2015

PRE-FEASIBILITY REPORT

(FOR TOR)

OF

GADABAVALASA MANGANESE ORE MINES,
AT: GADABAVALASA, GARIVIDI MANDAL, DIST: VIZIANAGRAM

FOR

PRODUCTION OF 12,000TPA OF MANGANESE ORE OVER AN AREA OF 12.691 HA.

OF

SHRI. PRADEEP CHANDRA DEO

At: R/o C4/19 Arc 7 & 8,
Civil Township, Rourkela,
P.S Raghunathpalli, Dist- Sundagarh, Odisha-769004

EXECUTIVE SUMMARY

1.0 INTRODUCTION

Shri Pradeep Chandra Deo proposes to mine Manganese ore from an approved Mining Lease over an area of 12.691 hectares (Non-Forest Land) which is located in Survey No1/p & 3/p at Gadabavalasa Village, Garividi Mandal, Vizianagaram District of A.P. The proposed capacity during the current mining scheme period is 12,000 TPA. The subject area is covered with existing pits and waste dumps in the northern portion are a plain terrain.

The proposed mining project falls under Category 'B' as per EIA notification 2006 of Ministry of Environment and Forests, New Delhi.

1.2 SALIENT FEATURES OF THE PROJECT

The mine lease area falls under the Toposheet No. 65 N/11 bearing following Toposheet details:

Toposheet No. : 65 N/11
Latitude : 18° 22' 30" N
Longitude : 83° 34' 26" E

The nearest railway station is at Baribil which is about 20 km from the mine lease area. The nearest airport is Visakhapatnam Airport at 100 km south from the mining site.

Details about Project Site

Nature of the project	**Gadabavalasa Manganese Ore Mines**
Mineable reserves	55896.344 MT
Capacity	12,000 TPA
Location of the project	
District & State	Vizianagaram District, A.P.
Mandal	Garividi
Village	Gadabavalasa
Land Availability	12.691 Ha
Latitude	18° 22' 30" N
Longitude	83° 34' 26" E
General climatic conditions	
Maximum Temperature	43^0C
Minimum Temperature	15^0C
Annual average rain fall	1050 mm
Predominant wind direction	SE

General location details	
Nearest Village	Gadabavalasa at 1.0 km from the mining site
Nearest city	Srikakulam at 45 km from the mining site.
District headquarters	Vizianagaram at 26 km from the mining site.
Nearest railway station	Barbil Railway station at 20 km from the mining site.
Nearest Airport	Visakhapatnam Airport at 100 km from the mine site.
Archaeological/Historically important site	Not present within 10 km radius
Sanctuaries/National parks	None within 10 km radius
Nearest Reserved Forest	Nil

2.0 INTRODUCTION OF THE PROJECT/BACKGROUND INFORMATION

2.1 Identification of project and project proponent. In case of mining project, a copy of mining lease / letter of intent should be given.

Sri Pradeep Chandra Deo,(Mine Owner) is a resident of Vizianagram district in the state of Andhra Pradesh.

TABLE 1.1 Description of Project Proponent

Address of the Lessee	Sri Pradeep Chandra Deo,(Mine Owner) 3-211 B4/B,MIG plot, Godavari Devi Nagar , Cheepurupalli-535 128 Vizianagaram District , Phone No.08952-280537 Fax: 08952-280537
Address of Mine	Gadabavalasa Manganese Ore Mines Village : Gadabavalasa Mandal: Garividi District: Vizianagaram, Andhra Pradesh Ref: Toposheet No: 65 N/11

2.2 Brief Description of nature of the project

The Mining lease for Manganese Ore over an extent of 12.691 ha., Survey Nos 1/P & 3/P of Gadabavalasa village, Garividi (M), Vizianagaram District, AP State, was originally granted in favor of Sri M. Dhanaramanujayya for a period of 20 years vide G O No.872 dated 08.10.1969 and the same was executed on 31.12.1969.

The Mining Lease was transferred in favor of M/s Radhika Metals and Minerals for the unexpired period of lease vide G O Ms No 249, dated 25.05.1985 and the transfer of lease was executed on 19.08.1985. The lease period was valid up to 30.12.1989.

The first renewal of lease in favor of M/s Radhika Metals and Minerals was granted vide G O Ms No.200, dated 16.10.1996 for a period of 10 years from 31.12.1989 to 30.12.1999 and the renewal of lease was executed on 15.04. 1997. Subsequently, Government has extended the lease period from 10 years to 20 years vide G O Ms No.401, dated 19.11.1996. Thus the lease was in force up to 30.12.2009.

The mining lease was transferred to Shri B. Toudu vide G O Ms No 602 dated 21.12.2001 for unexpired period up to 30.12.2009. Smt B. Kameswaramma was declared as legal heir of Shri B.Toudu after his death by ADMG, Vizianagaram vide proceeding No.59/M/1995, dated 12.05.2004.

Finally, the mining lease was transferred in favor of Shri Pradeep Chandra Deo vide G.O.Ms.No.219, dated 30.09.2009 and the transfer of lease was executed vide Proceeding No.59/M/1995, dated 09.11.2009.

The application for renewal of mining lease was applied by the applicant on 26.12.2008 in time. The mining plan was approved by the IBM, Hyderabad vide letter no.AP/VZNR/Mn-24/Hyd, dated 22.06.1992.

2.3 Need for the project and its importance to the country and or region

In the present scenario, the manganese has good market in the country apart for export purpose and it is the fourth most heavily consumed metal after Iron, Aluminum and Copper. Due to the use of manganese in steel production, the lessee wants to exploit the ore considering the market demand and sufficient availability of Manganese within the area, it is very much essential to have mining project to earn more export and provide employment opportunities.

2.4 Demand and Supply Gap

There is a huge demand of manganese for Ferro manganese industry and is ever growing with the growth of industrial sector in the country. The requirement of the mineral is always found high in adjoining area. Hence, there will always be a good demand for manganese in the steel market.

2.5 Imports V/s Indigenous production

Manganese mined from the proposed project will neither be exported nor imported. It is an indigenous production and will be supplied within the country.

2.6 Export Possibility

There will not be any export of manganese ore.

2.7 Domestic / Export Markets

The manganese ore produced from the lease area will be exported to the domestic users, of Vijayanagaram Dist, according to their requirement of grade and specified size. The total ore extracted in the mine is economical.

2.8 Employment generation (Direct and indirect due to the project)

The proposed project will generate direct employment to 30 people of the local people and number of indirect beneficiaries will be of the order of 300.

3.0 PROJECT DESCRIPTION

3.1 Type of project including interlinked and interdependent projects, if any

Mining activities will be carried out by opencast semi-mechanized mining (OTFM-A category) involving use of Air Compressor and Hand Breaker for separation of ROM. Hydraulic excavator with a bucket capacity of 0.9 cu.m rear dump truck of 14 tonne capacity, loader /JCB will also be in use. Handling of ROM ore will be by manual operations. The benches shall be of 3.0 m height with two slices of 1.5 m height each and full ultimate width will be developed for facilitating development and production. The benches shall be sloped at 30^0 to the horizontal. Since, the formation is very hard and near horizontal, there will not be risk of any slope failures.

3.2 Location

The Mining area is located in Godabavalasa village of Garividi Mandal at Vizianagram district, Andhra Pradesh. The mine lease area falls under the Toposheet No. 65N/11.

Toposheet No. : 65 N/11

Latitude : 18° 22' 30" N
Longitude : 83° 34’ 26” E

LOCATION MAP is enclosed herewith as Annexure-1.

3.3 Details of alternate sites considered

The mineral is site specific, hence there are no alternative sites considered. Mining activities are carried out based on local geology and availability of minerals.

3.4 Size of magnitude of operation

The proposed mine has lease over an area of 12.691 Ha., in survey no. 1/p and 3/p. The total extractable material would be approx. 12,000 TPA.

3.5 Project description with process details

The mining will be opencast Semi-Mechanised Mining (OTFM-A Category. The mining plan is specially designed with 3 meters bench height for proper recovery of ore, the adjacent waste rock is highly weathered khondalite, which can be excavated with excavator without drilling and blasting. The hauling roads with proper gradients and benches are properly designed along the strike direction by adopting best safety concepts. The efficient trained manpower is engaged for the best recovery of ore and segregation of ore as per grade.

Working Depth (Below ground level)

The benches shall be of 3.0 m height with two slices of 1.5 m height each and full ultimate width will be developed for facilitating development and production. The benches shall be sloped at 30^0 to the horizontal. Since, the formation is very hard and near horizontal, there will not be risk of any slope failures.

3.6 Raw material required along with estimated quantity, likely source, marketing area of final product/s, Mode of transport of raw material and finished product.

No raw material will be required in the proposed project. Processing of mineral involves only dressing of ROM material manually to get rid-off adherent clay and non-ore material. The main processing operation for Manganese is manual segregation. The manual segregation includes separation of ore from ROM and stacking into stocks as per grade. This can be done only with manpower. No mechanized method is substitute for this manual segregation.

3.7 Resource optimization / recycling and reuse

Minerals are depleting asset once mined, they cannot be replenished like agriculture, vegetation thus a scientific approach will be taken up in exploitation of mineral with systematic method. Mining work will be carried out by Semi-mechanized Open Cast method. Sub grade ore will be kept separately and would be blended with high grade to make it saleable. Overburden will be disposed of in proposed dumps and reclamation and rehabilitation of the dump by way of afforestation will be taken up once the dump becomes stabilized.

3.8 Availability of water its source, energy / power requirement and source

3.8.1 Water Requirement

Around 20 KLD of water will be required for the project activity. Water requirement will be met through water tankers.

Water is required in the mine for spraying on the haul roads and working faces to suppress the dust and also for use in the garage. Also a small quantity of drinking water is required.

3.9 Quantity of wastes to be generated (liquid and solid) and scheme for their management / disposal.

3.9.1 Solid waste generation & its disposal

The waste likely to be generated is lateritic in nature, bearing reddish color.

Disposal and Location:

The dumping work is proposed to be done by the dumpers. The dumpers and other machineries will do waste dumping in the proposed location. There is one proposed dump located at the mine site. The total area occupied by the dumps is about 12087 m^2 (1.2087 ha).

About 166459.4m^3 of waste is likely to be generated which will be stacked at the dumping yard to a height of 20.3 m with terracing. The inactive dumps will be afforested to prevent rain wash off. A garland channel will be provided all around the dump to prevent dump material being carried to the nearby agricultural fields.

OB and Waste generation details

Year (A)	**Volume of Side Burden waste m^3 (B)**	**Intercalated waste (m^3) (C)**	**Dump handled (D)**	**Total waste (m^3) (E=B+C+D)**	**Swelled volume of waste (F= EX1.6)**
2014-15	49000	3736.5	2550	55286.5	88458.4
2015-16	48920	3478	2860	55258	88412.8
2016-17	12760	3830.5	Nil	16590.5	26544.8
2017-18	18300	3186.6	802	22288.6	35661.76
2018-19	13680	3355.8	Nil	17035.8	27257.2
Total	**142660**	**17587.4**	6212	166459.4	266335

3.9.2 Liquid effluent

No liquid effluent will be generated at the mining site. Domestic waste water generated will be treated in septic tank followed by soak pit.

4. SITE ANALYSIS

4.1 Connectivity

The area is connected by fair weather road. Vizianagaram is the Nearest Town to Gadabavalasa. Vizianagaram is 27 km from Gadabavalasa. Road connectivity is there from Vizianagaram to Gadabavalasa.

4.1.1 Nearest Railway Station

The nearest railhead is at Baribli at a distance of 20 Km from the lease area.

4.1.2 Nearest Airport

The nearest airport facility is available at Vishakhapatnam at about 100 km from the mine site.

4.1.3 Nearest Highway

The Ramabhadrapuram State Highway passes at about 1 KM North of the village Gadabavalasa.

4.2 Land form, land use and land ownership

With the envisaged rate of annual production of about 12,000 tonnes, when the mine is fully developed, the estimated total mineable reserves of about 55896.344 or say 55896tonnes will sustain the mining during the 5 year plan period. So there is no subsequent life of the mine after the 5 year Mining Plan period.

During this scheme period the mining operations will be fully developed. At the end of the life of the mine the quarry will be backfilled during conceptual period.

4.3 Topography

The ML area topography is a plain lane with a gentle slope towards the west and the contour varies from 164 mRL at the eastern side and sloping towards the western side up to 160 mRL above M.S.L.

4.4 Existing land use pattern

The total land degradation at the end of the life of the mine shall be 5.8394 ha as detailed below:

Present and Conceptual land use pattern of the M.L area

Type of land use	At present in Ha.	At the end of the Plan period in Ha	Total area at the Conceptual period in Ha.
Mining	1.23	1.8055	1.8397
Overburden Dump	1.09	1.9791	1.9791

Mineral storage	0.015	0.015	0.015
Sub-Grade stack	Nil	Nil	Nil
Top soil	Nil	Nil	Nil
Infrastructure	0.0088	0.0088	0.0088
Roads	0.14	0.19	0.19
Green belt	0.5673	1.8068	1.8068
Screening plant/ Washing plant	Nil	Nil	Nil
Tailing pond	Nil	Nil	Nil
Total land degradation	**3.0511**	**5.8052**	**5.8394**
Area which will remain untouched	9.6399	6.8858	6.8516
Total	**12.691**	**12.691**	**12.691**

4.5 Existing infrastructure

The mine has complete developed roads connecting to nearby town Cheepurupali. It is well connected to Vishakhapatnam port and Airport at 105 kms away from the mine. There is no major construction near to the mines.

The office building, rest house for labour, boreholes for drinking water and toilets are proposed to be developed in the mines.

4.6 Soil classification

Soil and murrum of 0.5m to 1.5 m in thickness, average being 1 m. occurs as overburden. The ore zone extends over a strike length of about 300 m with width varying from 25 m. thus, exhibiting pinching and swelling characteristics along the strike direction

4.7 Climate data from secondary sources

CLIMATE AND RAINFALL

Day temperatures in summer (March to May) touch 42^0C to 43^0C, the average temperature during summer is around 40^0C. Mercury dips to 15^0C to 20^0C during winter days (November to January). The area receives rainfall mainly from the SW monsoon during June to September with the monthly rainfall ranging between 150mm and 250 mm. The area is also visited by NE monsoon in October and November along with cyclonic storms. The annual fall is around 1050 mm.

4.7 Social infrastructure available

Other statutory and social infrastructures facilities like hospitals, schools, colleges etc are available nearby villages, Gadabavalasa and other facilities like rest shed, blasting shed, first-aid-centre, ambulance service, drinking water facilities, Canteen, Time Office etc., has been proposed to be provided.

5. PLANNING BRIEF

5.1 Planning concept (Type of industries, facilities, transportation etc) town and country planning / development authority classification

With the envisaged rate of annual production of about 12,000 tonnes per annum, when the mine is fully developed, the estimated total mineable reserves of about 55896.344 or say 55896tonnes will sustain the mining during the 5 year plan period. So, there is no subsequent life of the mine after the 5 year Mining Plan period.

Bench height and width will be maintained at 3m and 3m each respectively both in ore and waste. The mining is proposed to be carried out by Semi- Mechanized means, deploying drifter drill and 10tonne tippers, etc.

5.2 Population projection

This mining project will provide opportunities for employment of nearly 300 people from the nearby villages. The social set up and life style of the nearby area will also be improved further with progress of mining activities in the way of availability of Education, Medical facilities, Communicational facilities, drinking water facility, cultural and recreational activities, and proper sanitation system.

5.3 Land Use Planning

Land use planning has been clearly explained under Existing Land Use Pattern.

5.4 Assessment of Infrastructure Demand (Physical & Social)

With the generation of direct and indirect employment opportunities for the local people, the Mining Project will provide safety equipments, small rest shelter and first aid facilities for the workers in the mine lease area.

5.5 Amenities / facilities

The management of the mine will extend facilities like

a) Direct and indirect employment opportunities
b) Provision of drinking water
c) Education and Medical facilities
d) Arrangement of safety and healthy working conditions
e) Conducting medical camps for workers and nearby villagers at regular intervals

6. PROPOSED INFRASTRUCTURE

6.1 Industrial area (Processing area)

The main processing operation for Manganese will be manual segregation. The manual segregation includes separation of ore from ROM and stacking into stocks as per grade. This can be done only with manpower. No mechanized method is substitute for this manual segregation.

6.2 Residential Area (Non processing area)

As the workers will be hired from the nearby villages, no residential areas are required.

6.3 Green Belt

The plantation is developed in the buffer zone and same practice is proposed for future course of mining. During plan period, it has been proposed by the the lessee to plant 1250 nos. of saplings, covering 1.2395 Ha. area, along the entire lease boundary.

Year	No. of sapling	Area in Ha.	Type of sampling
2014-15	250	0.2479	Chakunda, Acasia Guava, Neem, Jamun
2015-16	250	0.2479	
2016-17	250	0.2479	
2017-18	250	0.2479	
2018-19	250	0.2479	
Total	**1250**	**1.2395**	

6.4 Connectivity

The area is connected by fair weather road. Vizianagaram is the Nearest Town to Gadabavalasa. Vizianagaram is 27 km from Gadabavalasa. Road connectivity is there from Vizianagaram to Gadabavalasa.

6.5 Drinking Water Management

The drinking water will be made available from nearby wells. The quality of the surface water as well as ground water has been reported normal.

6.6 Sewerage System

NA

6.7 Industrial Waste Management

Not applicable

6.8 Solid Waste Management

Solid waste generated will be dumped on non-mineralised area and the maximum height of proposed dump will be 20.3 mtr with terraces, spreading over an area of 12087 m^2 and about 166459.4m^3 of waste is likely to be generated.

6.9 Power requirement & Supply / sources

No electric power is available in the applied area. However, the village has got Electricity Facilities. Power lines are passing within 1.5 K.M. from the area. One Diesel generator, capacity of 200 KVA will be used in the mine when no electricity is available.

7. REHABILITATION AND RESETTLEMENT (R&R) PLAN

7.1 Policy to be adopted (Central / State) in respect of the project affected persons including home oustees, land oustees and landless labourers (a brief outline to be given)

No human settlements are existing in the ML area and no humans will be displaced from the area, so the proposed project does not involve any rehabilitation and resettlement.

8. PROJECT SCHEDULE & COST ESTIMATES

8.1 Likely date of start of construction and likely date of completion (Time schedule for the project to be given)

The project will commence once the Environmental Clearance and other necessary statutory clearance certificates are obtained from the respective departments / authorities.

8.2 Estimated project cost along with analysis in terms of economic viability of the project

The average sale price of 26 -28% lumpy Mn grade ore is Rs.3300/- to Rs.3500/- per ton and fines has sale price of about Rs 2200/- per ton. In general the proportion of fines and lumps will be 20:80. The average sale price will be Rs.3080/-.

Pit mouth value / Ex-mines sale cost is Rs.3500/- approx. excluding the transportation cost and the royalty by the State, Rs. 50/- per tonne. The production cost of the Manganese is Rs. 2193/- per tonne. The profit margin is Rs.1307/- per tonne, which is feasible including logistics.

The total cost of project would be around Rs. 2 crore

9. ANALYSIS OF PROPOSAL (Final recommendation)

The project will bring economical benefits to the State by the ways of royalty of mineral. The mining operations shall be providing employment to approximately 300 people of the local area and benefiting more than 30 people indirectly.

Socio-economic condition of area will improve as mining activity will create additional employment for the local people raising their living standard and socio economic status. Significant contribution will be made towards education, medical facilities and cultural aspects.

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