
PRE-FEASIBILITY REPORT & PROPOSAL

FOR

**5.00 MTPA IRON ORE PROCESSING PLANT &
3.0 MTPA PELLET PLANT OVER AN AREA OF
26.44 Ha, INTEGRATED WITH DOWNHILL
PIPE CONVEYOR OVER AN AREA OF 16.58 Ha
BY MSPL LIMITED**

AT

**SOMALPURA VILLAGE
SANDUR TALUKA, BELLARY DISTRICT
KARNATAKA**

EIA CONSULTANTS

**BENEFICIATION PLANT
MINERAL ENGINEERING SERVICES**
(Accredited by QCI-NABET ORG000756 of QCI
NABET/EIA/1922/RA0158 dated Jan,2021)

&

*Lab Recognised by MoEF
25/XXV, Club Road, BELLARY-583103, Karnataka,
Tel/Fax 08392-267421, Mob: 0919448367421,
Email : mes_msraju@yahoo.co.uk*

**PELLETIZATION PLANT
ARDRA CONSULTING SERVICES PVT LTD**
(Accredited by QCI-NABET
NABET/EIA/1922/IA0055 dated 16th Mar, 2020)

*A/79, Sahidnagar, Bhubaneswar-751007
Tel.No. 0674-2546346, Mob: 09937910105
Email: ardraconsulting09@gmail.com*



PRE-FEASIBILITY REPORT OF IRON ORE PROCESSING PLANT & PELLETIZATION PLANT, INTEGRATED WITH DOWNHILL PIPE CONVEYOR OF M/s. MSPL LTD

1. EXECUTIVE SUMMARY

1.1 Introduction

MSPL Limited – Baldota Group is a veteran name in Mining, Processing of Minerals by using advanced techniques of mineral beneficiation and pelletisation and has its operations in the state of Karnataka and having vast customer base in South Region & across India. Baldota Group flagship company MSPL in Karnataka having won captive Iron Ore Mine access at Sandur.

Keeping in view the better utilization of iron ore minerals available in Karnataka, Baldota group is actively taking MSPL to new expansion model with an objective to be a leading iron ore processing & pellet manufacturer in Karnataka in close vicinity of mining zone.

MSPL LIMITED envisages an Iron ore processing Unit & pellet plant at Village Somalapura, Sandur in Bellary, of Karnataka. The salient features of the mining project are given in below

Table No. 1

S.No	Particulars	Details
1.		
2.	Project Coordinates	Latitude : N 15° 01'26.00" to N 15° 01' 57.3" Longitude : E 76° 29' 47.10" to E 76° 30' 12.0"
3.	Nature of the project	5.00 MTPA Iron Ore Processing Plant & 3.0 MTPA Pellet Plant over an area of 26.44 Ha, Integrated with Downhill Pipe Conveyor over an area of 16.58 Ha at Village Somalapura, Sandur Taluk, Bellary District, Karnataka by MSPL Limited.
4.	Nearest Habitat	Yashwantnagar Village is about 1.5 km
5.	Capacity	5.00 MTPA Iron Ore Processing Plant & 3.0 MTPA Pellet Plant over an area of 26.44 Ha, Integrated with Downhill Pipe Conveyor over an area of 16.58 Ha.
6.	Category of the project	“A”
7.	Topo Sheet No	57A/8
8.	Total water requirement	103.75 m ³ /hr
9.	Man power requirement	432
10.	Nearest Town, City, District Headquarters along with distance in km	Sandur Town is 9.4km by road, Nearest City Hosapete 40 kms.
11.	Nearest railway station	Nearest Railway station is Yashwantapur 1km
12.	Nearest Airport	Vidhyanagar Airport 30 Km
13.	Nearest highway	SH 49 Sandur- Kudligi 1.5 Km



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S.No	Particulars	Details
14.	Ecological sensitive areas (wild life sanctuaries, national parks, biosphere reserves, protected forest etc.,)	Ramgad Reserve Forest 2.3 Km Kumaraswami Betta RF 0.68 Km Somalapura RF 0.47 Km
15.	Historical Places	Kumaraswami temple 7.5 kms

1.2 Design

- Down Hill Pipe Conveyor (DHPC) : The design of the plant involves setting up of DHPC to deliver 5 MTPA of screened iron ore of -10 mm size for the proposed plant located at Somaplur village.
- Processing Plant : The proposal of the project is for 5.00MTA throughput. The plant will accept Iron ore (ROM) of around <55% Fe grade (- 10 mm size). The overall plant yield would be about 3.0 MTPA with 63.5% Fe concentration. The plant will be operated for 19 hrs/day and 325 working days/yr. The process would involve screening, grinding, ore beneficiation by means of magnetic separation and reverse flotation . Fines collected from ESP/Bag filters will be feed for pellet plant.
- Pelletization: The process proposed for pelletization will be of Grate Kiln.

1.3 Tailing Disposal

Major solid waste from the proposed plant will be as follows:

Iron ore processing Plant: Tailings will be generated after filter press from the proposed Iron ore Processing Unit. Tailings will be stored temporarily within the project site. It is proposed to dispose the tailings to the nearby Cement Industries, Brick, Tiles, Paver Manufactures, the water recovered is recirculated in the plant. MSPL identified area of 95.95 Ha (237.11 Acres) at Ankammanahal village surrounding at a distance of about 7.5 kms from project site for future storage of tailings. The tailings will be transported in a slurry form and subjected to filtration and cake will be stocked.

Pellet Plant: No Solid waste

1.4 Land Availability and Connectivity

The plant along with infrastructure, temporary tailing (dry cake) stocking and mineral stacking will be in the area already acquired of 21.62 Ha and proposed area to the extent of 4.82 Ha in Somlapur Village of Sandur Taluk, Ballari District in the State of Karnataka. The total area of 26.44 Ha is sufficient for the plant layout. The plant is well connected by road and can also use railway navigation system which is at a distance of about 1 Kms by road. The plant is located near the State Highway (SH49) between Sandur and Kudligi.



The majority of raw material (ROM) will be transported by Down Hill Pipe Conveyor(DHPC) from the captive Narashima Iron Ore Mine located at a distance of 4.3 km and other nearby mines by road. The DHPC requires 13.98 Ha of forest land and 2.6 Ha non forest land and process for diversion of forest land is initiated. After ore beneficiation the concentrate shall be used for preparing pellets.

1.5 Water Requirement

Water requirement for running the wet beneficiation plant & pellet plant is about 2491 KLD which will be met by ground water available in the area, natural water bodies near to proposed site & Rain water harvesting proposed by the proponent. Necessary permissions shall be obtained from concerned ground water authority i.e., Karnataka Ground Water Authority (KGWA).

1.6 Power Requirement

The power requirements for the proposed plant is about 40 MW which has been envisaged to be made available from nearest Power source (Kudligi) 220 KV grid substation of State Electricity Board of Karnataka. The Kudligi substation is ~27 km away from the proposed site. The Main Receiving Sub Station (MRSS) for both the proposed plants will be located within proposed plant complex.

The power at 220 kV shall be further stepped down to 6.6 kV through switchyard & transformer designed for the purpose

1.7 Green Belt Development

Proposed Green belt of about 9.82 Ha as a part of the total plant area will be maintained. Plantation will be taken up in open spaces around the plant area by planting Local species as per the CPCB guidelines in consultation with Local Forest Department.

1.8 Project Schedule and Cost Estimate

The project cost for the proposed 5.00 MTPA Iron Ore Processing Plant & 3.0 MTPA Pellet Plant over an area of 26.44 Ha, Integrated with Downhill Pipe Conveyor over an area of 16.58 Ha is estimated about **Rs. 1316 Cr** for the plant and **Rs 160 Cr for down-hill conveyor.**



2. 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.

MSPL Limited – Baldota Group is a veteran name in Mining, Processing of Minerals by using advanced techniques of mineral beneficiation and has its operations in the state of Karnataka and having vast customer base in South Region & across India. Baldota Group flagship company MSPL in Karnataka has acquired captive Iron Ore Mine through E-auction at Sandur. Keeping in view the better utilization of iron ore minerals available in Karnataka, Baldota group is actively taking MSPL to new expansion model with an objective to be a leading iron ore processing & pellet manufacturer in Karnataka in close vicinity of mining zone.

This setting up of the proposed plant is in line with the increased demand for quality Iron Ore and Pellets in the domestic as well as in the world market.

The proposed project forms a green field iron ore processing & Pellet plant which will also yield many socio - economic benefits by way of employment generation, opportunities for setting up of ancillary units besides other service facilities benefiting the local population in the area.

2.2 Brief description of nature of the project.

Wet Beneficiation in the proposed processing plant upgrades Iron ore having low economic value to a product (iron ore concentrate) with high Fe content. The process steps involve grinding of the raw material, washing and concentrating the iron ore using magnetic separators and flotation.

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

India's current steel producing capacity of is ~140 mtpa and the figure is anticipated to rise to 300 mtpa by 2030-31. India's finished steel consumption grew at a CAGR of 5.2% during FY16-FY20 to reach 100 MT. India's crude steel and finished steel production increased to 108.5 MT and 101.03 MT in FY20P, respectively. Between April 2020 and February 2021, India's cumulative production of finished steel at 85.60 MT. In April 2021, India's finished steel consumption stood at 6.78 MT. For the period April 2020 and February 2021, India's cumulative production of crude steel stood at 92.78 MT. Export and import of finished steel stood at 8.24 MT and 6.69 MT, respectively, in FY20P.



According to the association, whose members represent 85% of the global steel production, globally steel demand will grow by 5.8% in 2021 to reach 1,874 MT, after declining by 0.2% in 2020. In 2022, global steel demand will see further growth of 2.7% to reach 1,924.6 MT. China, which recorded 9.1% growth in consumption in 2020, is expected to see 3% and 1% growth respectively in 2021 and 2022. Thus there is a lot of demand for pellets for meeting the requirements of steel production.

2.4 Demand-Supply Gap.

Domestic pellet prices were down 6% mom but still 175% yoy higher at INR16, 200MT in mid-June 2021. Elevated price realizations have benefitted pellet producers who would earn healthy margins over 1QFY22, especially those who are backward integrated with iron ore mines.

Furthermore, the gap between high grade and low-grade iron ore is likely to widen with the curb on the use of low-grade ore in China, and increase in the utilization of high-grade ore such as pellets thereby increasing the opportunity for pellet exporters. The strong international prices continue to benefit domestic pellet exporters.

International pellet price was up 6% mom and 135% yoy to USD230/MT in mid-June 2021. While Indian pellet exports have gradually reduced from the highs of May 2020 when exports were at 2.01MT, it was still high at 1.34MT in May 2021.

The government has a fixed objective of increasing rural consumption of steel from the current 19.6 kg/per capita to 38 kg/per capita by 2030-31. As per Indian Steel Association (ISA), steel demand will grow by 7.2% in 2019-20 and 2020-21.

2.5 Imports vs. Indigenous production.

India has emerged as the fourth largest miner and the third largest exporter of iron ore. India has currently estimated iron ore resource of about 31000 Million tonnes. The Iron Ore & Steel Derivatives Association (hereafter referred as IOSDA) expects India to strengthen its position as a major ore producer. However, it foresees moderation in iron ore exports from India going forward. With several steel projects coming on stream in the next one year, IOSDA anticipates a steep increase in internal demand for iron ore. It also opines that India needs to invest in infrastructure in order to develop the industry from a long-term perspective.



2.6 Export Possibility.

The Ministry of Steel is very much vocal against the export of iron ore in order to support the domestic steel industry. However, steel majors like Tata Steel and SAIL have their own captive Iron ore mines and rest depend on the non-captive mines. Indian iron ore production has always been higher than the Steel Mill's capacity to consume.

Having utilized the ore for steel industries as well as exports, majority of times there is a surplus of ore which accumulates and this is mostly the low-grade ore. As the Indian steel industry requires good quality ore, there is a necessity to upgrade the low grade ore for ready consumption. Further, having met the demand of the steel industry by upgradation of the low grade ore, the surplus could always be exported to benefit the state/country exchequer.

2.7 Domestic / export Markets.

Spike in iron ore export, largely to China, has made the lives of Indian steel makers miserable. Though global steel prices have been high in the first four months of this year, producers are struggling to supply as there is a huge shortage in raw material iron ore.

In the first four months (January-April), iron ore exports from India increased by 66 per cent to 22.42 million tonne (MT). About 90 per cent of the export goes to China.

The country, which is the world's largest steel producer, imported 20.28 MT of iron ore from India in the first four months compared to 12.24 MT in the same period last year.

The price of hot rolled coil (HRC) increased to Rs 70,000 per tonne as compared to Rs 45,000 at the same time last year. On the other side, NMDC's iron ore price jumped 156 per cent to Rs 6,560 a tonne in April-beginning, compared to Rs 2,560 a year back.

Due to economic disruptions post Covid-19 outbreak, iron ore production fell sharply by almost 44 million tonne (MT) to 202 MT in 2020-21 vis-a-vis 246 MT in the previous year. However, the country's exports increased by 62 per cent to 60 MT against 37 MT. It created an overall short supply of around 70 MT after adjusting incremental exports and drop in production.

2.8 Employment Generation (Direct and Indirect) due to the project.

The organization structure and manpower requirement for proposed Iron Ore Processing unit and pellet plant complex have been developed to provide a smooth functioning, line of responsibility and span of control. In developing the organization structure, practices prevailing in the private sector plants have been generally taken into consideration.



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The proposed project will be executed On-roll employees, except engaging unskilled labours on contractual basis and outsourcing of security facilities to the renowned agencies in their fields for the proposed plant complex. Major requirement of unskilled manpower will be met through engagement of local people.

The category wise manpower requirement for Ore Processing unit and pellet plant complex has been indicated below. **Table No.2** Manpower Requirement

Sl.	Category	Ore Processing	Pellet Plant	Total
1	Senior Executive	3	3	6
2	Executives	8	8	16
3	Discipline Managers	15	15	30
4	Associate Staff	25	25	50
5	Supervisors	25	25	50
6	Skilled	40	40	80
7	Semiskilled	40	40	80
8	Unskilled *	60	60	120
	Total Manpower	216	216	432

*Can be contractual also

3. PROJECT DESCRIPTION

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

The project is of stand-alone and independent type and does not have any interlinked and interdependent projects.

The proposed plant is a green field project for production of Fe concentrate with a throughput capacity of 5.00 MTPA Iron Ore Processing Plant & 3.0 MTPA Pellet Plant over an area of 26.44 Ha, Integrated with Downhill Pipe Conveyor over an area of 16.58 Ha (13.98 Ha forest area + 2.6 Ha non forest area).

3.2 Location (map showing general location, specific location, and project boundary & project site layout) with coordinates.

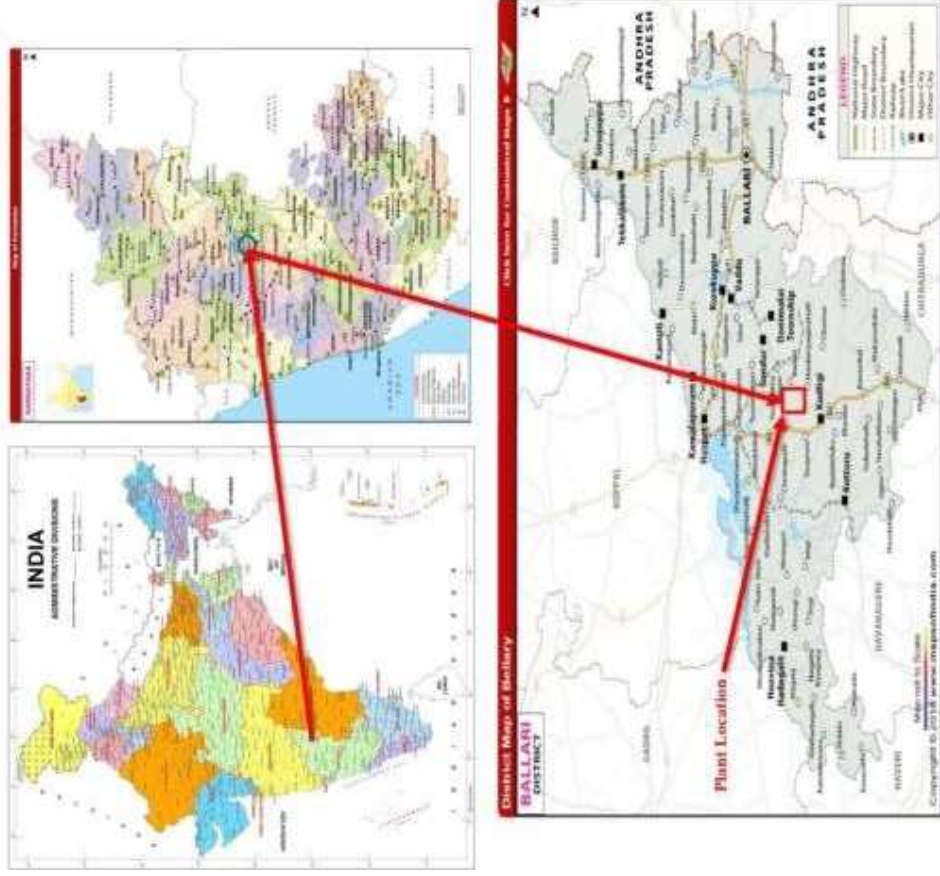
The project MSPL Limited Iron Ore Processing, Beneficiation & Pelletization plant, Integrated with Downhill Pipe Conveyor is located in Village Somlapur, Sandur Taluk, Ballari District, and Karnataka state. The project is located at the GPS co-ordinates of Latitude N 15° 01'26.00" to N 15° 01' 57.3" and Longitude E 76° 29' 47.10" to E 76° 30' 12.0".

The location of the project is shown in Fig No. 1. Proposed plant layout plan is shown vide Fig No. 1A.



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Fig. 01: Location Map





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Fig.No. 1A. Plant Layout





3.3 Details of alternate sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.

The Iron Ore Processing & Pelletization plant is located in the midst of a cluster of mining leases and this helps in cutting down the ore transportation distance. The environmental protective measures taken up as per the statutory requirements. A green cover of >33% of the plant area with local species.

3.4 Size or magnitude of operation.

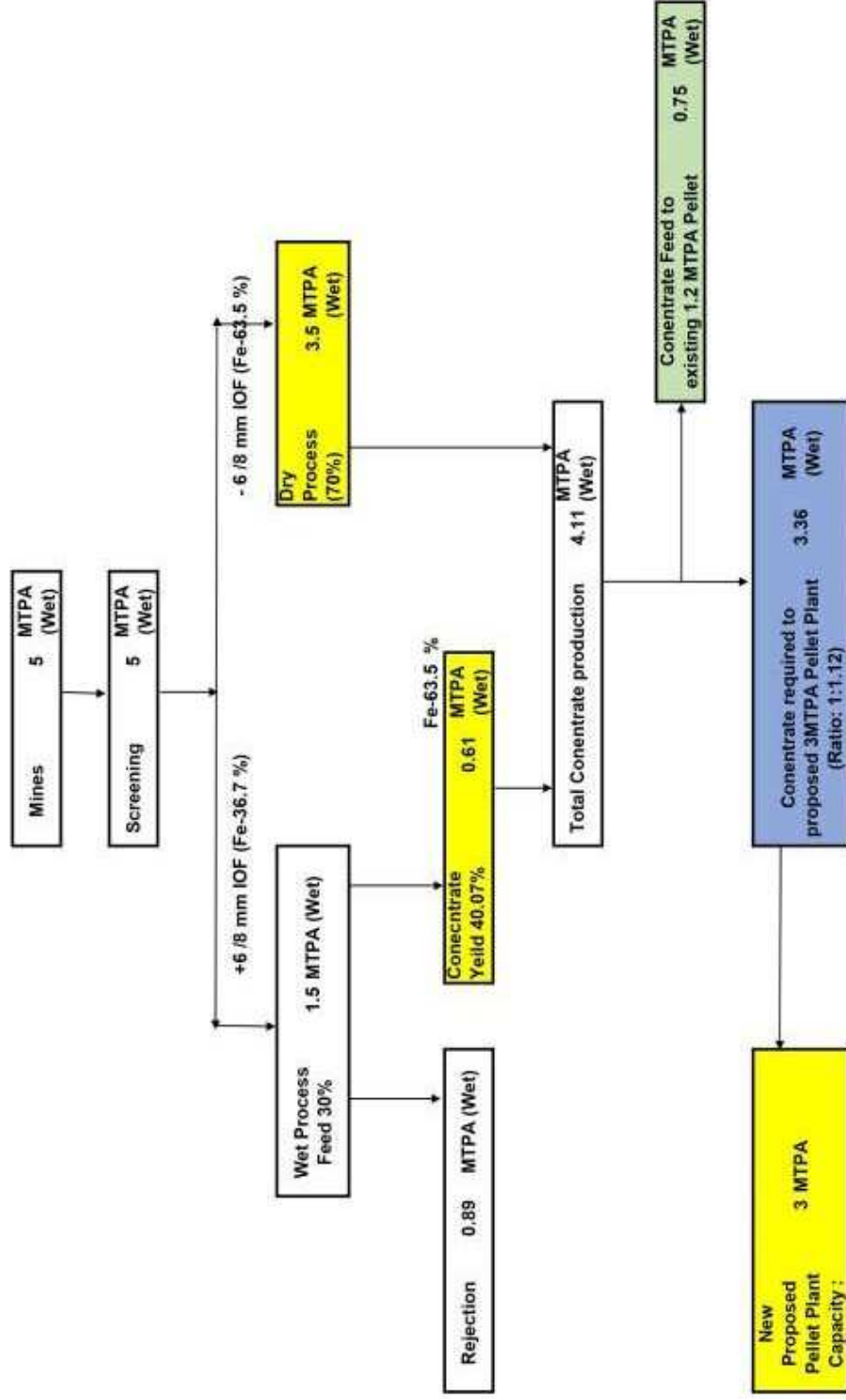
The proposal of the project is for 5.00MTA for Iron Ore Processing and 3.0 MTPA for Pelletization, Integrated with Downhill Pipe Conveyor. The 5 mtpa feed to processing plant comprises of 1.5 mtpa of +6/8mm(Fe-36.7%) of siliceous haematitic ore requiring wet processing and 3.5 mtpa of – 6/8mm size IOF (Fe 63.5%) for dry processing. The material balance and flow sheet is given vide Fig No. 1B. The plant will be operated for 325 working days/yr. The feed size for pellet plant will be -200# around 80-85% passing. The average product grade of will be around 63.5% Fe.



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Fig. No. 1B

MATERIAL BALANCE AND FLOW SHEET FOR 3 MTPA PELLET PLANT @ SANDUR SITE





3.5 Project description with process details (a schematic diagram/ flow chart showing the project layout, components of the project etc. should be given)

MSPL Limited intends to set up 5.00 MTPA Iron Ore Processing Plant & 3.0 MTPA Pellet Plant, Integrated with Downhill Pipe Conveyor.

Down Hill Pipe Conveyor (DHPC)

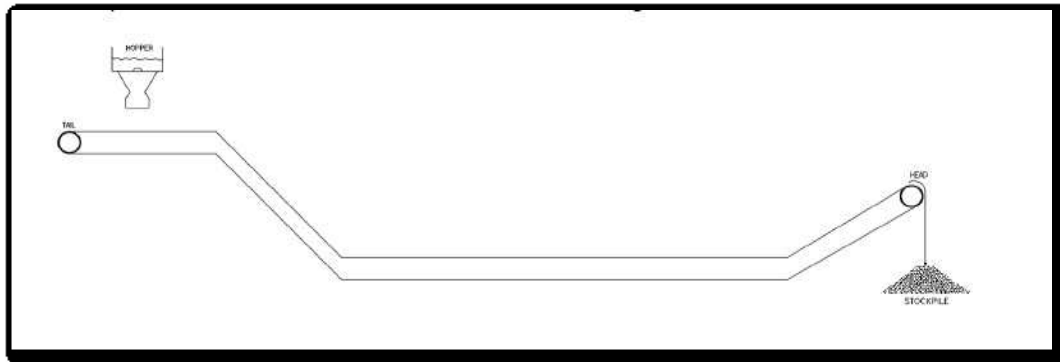
MSPL Limited has been declared successful bidder in the auction conducted for Narasimha Iron Ore Mines (erstwhile ML No 2148), subsequently Environmental Clearance for the mine lease obtained by the previous lessee has been transferred in favour of M/s MSPL Limited for production capacity of 5.00 MTPA.

Iron Ore produced at mines head will be transported to plant located at Somlapur Village, Sandur Taluk through a Down Hill Pipe Conveyor system. The proposed Downhill Conveyor system is a single flight pipe conveyor utilizing a 1,200 mm wide steel cord belt formed into a 305 mm nominal inside pipe diameter operating at a speed of 3.5 m/s with a designed capacity of 1500 TPH. The basic design of the conveyor is prepared by M/s Conveyor Dynamics Inc, USA. The system is environment friendly and will avoid burning of fossil fuel.

The downhill conveyor alignment is both vertically and horizontally curved with an overall length of 4.3 Km and an overall decline of 300 meters with a maximum inclination of 21° as it travels down the steep hill from the mine towards plant.

The Downhill Conveyor is powered by two (2) 700 kW, 4 pole motors with variable frequency drives for starting and stopping control with regenerative operation capability. One drive is located near the head and the other is located at the tail station to reduce the overall tension variations. The material flow scheme and route alignment are given vide Figs 2 & 3

Fig.2 Material Flow Scheme DHPC





ii) Proposed route alignment for DHPC

A self-powered maintenance trolley would provide ease of access for roller replacement all along the conveyor. The upstream loading of material onto the Downhill Conveyor will be controlled by a feeder / feeder conveyor to ensure the design capacity is not exceeded. The discharge pulley has been located approximately 20 meters above the existing ground level to accommodate the required height of a diverter chute to divert excess material.

Any conveyor utility to reach to proposed plant must be through the forest area hence the best alignment for the conveyor belt from mines to proposed plant location passing through the forest is selected based on the extensive survey which will affect negligible area and diversion proposal for the 13.98-hectare forest land has been submitted under Forest Conservation Act, 1980 by the company.

iii) Iron Ore Processing Unit

Iron Ore Processing unit shall receive the iron ore fines from MSPL captive mines through a downhill conveyor as well as additional nearby mines & subjected to dry & wet processing.

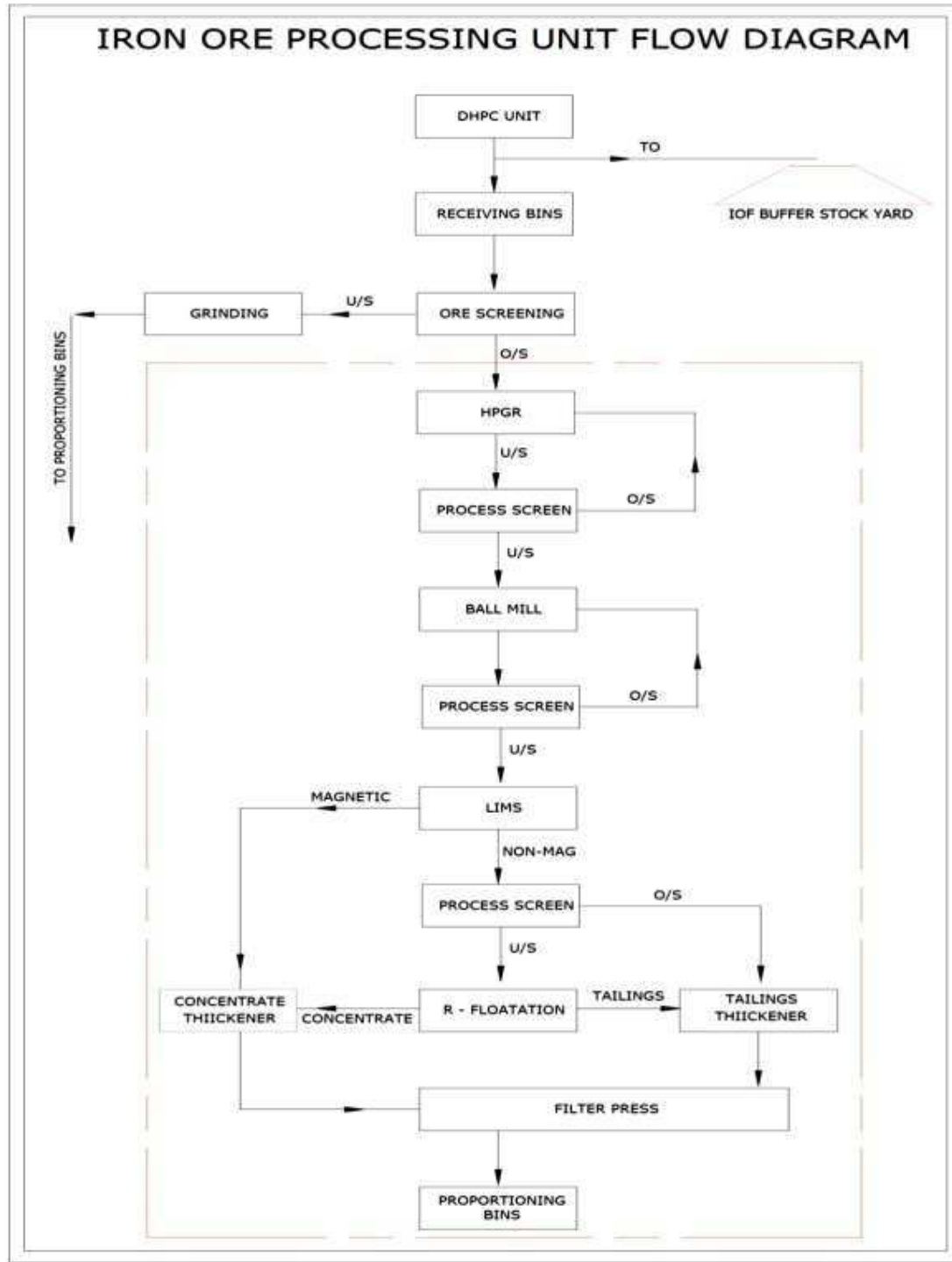
Iron Ore Processing Design Parameters - Input & Output:

- I. The feed for the proposed plant shall be sourced from the MSPL captive mines and other adjacent mines working in the region. The feed size shall be -10 mm.
- II. Iron ore feed thus received will be subjected to screening, grinding and beneficiation and the final product will be a feed to the pellet plant.
- III. Processing equipment will consist of grinding mills, Magnetic separators, Reverse Flotation etc.
- IV. For thickening and water recovery purposes concentrate, intermediate and tailing thickener shall be provided.
- V. Tailing filtration shall be provided. The filter cake shall be stockpiled in the allocated area and filtrate water shall be reused back in the plant.
- VI. Upgraded IOF concentrate slurry shall be pumped to the receiving slurry storage tank of pellet plant.
- VII. The operating regime of Iron Ore Processing unit shall be 325 days per year.

Iron ore processing flow sheet is shown in Fig No.4



Fig.4 Iron Ore Processing Block Flow Diagram





iv) Plant Capacity

Based on above flow sheets, the plant feed parameters for different units of the Iron Ore Processing units considering the 325 annual operating days shall be follows

Table 3: Iron Ore Processing Plant - Feed Parameters

Sl.	Parameter	Iron Ore processing Unit
A	Feed	
	Total feed to the proposed plant (-10 mm)	5 MTPA
B	Product	
	Concentrate from Process	4.1MTPA
C	Reject	
	Tailing (Reject)	0.9 MTPA

v) Proposed Quality

Based on the feed quality and proposed flow sheet the quality of the feed and product is shown in the material balance flow sheet.

vi) Proposed Water Quantity

Process water requirement and recovery from the Iron Ore Processing unit, the total water requirement, recovery and make up water requirement of proposed Iron Ore Processing unit is shown below.

Table 4: Iron Ore Processing Plant - Water requirement

Parameter	Make-up (KLD)
Total	1085

The reject of the Iron Ore Processing unit shall be dumped at the proposed area allocated for dumping at 75 % solid. The moisture % in the tails filter cake shall be about 25 % w/w. The iron ore concentrate at ~65 % solid shall be pumped to the proposed filtration unit and about ~25 % water is reclaimed from filtration and pump back to the Iron Ore Processing unit for reutilizing in the process circuit.

Vii) Pellet Plant Unit

The pellet plant has been envisaged within the same premises to produce Iron ore pellets by utilizing the iron ore concentrate. The finished pellets shall be sold in the domestic/international market

Grate kiln process has been envisaged considering the operating experience of major existing pellet plants in India with Hematite as input iron ore feed. The major technology units are as follows



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1. Proportioning and Additives system and Mixing unit
2. Feed & Handling: Coke breeze/coal, limestone, dolomite & bentonite.
3. Balling unit
4. Induration system (Grate Kiln Process)
5. Pellet screening
6. Fuel handling and utilizing system
7. Belt conveyors, junction houses, inter-connecting & galleries.

Apart from the above major units, all auxiliary facilities like water supply system, compressed air, fuel, ventilation & air-conditioning, process & plant dedusting, repair shop, non-factory buildings, electrics, instrumentation, automation and telecommunication facilities etc. have also been envisaged. Adequate hoisting facilities have been provided in all the units for ease of maintenance and operation.

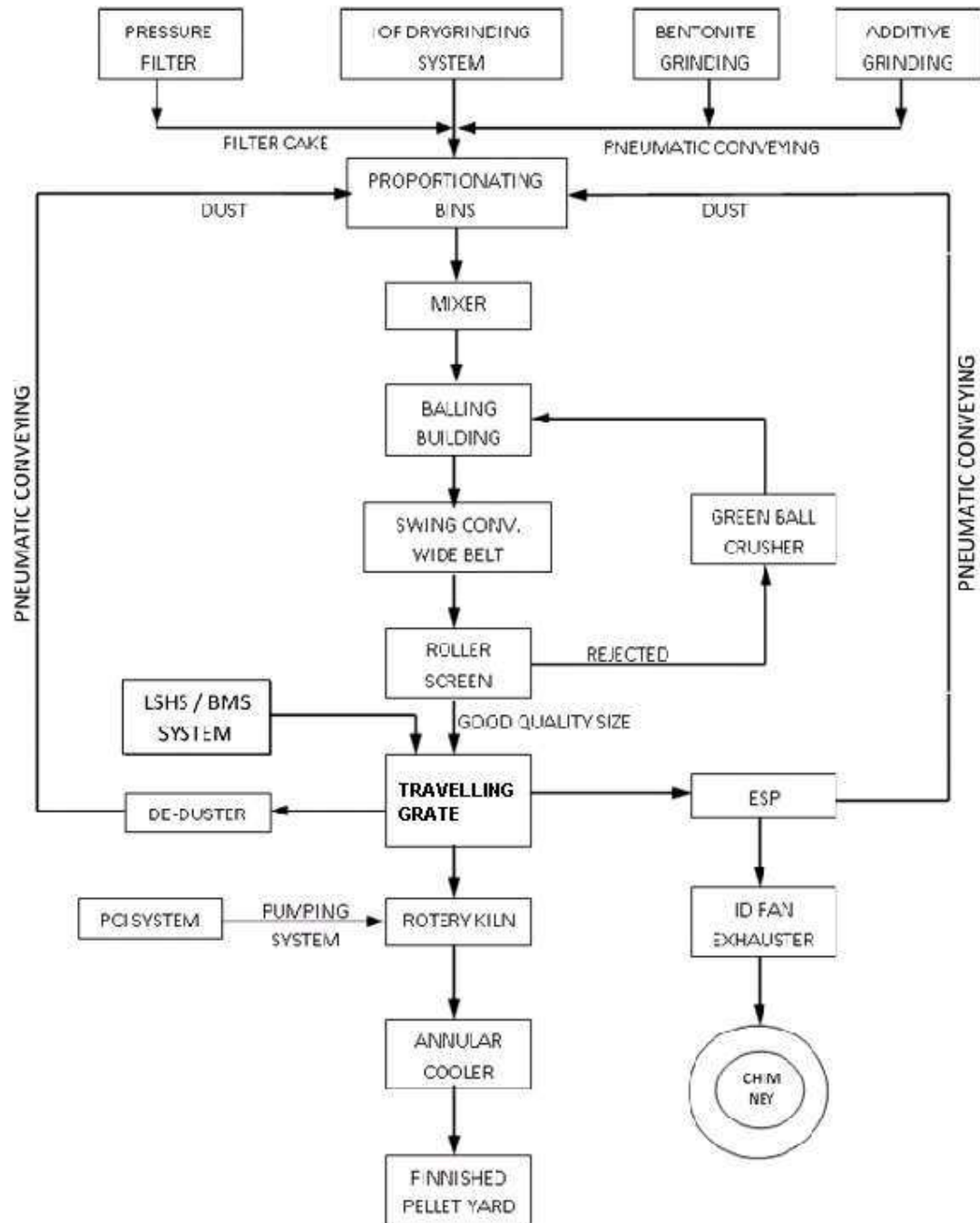
The process of Iron Ore Pelletization involves following steps:

- Formation of green balls (rolling of moistened ground ore mixed with additives)
- Drying, pre-heating, heating of green balls in TG.
- Cooling of Indurated balls called pellets in cooler.

Pellet plant process flow diagram is shown in Fig No. 5



Fig 5. Pellet Plant Process Flow Diagram





viii) Pellet Design Parameters - Input & Output

The tentative chemical composition of raw materials for pellet production is as follows.

Table No 5: Quality of Raw material feed to Pellet

Sl.	Raw Material	Fe ₂ O ₃	SiO ₂	Al ₂ O ₃	CaO	MgO	LOI	Other	Other
1	Iron Ore Fines	63.5							
2	Bentonite	Max. 15%	50	20	2	-	14	FSI 32 & PWA 650	
3	Lime stone	-	-	4	45	3	41	-	-
4	Dolomite	-	7	4	28	16	42	-	-
		CaO	MgO	LOI	S %	FC %	Ash %	VM	GCV Kcal/K g
5	Coke Breeze / Coal	-	-	-	<0.5	85	Max. 8%	4%	7400

ix) Pellet Process Description

Proportioning and additives feeding system and Mixing unit. There will be allocated bins (for filter cake and for limestone, bentonite & ESP dust) in proportioning building. Belt weigh, feeders below filter cake bins and loss-in-weigh feeders below other bins are provided for drawing requisite quantity of materials on one common conveyor leading to high intensity mixer of rated capacity. Required quantity of water is added to the mixer for thorough mixing. The mixed material from mixer is taken to balling building by a conveyor located on the ground below mixer.

x) Feeding & Handling

From storage yards, coke breeze, limestone, dolomite, if required, are transported through ground hoppers to the respective storage bins in the coarse additives grinding unit. The pre-requisite quantity of raw materials will be extracted from respective bins through vibro-feeders and fed to two vertical roller mills through conveyors for grinding. From grinding unit, ground additives shall be stored in ground additives storage bins in the Mixing Building.

xi) Balling unit

Green pellets formation will be carried out in discs. Green pellets from discs will be screen through roller screen and required good sized green pellets shall collected on belt and transported to indurating unit through swing belt and wide belt system.



xii) Induration system

The main area is Grate - Kiln Induration System. This system includes Travelling grate (TG), Rotary kiln (RK) and annular cooler (AC). The screened green balls from the balling discs has been feed to travelling grate consists of a horizontal furnace divided in zones through which a grate moves slowly through each zone, exposing the pellet bed to a progressive increase in temperature. The temperature is controlled in each zone to maintain the appropriate firing curve. After pre heating in TG the pellets will be discharged to Rotary Kiln where the pre heated pellets will further exposed to more temperature uniformly and final hot pellet will be discharged to the Annular cooler. In this cooler we are passing the cold air for the bed of hot pellets and taken away the heat from hot pellets. The hot air will be utilize in TG & RK to improve the energy efficiency in the process.. The final cooled pellets shall be discharged on a conveyor belt and sending for screening.

xiii) Pellet Screening

The cooled Pellets shall be carried to pellet screening unit by belt conveyor and fed to screen with designed aperture. Required product grade pellet shall be then conveyed either to pellet stock pile or to the product storage for onward transportation via railway wagon / dumpers. The undersize pellet fines will be conveyed to one stock pile near screening unit for further reuse in system.

xiv) Fuel Handling and Utilizing system

The heat requirement for the induration system shall be achieved through the Pulverized Coal Injection (PCI) system and Fuel pumping and burner unit system.

xv) Belt conveyors, junction houses & inter-connecting galleries:

Various belt conveyors, interconnecting structural galleries and junction houses shall be envisaged as per the technological layout of pellet plant.

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.

The MSPL mines will be one of the sources of raw material to the proposed plant. The crushed product of -10 mm from the mines shall be transported/conveyed to the proposed site. However, the remaining quantity of iron ore fines, if any shall be arranged from nearby mines. Iron Ore Processing unit has been envisaged to produce – 200# around 80-85% passing.



Reject of the Iron Ore Processing unit shall be filtered and stockpiled in a solid form at tailing yard and sold to prospective buyers for brick making, road construction and cement manufacturing unit based on demand.

Development of the process flow sheet is based on, the operating experience of the MSPL Group in the similar type of iron ore feed material and inputs from Principal Technology Provider

i) Proposed Quality

Based on the proposed flow sheet the quality of the feed and product shall be as taken up

ii) Iron ore fines /Concentrate

The iron ore concentrate product (-200 mesh) 80 % of fines up gradation unit of Iron Ore Processing unit shall be the prime source.

iii) Additives

Limestone, dolomite, if required, bentonite and coke breeze shall be brought through trucks and unloaded in their dedicated covered storage yards. Limestone/dolomite and coke breeze shall be reclaimed through pay loaders from the covered storage yard and conveyed to respective bins, mixed material grinding building through ground hopper (two numbers), conveyors and Junction Houses. One vibro-feeder shall be provided below each ground hopper.

iv) Finished Pellet

Finished pellet shall be received and stacked in open yard

v) Limestone

Limestone quarries located in near-by areas will be potential source.

vi) Coke Breeze / Coal

Coke breeze sourced from the nearest place of proposed site with the following proximity analysis (Dry basis) shall be used.

- Ash : 8 %
- Volatile matter : 4%
- Fixed carbon : 85 %



v) Dolomite

Dolomite quarries of Baradwar region has specs as given below:

- Cao 28 % - 30 %
- MgO 16 % - 21 %
- SiO₂ 7 % (Max)

vii) Fuel for Firing

- LSHS will be used for firing in Travelling Grate machine and the driers or hot gas generators. Also provision of associated gas / natural gas for firing is envisaged in the future, when the same is available in the region.
- PCI coal (imported) shall be used in rotary kiln (Ash:<10%, VM: 18% - 22%, FC:70% Min)

viii) Material Handling Facilities

Raw material handling system shall be envisaged to receive raw materials by means of conveyor & road, transportation of the same to the processing plants through belt conveyor system & transportation of products through road / wagon.

ix) Quality of Raw Material & Finished Pellets

The tentative chemical composition of raw materials for pellet production is as follows.

Table no 6: Quality of Raw material feed to Pellet

Sl.	Raw Material	Fe(%)	SiO ₂ (%)	Al ₂ O ₃ (%)	CaO (%)	MgO (%)	LOI (%)	Other (%)	Other (%)
1	Iron Ore Fines	63.5							
3	Bentonite	Max. 15%	50	20	2	-	14	FSI 32 & PWA 650	
3	Lime stone	-	-	4	45	3	41	-	-
4	Dolomite	-	7	4	28	16	42	-	-
		Cao	MgO	LOI	S %	FC %	Ash %	VM	GCV Kcal/Kg
5	Coke Breeze / Coal	-	-	-	<0.5	85	Max. 8%	4%	7400

Based on the raw material analyses, the calculated chemical composition of pellet is furnished below.



Table no 7: Constituents & Quality of Pellet

Constituents	Value (%)
Fe	63.5%
SiO ₂	5% to 8%
Al ₂ O ₃	1.5 to 2.5%
CaO	0.6 to 0.8%
MgO	0.2 to 0.3%
Basicity	0.1 to 0.14

x) Quality of feed unit

Based on experience of utilization of Indian iron ore fines in the existing Indian pellet plants, the expected major mechanical and metallurgical, properties of finished pellets are placed below.

Table no 8: Pellet Mechanical & metallurgical properties

Sl.	Item	Value
1	Size 8- 16 mm & +16 mm	95 % & 5 %
2	MPS of pellet	10.5 to 12.5 mm
3	Cold Crushing Strength	200 to 220 Kg / pellet
4	ASTM Tumbler index (+6.35 mm)	95 to 98 %
5	Abrasion Index (-0.5 mm)	2 to 5%

Specific Consumption of Raw Materials and Services expected quality of Iron Ore Processing unit, The specific consumption of raw materials, fuel, power, water and other services estimated for the proposed pellet plant is furnished below.

Table no. 9: Pellet Plant - Raw Material

Sl.	Raw Material	Qty per Annum in MTPA	Source of Raw materials	Distance to the Plant in Km
1	Iron ore fines	5 MTPA	NIOM Captive & Other Mines	Through DHPC & By road.
2	Bentonite	36000 TPA	Gujarat	2000 Km
3	Coke breeze	24000 TPA	Imported from Australia / Russia	-
4	Limestone	24000 TPA	Lokapur, Karnataka	350km
5	Dolomite	24000 TPA	Lokapur, Karnataka	2000 km

Table no.10: Pellet Plant & Iron Ore processing Unit - Service Consumptions / ton of pellet

Sl.	Raw Material	Per ton
1	Make up Water	0.25 M3
2	Electric Power	78 WH



3.7 Resource optimization/ recycling and reuse envisaged in the project, if any, should be briefly outlined.

i) Iron Ore Utilization

The Beneficiation Plant is designed to upgrade the available low grade Fe ROM (Iron Ore) to grades that can be used in sinter making / Blast Furnace / DRI in steel making industry.

ii) Tailing Utilization

Tailings will be stored temporarily within the project site. It is proposed to dispose the tailings to the nearby Cement Industries, Brick, Tiles, Paver Manufactures, the water recovered is recirculated in the plant. MSPL identified area of 95.95 Ha (237.11 Acres) at Ankammanahal village surrounding at a distance of about 7.5 kms from project site for future storage of tailings. The tailings will be transported in a slurry form and subjected to filtration and cake will be stocked.

iii) Water Utilization

A comprehensive water supply scheme for supplying water to various units of Iron ore processing unit, pellet plant complex and other services facilities has been envisaged. The total fresh water requirement from the source for the proposed plant complex has been estimated as 2491 KLD and which will be met by ground water available in the area, from existing natural water bodies near to proposed site & Rain water harvesting. However detailed comprehensive hydrogeological studies are under way to finalize the source of the raw water for proposed plant and necessary approval shall be taken from Karnataka Ground Water Authority (KGWA) .

3.8 Availability of water its source, Energy/ power requirement and source should be given.

i) Water Requirement

A comprehensive water supply scheme for supplying water to various units of Iron ore processing unit, pellet plant complex and other service facilities has been envisaged. The total freshwater requirement from the source for the proposed plant complex has been estimated as 103.75 m³/hr.

Table 11: Water Requirement Break-up

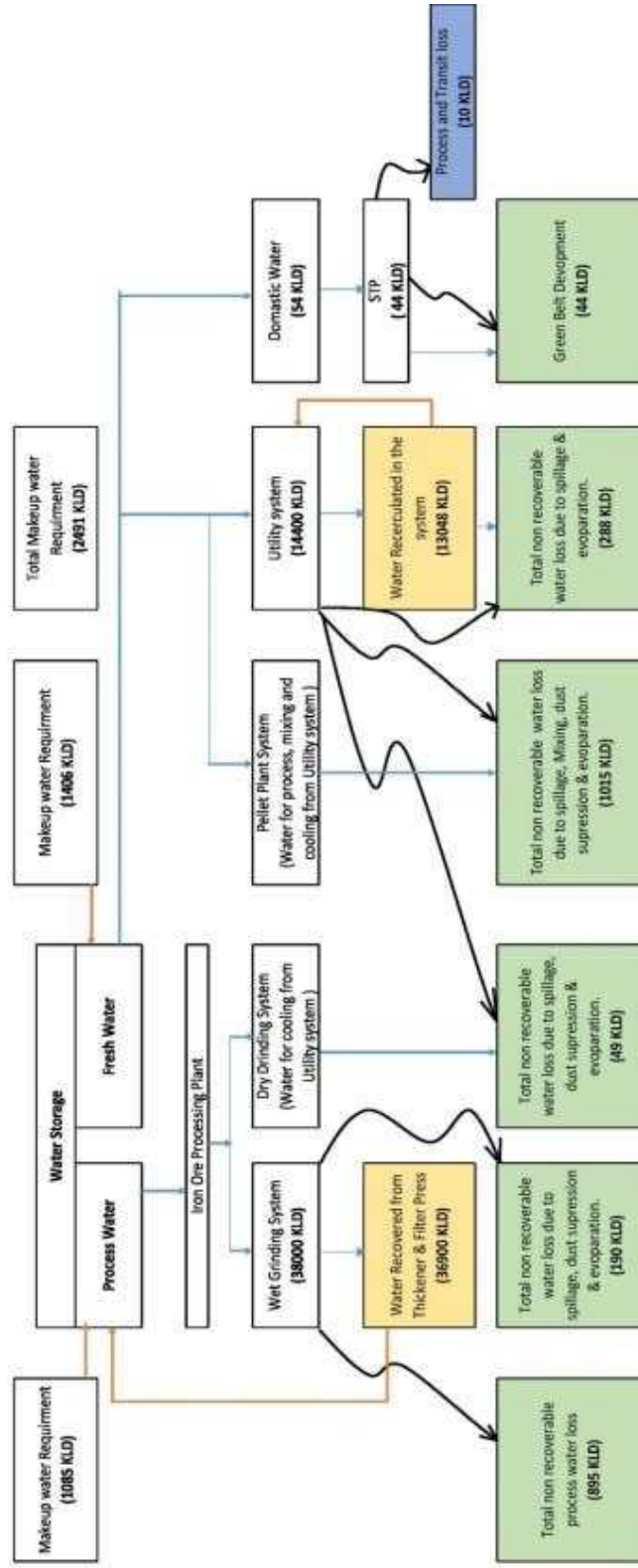
Sl.	Description	Make up requirement m ³ /hr
1	Iron Ore Processing Plant	47.20
2	Pellet Plant	42.30
3	Drinking water & Utility	14.25
	Total Water Requirement	103.75

Fig No 6 shows the detailed water balance chart



PRE-FEASIBILITY REPORT OF IRON ORE PROCESSING PLANT & PELLETIZATION PLANT, INTEGRATED WITH DOWNHILL PIPE CONVEYOR OF M/s. MSPL LTD

Fig 6: Detailed Water Balance Chart





To conserve the fresh water requirement the major water consumption for the feed preparation unit has been envisaged to be met from the slurry filtrate received from the proposed pellet plant and tails filtration unit. Suitable water recirculation circuits have been adopted to meet the various processes and cooling water needs

i) Power Requirement and Source

The power requirement of ~40 MW for the proposed plant has been envisaged to be made available from Kudligi 220 KV grid substation of State Electricity Board of Karnataka. This project is also envisaged / being Planned to use solar power 100 MW &/or Wind Power 60 MW at an investment of 350 Cr &/or 410 Cr Appx, This will make the project to a Green Manufacturing unit .

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

i) Waste generated

The type of waste that would be generated due to operation and maintenance of the Beneficiation Plant include 1. Tailings, 2. Hazardous waste and 3. Metal scrap, details of which is given below.

a) Tailing generated from Beneficiation Plant

The tailing solids generated from the Beneficiation Plant will be about 100-150 tonnes/hr depending on the quality of Iron ore.

Tailing Management

Tailings will be stored temporarily within the project site. It is proposed to dispose the tailings to the nearby Cement Industries, Brick, Tiles, Paver Manufactures, The water recovered is recirculate in the plant. MSPL identified area of 95.95 Ha (237.11 Acres) at Ankammanahalli village surrounding at a distance of about 7.5 kms from project site for future storage of tailings. The tailings will be transported in a slurry form and subjected to filtration and cake will be stocked.

b) Hazardous Wastes

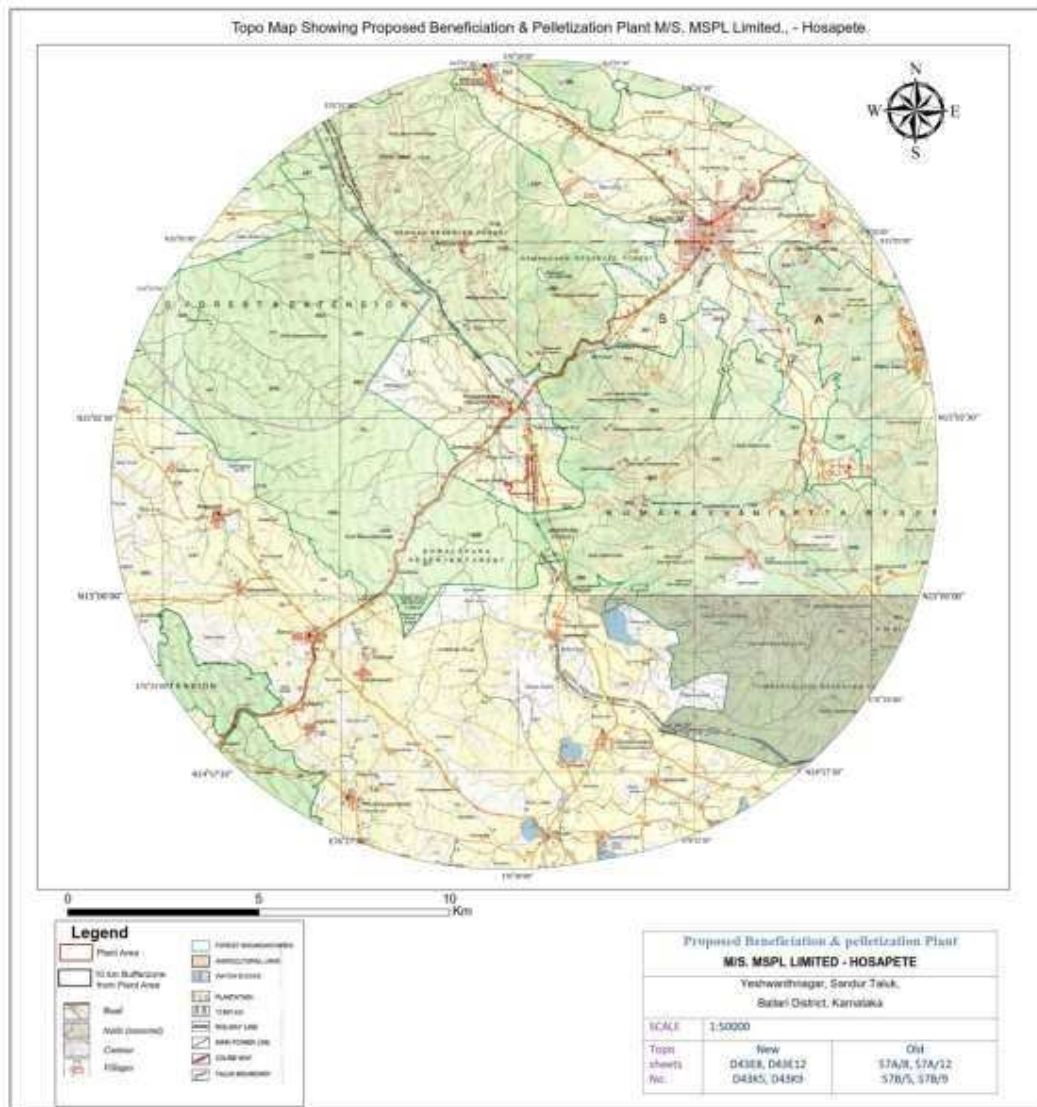
Used oil and grease wastes will be generated at a maximum of about 10 metric tonnes per annum from Pump area, Workshop, DG room, etc., while not more than two metric tonnes of waste/residue containing oil will be generated during the operations. The generated used oil will be stored in leak proof containers under covered shed followed by its disposal to the Authorized Recycler. The waste/residue containing oil will be disposed to the Authorized Recycler or to the nearby Common Hazardous Waste Treatment Storage Disposal Facility available.



PRE-FEASIBILITY REPORT OF IRON ORE PROCESSING PLANT & PELLETIZATION PLANT, INTEGRATED WITH DOWNHILL PIPE CONVEYOR OF M/s. MSPL LTD

4.3 Topography (along with map).

The proposed plant will be located within Latitude Latitude N 15° 01'26.00" to N 15° 01' 57.3" Longitude (East) : E 76° 29' 47.10" to E 76° 30' 12.0", that is at an elevation of about 630AMSL on the Western side of the Plant boundary with a gentle slope towards the Eastern side of the boundary having elevation of about 625AMSL. The Key plan showing the project area is shown below **Fig No 7** .





Drainage

The general topography of area showing Easterly to westerly sloping condition. The proposed plant site area is traversed by 3 seasonal drains flowing with a rough trend of South East to North West direction forming the main local drainage pattern of the area. The drainage of the terrain will be kept intact and underground to keep the seasonal drain live and accordingly plant will be constructed.

4.4 Existing land use pattern (agriculture, non-agriculture, forest, water bodies (including area under CRZ)), shortest distances from the periphery of the project to periphery of the forests, national park, wild life sanctuary, eco sensitive areas, water bodies (distance from the HFL of the river), CRZ. In case of notified industrial area, a copy of the Gazette notification should be given.

This project does not attract special conditions like CRZ area. No nearest Wild Life Sanctuary available.

4.5 Existing Infrastructure.

It is a green field project and required infrastructure needs to be developed.

4.6 Soil classification

The Sandy loam soil mixed with black and grey soil occurs along the stream beds. These are originated from gneisses and granites. They are permeable and mildly alkaline in nature. The thickness of the soil varies from 0.2 to 1.00m.

4.7 Climatic data from secondary sources.

Climate is hot summers with high humidity and mild winters. The details of the metrological data of the proposed plant site area are as follows.

Air Temperature

Maximum	: 43.0 degree C
Minimum	: 22.0 degree C

Relative Humidity

Maximum	: 95 %
Minimum	: 38 %

Rainfall

Average rainfall	: 870.7mm
Annual Rainfall	: 443-1420 mm



Wind

Predominant wind direction : Southwest to Northeast

The rainfall is mostly (60.22 %) confined to the period from June to September. During SW monsoon, October to November receives 22.21 % of the annual rainfall and another 17.57 % of rainfall occurs as sporadic in the other months of the year.

4.8 Social Infrastructure

Within the buffer zone of 10 km radius around this plant, there are 17 villages and 1 town with a total population around 93652 (Census 2011). The main occupation here is agriculture. Additionally, majority of the people depend upon mining and related activities such as direct and indirect employment, transportation, garage, shops etc.

With this proposed opening of the plant there will be increase in employment opportunities and other auxiliary service industries indirectly there by increasing the financial status of villagers, improvement in literacy rate by improving the schooling facility, improvement in the health status by establishing health care units, & health camps in the villages, improvement in infrastructure by repair & maintenance of village roads, establishment of business center near to the project site are expected.

Table. No. 13 The demographic data of villages in 10 kms radius buffer zone as per 2011 census

Sl.No	Villages	Total Population
1	Yeswantnagar	6847
2	Somalpur	859
3	Ankamanahalli	2462
4	Devaramallapur	2609
5	Hirehalu	1179
6	Kodihalli	1807
7	Bandri	7106
8	Mallapur	2546
9	Susechnagar	4977
10	Bhujangnagar	5535
11	Lakshmipur	1874
12	Krishnanagar	7027
13	Narsapur	1092
14	Nandihalli	2259
15	Dawalatpur	2764
16	Nidagurti	3278
17	Subbrayanahalli	2000
18	Sandur(Town)	37431
	Total	93652



5. Planning Brief

5.1 Planning Concept (type of industries, facilities, transportation, etc) Town and Country Planning / Development authority Classification

Iron Ore Processing & Pellet Plant is an independent unit to be established in an area of about Area 21.62 Ha Non-Agricultural land converted for industrial use, the proposed area 4.82 Ha will be converted after acquiring for industrial purpose and together Total 26.44 Ha area, Integrated with Downhill Pipe Conveyor of 16.58 Ha (Forest Land 13.98 Ha & Non-Forest Land 2.6 Ha). The concept on selecting such a location is that at least 10 iron ore mining leases are present within 10 Km radius, which could cater raw material for running the plant if required.

5.2 Population Projection

The total manpower required to run the plant is about 432 people. First preference will be given to the people staying in villages around the plant, wherein Skilled/semiskilled/unskilled personnel will be absorbed. In case there is non availability of such qualified people in the nearby villages, attempts will be made to get people from the next nearest village or from elsewhere. To the maximum extent, migration of semiskilled/unskilled workers in the area is not expected on mass level and demographic profile of the area will not change significantly. It is expected that the population in the nearby area will only be increased marginally. It is envisaged that the project would provide direct employment 432 and indirect employment to about 300 people.

5.3 Land use planning (breakup along with green belt etc).

Land use planning and proposal is explained in Land Form, Land use and Land ownership, under Site Analysis section.

5.4 Assessment of Infrastructure Demand.

- a) Water requirement for the Plant will be met from the bore wells to be developed for tapping ground water which is in “safe zone” category.
- b) The power requirement for the Plant will be met from the existing local power grid of 220KV sub-station.
- c) Apart from existing infrastructure, facilities like thickeners, tailing pipeline, water pipeline and associated infrastructure will be repaired and maintained during the operation of the plant.

5.5 Amenities/Facilities.

New amenities are proposed to cater to the requirement.



6. Proposed Infrastructure

6.1 Industrial Area (Processing Area).

The Iron Ore Processing & Pellet plant production at a throughput capacity of 5.00MTPA & 3.0 MTPA respectively, some of the infrastructure proposed are given below.

a) Truck Unloading System

An area will be earmarked for the unloading and stacking additional of raw material brought in to be beneficiated if required. Such material will be brought in from nearby mining leases by 25 tonner trucks.

b) Raw Material Handling

Raw material handling within the plant premises will be done by using heavy earth moving machinery and feeding of the ore to the beneficiation plant will be through 10/ 35 tonner trucks.

c) Water pipeline

Water pipeline along with plant associated electrical and communication system will be established for smooth working of the Iron Ore Processing & Pelletization Plant.

6.2 Residential Area (Non Processing Area).

There are no settlements or inhabitants within the project area. Workmen of the Iron Ore processing and pellet plant live in the nearby villages.

6.3 Green Belt.

Some portion of the beneficiation plant area is vegetated. However, there is scope of green belt development in an area of about 9.82ha inside the plant area. Plantation will be carried out as per the CPCB guidelines.

6.4 Social Infrastructure.

For the benefit of the local community, the company provides employment in the form of direct and indirect employment. The company shall extend social benefits like drinking water, health care measure, HIV awareness programs, promotion of cultural & religious activities, sports and training in self-employment scheme, to the neighboring villagers in addition to his own employees. Repair & maintenance of the transportation roads, maintenance of school buildings, awarding scholarships for higher studies to meritorious students, supply of free books & uniforms to the students shall be taken up.

6.5 Connectivity (Traffic and Transportation Road/Rail/Metro/Water ways etc)

The existing plant is well connected by road, & rail.



6.6 Drinking Water Management (Source & Supply of water)

There are existing wells close to the proposed plant which caters drinking water to the workers employed in the plant. The water is treated before distribution within the plant premises.

6.7 Sewerage System.

Domestic waste waters from toilets and canteen is treated through Septic tank and soak pit system.

6.8 Industrial Waste Management.

The waste oil/grease generated is collected in leak-proof MS barrels and sealed with caps. The barrels are temporarily stored in an earmarked area having impervious floor with shed. Such oil collected is disposed to an authorized recycler.

6.9 Solid Waste Management.

Industrial solid wastes such as tailings will be stored temporarily within the project site and tailings will be given to nearby Cement Industries, Brick, Tiles, Paver Manufactures, etc

6.10 Power Requirement & Supply / source.

The power requirements for the proposed plant is about 40 MW which have been envisaged to be made available from nearest Power source (Kudligi) 220 KV grid substation of State Electricity Board of Karnataka. The Kudligi substation is ~27 km away from the proposed site. The Main Receiving Sub Station (MRSS) for both the proposed plants will be located within proposed plant complex.

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 laborers (a brief outline to be given).

No R & R involved. Majority of land is already been acquired and in possession for the project by the MSPL Limited

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).

Execution of project will be completed in 2 years period with meticulous planning , monitoring and control during engineering , procurement and execution stage.

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

Capital Cost Deployed for project



PRE-FEASIBILITY REPORT OF IRON ORE PROCESSING PLANT & PELLETIZATION PLANT, INTEGRATED WITH DOWNHILL PIPE CONVEYOR OF M/s. MSPL LTD

The project cost for the proposed 5.00 MTPA Iron Ore Processing Plant & 3.0 MTPA Pellet Plant over an area of 26.44 Ha, Integrated with Downhill Pipe Conveyor over an area of 16.58 Ha is estimated about **Rs 1136 Cr** for plant including **160 Cr for down-hill conveyor**.

The total estimated capital investments and the broad break up is summarized here under

Table No.14: Cost Break up for project

Sl.	CAPEX Description	Total
1a	Land & Building Development	55 Cr
1b	Statutory Lease & Infra charges	110 Cr
1c	Upfront Fees (5 yr. Amortization)	71 Cr
1d	Plant & Machinery	860 Cr
1e	Furniture & Office Enabling	4 Cr
1	Total Pellet Plant & IOBP	1100 Cr
1	Total foe DHPC & Mining Eqp	160 Cr
2	Interest During Construction	56 Cr
3	Total CAPEX Deployment for the project	1316 Cr

9. Analysis of proposal (Final Recommendations)

(i) Financial and social benefits with special emphasis on the benefit to the local people including tribal population, if any, in the area.

MSPL. is a mining company operating various iron ore mines in the State of Karnataka.. The proposed beneficiation and pellet plant will upgrade the non-saleable low-grade ore to a saleable ore concentrates thereby assisting in mineral conservation as well as helping in value addition to the product. The value addition will further contribute to the state exchequer.

In its mining activities and plant , the company prioritizes engaging workers from the surrounding villages for employment. Benefit due to the beneficiation & pellet plant will provide further employment to the people inhabiting the nearby villages. The project will thereby generate direct/indirect employment in substantial numbers. Engaging local contractors and material suppliers for activities such as plantation, cleaning, construction activities, etc. will help the small-time businessman in the locality. Secondary development in the form of garages, guest houses/hotels, restaurants, utility shops, new schools, transport operators, house rentals, etc. Such are the beneficial factors that would contribute in upgrading the lives of the locals residing in the nearby villages.

It is therefore summarized that the proposed plant helps in mineral conservation and improvement in the lives of the neighboring villagers through employment, business and health care and education facilities etc.

Annexure No-1

Land details of Somlapura Village Sandur					
Sl.No.	Sy.No.	Area (Acres)	village	Name of land owner	Name of the Ex-land owner
1	110/A2	4.35	SOMALAPUR	MSPL Limited	M/s SMMPL
2	112	2.65	SOMALAPUR	MSPL Limited	M/s SMMPL
	153	6.58	SOMALAPUR	MSPL Limited	M/s SMMPL
3	114	9.28	SOMALAPUR	MSPL Limited	M/s SMMPL
4	115	9.85	SOMALAPUR	MSPL Limited	M/s SMMPL
5	118	1.75	SOMALAPUR	MSPL Limited	M/s SMMPL
6	150/A	0.06	SOMALAPUR	MSPL Limited	M/s SMMPL
	154/A	0.74	SOMALAPUR	MSPL Limited	M/s SMMPL
	155/A	0.66	SOMALAPUR	MSPL Limited	M/s SMMPL
7	151/A	4.93	SOMALAPUR	MSPL Limited	M/s SMMPL
8	152	3.25	SOMALAPUR	MSPL Limited	M/s SMMPL
9	169/AB	2.76	SOMALAPUR	MSPL Limited	M/s SMMPL
10	169/A	3.00	SOMALAPUR	MSPL Limited	M/s SMMPL
11	170/A	3.57	SOMALAPUR	MSPL Limited	M/s SMMPL
Total		53.43			

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Proposed Land details of Somlapura Village Sandur				
Sl.No.	Sy.No.	Area (Acres)	village	Name of land owner
1	136	5.15	SOMALAPUR	Venkatesh Rao S/O bhimasena
2	137	6.77	SOMALAPUR	Mohammad haji malang
Total		11.92		

Total Land is 65.35 Acres (26.44 Ha)

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Proposed Dump yard lands to be acquired				
Sl.No.	Sy.no	Extent (Acres)	Land owner	Village
1	231/A	2.79	Kristofer farson s/o Late Thyodar farson	Ankamanahall
2	231/B	7.36	Kristofer farson s/o Late Thyodar farson	Ankamanahall
3	232	3.20	Kristofer farson s/o Late Thyodar farson	Ankamanahall
4	234	0.71	Kristofer farson s/o Late Thyodar farson	Ankamanahall
5	268	2.43	Kristofer farson s/o Late Thyodar farson	Ankamanahall
6	269	2.25	Kristofer farson s/o Late Thyodar farson	Ankamanahall
7	270/A	1.16	Kristofer farson s/o Late Thyodar farson	Ankamanahall
8	271	0.90	Kristofer farson s/o Late Thyodar farson	Ankamanahall
9	273	1.05	Kristofer farson s/o Late Thyodar farson	Ankamanahall
10	274	4.09	Kristofer farson s/o Late Thyodar farson	Ankamanahall
11	275	2.10	Kristofer farson s/o Late Thyodar farson	Ankamanahall
12	276/B	2.10	Kristofer farson s/o Late Thyodar farson	Ankamanahall
13	276/C	2.00	Kristofer farson s/o Late Thyodar farson	Ankamanahall
14	276/D	1.90	Kristofer farson s/o Late Thyodar farson	Ankamanahall
15	276/E	2.00	Kristofer farson s/o Late Thyodar farson	Ankamanahall
16	277	1.22	Kristofer farson s/o Late Thyodar farson	Ankamanahall
17	278	1.13	Kristofer farson s/o Late Thyodar farson	Ankamanahall
18	280/A	0.91	Kristofer farson s/o Late Thyodar farson	Ankamanahall
19	280/B	2.21	Kristofer farson s/o Late Thyodar farson	Ankamanahall
20	281	1.51	Kristofer farson s/o Late Thyodar farson	Ankamanahall
21	282	4.30	Kristofer farson s/o Late Thyodar farson	Ankamanahall
22	283	3.07	Kristofer farson s/o Late Thyodar farson	Ankamanahall
23	279	1.04	Kristofer farson s/o Late Thyodar farson	Ankamanahall
Total		51.43		

Proposed Dump yard lands to be acquired				
Sl.No.	Sy.no	Extent (Acres)	Land owner	Village
1	266	1.85	Govt Land	Ankamanahall
2	272	8.10	Govt Land	Ankamanahall
3	276/A	3.50	Govt Land	Ankamanahall
4	284/A	2.43	Govt Land	Ankamanahall
5	284/B	6.38	Govt Land	Ankamanahall
6	290	5.59	Govt Land	Ankamanahall
7	291	5.73	Govt Land	Ankamanahall
8	292	5.87	Govt Land	Ankamanahall
9	236	8.65	Govt Land	Ankamanahall
10	230/A	1.41	Govt Land	Ankamanahall
11	230/B	0.37	Govt Land	Ankamanahall
12	260	3.00	Govt Land	Ankamanahall
13	263	3.00	Govt Land	Ankamanahall
14	294	1.73	Govt Land	Ankamanahall
15	295/A	4.43	Govt Land	Ankamanahall
16	295/B	1.68	Govt Land	Ankamanahall
17	296	0.40	Govt Land	Ankamanahall
18	297/A	5.13	Govt Land	Ankamanahall
19	297/B	2.79	Govt Land	Ankamanahall
20	297/C	2.43	Govt Land	Ankamanahall
21	228	4.85	Govt Land	Ankamanahall
22	285	0.75	Govt Land	Ankamanahall
23	286	12.42	Govt Land	Ankamanahall
24	287	2.25	Govt Land	Ankamanahall
25	289	0.13	Govt Land	Ankamanahall
Total		96.87		

Proposed Dump yard lands to be acquired				
Sl.No.	Sy.no	Extent (Acres)	Land owner	Village
1	233/A	4.41	Iligi Koitrappa S/o Late KENCHAPPA	Ankamanahall
2	233/B	0.61	D M Shailaja W/o M Siddaramaiha	Ankamanahall
3	270/B	0.54	PS Srinivas murthy	Ankamanahall
4	284/B	3.00	Bagyalakshmi w/o kumaraswamy	Ankamanahall
5	290	2.60	Nigappa S/o Galeppa	Ankamanahall
6	291	2.00	Goudra mallappa s/o kumareppa	Ankamanahall
7	236	2.50	T Anjinappa	Ankamanahall
8	237/A	3.83	T Subbayya	Ankamanahall
9	237/B	1.89	Marenma W/o Basappa Joint	Ankamanahall
10	230/B	2.50	Sannayya	Ankamanahall
11	235/B	2.22	Shylaja Sidramayya & Kere	Ankamanahall
12	260	3.46	Shylaja Sidramayya & Kere	Ankamanahall
13	263	6.29	J Nagappa	Ankamanahall
14	264/A	1.83	Ramappa	Ankamanahall
15	264/B	2.77	J Siddayya	Ankamanahall
16	265	3.79	Kumaraswamy	Ankamanahall
17	293	4.32	Gangamma and Joint	Ankamanahall
18	295/A	8.50	Yeriswamy and Joint	Ankamanahall
19	229	2.93	G Goudappa Mallapura	Ankamanahall
20	285	14.5	V Huligemma Joint	Ankamanahall
21	286	5	Marekka	Ankamanahall
22	288	5.32	Lakshminarayana Rao	Ankamanahall
23	289	4	V Thinnappa	Ankamanahall
Total		88.61		

Land Owner	Extent (In Acres)
Kristofer farson	51.43
Govt Land	96.87
Private Land owners Land	88.61
Total	237.11

Total Area is 95.95 Ha

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