

M/s. SAGAR CEMENTS LIMESTONE MINE.,

Pedaveedu (V), Mattampally (M),
Suryapet (Dist). Telangana.



ENVIRONMENTAL STATEMENT (AUDIT) REPORT FOR THE FINANCIAL YEAR 2024-2025



LAWN ENVIRO PRIVATE LIMITED

(Formerly M/s. Lawn Enviro Associates)

[Environmental Engineers & Consultants in Pollution Control]

Recognised by Central Pollution Control Board, GOI, New Delhi & Laboratory Accredited by NABL



ISO 9001, 14001 & 45001
Certified Company

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ACKNOWLEDGEMENT

M/s. LAWN ENVIRO PRIVATE LIMITED express sincere debt of gratitude to M/s. SAGAR CEMENTS LIMESTONE MINE for the opportunity given by assigning the preparation of Environmental Statement (Audit) for the financial year 2024-2025, for their captive limestone Mine located at Sy.No. 540/A & 541, 202, 203, 269 (P), 270, 271, 273-295, 296 (P), 297, 305 (P), 306 (P), 307 (P) Pedaveedu (V) Mattampally (M), Suryapet District. The Environmental statement (Audit) Report is prepared for the financial year 2024-2025. Special mention needs to be made of Executives of M/s. SAGAR CEMENTS LIMESTONE MINE for their co-operation and assistance during the preparation of this statement. We also wish to acknowledge our gratitude to all of them who helped during the data collection and report preparation.

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FORM – V

(See Rule 14)

ENVIRONMENTAL STATEMENT (AUDIT) REPORT
FOR THE FINANCIAL YEAR ENDING 31st MARCH, 2025

PART – A

- i) Name and address of the agent / of the industry operation : **Mr. M.V.RAMANA MURTHY**
Sr. Vice President (Works) & Agent (Mines)
- or process. **M/s. SAGAR CEMENTS LIMESTONE MINE,**
Sy.No.540/A &541, 202, 203, 269(P) to 273-
295, 296 (P), 297, 305 (P), 306 (P), 307 (P)
Pedaveedu (V),
Mattampally (M), Suryapet (Dist).
- ii) Date of the last environmental audit report submitted : September 2024
- iii) Production Capacity (Units) : 3.30 MTPA
- iv) Year of Establishment : 1984

PART – B

WATER AND RAW MATERIAL CONSUMPTION

i) Water Consumption for Limestone Mine – 46.549 m³/day

	Peak level Consumption m ³ /day
1. Dust suppression	- 34.561
2. Greenbelt development	- 8.008
3. Domestic	- 3.98

Water consumption per unit of product (KL/MT)

Name of Product	During the previous financial year (2023-2024)	During the current financial year (2024-2025)
Limestone	0.0060	0.0058

ii) Raw material consumption:

Name of Raw materials	Name of product	Consumption of raw material per MT of output based on MT of Limestone	
		During the previous financial year (2023-2024)	During the current financial year (2024-2025)
		-NA-	-NA-

PART - C

POLLUTION DISCHARGED TO ENVIRONMENT
(Parameter's as specified in the consent issued)

Pollutants	Quantity of Pollutants Discharged (kg/day) 2024-2025	Concentrations Of Pollutants in Discharges (mg/L) 2024-2025	Percentage of variation from prescribed standards with reasons
a) Wastewater: There is no source to generate process wastewater from mining activities. Domestic sewage is treated at septic tank followed by soak pit.			
b) Air: There is no source of emission in the mine only dust generation during mining operation is monitored by establishing ambient air quality sampling stations at various places in mine premises and surrounding areas. The generated data is shown in table 8.1. Analyzed data shows all the values are within the prescribed standards of T.G.P.C.B.			

PART - D**HAZARDOUS WASTE**

(As specified under Hazardous and other wastes Management and Transboundary Movement Rules, 2016)

Hazardous wastes	Total Quantity	
	During the previous financial year (2023-2024)	During the current financial year (2024-2025)
a) From Process		
Lube Oils	11,190 Ltr's/year	11,355 Ltr's/year
Waste Grease along with Cotton Waste	1,210 Kg's/year	980 Kg's/year
b) From Pollution control facilities	-NA-	-NA-

PART - E**SOLID WASTES**

S.No	Solids Waste	Total quantity MT per year	
		During the previous financial year (2023-2024)	During the current financial year (2024-2025)
a)	From Process	-N.A-	Nil
b)	From Pollution Control Facility	-N.A-	Nil
c)	Quantity recycled or re-utilized	-N.A-	Nil

PART - F

Please specify the characteristics (in terms of concentration and quantum) of Hazardous as well as solid wastes and indicates disposal practice adopted for both these categories of wastes.

PART - G

Impact of the pollution control measures on conservation of natural resources and consequently on the cost of production.

PART - H

Additional investment for environmental protection including abatement of pollution.

The Management of SCLM incurred an amount of Rs. 2,38,24,795/- **(Rupees Two crores thirty eight lakhs twenty four thousand seven hundred and ninety five only)** during the financial year 2024-2025 for various heads like general expenditure, capital expenditure, monitoring charges, housekeeping charges, health, pest control, Green belt development and socio-economic development activities in the (neighboring) near-by villages.

PART - I

Any other particulars in respect of environment protection and abatement of pollution.

Dust generation is a major pollutant in mines which can be controlled by adopting pollution control measures in mining operation and water spraying system. The Management's objective is to achieve the production without affecting the physical, chemical and biological environments of the nearby vicinity. Industry has taken lot of efforts to raise the plantation in and around the mining lease area.

1. INTRODUCTION:

M/s. SAGAR CEMENTS LIMESTONE MINE is producing limestone for the captive consumption of M/s. Sagar Cements Ltd., which is producing cement. M/s. Sagar Cement Limestone Mine is located over an extent of Ac. 806.32 Gts or 326.58 Hectares in Sy. No. 540/A & 541, 202, 203, 269 (P), 270, 271, 273 to 295, 296 (P), 297, 305 (P), 306 (P), 307 (P) Pedaveedu (V) Mattampally (M), Suryapet District of T.S. is presently producing limestone capacity of 3.30 MTPA to meet the clinker production capacity of 2.65 MTPA. The total area of 326.58 ha of mining lease consists Private Patta Lands and Government barren land. The main raw material limestone is being mined from captive limestone Mine situated at 1.5 km away from the plant site.

2. OBJECTIVE OF THE STUDY:

The objective of the present study is to review the performance of pollution control systems installed by the industry so as to identify efficient pollution prevention and control systems, which could be beneficial to both environment and its components. And also Inserted by Rule 2 of the Environment (Protection) second Amendment & Rules, 1992 vide G.S.R. 329 (E), dated: 3-3-1992. Every person carrying on an Industry, operation or process requiring consent under Section 25 of The Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) or under section 21 of The Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) or both or authorization under the Hazardous Wastes (Management, Handling & Tranboundary, Movement) Rules, 2016 issued under the Environmental (Protection) Act 1986 (29 of 1986) shall submit an environmental audit report for the financial year ending 31st March in Form - V

to the concerned state pollution control board on or before the 30th day of September every year beginning 1993.

3. BENEFITS OF ENVIRONMENTAL AUDIT:

Environmental audit creates awareness in the conservation of natural resources and helps to improve production, safety and health. The benefits of audit are:

1. It helps in reduction of raw material consumption by way of waste minimization and adoption of recovery of waste and recycle the same.
2. Determines the performance of process systems and helps to improve the systems.
3. Efficiency of pollution control systems can be assessed.
4. This gives the awareness of environmental organization in the industry.
5. Data available will help the management for use in the plant modification and adopting pollution control for different types of technology.
6. It helps to identify pollution prone systems and exposure to it by the employees, for taking remedial measures.
7. The management will be assisted in complying with local, regional and national laws and regulations by adopting standards.
8. It helps to identify hazardous wastes, handling measures taken and exposure to litigation can be reduced.
9. To determine the impact on the surrounding environment due to the disposal of its pollutants and identify suitable preventive measures.
10. Energy saving systems can be adopted by considering fuel consumption data.

M/s. Sagar Cements Limestone Mine has entrusted the task of preparation of Environmental Statement (Audit) for their captive limestone Mine to LAWN ENVIRO PRIVATE LIMITED (LEPL), Hyderabad. An in-depth study was conducted by LEPL, to review the process efficiency, waste water generated, the present treatment systems, air pollution sources & control measures being adopted, mode of solid waste collection & disposal, the other associated problems leading to the pollution and impact on environment.

3. LOCATION:

M/s. SAGAR CEMENTS LIMESTONE MINE is located at Sy.No.540/A & 541, 202, 203, 269 (P), 270, 271, 273 to 295, 296 (P), 297, 305 (P), 306 (P), 307 (P) at Pedaveedu (V), Matampally (M), in Suryapet District of T.S. The mine is situated at a distance of 2 km from Pedaveedu (V). Captive Limestone mine is located between latitude N16⁰44'30" – N 16⁰47'00" & between longitude E79⁰51'45" – E79⁰53'00". The mining lease area falls under the Survey of India Topo Sheet No.56 P/13 & 14 Fig.1 shows the Location Map of M/s. Sagar Cement Limestone Mine.

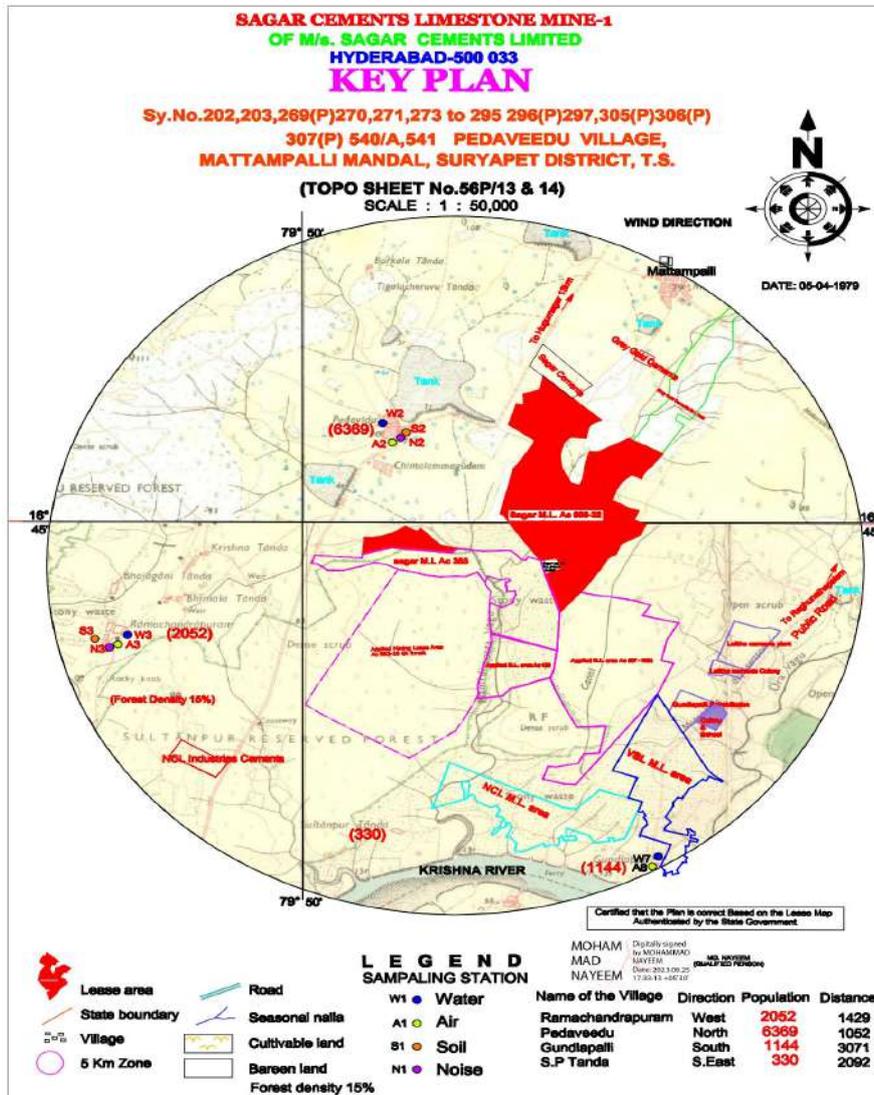


FIG.1 LOCATION MAP OF SAGAR CEMENTS LIMESTONE MINE

Road connecting Huzurnagar to Mattapally passing at a distance of 0.5 Km from the mine lease in the Western direction. The ML area is approached from Kodad (on NH – 65) & Miryalaguda at 32Km and 56Km respectively. The nearest Railway Station Nadikudi is at 26 Kms away in the Southern direction on Secunderabad to Guntur section of South Central Railway. Krishna river is located at a distance of 6.0 Km from site.

5. PRODUCTION DETAILS:

The total quantity of Limestone taken out from mine during the financial year 2024–2025 is 23,70,000 Ton's.

6. MINING PROCESS:

Open cast workings:

Limestone is being raised, in the Sagar limestone mine of the company, by open cast mechanised method of working. The equipment deployment planning for various mining operation has been done keeping in view the following viz., no/very marginal removal of topsoil is required, breaking of limestone by drilling and blasting and loading of limestone and transport to crusher by excavator–Dumpers combination. 140.47580

The opened up area of mine up to 2024–25 is over an extent of 140.4758 Ha or Ac. 347.115 with 3 benches developed already. The mine is proposed to work with the maximum bench height of 9 m operation. The gradient of first bench ramp is kept at 1 in 22 and that of second bench 1 in 20. The floor levels of the two working benches are 70 m and 62 m. Initially the mine has been opened

more or less parallel to the general strike of the beds. The advancement of the mine, however, is in the down-dip direction into the conventional up-dip extensions. Transportation of limestone from the pit mouth to the crusher located in mines is accomplished through 60 ton capacity dumpers, which will be loaded by hydraulic excavator. The lead distance between the existing mine and crusher, one way, is around 1.5 Km (longest distance bench). Automobile garage is located in mines premises to attend for maintenance and repairs of the heavy earth moving equipment.

There is a 14.5 tons magazine to store explosives and 50 tons capacity ammonium nitrate storage room located within the existing mine leasehold. Burden and spacing is kept around 3.0 m to 5.50 m and blast holes will be drilled with a 115 mm diameter wagon drill. Boosters of high explosives in conjunction with ammonium nitrate fuel oil (ANFO) are used for charging the blast holes. Non-electric millisecond delay initiators in each hole with trunk line delay is used.

They are using rock breaker to break the projected outcrops (overhangs and undercuts) of limestone and over size boulders formed during the primary blast.

List of Mining Machinery:

S No	Type of Machinery	Capacity	HP	No's Deployed
1	ICM 260 N Drill Machine	350 cfm	180	2
2	PC 1250 Excavator	6.5 m3	650	1
3	Volvo EC 950 EL	6.0 m3	611	1
4	CAT 988 H Loader	6.9 m3	555	1
5	BACK HOE	4.5	487	1
6	BACK HOE	0.900	170	1
7	D 155A Dozer	11.8 m3	302	1
8	HD 465 Dumpers	60 tonner	719	6
Supportive Equipment:-				
9	Soil Compactor	33Hz	112	1
10	Water Tanker	12 KL	118	2
11	Explosive Van	7 Ton	70	1
12	Portable Lighting Tower	0	10	1
13	Welding Gen Set	500 Amps	58	1
14	Core Drilling Rig, KLR CDR-100	47.62 mm (Core dia)	102	1
15	Jeep, Mahindra Campher Gold	5+1 Seating	50	1

Mining process is given in Fig.2.

Drilling:

Generally for the preparation and development of quarry, the first phase of operation is drilling followed by blasting. Adequate care is taken while drilling and blasting considering the safety, statutory and environmental aspects. Blast holes are drilled at an angle of 15 Degrees and the ratio of spacing to burden has been determined based on the bench height and structural features of the bench. Sub grade drilling is in practice to maintain the even level of the bench floor and to avoid the toe.

Angular blast hole drilling is selected for reduced back break and toe problems, improved fragmentation, better working conditions, and better performance of loading and hauling units. As is being practiced, the pattern of blast holes has been maintained taking into considering the physical characteristics of the deposit and other allied parameters, type of explosives, height of the bench etc. For blast hole drilling currently there are 3 drilling machines of 115 mm dia.

The water mist drilling is being practiced, as a routine process, to arrest the dust at source.

Blasting:

Broad blasting parameters: – Limestone in this lease area is massive, compact and sub–horizontal to moderately dipping. The strata exhibit fractures. Hence, there are no problems envisaged or encountered in blasting. A Spacing and burden of 5.0 m x 3.0 m is maintained presently by drilling blast holes of 115 mm dia with sub grade drilling of 10%. Bench heights are generally 9 m depth. However there are minor variations at different locations within the lease due to the nature of the deposit. Blast holes are normally drilled in rows in the selected block. Staggered pattern of drill holes usually 2 to 3 rows are blasted by using milli–second delay detonators (one delay for each row). Multi Delay firing is adopted to achieve best fragmentation and optimum results.

All necessary precautions right from charging the blast holes, deployment of proper sentries is being monitored by all the competent mine personnel. The usage of Non–electric detonators, bottom initiation has the controlled blasting effect, with minimized ground vibrations and fly rocks.

Dozing:

As soon as the blasting is conducted, the loader is utilized for leveling the area, to avoid the effect of any sharp edged loose rocks. This is mainly to keep the floors of respective benches uniformly leveled and neat for other activities. Since water spray is done soon after the blasting, the generation of dust is bare minimum.

Loading:

Hydraulic excavator into tipper dumpers loads the blasted limestone. The entire limestone is directly dispatched to crusher located in the mine site.

Transportation:

The transportation of limestone from the working face to the Crusher which is located at near working pit is presently carried out by 55 Ton dumpers which are matching with the loading/excavating unit. The average to and from hauling distance from the farthest working face to the crusher is around 3 Kms (considering the longest distance in the future) thus the number of tippers required for transportation-of limestone has been calculated based on haulage distance of 3 Kms and also on the basis or two shifts working in a day.

Compactor:

It is being used for maintenance of Haul roads, for the convenience of smooth running of dumpers.

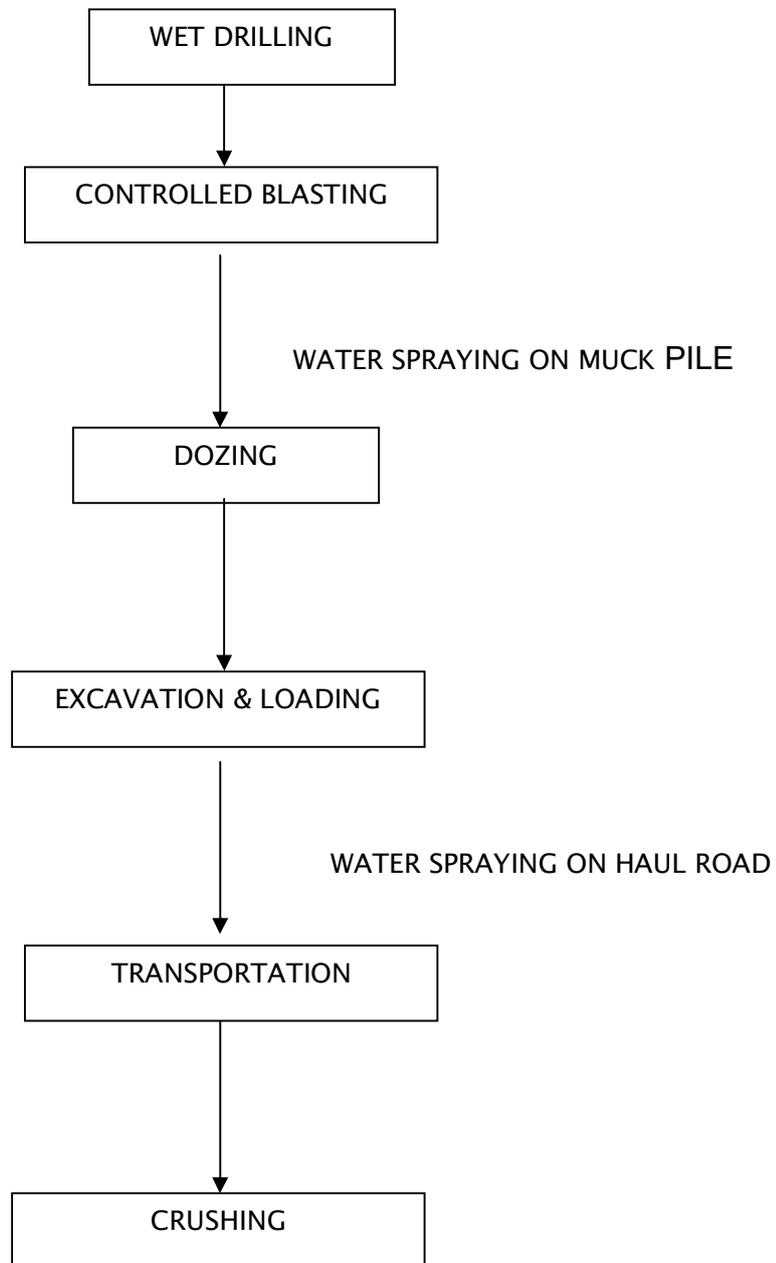


Fig.2 Mining Process Flow Sheet of M/s. Sagar Cements Limestone Mine

7. WATER REQUIREMENT:

The peak water consumption for Mine is 46.549 m³/day and the details are given below:

		Peak level Consumption m ³ /day
1. Dust suppression	-	34.561
2. Greenbelt development	-	8.008
3. Domestic	-	3.98

The water for domestic consumption is supplied by cement plant. The water requirement for greenbelt development and dust suppression is met from the mine sump. The analyzed values of bore well water sample & Mine pit water in the year 2024–2025 are given Table 7.1 & 7.2 also Drinking water analysis data given in table 7.2.1.

8. POLLUTION CONTROL MEASURES IN THE MINE:

8.1 Air Pollution Control Measures:

The Industry has given top priority to pollution prevention and control. The air pollutants emitted into atmosphere are controlled by adopting various pollution control measures. Stage wise operations are as follows:

Drilling:

(Wet) water mist drilling is in practice, keeping the emission of dust to bare minimum at source itself. In addition to this, the drillers have been provided with nose-filters, goggles; helmets, shoes hand gloves etc. for the safe workings.

Blasting:

Blasting is being carried out as per the guidelines of DGMS by using delay (non-electrical) detonators (EXEL), which can keep noise, ground vibrations, fly-rock within the safe limits. Explosives are being handled from 14.50 MT capacity explosive magazine located outside the ML area.

Dozing:

It is the usual & routine practice to doze and level the area, as soon as the blasting is done. This will help to maintain a uniform leveled bench floors, throughout the workings, in all working benches.

Total mine working floor (including loading point) is dozed evenly to avoid heavy dust generation with the movement of dumpers.

Loading:

Water spraying on the blasted mass of rock is being in practice for dust suppression before loading into the dumpers. Operators have been provided with nose filters & earplugs. The shovel operator's cabin air conditioned and is well covered and dust proof type.

Transportation:

Continuous, water spraying on all the haul roads, right from the (Mines faces) loading points to crusher is a routine process, 12 KL lorry mounted water tanker. The cabin of hauling dumpers are of air conditioned and fully covered to control dust and noise effect on the operator.

TABLE -7.1
WATER QUALITY DATA - BORE WELL WATER (Mines)

		RESULTS
1	Colour (Hazen)	<5.0
2	Electrical Conductivity (Micro Siemens/cm)	746
3	Total Dissolved Solids	448
4	Turbidity (NTU)	0.90
5	pH	7.65
6	Total Suspended Solids	15
7	Sulphates as SO ₄	27
8	Phosphorus as P	0.17
9	Sodium as Ca	40
10	Potassium as K	2.46
11	Calcium as Ca	73.89
12	Magnesium as Mg	19.35
13	Total Hardness as CaCO ₃	262.16
14	Chlorides as Cl	67
15	Fluorides as F	0.54
16	Nitrates Nitrogen as NO ₃	1.05
17	Total Alkalinity as CaCO ₃	235
18	Acidity as CaCO ₃	07
19	Total Iron as Fe	0.15
20	Nickel as Ni	<0.01
21	Manganese as Mn	<0.01
22	Copper as Cu	0.26
23	Zinc as Zn	<0.01
24	Lead as Pb	<0.01
25	Arsenic as As	<0.01
26	Chromium as Cr	<0.01
27	Cadmium as Cd	<0.01
28	Total Coliform Count	346
29	Escherichia Coli Count	Absent

Note: All the values except pH & E.C are expressed in mg/L.

TABLE -7.2

WATER QUALITY DATA - MINE DISCHARGE WATER

S.No.	Parameters	Values
1	pH	7.47
2	Temperature (°C)	42
3	Total Suspended Solids	19
4	Oil & Grease	<1.0

Note: All the values except pH are expressed in mg/L.

TABLE -7.2.1
WATER QUALITY DATA - DRINKING WATER

		As per IS:10500:2012 (Drinking water standards)		
		RESULTS	Requirement (Acceptable Limit)	Permissible Limit in the absence of alternate source
1	Colour (Hazen)	<5.0	5 max	15 max
2	Turbidity (NTU)	<1.0	01 max	05 max
3	pH	7.66	6.50 - 8.50	No relaxation
4	Total Hardness as CaCO ₃	12	200 max	600 max
5	Calcium as Ca	3.96	75 max	200 max
6	Magnesium as Mg	0.67	30 max	100 max
7	Copper as Cu	<0.01	0.05	1.5
8	Iron as Fe	<0.10	0.3 max	No relaxation
9	Manganese as Mn	<0.01	0.1 max	0.3 max
10	Chloride as Cl	9.01	250 max	1000 max
11	Sulphate as SO ₄	2.84	200 max	400 max
12	Nitrates as NO ₃	0.97	45 max	No relaxation
13	Fluorides as F	<0.10	1.0 max	1.5 max
14	Phenol Compounds as C ₆ H ₅ OH	<0.001	0.001	0.002
15	Mercury as Hg	<0.001	0.001	No relaxation
16	Cadmium as Cd	<0.003	0.003	No relaxation
17	Selenium as Se	<0.01	0.01	No relaxation
18	Arsenic as As	<0.001	0.01	0.05
19	Cyanide as CN	<0.01	0.05	No relaxation
20	Lead as Pb	<0.01	0.01	No relaxation
21	Zinc as Zn	<0.01	5.0	15
22	Anionic Detergents as MBAS	Absent	0.2	1.0
23	Chromium as Cr	<0.01	0.05	No relaxation
24	Polynuclear aromatic Hydrocarbons as PAH	Absent	NS	NS
25	Mineral Oil	<0.10	0.5	No relaxation
26	Residual Chlorine	<0.20	0.2	01
27	Pesticides	Absent	Absent	0.001
28	Radio active	<0.001	0.1	No relaxation
29	Odour	Agreeable	Agreeable	Agreeable
30	Taste	Agreeable	Agreeable	Agreeable
31	Dissolved Solids	66	500	2000
32	Total Alkalinity	42	200 max	600 max
33	Aluminum	0.009	0.3	0.2
34	Boron	0.014	0.5	1.0
35	E-Coli	Absent	Absent	NS

Note: 1. All the values except pH, Turbidity, Taste, Colour & Odour are expressed in mg/L.
2. BDL- Below Detectable Limit. (for Hg, 0.001 mg/L and for all other parameters, 0.01mg/L)

8.2 Ambient Air Quality:

Ambient air quality monitoring is carried out quarterly at the following locations to know the status of the ambient air quality.

Core Zone:

1. Near Mines Office
2. Near Crusher Area

Note: The Ministry of Environment and Forest (MOEF) New Delhi, has given amendment on 16th November 2009 for revised standards for Ambient Air Quality Standards. M/s. Sagar Cements Limestone Mine, has following the same Standards.

Ambient air quality is monitored for 8 hours each sample for PM₁₀, PM_{2.5}, SO₂ and NO₂ the average values are presented in Table. 8.1. The analyzed values for PM₁₀, PM_{2.5}, SO₂ and NO₂ are within the limits prescribed by T.G.P.C.B.

Table 8.1

AVERAGE VALUES OF AMBIENT AIR QUALITY DATA

Location	Parameters				
	PM ₁₀	PM _{2.5}	SO ₂	NO ₂	CO (ppm)
Core zone					
1. Near Mines Office	63.50	24.50	8.75	18.75	<1.0
2. Near Crusher Area	69.00	28.00	9.25	19.00	<1.0

Note: All the values are expressed as ($\mu\text{g}/\text{m}^3$)

8.3 Wastewater Sources and Monitoring:

Waste water from toilets located at site mines office is being treated at septic tank followed by soak pit. No waste water is generated either from dust suppression system or from (wet) drilling method.

8.4 Noise Pollution:

Noise pollution control measures adopted at various stages of operation are as follows:

Loading:

The cabin doors of shovel are of sound proof type. Earplugs have been provided for shovel and dumper operators.

Transportation:

The cabins of dump trucks are fully covered to control dust and noise effect on the operator.

Crushing:

Crushing process is being carried out in confined area, which is fully closed. The noise level depends on the hardness of the material, which is fed to the crusher.

Noise Levels are measured at various locations in the mines by using sound level meter. Statistical data of average values of noise levels & Average values of Ambient noise levels data & Workplace Noise levels data measured at various mine locations during the year 2024–2025 is given in Table 8.2.

Table 8.2
Average Values of Noise Levels Data
(Period 2024–2025)

S.No.	Station	Noise Levels in dB(A)
1.	Near Pedaveedu Village	49.95
2.	Near Ramachandrapuram Village	46.84
3.	Western Boundary of ML Area	62.25
4.	Near Shovel Working	74.06
5.	Near Drill Working	78.68
6.	Tipper Inside Cabin	70.63
7.	Near Haulage Road	66.39
8.	Near Loading Area	78.31
9.	Near Mines Office	63.59

Note: 1. Day time is reckoned in between 6 am and 10 pm. Limit <75 dB (A)
2. Night time is reckoned in between 10 pm and 6 am. Limit <70 dB (A)

9. GREENBELT DEVELOPMENT

Greenery/plantation recharges oxygen into environment. Greenbelt development may have the following benefits.

- a. Mitigation of fugitive emissions including odour
- b. Noise pollution control
- c. Improving the local eco-system
- d. Arresting the soil erosion
- e. Improving the landscape of the area
- f. Aesthetics

Total plantation carried out up to 2024-2025 inside the lease area 85,830 no's covering a total area of Ac. 115.889 and outside the lease area 1,31,795 no's covering an area of Ac. 225.958 by the end of financial year 2024-2025 in mines and plant respectively. A major breakthrough implementation was made by SCLM for greenbelt development at mine.

10. EXPENDITURE INCURRED FOR ENVIRONMENT PROTECTION MEASURES IN THE FINANCIAL YEAR 2024-2025.

Total expenditure incurred for various Pollution Control Measures, viz. Health, Solid waste management, Monitoring, Greenbelt development socioeconomic activities etc., by the Management of SCLM is **Rs. 2,38,24,795/- (Rupees Two crores thirty eight lakhs twenty four thousand seven hundred and ninety five only)**

11. HOUSE KEEPING:

Unnecessary loss of product in the form of dust emission will pollute surrounding environment. Water spraying is being done in mining area including haul roads to control fugitive emissions. Mine premises are clean and green which reflects on good housekeeping. M/s. Sagar Cements Limestone Mine is keeping their mine and premises clean and green. Housekeeping has been found to be on top priority.

12. AUDITOR'S COMMENTS:

1. The ambient air quality in mine area is within the prescribed limits of T.G.P.C.B.
2. The audit activities have enabled the mine authorities to control fugitive emissions and water consumption efficiently.
3. During the financial year 2024-2025, an amount **Rs. 2,38,24,795/- (Rupees Two crores thirty eight lakhs twenty four thousand seven hundred and ninety five only)** was spent on environmental protection and social welfare activities by the management of SCLM.

Auditor's Signature

APPENDIX-A
MINISTRY OF ENVIRONMENT AND FORESTS
NOTIFICATION

New Delhi, the 16th November, 2009.

NATIONAL AMBIENT AIR QUALITY STANDARDS

G.S.R. 826 (E) In exercise of the powers conferred by section 6 and section 25 of the Environment (Protection) Act, 1986, (29 of 1986), the Central Government hereby makes the following rules further to amend the Environment (Protection) Rules, 1986, namely:-

1. (1) These rules may be called the Environment (Protection) seventh Amendment Rules, 2009.
 (2) They shall come into force on the date of their publication in the Official Gazette.
2. In the Environment (Protection) Rules, 1986, (hereinafter referred to as the said rules), In rule 3, in sub-rule (3B), for the words, brackets, figures and letters, "In columns (3) to (5) of Schedule VII" the words, brackets figures and letters "in columns (4) and (5) of Schedule VII" shall be substituted.
3. For Schedule VII to the said rules and entries relating thereto, the following Schedule and entries shall be substituted, namely:--

S. No.	Pollutant	Time weighted average	Concentration in Ambient Air		
			Industrial , Residential, Rural and Other area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
1.	Sulphur dioxide (SO ₂), µg/m ³	Annual Average*	50 µg/m ³	20 µg/m ³	1. Improved West and Gaeke Method 2. Ultraviolet Fluorescence
		24 hours**	80 µg/m ³	80 µg/m ³	
2.	Nitrogen Dioxide (NO ₂) µg/m ³	Annual Average*	40 µg/m ³	30 µg/m ³	1. Modified Jacob & Hochheiser (Na-Arsenite) Method 2. Chemiluminescence
		24 hours**	80 µg/m ³	80 µg/m ³	
3.	Particulate Matter (Size less than 10 µm) or PM ₁₀ µg/m ³	Annual Average*	60 µg/m ³	60 µg/m ³	1.Gravimetric 2. TOEM 3. Beta attenuation
		24 hours**	100 µg/m ³	100 µg/m ³	
4	Particulate Matter (size less than 2.5 µm) or PM _{2.5} µg/m ³	Annual Average*	40 µg/m ³	40 µg/m ³	1. Gravimetric 2. TOEM 3. Beta attenuation
		24 hours**	60 µg/m ³	60 µg/m ³	
5.	Ozone (O ₃) µg/m ³	8 hours	100 µg/m ³	100 µg/m ³	1. UV photometric 2. Chemiluminescence 3. Chemical Method
		1 hour	180 µg/m ³	180 µg/m ³	
6.	Lead (Pb) µg/m ³	Annual Average*	0.50 µg/m ³	0.50 µg/m ³	1. AAS/ICP Method after sampling on EPM 2000 or equivalent filter paper 2. ED-XRF using Teflon filter
		24 hours**	1.0 µg/m ³	1.0 µg/m ³	

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7.	Carbon Monoxide (CO) mg/m ³	8 hours**	02 mg/m ³	02 mg/m ³	Non dispersive infra Red (NDIR) spectroscopy
		1 hour	04 mg/m ³	04 mg/m ³	
8.	Ammonia (NH ₃) µg/m ³	Annual Average*	100 µg/m ³	100 µg/m ³	1. Chemiluminescence 2. Indophenol blue method
		24 hours**	400 µg/m ³	400 µg/m ³	
9.	Benzene (C ₆ H ₆) µg/m ³	Annual Average	05 µg/m ³	05 µg/m ³	1. Gas chromatography based continuous analyzer 2. Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP) particulate phase only, ng/m ³	Annual Average	01 ng/m ³	01 ng/m ³	Solvent extraction followed by HPLC/GC analysis
11.	Arsenic(As) ng/m ³	Annual Average	06 ng/m ³	06 ng/m ³	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni), ng/m ³	Annual Average	20 ng/m ³	20 ng/m ³	AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

- Annual Arithmetic mean of minimum 104 measurements in a year at particular site taken twice a week 24 hourly at uniform intervals.

** 24 hourly / 8 hourly or 01 hourly monitored values, as applicable, shall be complied with the 98% of the time in a year. 2 % of the time, they may exceed the limits but not on two consecutive days of monitoring.

Note: Whenever and wherever monitoring results on two consecutive days of monitoring exceed the limits

Specified above for the respective category, it shall be considered adequate reason to institute regular or continuous monitoring and further investigation.

APPENDIX-B**AIR QUALITY STANDARDS FOR
LIME STONE AND DOLOMITE MINES**

(Air Quality Standards as per Indian Bureau of Mines, Department of Mines, Ministry of Coal & Mines, Govt. of India)

S.No.	Parameters/Pollutants	Time weighted average (TWA)	Concentration at work zone monitoring station
1	Suspended Particulate Matter (SPM)	8 hours	700 µg/cu m
2	Resperable Particulate Matter (RPM) size less than 10 microns)	8 hours	350 µg/cu m
3	Sulphur Dioxide (SO ₂)	8 hours	5 mg/cu m
4	Oxides of Nitrogen (NO ₂)	8 hours	6 mg/cu m
5	Carbon Monoxide	8 hours	40 mg/cu m

Note: The distance of monitoring stations from the dust generating source should not exceed 300 m and it should be located in the down wind direction, considering the prominent wind direction.

**MINE EFFLUENT STANDARDS FOR
LIME STONE AND DOLOMITE MINES**

(Mine effluent standards as per Indian Bureau of Mines, Department of Mines, Ministry of Coal & Mines, Govt. of India)

S.No.	Parameters/Pollutants	Concentration not to be exceeded in mg/L except pH
1	pH	5.5 – 9.0
2	Total Suspended Solids (TSS)	100.0
3	Oil & Grease	10.0
4	Iron	3.0
5	Fluoride	1.5

Note: The monitoring stations should be at the place as far as possible close to the source of generation or the discharge from effluent treatment plant, as applicable.

APPENDIX-C
AMBIENT AIR QUALITY STANDARDS IN RESPECT OF NOISE

G.S.R. 158 (E) dt. 09-3-2009

The Environment (Protection) Rules, 1986 (See rule 3)

Area Code	Category of Area	Limits in dB(A)	
		Day Time	Night Time
A	Industrial Area	75	70
B	Commercial Area	65	55
C	Residential Area	55	40
D	Silence Zone	50	40

- Note :
1. Day time is reckoned in between 6 am and 10 pm.
 2. Night time is reckoned in between 10 pm and 6 am.
 3. Silence Zone is defined as areas upto 100 m around such premises as hospitals, educational institutions and courts. The silence zones are to be declared by the competent authority. Use of vehicular horns, loud speakers and bursting of crackers shall be banned in these zones.
 4. Mixed categories of areas should be declared as one of the four above mentioned categories by the competent authority and the corresponding standards shall apply.

APPENDIX-D
GENERAL STANDARDS FOR DISCHARGE OF EFFLUENTS
 [Schedule II inserted vide G.S.R. 919 (E) dt. 12-9-1988 Published in the
 Gazette No. 488 dt. 12-9-1988]
 The Environment (Protection) Rules, 1986 (See rule 3)

Sl. No.	Parameter	Standards			
		Inland Surface Water	Public Sewers	Onland for Irrigation	Marine Coastal areas
1	2	3			
		a.	b.	c.	d.
1	Colour and Odour	See Note 1	---	See Note 1	See Note 1
2	Suspended Solids, mg/L, max	100	600	200	a. For process waste water 100 b. For cooling water effluent- 10% above total suspended matter of influent cooling water
3	Particle size	Shall pass 850 micron IS sieve	---	---	a. Floatable solids max- 3 mm b. Settleable solids max-850 μ
4	Dissolved Solids (inorganic), mg/L, max	2100	2100	2100	---
5	p ^H value	5.5 – 9.0	5.5 – 9.0	5.5 – 9.0	5.5 – 9.0
6	Temperature °C, max	Shall not exceed 40 in any section of the stream within 15 m downstream from the effluent outlet	45 at the point of discharge	---	45 at the point of discharge
7	Oil & Grease, mg/L, max	10	20	10	20
8	Total Residual Chlorine, mg/L, max	1.0	---	---	1.0
9	Ammonical Nitrogen (as N), mg/L, max	50	50	---	50
10	Total Kjeldahl Nitrogen (as N), mg/L, max	100	---	---	100
11	Free Ammonia (as NH ₃) mg/L, max	5.0	---	---	5.0
12	Biochemical Oxygen Demand (5 day at 20 °C), mg/L, max	30	350	100	100
13	Chemical Oxygen Demand, mg/L, max	250	---	---	250
14	Arsenic (as As), mg/L, max	0.2	0.2	0.2	0.2
15	Mercury (as Hg), mg/L, max	0.01	0.01	---	0.01
16	Lead (as Pb), mg/L, max	0.1	1.0	---	1.0
17	Cadmium (as Cd), mg/L, max	2.0	1.0	---	2.0

Sl. No.	Parameter	Standards			
		Inland Surface Water	Public Sewers	Onland for Irrigation	Marine Coastal areas
1	2	3			
		a.	b.	c.	d.
18	Hexavalent Chromium (as Cr ⁺⁶), mg/L, max	0.1	2.0	---	1.0
19	Total Chromium (as Cr), mg/L, max	2.0	2.0	---	2.0
20	Copper (as Cu), mg/L, max	3.0	3.0	---	3.0
21	Zinc (as Zn), mg/L, max	5.0	15.0	---	15.0
22	Selenium (as Se), mg/L, max	0.05	0.05	---	0.05
23	Nickel (as Ni), mg/L, max	3.0	3.0	---	5.0
24	Boron (as B), mg/L, max	2.0	2.0	2.0	---
25	Percentage Sodium, max	---	60.0	60.0	---
26	Residual Sodium Carbonate, mg/L, max	---	---	5.0	---
27	Cyanide (as CN), mg/L, max	0.2	2.0	0.2	0.2
28	Chloride (as Cl), mg/L, max	1000	1000	600	---
29	Fluorides (as F), mg/L, max	2.0	15.0	---	15.0
30	Dissolved Phosphate (as P), mg/L, max	5.0	---	---	---
31	Sulphate (as SO ₄), mg/L, max	1000	1000	1000	---
32	Sulphide (as S), mg/L, max	2.0	---	---	5.0
33	Pesticides	Absent	Absent	Absent	Absent
34	Phenolic Compounds (as C ₆ H ₅ OH), mg/L, max	1.0	5.0	---	5.0
35	Radio Active Materials:	10 ⁻⁷	10 ⁻⁷	10 ⁻⁸	10 ⁻⁷
	a. Alfa Emitters µc/mL, max	10 ⁻⁶	10 ⁻⁶	10 ⁻⁷	10 ⁻⁶
	b. Beta Emitters µc/mL, max				

- Note :
- All efforts should be made to remove colour and unpleasant odour as far as practicable.
 - The standards mentioned in this notification shall apply to all the effluents discharged, such as industrial mining and mineral processing activities, municipal sewage, etc.
 - Omitted by Rule 2 of the Environment (Protection) Fourth Amendment Rules, 1992 vide Notification G.S.R. 797 (E) dated 01-10-1992, Gazette No. 396 dated 01-10-1992.

APPENDIX-E
TEST CHARACTERISTICS FOR DRINKING WATER (IS:10500-2012)

Sl. No.	Substance of Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternative Source	Methods of Test (Ref. To IS)	Remarks
1	2	3	4	5	6
i.	Colour, Hazen units, max	5	15	3025 (Part 4)	Extended to 15 only if toxic substances are not suspected, in absence of alternative sources.
ii.	Odour	Agreeable	Agreeable	3025 (Part 5)	a. Test cold and when heated b. Test at several dilutions
iii.	Taste	Agreeable	Agreeable	3025 (Part 7 & 8)	Test to be conducted only after safety has been established
iv.	Turbidity, NTU, max	1	5	3025 (Part 10)	---
v.	p ^H value	6.5 – 8.5	No relaxation	3025 (Part 11)	---
vi.	Total Hardness (as CaCO ₃) mg/L, max	200	600	3025 (Part 21)	---
vii.	Iron (as Fe), mg/L, max	0.3	No relaxation	3025 (Part 53)	Total concentration of manganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
viii.	Chlorides (as Cl), mg/L, max	250	1000	3025 (Part 32)	---
ix.	Residual, free Chlorine, mg/L, min	0.2	1	3025 (Part 26)	To be applicable only when water is chlorinated. Tested at consumer end. When protection against viral infection is required, it should be min. 0.5 mg/L
x.	Dissolved Solids, mg/L, max	500	2000	3025 (Part 16)	---
xi.	Calcium (as Ca), mg/L, max	75	200	3025 (Part 40)	---
xii.	Copper (as Cu), mg/L, max	0.05	1.5	3025: 1964 (Part 42)	---
xiii.	Manganese (as Mn), mg/L, max	0.1	0.3	3025:(Part 59)	Total concentration of manganese (as Mn) and iron (as Fe) shall not exceed 0.3 mg/l
xiv.	Sulphate (as SO ₄), mg/L, max	200	400	3025 (Part 24)	May be extended to 400 provided that magnesium does not exceed 30
xv.	Nitrate (as NO ₃), mg/L, max	45	No relaxation	3025 (Part 34)	---
xvi.	Fluoride (as F), mg/L, max	1.0	1.5	3025: (Part 60)	---

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Sl. No.	Substance of Characteristic	Requirement (Acceptable Limit)	Permissible Limit in the Absence of Alternative Source	Methods of Test (Ref. to IS)	Remarks
1	2	3	4	5	9
xvii	Phenolic compounds (as C ₆ H ₅ OH), mg/L, max	0.001	0.002	3025: (Part 43)	---
xviii.	Mercury (as Hg), mg/L, max	0.001	No relaxation	IS 3025 (Part 48)/ Mercury Analyser	---
xix.	Cadmium (as Cd), mg/L, max	0.003	No relaxation	IS 3025 (Part 41)	---
xx.	Selenium (as Se), mg/L, max	0.01	No relaxation	IS 3025 (Part 56) or IS 15303*	---
xxi.	Arsenic (as As), mg/L, max	0.01	0.05	3025 (Part 37): 1988	---
xxii.	Cyanide (as CN), mg/L, max	0.05	No relaxation	3025 (Part 27)	---
xxiii.	Lead (as Pb), mg/L, max	0.01	No relaxation	IS 3025 Part 47	---
xxiv.	Zinc (as Zn), mg/L, max	5	15	39 of 3025: 1964 (Part 49)	---
xxv.	Anionic detergents (as MBAS), mg/L, max	0.2	1.0	Annex K of IS 13428	---
xxvi.	Chromium (as Cr ⁺⁶), mg/L, max	0.05	No relaxation	IS 3025 (Part 52)	---
xxvii	Polynuclear aromatic hydrocarbons (as PAH), g/L, max	0.0001	No relaxation	APHA 6440	---
xxviii	Mineral Oil, mg/L, max	0.05	No relaxation	Clause 6 of IS 3025 (Part 39) infrared Partition Method	---
xxix	Pesticides, mg/L, max	Absent	0.001	---	---
xxx	Radioactive materials: a. Alpha emitters, Bq/L, max	0.1	No relaxation	Part – 2	---
	b. Beta emitters, pci/L, max	1.0	No relaxation	Part - 1	---
xxxi	Alkalinity, mg/L, max	200	600	13 of 3025: 1964 (Part - 23)	---
xxxii	Aluminum (as Al), mg/L, max	0.03	0.2	31 of 3025: 1964(Part - 55)	---
xxxiii	Boron, mg/L, max	0.5	1.0	29 of 3025: 1964 (Part - 57)	---

Note: Atomic Absorption Spectrophotometer method, may be used.

APPENDIX-F
PLANT SPECIES FOR GREEN BELT DEVELOPMENT

SI. No.	BOTANICAL NAME	COMMON NAME	SIZE AND TYPE	SUITABLE SIZE
1.	Acia auriculæformis (Mimosaceae)	H: Vilaiti	M: Semi evergreen	fragrant white flowers. Suitable in green belts on road sides.
2.	Adina cordifolia (Rubiaceae)	T: Pasupukadamba H: Haldu	L: Deciduous	a light demander, suitable on open areas & near flares.
3.	Aequle marmelos (Rutaceae)	T: Bilavamu H: Bael	M: Deciduous,	good for green belts for green belts near temples.
4.	Anogeissus latifolia (Combretaceae)	T: Chirimanu H: Dhaura	M: Deciduous,	good for green belts near temples
5.	Artabotrys hexapetius (Annonaceae)	T: Monaranjani H: Hara Champa	S: Evergreen shrub	with fragrant flowers good for gardens & inside boundary wall and long canals.
6.	Averrhoa carambola (averrhoaceae, Oxalidaceae)	T: Kamaarakkarmel H: Kamrak	S: Semi evergreen	good in narrow belts (green belts <50m width) along channels
7.	Azadirachta indica (Meliaceae)	T: Vepachettu H: Nim	L: Evergreen,	suitable in green belts and out side office & hospital buildings
8.	Bauhinia Variiegata (Caesalpinhiaceae)	T: Devakanchanamu H: Rachanaram	M: Deciduous,	good in green belts, garden and as a second row avenue tree.
9.	Borassus flabellifer (Arecaceae; Palmae)	T: Taadi H: Tad	L: A tall deciduous,	palm, can be used as wind break when of different age.
10.	Bosellia serrata (Bursereaceae)	T: Phirangi saambraani H: Kunder	M: Deciduous	suitable on green shallow soils.
11.	Burera serrata (Bureraceae)	T: Chitreka	M: Deciduous	suitable on shallow soils as a green belt or avenue tree.
12.	Butea monosperma (Fabaceae)	T: Mlduga H: Palas	M: Deciduous	for green belt and as a second row avenue tree.
13.	Caesalpinia pulcherrima (Leguminosae)	T: Pamiditangedu H: Gulutora	M: A large shrub	suitable for gardens outside office and along channels
14.	Callistemon lanceolatus (Myrtaceae)	T: Bottle Brush	M: Deciduous	for some time, ornamental plant in garden
15.	Careva arobora (Lecythidaceae)	T: Araya H: Kumbi	L: Deciduous,	good in green belts.
16.	Carrisa carandas (Apocynaceae)	T: Vaka H: Karaunda	S: semi evergreen,	large bushy shrub, good as a hedge to protect against noise.
17.	Caryota urenus (Palmae)	T: Jilugujattu H: Mari	M: A lofty palm,	good as a wind break.
18.	Cassia fistula (Leguminosae)	T: Rela H: Amaltas	M: Deciduous	good ornamental tree in green belt.
19.	C. Siamea	T: Sima Tangedu	L: Evergreen	good as avenue tree
20.	Casuarina equisetifolia	T: Sarugudu H: Jungli s aru	M: Evergreen,	suitable for covering low-lying areas and in green belt.
21.	Cadrela toons	T: Nandichettu H: Mahanim	L: Deciduous,	good in open spaces, in green belts and along ponds.
22.	Cestrum diurnum	H: Din-ka-maja	S: A shrub with white fragrant flowers,	suitable (solanaceae) around boilers and waste disposal sites. (Contd..)

PLANT SPECIES FOR GREEN BELT DEVELOPMENT

Sl.No.	BOTANICAL NAME	COMMON NAME	SIZE AND TYPE SUITABLE SIZE
23.	Cleistanthus collinus (Euphorbiaceae)	T: Kadishe H: Garari	S: Deciduous tree suitable in green belts.
24.	Cocus nucifera (palmae)	T: Kobbarichettu H: Nariyal	L: A tall stately palm suitable on sea shore river banks and hill slopes.
25.	Cleistanthus collimus (Leguminosae)	T: Errasissu H: Shisham	M: Deciduous, suitable on areas around flare sites and in green belts.
26.	Delomix reqlia (Leguminosae)	T: Shimasankesual H: Gulmohar	M: Deciduous ornamental, suitable on road sides.
27.	Dillenia inidica	T: Peddakalinga H: Chalta	L: Evergreen, white fragrant flowers, goon in green belts and around waste disposal sites.
28.	D. pentagyna	T: Chinnakalinga H: Aggai	L: Deciduous, good in green belts and onsite around flare.
29.	Emblica officianallis (Euphorbiaceae)	T: Amalakamu H: Amla	M: Deciduous, good as isolated trees in garden
30.	Erythrina suberosa (Leguminosae)	T: Barijama H: Dauldhak	M: Deciduous, good in green belts
31.	E. variegata	T: Badisa H: Dadap	M: Deciduous, good in gardens outside office buildings.
32.	Ficus bengalensis (Moraceae)	T: Marri H: Bargad	L: Deciduous, widely spread avenue tree (15 m apart)
33.	F. religiosa	T: Bodhi H: Pipal	L: Deciduous, widely spaced avenue tree also a single tree in isolated sites.
34.	Emelina arborea (Verbenaceae)	T: Gumartek H: Sewan	M: Deciduous, good in green belts around flare sites.
35.	Grewia tilioifolia (Tiliaceae)	T: Charachi H: Dhamim	M: Deciduous, good in green belts for use as timber
36.	Hamelen patens		S: Evergreen shrub with dense attractive foliage of greenish bronze leaves; good in gardens.
37.	Hardwickia binata (Leguminosae)	T: Yepi H: Anjan	M: Deciduous, good for green belts on shallow soils.
38.	Hibiscus mutabilis (Malvaceae)	H: Sthal Kamal	S: Large bushy shrub, semi evergreen good in green belts & in gardens, along channels.
39.	H. Rosa sinensis	T: Java Pusphamu	S: Evergreen woodly showy shrub good for gardens.
40.	Lxora arborea	T: Korivipala H: Navari	S: Much branched evergreen, good in green belts and in gardens.
41.	Lxora coccinea	T: Mankana H: Rangan	S: Much branched evergreen, good in garden and in green belts.
42.	Jasminum sambur (Oleaceae)	T: Boddumalle H: Moghra	s: Much branched evergreen, good in garden and in green belts.
43.	Kydia calycina (Malvaceae)	T: Potri H: Pula	S: Deciduous, good along canals and in green belts.
44.	Lagersteoemia speciosa (Lythaceae)	T: Varagogu H: Jarul	M: Deciduous, good along road sides and in garden (Contd..)

PLANT SPECIES FOR GREEN BELT DEVELOPMENT

SI.No.	BOTANICAL NAME	COMMON NAME	SIZE AND TYPE SUITABLE SIZE
45.	Lanea coramandelica (Anacardiaceae)	T: Appriyada H: Jhingan	L: Deciduous, good on well drained green belts and around flares.
46.	Lawsonia alba (Lythraceae)	T: Goranti H: Mehndi	S: Glabrous much branched shrub, good along canal sides.
47.	Locbnera rosea (Apocynaceae)	T: Bilaganuueru H: Sadabahar	S: An erect perennial herb; good in garden and along small channels.
48.	Madhuca indica (Sapotaceae)	T: Ippa H: Mahua	M: Deciduous, good in green belts
49.	Mallotus philippensis (Euphorbiaceae)	T: Kunkuma H: Sidur	S: small evergreen good along channels
50.	Melia azedarach (Meliaceae)	T: Turaka Vepa H: Bakain	M: Deciduous good along small roads, and canals.
51.	Millingtonia hortensis (Bignoniaceae)	T: Kavuki H: Akas Nim	L: Semi evergreen flowers fragrant, good along roadsides.
52.	Mimusops elengi (Sapotaceae)	T: Pogada H: Maulsari	M: Evergreen, good for avenues
53.	Moringa oleifera (Moringaceae)	T: Muluga H: Sainjna	M: Deciduous, with fragrant flowers, good in green belts.
54.	Murrava koenigi (Rutaceae)	T: Karepaku H: Mitha neem	S: Semi evergreen good in green belts and along small channels
55.	Oreodoxa reqia (Palmae)	Royal palm	L: Semi evergreen good medium and small road sides as an ornamental plant.
56.	Pandanus odoratissimus (Pandanaceae)	T: Mugali H: Kewada	S: A densely branched shrub good in gardens near seashore
57.	Peltophorum inerme (Leguminosae, Caesalphiaceae)	T: Kondachinta	M: Semi evergreen, suitable on road sides, in gardens & outside buildings.
58.	Plumeria acuminata (Apocynaceae)	T: Vaala Ganneru H: Golainchi	M: Semi evergreen, fragrant white flowers, good in green belts.
59.	Plumeria alba	T: Veyui Varahaalu	S: Semi evergreen good for gardens
60.	Plumeria rubra	T: Nurruvarahalu H: Golainchi	S: semi evergreen good for gardens
61.	Pterocarpus marsupium (Leguminosae, Papilionaceae)	T: Vegi H: Bija	M: Deciduous, good on open areas with adequate light
62.	Pogamia pinnata (Leguminosae, Papilionaceae)	T: Ganuuga H: Karanj	M: Deciduous, good along roads & canals.
63.	Rauvolfa serpentina (Apocynaceae)	T: Paataalagani H: Chandrabhaga	S: An erect evergreen perennial shrub good along canal.
64.	Salmalia malabarica	T: Booruga H: Semul	M: Deciduous, Good for avenues
65.	Samanea saman (Leguminosae)	T: Nidraganneru	L: Deciduous, good tree along road sides for shade.
66.	Saraca indica (Leguminosae, Caesalpinaceae)	T: Ashoka H: Asok	M: Evergreen tree good on road sides within campus (Contd..)

PLANT SPECIES FOR GREEN BELT DEVELOPMENT

SI.No.	BOTANICAL NAME	COMMON NAME	SIZE AND TYPE SUITABLE SIZE
67.	<i>Spathodia campanulata</i> (Bignoniaceae)	T: Patadiya H: Runugtora	L: In gardens and avenues and in green belts, it is deciduous.
68.	<i>Sykzygium cumini</i> (Myyrtaceae)	T: Neeredu H: Jaman	L: Evergreen tree, good in green belts and within campus and road sides.
69.	<i>Tabernamontana coronaria</i> (Apocynaceae)	T: Gandhitagarapu H: Chandni	S: An evergreen shrub good in gardens and along canals.
70.	<i>Tabebuia pentaphylla</i> (Bignomiaceae)		M: Deciduous, good in gardens
71.	<i>Tamarindus indica</i> (Leguminosae,Caesalphiaceae)	T: Chintachettu H: Imli	L: Semi evergreen tree along state & national highways suitable site.
72.	<i>Ticoma stans</i> (Bignomiaceae)	T: Pachgotla	L: Evergreen tree, good in garden and along canals.
73.	<i>Tectona grandis</i> (Verbenaceae)	T: Adviteeku H: Sagwan	M: Deciduous, good in green belts and on inner sides of roads.
74.	<i>Terminalia alata</i> (Combretaceae)	T: Tani H: Sain	L: Deciduous, good in green belts near flare site
75.	<i>Terminalia arjuna</i>	T: Yerramadi H: Arjuna	L: Evergreen tree for road sides and in green belts.
76.	<i>Terminalia bellirica</i>	T: Tani H: Bahora	L: Deciduous, good in green belts.
77.	<i>Terminalia bellirica</i>	T: Badamchettu d H: Deshi Badam	L: Deciduous tree good near sea shore.
78.	<i>Thespesia populanea</i> (Malvaceae)	T: Gangaraavi H: Paras Pipal	M: Compact quick growing evergreen tree good along road sides.
79.	<i>Thevetia peruviana</i> (Apocynaceae)	T: Pachaganneru H: Pile, Kaner	S: An evergreen large shrub, has shady yellow, flowers, good around the waste treatment.
80.	<i>Vitex negundo</i> (Verbenaceae)	T: Vaavili H: Sambhaluu	S: A large shrub suitable on areas along channels and streams and on waste lands.
81.	<i>Xylia xylicarpa</i> (Eguminosae, Mimosaceae)	T: Eravalu H: Jambu	L: Deciduous is green belts and on waste lands
82.	<i>Zanthoxyium</i> (Rutaceae)	T: Rhetsamaramu H: Badrang	M: Deciduous in green belts and on waste lands

NOTE: H Denotes Name in Hindi
 T “ Name in Telugu
 S “ Small size
 L “ Large size
 M “ Medium size