

MCDR INSPECTION REPORT

Year 2016-17

**General**

<b>S. N.</b>	<b>Particulars</b>	<b>Details</b>
1	Name of the Mine	Dongarbor Iron Ore Mine
1a	Name of Inspecting officer, Accompany person, Date of Inspection	Rajesh Kumar Das, Senior Assistant Controller of Mines, J.S.Hada, AMG, Shri Neeraj Thakur, Agent Mines,08.11.2017
2	Total Lease Area (Ha) with breakup of Non-forest and forest land	80.710 Ha. (Forest land – 80.71 Ha.)
3	Mine code	30CHG15001
4	IBM Registration Number under rule 45 of MCDR, 1988	IBM/485/2011
5	Name of the lessee, Address, phone, email and fax number	M/s Sarda Energy & Minerals Limited, Industrial Growth Centre, Phase – 1, Siltara Raipur, Chhattisgarh, Pin- 493111.
6	Village	Khadgaon
7	Taluka/Mandal	Manpur
8	District	Rajnandgaon
9	Pincode	491229
10	State	Chhattisgarh
11	Post office	Khadgaon
12	Nearest police station	Khadgaon
13	Nearest Railway station	Dalli Rajhara
14	Date of Grant of Mining Lease	23.11.2002
15	Date of Execution	02.01.2003
16	Date of opening of Mine	17.04.2003
17	Date of first Renewal, if applicable and its period & expiry	Not Applicable
18	Date of second Renewal, if applicable and its period & expiry	Not Applicable
19	Date of submission of renewal application if Mining Operations are continuing under deemed extension	Not Applicable
20	Name of the Nominated Owner with Address, phone, email, fax number and date of appointment	Sri P. K. Jain, Residence: B – 501, Ashok Ratan, New Vidhan Sabha Road, Raipur, Chhattisgarh. Office : Sarda Energy & Minerals Ltd, Industrial Growth Centre, Phase – 1, Siltara, Raipur, Chhattisgarh Phone :- 0771-2216100, Email: <a href="mailto:pkjain@seml.co.in">pkjain@seml.co.in</a> Date of Appointment:- <b>01.06.2016</b>
21	Name of the Mine Agent with Address, phone, email, fax number and date of appointment	Sri Neeraj Thakur, Sarda Energy & Minerals Ltd, Industrial Growth Centre, Phase – 1, Siltara, Raipur, Chhattisgarh Phone/ Mob:- 7747013700 Email: <a href="mailto:nthakur@seml.co.in">nthakur@seml.co.in</a> Date of Appointment:- <b>01.10.2014</b>
22	Name of the Mines Manager with Address, phone, email, fax number and date of appointment in mines	Sri Shriniwas Thakur Khadgaon, Tehsil:- Manpur, Dist: Rajnandgaon Chhattisgarh Phone: 07747013701 Email: <a href="mailto:sthakur@seml.co.in">sthakur@seml.co.in</a> Date of Appointment: <b>01.05.2017</b>

23	Name of the Mining Engineer, Qualification and total experience with Address, phone, email, fax number and date of appointment in mine	Mr. Ramanand, B.Tech Mining, SEML Mines Colony at Boriya, Post: Khadgaon, Tehsil:- Manpur, Dist: Rajnandgaon, Chhattisgarh Phone:7747013704 Date of Appointment : 31.12.2015
24	Whether Geologist and Mining Engineer appointed in mines satisfy the rule 42 (55)& carrying out their duties as per rule 43(56) & 44(57) of MCDR 2017.	Yes, Mr. Sant Das (M.Sc. Geology) has been appointed. Date of Appointment:- 02.07.2012
25	Date of Approval of Mining Plan/Modified Mining Plan with five-year period and specific condition in approval letter, if any.	Modified Mining Plan approved vide letter No. RNG/FE/MPLN-625/NGP dated 12.09.2005. Proposals valid up to 31.03.2008. Scheme of Mining approved vide letter no. RNG/FE/MPLN-625/NGP dated 25.05.2009 and valid up to 31.03.2013. Specific condition – Nil
26	Date of Approval of Scheme of Mining/Modified Scheme of Mining with five-year period and specific condition in approval letter, if any.	Scheme of Mining approved vide letter no. RNG/FE/MPLN-625/NGP dt. 06.08.2013 valid up to 31.03.2018. Specific condition – Nil
27	Mineral(s) granted in lease and proved for mining	Iron Ore
28	Method of Mining(Open cast, Underground)	Open Cast
29	Category (Fully Mechanised Others or Manual)	A (OTFM)/ Fully mechanized with manual work
30	Captive/Non Captive	Captive

Scientific Mining: Compliance of proposals of approved mining plan/scheme of mining. (Duplication of information in existing TMIS data sheets and draft write up has been avoided.)

#### **Exploration**

S.N.	Item	Proposals	Actual work	Remarks
1a	Backlog of previous year	Nil	Nil	
1b	Exploration over lease area for Geological axis 1 or 2.	In the approved Scheme of Mining for period 2013-2018, it was proposed to drill 5 nos. of exploratory boreholes in the potentially mineralized area within the lease area.	Total 7 nos. of exploratory bore holes at Ore body 1 have been drilled in year 2014-15.	
1c	Exploration Agency & Expenditure in lakh Rupees during the year	M/s Geotech Exploration, Nagpur	Expenses Rs. <b>22.71</b> lakhs	
1d	Balance area to be explored to bring Geological axis in 1 or 2	As on 01.04.2017, out of total 80.71 Ha area, the area under G1 category is 13 Ha , Under G -2 category is 15.46 Ha and under G3 category 52.25 Ha.		
1e	Balance reserves as on 01.04.2017	18.726 Million Tonnes	8824664 - Proved (111), 117360- Probable (121&122) Total - 8942024Tonnes	The 7 nos. of boreholes drilled during 2014-15 proved the section wise discontinuance of presence of iron ore assumed otherwise while estimating the

			reserves in year 2004-05
1f	General remarks of inspecting officer on geology, exploration etc.	The exploration is not covered the entire lease area only selective area was considered for exploration remaining exploration proposal given in the present document.	

### Development

S.N.	Item	Proposals	Actual work	Remarks
2a	Location of development w.r.t. lease area	In between grid 1800 – 2150 E/W and 1750-2100 N/S	In between grid 1800 – 2000 E/W and 1600-1850 N/S	
2b	Separate benches in topsoil, overburden and mineral (Rule 15)	Yes, the uppermost bench is mostly of BHQ – the reject and in lower benches the waste/reject bands of silicious material and phyllite exist/occurs as intercalations/ intrusions - besides the iron ore which is mined selectively by avoiding the mix of iron ore with the waste/reject.	Yes, the uppermost bench is mostly of BHQ – the reject and in lower benches the waste/reject bands of silicious material and phyllite exist/ occurs as intercalations/ intrusions - besides the iron ore which is mined selectively by avoiding the mix of iron ore with the waste/reject	
2c	Stripping ratio or ore to OB ratio	0.313 cubic mtr per tonne	0.335 cubic mtr per tonne	
2d	Quantity of topsoil generation in m <sup>3</sup>	Nil	Nil	
2e	Quantity of overburden generation in m <sup>3</sup>	454500	48617	
2f	General remarks of inspecting officer on development of pit w.r.t. type of deposit etc.	The development is broadly as per proposal		

### Exploitation

S.N.	Item	Proposals	Actual work	Remarks
3a	Number of pits proposed for production	4 (Ore body -1, Float 3, 4 &5)	3 (Ore body -1, Float 4 &5)	
3b	Quantity of ROM mineral production proposed	1454400.00	191696.30	The mine was temporarily discontinued during 07.03.2016 to 20.11.2016.
3c	Recovery of salable/usable mineral from ROM production ( in Tonnes)	1308960.00	174269.36	Assuming 10% ore as processing /transportation loss
3d	Quantity of mineral reject generation ( in Tonnes)	1363500.00	145852.00	
3e	Grade of mineral reject generation and threshold value declared	Below 35%	33	
3f	Quantity of sub-grade mineral	Nil	Nil	

	generation			
3g	Grade of sub-grade mineral generation	Nil	Nil	
3h	Manual / Mechanised method adopted for segregating from ROM	Manual sorting and mechanical screening (dry) of ROM mineral	Manual sorting and mechanical screening (dry) of ROM mineral	
3i	Any analysis or beneficiation study proposed & carried out for sub-grade mineral and reject	The iron ore fines have been analysed and studied for removal/reduction of silica through wet scrubbing.	The wet scrubbing processing plant is under installation.	
3j	Provision of drilling & blasting in mineral benches	Yes, the proposals have been approved to carrying out drilling & blasting in mineral benches	Yes, the drilling & blasting in mineral benches is being carried out	
3k	Provision of mining machineries in mineral benches	Yes, the proposals have been approved to deploy the mining machineries in mineral benches	Yes, the mining machinery is being used in mineral benches.	
3l	Whether height of benches in overburden and mineral suitable for method of mining proposed in MP/SOM	The height proposed and approved is 5 mtrs in over burden and mineral benches.	The height of the benches in overburden and mineral benches is not more than 5 mtrs.	
3m	Total area covered under excavation/pits	18.50 Ha	15.45 Ha	
3n	Ore to OB ratio for the pit/mine during the year	3.20 (Tonnes/ cubic meter)	2.99 (Tonnes/ cubic meter)	
3o	Total area put in use under different heads at the end of year	37.00 Ha	29.85 Ha	
3p	Production of ROM mineral during last five-year period, as applicable	20043600.00 Tonnes for period 2012-13 to 2016-17	802166.21 Tonnes for period 2012-13 to 2016-17	The mine remained temporarily discontinued due to naxal intervention from 01.07.2012 to 10.03.2014 and from 07.03.2016 to 20.11.2016
3q	General remarks of inspecting officer on method of mining etc.	The method of mining is mechanized as per proposal but production is very less due non working due to naxal affected.		

**Solid Waste Management-Dumping**

S.N.	Item	Proposals	Actual work	Remarks
4a	Separate dumping of topsoil, OB & mineral reject (Rule 32, 33)	Yes, proposals have been approved for Separate dumping of topsoil, OB & mineral reject in the Scheme of Mining	Separate dumping of topsoil, OB & mineral reject as approved in the Scheme of Mining is being carried out.	Top soil not found and utilized in plantation during subsequent years.
4b	Location of topsoil, OB & mineral reject dumps	In between grid 1420 – 1900 E/W and 2500-2850 N/S	In between grid 1500 - 1750 E/W and 2550 - 2750 N/S	
4c	Number of dumps within lease area and outside lease area	2 nos. (within lease area )	2 nos. (within lease area )	
4d	Location of dumps w.r.t. ultimate pit limit (Rule 16)	The location of dumps has been proved for non-existence of iron ore and is beyond the ultimate pit limit	The location of dumps has been proved for non-existence of iron ore and is beyond the ultimate pit limit	
4e	Number of active & alive dumps	2 nos.	2 nos.	
4f	Number of dead dumps	0	0	
4g	Number of dumps stabilised	2 nos.	2 nos.	
4h	Whether Retaining wall or garland drain all along dumps are there	Yes retaining wall and garland drain all along dumps has been proposed.	Yes retaining wall and garland drain all along dumps has been provided and maintained.	
4i	Length of Retaining wall or garland drain all along dump	Garland drain of 1KM length has been proposed	Garland drain of 1.2 Km length and retaining wall of 230 mtrs in length and of height 1.5 mtrs has been maintained.	
4j	Number of settling ponds	Total 12 nos. of check dams have been proposed	Total 12 nos. of check dams along garland drain provided .	
4k	Specific comments of inspecting officer on waste dump management	The waste dump management is broadly done as per proposal		

**Solid Waste Management-Backfilling**

S.N.	Item	Proposals	Actual work	Remarks
5a	Status on part or full extraction of mineral from mined out area before starting backfilling	It has been proposed to start back filling after full extraction from mined out area.	Float ore body no. VII has been fully extracted and back filled for total area 0.6 Ha during 2016 - 17.	
5b	Area under backfilling of mined out area	Total 4.90 Ha area proposed for year 2013-14 to 2017-18	0.6 Ha of mined out area backfilled during year 2016-	

			17 (2.4 Ha during year 2013-14 to 2016-17)	
5c	Concurrent use of topsoil for restoration or rehabilitation of mined out area (Rule 32)	Nil / NA	Nil/ NA as the mine has been worked at insitu ore body – I during the year.	
5d	Total area fully reclaimed & rehabilitated	Total 4.9 Ha has been proposed for afforestation after backfilling	Total area of 2.4 Ha has been planted after back filling as on 01.04.2017	
5e	General remarks of inspecting officer on backfilling, reclamation etc	The backfilling is mostly done in float ore zone and it is less w.r.t the proposal, as the development is less.		

### Progressive Mine Closure Plan

S.N.	Item	Proposals	Actual work	Remarks
6a	Whether Annual report on PMCP submitted on time and correctly - Rule 23E(2). Details should be given in the format as given in Annexure-20.	A report on protective and re-habilitative works along with information on afforestation and reclamation has been proposed to be submitted on yearly basis.	The yearly report on protective and re-habilitative works along with information on afforestation and reclamation for year 2016-17 has been duly submitted on time.	
6b	Management of worked/mined out benches i) Area available for rehabilitation (ha) ii) Afforestation done (ha) iii) No. of saplings planted during the year iv) Cumulative no. of plants v) Any other specific method of rehabilitation vi) Cost incurred on watch & care during the year	Management of worked/mined out benches i) Area available for rehabilitation (ha) – <b>Nil</b> ii) Afforestation proposed for year (ha) – <b>0.75Ha</b> iii) No. of saplings planted during the year – <b>3000 Nos</b> iv) Cumulative no. of plants - 7500 v) Any other specific method of rehabilitation – Nil vi) Cost incurred on watch & care during the year – Rs. 37500/-	Management of worked/mined out benches i) Area available for rehabilitation (ha) – <b>Nil</b> ii) Afforestation done (ha) - <b>Nil</b> iii) No. of saplings planted during the year – Nil iv) Cumulative no. of plants - 6048 v) Any other specific method of rehabilitation – Nil vi) Cost incurred on watch & care during the year – Rs. Nil	The mine remained temporarily discontinued due to axal intervention from 07.03.2016 to 20.11.2016
6c	Compliance on reclamation and rehabilitation by backfilling i) Voids available for backfilling (L *B * D) ii) Void filled by waste/tailings iii) Afforestation on the backfilled area iv) Rehabilitation by making water reservoir	i) Nil ii) 4.90 Ha with 83700 cubic mtr for five years period iii) Proposed to plant 3000 nos. of tree over 0.75 Ha area iv) Not proposed v) Not proposed	i. Nil ii. 0.60 Ha with 21000 cubic mtr during 2016-17 iii. Nil iv. Not carried out v. Not carried out	

	v) Any other specific means			
6d	Compliance of Rehabilitation of waste land within lease i) Afforestation ii) Area rehabilitated (ha) iii) Method of rehabilitation	Not proposed	Not carried out	
6e	Compliance of Environmental monitoring (core zone & buffer zone)	The environment monitoring for Ambient Air quality, Fugitive dust monitoring, noise monitoring, ground water level monitoring proposed at regular interval	The environment monitoring for Ambient Air quality, Fugitive dust monitoring, noise monitoring, ground water level monitoring being carried out on monthly basis and report of such monitoring has been submitted along with the yearly report on protective and rehabilitative works for year 2016-17.	
6f	General remarks of inspecting officer on PMCP compliance & progressive closure operations	PMCP work is done broadly as per plan		

### Mineral Conservation

S.N.	Item	Proposals	Actual work	Remarks
7a	ROM Mineral dispatch or grade-wise sorting within lease area	Dispatch of ROM mineral is proposed to be carried out after sorting of Iron Ore from float ROM and segregating BHQ and other silicious material manually as well as mechanically	The dispatch of ROM mineral is carried out after sorting of Iron Ore as proposed and approved through manual (picking and breaking) as well as mechanical (dry screens ) means.	
7b	Method of grade-wise mineral sorting i.e. manual or mechanical	Manual (picking and breaking) as well as mechanical (dry screens )	manual (picking and breaking) as well as mechanical (dry screens )	
7c	Different grade of mineral sorted out at mines	This deposit being of low grade i.e. below 62% Fe and is for captive consumption, all efforts are made to sort out iron ore of grade above threshold value which is	All grades above threshold value are processed for use and are segregated into lumps and fines by passing the ROM mineral through mechanical screens of desired size. The low quality	

		45% Fe	finer have been kept at mines for up gradation of its Fe content by removal of silica content after wet washing with scrubbing for which necessary facility is under installation.	
7d	Any beneficiation process at mines	The beneficiation of ROM mineral is proposed through its segregation into lumps and fines size through mechanical screens and manual picking and removal of BHQ, clay and other silicious material	The beneficiation of ROM mineral is being carried out through its segregation into lumps and fines size by mechanical screens and manual picking and removal of BHQ, clay and other silicious material	
7e	General remarks of inspecting officer on Mineral conservation & beneficiation issues	The manual sorting is done to use low grade mineral and screening is done.		

### Environment

S.N.	Item	Proposals	Actual work	Remarks
8a	Separate removal and utilization of topsoil (Rule 32)	It has been proposed to separately reviewed and remove, stack and utilize top soil.	Top soil not excavated during the year.	
8b	Concurrent use or storage of topsoil	It has been proposed to use the top soil as capping to the reclaimed / back-filled area for afforestation purposes.	No top soil handled during the year.	
8c	Separate dumps for overburden, waste rock, rejects and fines (Rule 33)	It has been proposed to maintain separate dumps for waste, reject and fines dump, etc.	It is being maintained separately.	
8d	Use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	It has been proposed to make use of overburden, waste rock, rejects and fines dumps for restoring the land to its original use	The waste/rejects are used as back-filling material to restore and reclaim the mined out area.	
8e	Phased restoration, reclamation and rehabilitation of lands affected by	It has been proposed to restore, reclaim	The waste/ rejects have been used to	



	mining operations (Pits, dumps etc)	and rehabilitate lands affected by mining operations (Pits, dumps etc)	restore, reclaim and rehabilitate lands affected by mining operations (Pits, dumps etc)	
8f	Baseline information on existence of plantation & additional plantation done (Rule 41)	Plantation on yearly basis has been proposed	Plantation carried out on yearly basis. No plantation carried out during 2016-17 as the mine was discontinued temporarily. Total 6048 nos. of plants have been told to be survived till year 2016-17.	
8g	Survival rate	It has been proposed to maintain survival rate of at least 80%	Survival rate of 90% is being maintained till year 2016-17. Total 6650 nos. planted vrs 6048 survived.	
8h	Water sprinkling on roads to control airborne dust	Proposed to be carried out	Being carried out to control air borne dust.	
8i	General remarks of inspecting officer on aesthetic beauty in and around mines area	The mining activity is not on large scale and due to afforestation, water sprinkling for dust suppression no adverse impact observed.		

**Compliance of Rule 45**

S.N.	Item	COMMENTS		Remarks
9a	Status of submission of Monthly and Annual returns	AR & MR upto date,		
S.N.	Item	Details GIVEN in A.R.	Observation of I/Officer	Remarks
9b	Scrutiny of Annual return for information on Mining Engineer, Geologist and Manager	Yes given	Mr. Ramanand, Mining Engineer & Shri Sant Das, Geologist	2016-17
9c	Scrutiny of Annual return on land use pattern for area under pits, reclaimed area, dumps etc.	Yes given	Covered Under O/C working-15.1 ha., used for waste disposal-4.1 ha., Infrastructure-6.5 ha., mineral storage & others-2.250 ha.	
9d	Scrutiny of Annual return on afforestation	Yes given	No afforestation within lease but 200 nos out side lease area	
9e	Scrutiny of Annual return on mineral reject generation (Grade & quantity)	Yes given	145852 te of grade 33% Fe	
9f	Scrutiny of Annual return on ROM stock and/or graded ore	Nil		

9g	Scrutiny of Annual return on sale value, Ex. Mine price & production cost	Ex-Mine price for lump & fines is Rs 666 to 698		
9i	Scrutiny of Annual return on fixed assets	72802008 Rs		
9k	Scrutiny of Annual return on mining machineries	Shovel 0.9 to 1.6 cu.m (05 nos),Tipper 8 cum(22 nos),front end loader 1.7 cum(3 nos),water tanker 12000 ltr (2 nos)		

**Details of violations observed during current inspection and compliance position of earlier violation pointed out:-** The mine is inspected for processing of Review of Mining Plan and during inspect no serious violation found The earlier violation pointed out on 12.01.2017 under Rule 13(1),21& 23 of MCDR,1988 is complied.

**(Rajesh Kumar Das, SrACOM & J.S.Hada, AMG, 08.11.2017)**