as well as harvest rainwater.

- Estimated rain water harvested in these structures:

➤ Check dams and Settling Pits: 37732.2 m³

Surface Water Management- Desilting of Check dam and Settling Pond

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Settling Pond (SPR-4)



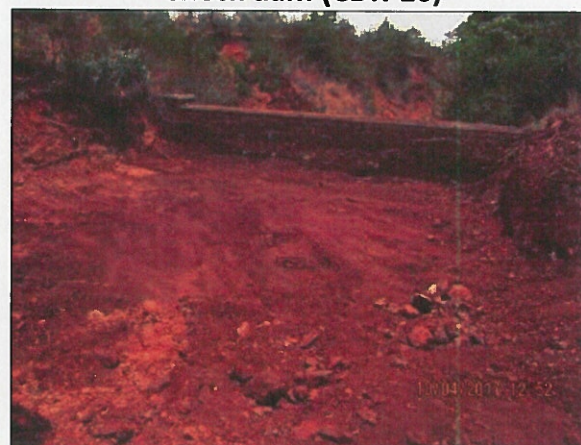
Check dam (CDR-10)



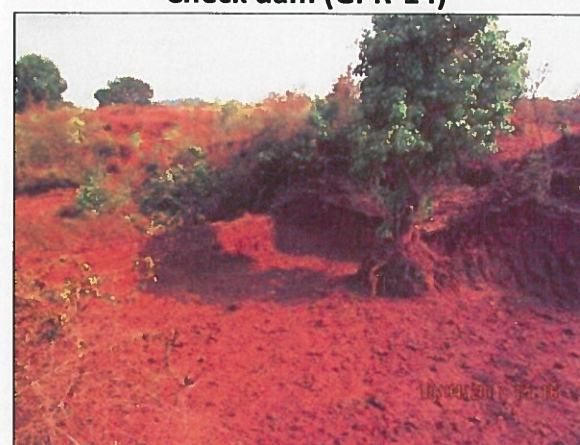
Check dam (GPR-14)



Settling Pond (SPR-2)



Check dam (CDR-15)



Check dam (CDR-13)



Settling Pond (SPF-2)



Check dam (CDR-15)



Settling pond (SPR-2)



Settling Pond (SPR-1)



Check dam (CDR-7)



Settling pond (SPF-1)

Desilting of Village Ponds

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Kadleguddu Village Pond



Tanigehalli Village Pond



Medikeripura Village Pond



Megalahalli Village Pond

As an initiative to rejuvenate the old existing village ponds and to augment the groundwater by harvesting rainwater by effectively channelizing storm water in these ponds, all the nearby village ponds have been desilted.

Year 2016-17			
SNo	Village	Volume	Total
1	Tenigehalli	14522.93	74407.80
2	Medikeripura	14961.85	
3	Megalahalli	29954.82	
4	Kadleguddu	14968.20	
Year 2017-18			
1	Bheemasamudra	46426.13	88645.92
2	Bommenahalli	16132.50	
3	Haliyuru	3628.50	
4	Nellikatte	3826.79	
5	Palya	8520.00	
6	Megalahalli	10112.00	
Year 2018-19			
1	Bheemasamudra	14050	75629
2	Haliyuru	6300	
3	Basavapura	9100	
4	Megalahalli	5600	
5	Dodalghatta	10950	
6	Hanumanakatte	6400	
7	Kadleguddu	4500	
8	Siddapura	6577	
9	Menengi	3102	
10	Malapanhatti	9050	

Rainwater Harvesting initiatives

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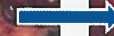
Basavapura Village Pond



Hanumanakatte Village Pond



Siddapura Village Pond



Malapanhatti Village Pond

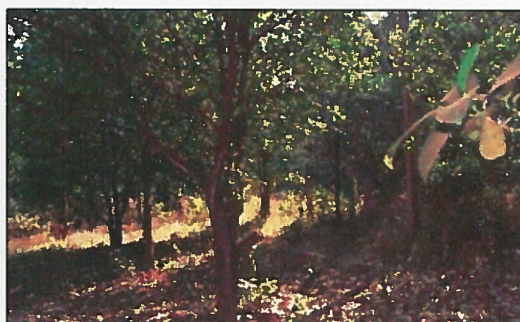


Dodalghatta Village Pond



Two newly constructed Checkdams on natural streams in forest area has a capacity to store 4800 m³ of rainwater

Location		Inside the lease						Outside the lease	
Year of plantation	Year	Gap Plantation	Avenue plantation	Safety Zone	Inactive dump	Green belt	Coir mat	Near Mining Lease	Others (in forest area)
	2012-13	21036	-	-	170626	-	486400 m ²	23330	-
	2013-14	-	2200	6070	46991	9105	3420 m ²	9930	7642
	2014-15	-	-	-	27282	-	30332 m ²	3100	23770
	2015-16	1080	-	603	17817	1750	-	2100	11156
	2016-17	-	-	750	16330	4920	82800 m ²		5000
	2017-18	2170	595	400	8174	930	36000 m ²	3865	8052
	2018-19	10533	-	930	14205	-	24900 m ²	1192	5110
Total no. of saplings		34819	2795	8753	301425	16705	663852 m²	43517	60730



Biological Rehabilitation- Plantation & After-care

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Plantation on Dump-3



After-care by Drip Irrigation



Saplings at Nursery



After-care of Plantation

Transformation of Waste Dumps through Plantation

