

**Nov'  
2018**

# **EXECUTIVE SUMMARY**

**OF**

**M/s. Peddamadeena Semi Precious Stone Mine  
of**

**Sri Beela Srinivasa Rao**

**Site Address**

**Extent: 30.81 Ha**

**Sy.No. 75 & 81/P, Peddamadeena (V)**

**Butchayyapeta (M)**

**Visakhapatnam District, A.P**

**Production capacity**

**Mining of Semi Precious Stone – 110.0Kg/Annum**

**Baseline data collected: March' 2018 to May'2018**

**Sector: 01 – Mining of minerals, Cat –B**

**PREPARED BY**

**SV ENVIRO LABS & CONSULTANTS**

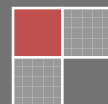
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**EXECUTIVE SUMMARY**

**1.0 INTRODUCTION**

The applicant Sri B. Srinivasa Rao, S/o Suryanarayana, resident of Visakhapatnam, is a business man. The Government of Andhra Pradesh has sanctioned the prospecting licence for SPS over an extent of 30.81 ha for a period of 2 years G.O.Ms.No.28, dated:13.02.2007. The lease deed executed vide Proc No. 541/M/2003 dated 09.03.2007. The renewal of mining lease operations for Semi Precious Stones over an extent of 30.81 Ha for a period of 20 years from 03-12-2009 to 02-12-2029 vide proceeding No. 541/M/03, dated: 03.12.2009 orders issued by ADM&G, Anakapalli.

The area is having lot of prospect for SPS, hence they have interested in taking mining lease. The SPS available in this area is very costly and even small quantity also carries lot of value and it is economically viable. Therefore the applicant has applied for Mining Lease. The Govt. of AP considered the application basing on recommendation of the Director of Mines and Geology, Hyderabad and asked the applicant vide their letter No. 15659/M-III(2)/2007-1, dated 16-01-2008, to submit the approved mining plan to consider his mining lease application for sanction of lease, as required under rule 22 (4) of MCR, 1960 for an extent of 30.81 Ha area. Hence the mining plan was prepared under 'very small 'B' category manual mines' (employed below 24 workers without blasting) for Semi Precious Stones in an area of 30.81 Ha in Sy. Nos. 75 (26.25 Acres – Patta land) & 81/P (49.88 Acres – Government land) of Peddamadeena village, Butchayyapeta Mandal, Visakhapatnam District of AP State.

In order to fulfill the further necessary requirements for obtaining the Environmental Clearance for this mining activity, the proponent has initiated steps to carryout required Environmental Impact Assessment (EIA) study in and around the proposed mine lease area.

This assessment is performed to identify the likely Environmental Impacts and based on the findings; an effective Environmental Management Plan is in place as per the EIA Notification 2006 general guidelines and the approved ToR issued by APSEIAA.

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The standards set by the Central Pollution Control Board (CPCB) and the State Pollution Control Board (SPCB) will be met and adhered to.

This study covers an area surrounding the project site with a radial distance of 10 km from the proposed mining lease area. The baseline monitoring was carried out during the Period of March '18 to May '18.

#### 1.1 SALIENT FEATURES OF THE PROJECT SITE

The mine lease area falls under the Topo sheet No. 65/K/13 bearing following details:

Topo sheet No.	: 65/K/13
Latitude	: 17° 45' 9.85" N
Longitude	: 82°50' 42.26"E

#### Details about Project site

Nature of the project	M/s. Sri Beela Srinivasa Rao Mining of Semi Precious Stone
Extent	30.81 Ha
Capacity	110Kg/Annum
<b>Location of the project</b>	
District & State	Visakhapatnam District, A.P.
Mandal	Butchayyapeta
Village	Peddamadeena
<b>General climatic conditions</b>	
Maximum Temperature	37 <sup>0</sup> C
Minimum Temperature	21.6 <sup>0</sup> C
Annual average rain fall	1000 mm
Predominant wind direction	SW
<b>General location details</b>	
Nearest habitation	Aithampudi village at a distance of 0.8 km from the mine area.
Nearest railway station	Anakapalli Railway station at a distance of 18.48 km from

**M/S. PEDDAMADEENA SEMIPRECIOUS STONE MINE OF SRI BEELA SRINIVASA RAO**

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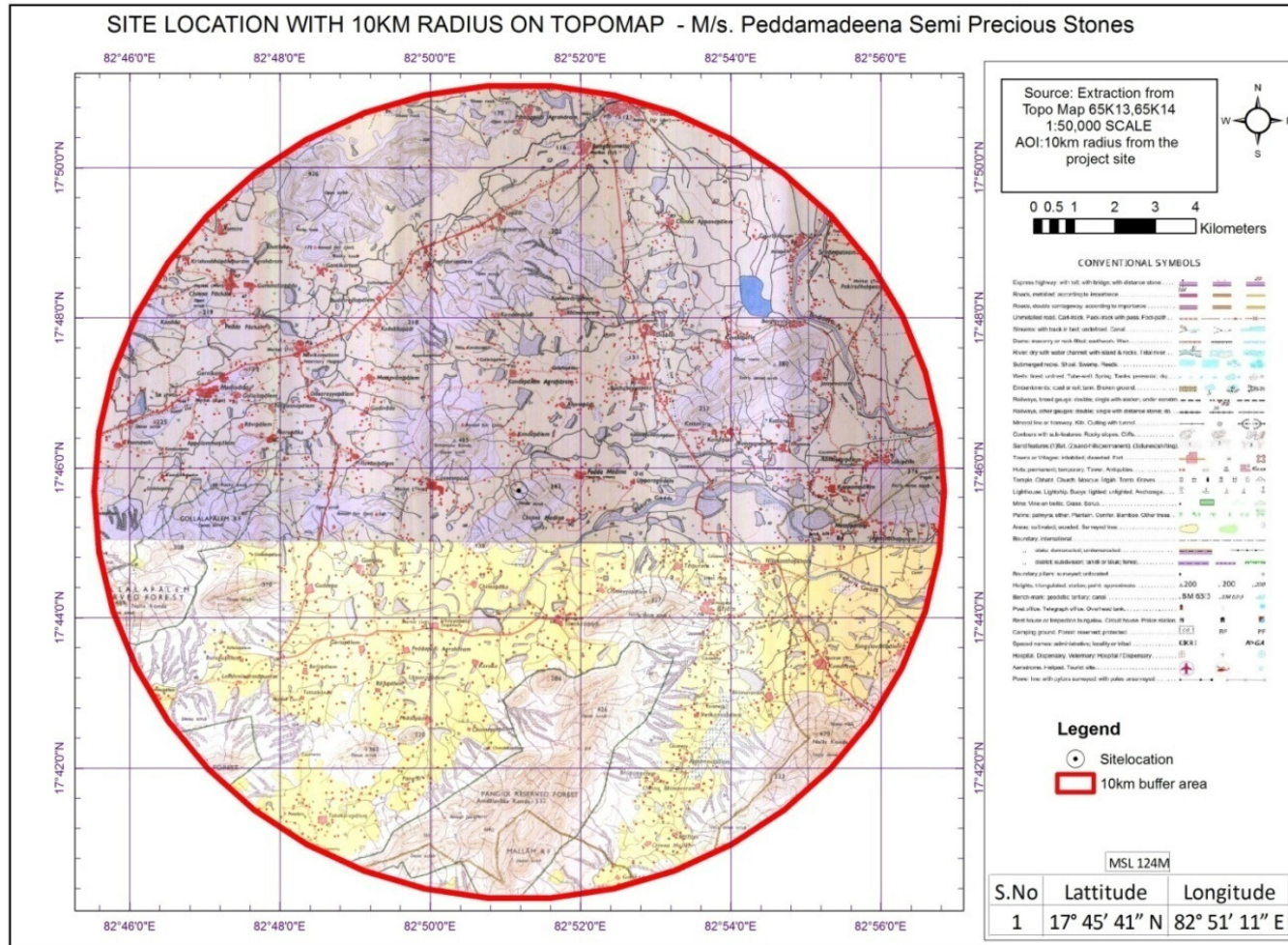
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	the mine area
Nearest High way	NH16
Archaeological/Historically important site	None within 10 km radius
Nearest Protected forest/Reserved forests	Pangidi RF at 5.5 km from mine area Gollalapalem RF at 7.69 km from mine area.

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### TOPO SHEET (10 KM RADIUS)



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**1.2 DETAILS OF PRODUCTION**

**Year wise Production and Development Programme**

<b>Year</b>	<b>0.0003% Production in Kgs</b>	<b>99.9997% Waste (m<sup>3</sup>)</b>	<b>Ore to OB ratio</b>
1 <sup>st</sup>	90.0	11840.964	1:329
2 <sup>nd</sup>	82.5	10741.967	1:326
3 <sup>rd</sup>	105.0	13885.958	1:331
4 <sup>th</sup>	110.0	14409.956	1:327
5 <sup>th</sup>	110.0	14409.956	1:327
<b>Total</b>	<b>497.5</b>	<b>65288.804</b>	<b>1:326</b>

**Mineable Reserves:**

Total Geological Reserves of Probable category i.e., 5610 Kg is considered as Mineable Reserves. With the production rate of 110 kg per annum, anticipated life of the mine is 56 years.

**Geological Reserves**

<b>Catg.</b>	<b>L (m)</b>	<b>AW (m)</b>	<b>AD (m)</b>	<b>Vol (m<sup>3</sup>)</b>	<b>99.9997 % Waste (m<sup>3</sup>)</b>	<b>0.0003 % SPS Vol (m<sup>3</sup>)</b>	<b>× 2.5 BD SPS. MT</b>	<b>Rec SPS in Kg</b>	<b>UNFC Code</b>
PRB	440	170	10	748000	747997.75	2.244	5.610	5610	121
PRB	440	170	5	374000	373998.87	1.130	2.825	2825	333
<b>Total</b>				<b>1122000</b>	<b>1121996.6</b>	<b>3.400</b>	<b>8.500</b>	<b>8500</b>	

**1.3 ANTICIPATED LIFE OF THE MINE**

Total applied area	308100m <sup>2</sup>
Total mineral bearing area	74800 m <sup>2</sup>
Life of the mine (5610/100 = 56.1, say 56 years)	56 years

**EXECUTIVE SUMMARY****1.4 MINING PROCESS**

In first 5 years period the applicant is intended to undertake development work such as removal of waste during production etc. simultaneously along with production. In this area, it is proposed to commence mining at central part of the area by utilizing existing pit at southern side of deposit, within N 300-600 & E 200-400 grids in first five years period by undertaking open cast manual mining method by digging 2-3 benches of varying height of 0.75-1.5m, in an area of 4800m<sup>2</sup> by utilizing mining appliances such as crow bars and spade. The mining benches will move from Southern side to Northern side. The material will be collected in gammelas (iron basket) and washed in stored water by manual giggering method, so the SPS seen physically will be picked-up (separated). After complete excavation, the SPS will be safeguarded in small bags by the end of the day it will be kept in locker made available in mine site. At the end of fifth year 2.5-3m depth pit will be formed. In 5 years period 65288.804m<sup>3</sup> of waste will be generated, that will be stacked at north-eastern side of the area.

**1.5 EXTENT OF MECHANIZATION**

It is proposed to use open case manual method of operations. Excavation shall be done by using crow bars.

**Machinery Requirement**

<b>S. No.</b>	<b>Machineries</b>	<b>Existing Nos.</b>	<b>Proposed Nos.</b>	<b>Total</b>
1.	Excavator		1	1
2.	Dozzer	-	1	1
3.	Tractor / Tipper	-	1	1
4.	Water tanker (mini)	-	1	1
5	Rotary screen (washing plant 5MTP/day fitted with 3hp motor & gear box	-	1	1
<b>Total</b>		-	<b>5</b>	<b>5</b>

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### **1.6 PROPOSED MANPOWER**

By this project many people will be benefited for their livelihood and get employment in this remote area.

#### **Employment Details**

<b>S.No</b>	<b>Description</b>	<b>Quantity (No's)</b>
1	Mine Manger(Cert. of Competence of Permit Manage) / Male	1 No.
2	Mining Engineer (Part time) B.E. (Diploma in Mining)	1 No.
3	Mining Supervisor / Clerk	1 No.
4	Mine Watchman	1 No.
5	Mining Labour ( On contract Basis)	20 No.
	<b>Total</b>	<b>24</b>

### **1.7 WATER SUPPLY**

Water requirement for the project is mainly for maintaining the green belt, for sprinkling on the haulage roads to mitigate dust emissions and for domestic purposes. The total water requirement is 20.0 KLD. The required water is drawn from the nearby villagers.

### **1.8 BASELINE DATA**

The study area covers an area of 10 km radius around the proposed mining site. The study includes detailed characterization of various Environmental components such as Air, Water, noise, Land and Socio-Economic within the study area.

#### **OBJECTIVES OF STUDY AREA**

- To assess the existing base line data of Air, Water, Noise, Land and Socio-economic environment.
- To evaluate the beneficial and adverse impacts of the proposed activity.
- To prepare an Environmental Management Plan (EMP) detailing control technologies and measures to be adopted for minimizing the impacts and improving the Environmental Quality.



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- To predict the incremental levels of pollutants in the study area due to the proposed mining activity.
- To prepare post mining programme for monitoring and regulating Environmental parameters.

### **1.8.1 ENVIRONMENTAL SETTINGS:**

#### **Air Environment:**

To know the existing ambient air quality, Eight sampling stations with in Core and buffer zone were identified and monitored for pollutants like, Particulate Matter – 10 (PM<sub>10</sub>), Particulate Matter – 2.5 (PM<sub>2.5</sub>), SO<sub>2</sub>, NO<sub>x</sub> and Free Silica. For this sampling calibrated through samplers of PM<sub>2.5</sub> & PM<sub>10</sub> dust samplers.

The Ambient air quality measured at mine site and surrounding stations with in the study zone showed the following maximum and minimum concentrations of the pollutants. It may be seen that all the parameters i.e., PM<sub>10</sub>, PM<sub>2.5</sub>, SO<sub>2</sub> and NO<sub>x</sub> are well within the range of 24 hr average of National Ambient Air Quality Standards. Silica was also monitored at all locations during the study period and was found to be Below Detectable limit.

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### **1.8.2 Noise Pollution:**

The Ambient noise levels monitored within the study zone show a minimum and maximum of Leq Day values of 52.4 dB(A) at location N1 and 54.9 dB(A) at location N2.

### **1.8.3 Water Environment:**

Ground water samples are collected from eight locations and surface water from two locations. All these samples are free from colour and pollutants.

#### **1.8.3.1 Summary of Ground water:**

The pH limit fixed for drinking water samples as per IS: 10500 is 6.5 to 8.5. During the study period, the pH of the groundwater was found varying between 7.1 and 7.5.

The desirable limit for total dissolved solids as per IS: 10500 is 500 milligrams per liter (mg/l). In groundwater samples collected from the study area, the total dissolved solids (TDS) were found to be varying between 476 mg/l and 583 mg/l. The TDS of all the samples were below the permissible limit of 2000 mg/l.

The desirable limit for Chloride is 250 mg/l as per IS:10500. The Chloride levels in the groundwater samples collected in the study area were ranging from 90 – 134 mg/l.

The desirable limit as per IS: 10500 for hardness is 300 mg/l where as the permissible limit for the same is 600 mg/l. In the groundwater samples collected from the study area, the hardness was found to be varying from 239 mg/l to 307 mg/l.

Fluoride is the other important parameter, which has the desirable limit of 1 mg/l and permissible limit of 1.5 mg/l. In the groundwater samples of study area the fluoride values were found to be within a range of 0.59 mg/l to 0.73 mg/l.

All the heavy metals in all samples were found to be below the permissible limits.

An overview of the results obtained reveals that none of parameters were found above the permissible limits of IS: 10500 Drinking Water Standards.

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### **1.8.3.2 Summary of surface water:**

- pH of the surface water collected was neutral with pH ranging from 7.2 -7.4
- TDS was found to be 204 mg/l to 211 mg/l. The tolerance limit of 1,500 mg/l as per IS:2296
- Total hardness was found to be 119 mg/l to 124mg/l
- Presence of Nitrate was recorded as 0.23 mg/l to 0.28mg/l
- DO was observed as 6.1 mg/l to 6.3 mg/l
- Total coliform in water was 760 MPN/100ml to 920 MPN/100ml The likely source of bacteriological contamination was due to the proximity to residential area
- All the heavy metals were found to be within below detectable limits.

### **1.8.4 Land Environment:**

Soil survey was carried out at 5 locations to assess the soil characteristics which include both physical and chemical details.

#### **Land Use Pattern:**

In the study area predominantly three crops are under cultivation i.e., Cashew, Mango & Paddy. The region is predominantly rural and suburban.

### **1.8.5 FLORA & FAUNA:**

No endangered species are found in the study area. No schedule – I species are found within 10km radius from the proposed project site.

### **1.8.6 SOCIO-ECONOMIC ENVIRONMENT:**

The operation of the proposed mining activity could result in elevation of living standards of the people in nearby villages as it will generate work for the unemployed and further will result in the upliftment of their socio-economic status. The Management has proposed to give preference to local people for recruitment of personal for mining operation. Therefore the impact on socio-economic Environment could be beneficial.

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### **1.9 RECLAMATION & REHABILITATION**

In the lease period of 20 years no reclamation is planned except fencing the working pit. Under reclamation programme, the applicant is proposed to undertake plantation in non-mineral zone.

### **1.10 PROJECT SCHEDULE AND COST ESTIMATES**

The Capital Cost is Rs. 180.0 Lakhs and the EMP budget is Rs. 51.35 Lakhs

### **1.11 ENVIRONMENT MANAGEMENT PLAN**

The Environment Management Plan envisaged for this mining activity is described hereunder with a strong commitment to follow best environmental practices to reduce the negative implication to make this project a sustainable development endeavor.

Environment Management Plan (EMP) is required to ensure sustainable development in the study area of the proposed Mine Lease Area.

#### **1.11.1 Air Environment:**

Mitigation measures proposed to maintain the air quality are as follows:

- ❖ Regular water sprinkling to suppress the dust on haul roads, service roads and mining face by truck mounted water tankers.
- ❖ Grading of haul roads, service roads time to time, to remove the accumulated dusty material will be done.
- ❖ Development of Green belt all around Plant and along mining area boundary.
- ❖ Periodical monitoring of air quality to take steps to control the pollutants.

#### **1.11.2 Noise Environment**

There will be intermittent noise levels due to vehicular movement and trucks loading. However the impact of noise on the surrounding area is likely to be minimal and appropriate mitigation measures will be adopted accordingly.

##### **Control Measures**

The Management Plan for controlling noise pollution is envisaged as follows.

- Selection of suitable machinery and equipment,
- Proper mounting of equipment,
- Providing noise insulation/padding wherever practicable and

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- Machinery will be fitted with properly designed noise acoustic silencers.
- Proper maintenance and periodic lubrication of noise generating parts of the machines.
- Provision of thick plantation in and around the mine is planned in order to reduce the noise and prevent it from reaching to surrounding habitation area.

### **1.11.3 Water Environment**

There will not be any waste water generation except domestic waste water, therefore no post waste water monitoring required.

#### **Water Pollution Management**

- In anticipation of seasonal streams and run-off in the core zone, channels and bunds would be constructed and maintained to avoid any erosion and contamination.
- The mine pit water collected due to rains will be utilized for water spraying on the haul roads and for watering plantation.

This water will be harvested for utilization in plantation watering, spraying on the haulage roads and mineral and waste dumps.

### **1.11.4 Socio-economic Environment and Safety**

The company management shall give preference to local people through both direct and indirect employment.

- It will provide ample opportunity to the locals to up-lift their living standards by organizing events that propagate mutual benefits to all, such as health camps, awareness campaigns, donations to poorer sections of society and downtrodden.
- Educational needs of the region will be improved by encouraging the workers to allow their children to attend schools.
- Sufficient funds shall be allocated for these and other emergency needs.
- Adequate supply of potable water to the workers will be made during the working hrs.

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- The mines department will supervise the safe working of the contractor and their employees. The working personnel will be provided with face masks, ear plugs, safety helmets and goggles in order to reduce health hazards.

The proponent will provide all necessary provisions stipulated under the Mines Act. In addition a Safety committee will be formed and manned by equal participants from Management and Workers.

- Personnel Protection Equipment (PPE) will be issued to each worker. Other safety equipments shall be used according to the nature of job involved.

### **1.12 ENVIRONMENTAL MONITORING**

Regular monitoring of various Environmental parameters shall be carried out to ascertain the following points,

- Status of air, noise, water, land pollution within the mining activity and in its vicinity;
- Generate data for predictive or corrective purpose in respect of environmental; and
- To assess and monitor Environmental impacts periodically.

### **1.13 SAFETY AND ENVIRONMENT**

- The management firmly believes in the concept of safety and environmentally sustainable growth. The authorities and staff are very much concern in Environmental issues.
- The management is going to develop scientifically designed green belt around the premises to mitigate air and noise pollution impacts on the surroundings.
- The management proposed to monitor ambient air as per APPCB guidelines.
- All the employees will be provided with personnel protective equipment
- The management will provide safety training to all employees periodically and regularly.

### **1.14 CONCLUSION**

- The management of Sri Beela Srinivasa Rao Semi Precious stones mining is committed to meet all stringent norms and to safe guard environment.