



Executive Summary

10.1 INTRODUCTION

This chapter executes summary of whole EIA report which includes project description in brief, environmental setting in 10 km radius, impact identification and mitigation measures and environmental management plan. Moreover brief information of Post Monitoring Program and risk assessment is also furnished in this chapter.

The Proposed Project is for Development of Sanitary Landfill Facility at Bhandewadi site of Nagpur Municipal Corporation (NMC), located at Sy. No's: 1009 (Kh-134(P)), 1010 (KH-133(P)) & 1011 (Kh-134(P)) of Bhandewadi Village, Nagpur Urban Taluka, Nagpur District, Maharashtra State. The area of the proposed project site is 7.5 Acre (30,351 Sq.m) and is owned by the Nagpur Municipal Corporation.. The proposed project falls under Category-B, under section 7(i) "Common Municipal Solid Waste Management Facility" as per the EIA Notification, dated 14th September 2006 and its amendments thereafter. Area of around 7.5 acres has been proposed for the Sanitary landfill facility. Total capacity of Sanitary landfill facility will be 150 TPD. Estimated cost of this project will be around Rs.1916.71 Lakhs

10.1.1 BRIEF INFORMATION ABOUT THE PROJECT

Salient Features of the project is presented in **Table-10.1**

Particulars	Details		
Nature of the Project	Development of Sanitary Landfill at Bhandewadi Site of Nagpur Municipal Corporation.		
Capacity	150 TPD– Sanitary Landfill at Bhandewadi site.		
Design Period	2 Years		
Location of the Project			
District & State	Nagpur, Maharashtra		
Mandal	Nagpur (Urban)		
Village	Bhandewadi		
Sy. No (or) Gut. No.	Survey No: 1009 (Kh-132(P)), Survey No: 1010 (Kh-133(P)) & Survey No: 1011(Kh-134(P))		
Proposed Land Area	7.5 Acre (30,351.42 Sq.M)		
Geo Co-ordinates	Boundary points	Latitude (N)	Longitude (E)
	1	21° 08'03.09"	79° 09' 41.10"
	2	21° 08'00.46"	79°09'44.64"
	3	21°07'53.51"	79°09' 40.01"
	4	21°07'57.58"	79°09'37.69"
	5	21° 07'58.36"	79° 09'38.71"
6	21°07'59.70"	79°09'37.70"	
Proponent Details			



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Project Proponent Name & Designation of Authorized Person	Nagpur Municipal Corporation Shwetha Salilkanti Banerjee Superintending Engineer
Registered Address	Office of the Public Health Engineering Department 4th Floor, Administrative Building C-Wing Mahanagarpalika Marg, Civil Lines, NMC, Nagpur-440001
General Climatic Details	
Maximum Temperature	48 ⁰ C
Minimum Temperature	27 ⁰ C
Annual Rainfall	1161.54mm (Average)
Wind Direction	Southwest to northwest
General Location Details	
Nearest human habitation	Bidgaon Village – 181M (E) (Note: As per SWM Rules 2016, habitation must be 200M from the site but there is encroachment issue near the processing plant due to which there is construction of unauthorised residential buildings at surrounding area of landfill. Providing compound wall and green belt area between habitations and landfill help to achieve overall environmental health)
Nearest Town/city	Nagpur – 1.78KM (W)
District headquarters	Nagpur – 1.8KM (W)
Nearest Railway Station	Bhandewadi Halt – 800M (NW) Nagpur Junction Railway Station – 7.6KM (W)
Nearest Airport	Dr. Babasaheb Ambedkar International Airport – 11.8KM (SW) (Note: In a special case, landfill site may be set up within 10–20 km away from the airport or airbase after obtaining no objection certificate from the civil aviation authority or air force as the case may be. This shall be obtained during environmental clearance stage.)
Nearest Highway	Surat-Kolkata Highway (NH-53) – 1.51KM (N)
Archaeological/ Historically important site	Sitabuldi Fort – 8KM (W)
Sensitive places	None within the 5Km radius
Sanctuaries/ National parks	➤ Ambazari Lake and Biodiversity Park – 11.9KM (W) ➤ Gorewada Reserve Forest and Safari – 12.2KM (WNW)
Nearest Water Bodies	➤ Stream -171M (E) ➤ Nala – 1.61KM (NNW) ➤ Nag Nadi – 1.9Km (NNW)
Nearest Forest Areas	Seminary Hills R.F. – 10.02Km (NW)
Project Cost	Rs. 19,16,71,596.23/- (Rs.1916.71 Lakhs)
Manpower	14 No.s



10.2 PROJECT DESCRIPTION

Municipal Council, Nagpur planned to set up SLF at at Bhandewadi site of Nagpur Municipal Corporation located at Sy No's: 1009 (Kh-134(P)), 1010 (Kh-133(P)) & 1011 (Kh-134(P)) of Bhandewadi Village, Nagpur Urban Taluka, Nagpur District, Maharashtra. Plant design capacity is 150 TPD.

All the inert/rejects generated from processing facility shall be transferred to the sanitary landfill for the safe disposal.

The project key points are presented below:

- Project Location: Nagpur, Mahashtra
- Proposed Process: Sanitary Landfill with leachate sump and allied infrastructure
- Plant Design Capacity : 150 TPD

Detailed Project Description is Presented in Chapter-2.

10.3 DESCRIPTION OF THE ENVIRONMENT

10.3.1 Study Period

The baseline study period for the proposed project was October 2025-December 2025. The baseline data collected during the study period is given in EIA Chapters.

10.3.2 Hydrogeology

The hydrogeology of Deccan Trap terrain is governed by physical nature of basaltic lava flows. The weathered portions of vesicular and compact basalt at shallow depth have better porosity and permeability. Close spaced jointing is favorable for movement and storage of groundwater. Open joints or fissures in rock serve as good passage ways for groundwater.

10.3.3 Micrometeorology and Climate

Nagpur has a semi-arid climate, winter lasts from October to February, and the December & January are severely cold. The average day temperature is about 27°C while that of night is about 11°C & sometimes it can drop down even by 5°C. From the month of March temperature starts increasing. May is the hottest Month, with average temperature of about 40°C rising even up to 47°C. Nagpur District mainly experiences rainfall from south-west monsoon. It rains from June to September. The western parts of the District receive on an average rainfall of 800-900 mm and other parts of District receive 1000- 1200mm annual rainfall..

10.3.4 Air Environment

Ambient Air Quality Monitoring (AAQM) was carried out at 6 locations for PM10, PM2.5, SO₂, NO₂,CO, H₂S & CH₄ during study period. The monitoring was carried out for three months (October 2025-December 2025) at a frequency of twice a week at each station adopting a continuous 24 hour schedule. The following is the summary of Ambient Air Quality in the study area.



Results of Ambient Air Quality

1. Particulate Matter (PM₁₀)

The minimum concentrations of PM₁₀ were recorded in the study area at Tarodi Khurdis 53.6 µg/ m³, maximum concentrations is 78.8 µg/ m³ at Project site and the highest 98th Percentile concentration is 78.3 µg/ m³ was recorded at Project site. The concentrations of PM₁₀ are well below the CPCB standard of 100 µg/ m³.

2. Particulate Matter (PM_{2.5})

The minimum concentrations of PM_{2.5} were recorded in the study area at Tarodi Khurd is 27.0 µg/ m³, maximum concentrations is 45.5 µg/ m³ at Project site and the highest 98th Percentile concentration is 45.4 µg/ m³ was recorded at Project site. The concentrations of PM_{2.5} are well below the CPCB standard of 60 µg/ m³.

3. Sulphur Dioxide (SO₂)

The minimum concentrations of SO₂ were recorded in the study area at Tarodi Khurd is 11.3 µg/ m³, maximum concentrations is 19.5 µg/ m³ at Kamptee and the highest 98th Percentile concentration is 19.4 µg/ m³ was recorded at Kamptee. The concentrations of SO₂ are well below the CPCB standard of 80 µg/ m³.

4. Oxides of Nitrogen (NO₂)

The minimum concentrations of NO₂ were recorded in the study area at Tarodi Khurdis 15.2 µg/ m³, maximum concentrations is 24.6 µg/ m³ at Project site and the highest 98th Percentile concentration is 24.3 µg/ m³ was recorded at Project site. The concentrations of NO₂ are well below the CPCB standard of 80 µg/ m³.

5. Carbon Monoxide (CO)

The minimum concentrations of CO were recorded in the study area at Tarodi Khurd is 0.31 µg/ m³, maximum concentrations is 0.71 µg/ m³ at Kamptee and the highest 98th Percentile concentration is 0.71 µg/ m³ was recorded at Kamptee. The concentrations of CO are well below the CPCB standard of 2.0 mg/ m³.

6. Hydrogen Sulfide (H₂S)

The concentration of H₂S was recorded below 1.0 ppm in all monitoring locations of the study area. The concentrations of Hydrogen Sulfide is not specified.

7. Methane (CH₄)

The concentration of CH₄ was recorded below 5ppm in all monitoring locations of the study area. The concentrations of Methane is not specified

The ambient air quality monitoring results indicates that the overall air quality in the study area is within permissible limits, as prescribed by NAAQ Standards.

10.3.5 Water Environment

10.3.5.1 Ground Water

Ground water samples collected from 3 locations within 10 km radius from the project site & analyzed as per standard methods of water and wastewater analysis (APHA). Summary of Ground



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water Samples within 10 Km radius given below.

- pH of the ground water samples collected was in the range between 6.16-7.20
- Total Dissolved Solids in the ground water samples were in the range between 674-2612 mg/l.
- Total hardness was found between 340-680 mg/l.
- The Chlorides concentration was found to vary between 75.8-865 mg/l.
- The Fluoride concentration was found to vary between 0.79-0.098 mg/l.
- The Sulphates concentration was found between 25.29-226.1 mg/l.
- The Nitrate concentration was found between 1.0 -35.45 mg/l
- The Phosphate concentration was found between 0.93-1.46 mg/l.
- All the heavy metals in all samples were found to be below the permissible limits.

10.3.5.2 Surface Water

Surface water samples collected from 3 locations within 10 km radius & analyzed as per standard methods.

- pH of the water samples collected was in the range between 7.45-8.22
- Total dissolved solids in the samples were in the range between 549-580 mg/l.
- Total hardness was found to be in the range of 250-255mg/l.
- Chlorides concentration was found to in the range of 70.94-90.50 mg/l.
- Fluoride concentration was found to be in the range of 0.72-0.81mg/l.
- Sulphates concentration was found to be in the range of 33.35-45.34mg/l.
- Nitrate concentration was found between 1.52-2.29 mg/l
- Phosphate concentration was found to be 12.33-12.92 mg/l

10.3.6 Noise Environment

In order to assess the noise levels in the study area, monitoring was carried out at 6 different locations within 10 km radius of the study area.

The readings were taken for every hour for 24-hrs. The day noise levels have been monitored during 6 am to 10 pm and night noise levels during 10 pm to 6 am at all the locations.

10.3.6.1 Noise Level Results

Daytime Noise Levels (L day)

Industrial Area: Project site is considered as Industrial zone. In that place day time noise level was 65.0 dB (A), which is below the permissible limits of 75 dB (A).

Residential Area: The day time noise levels in all the residential locations (N2,N3, N4, N5) were observed to be in the range of 53.1 dB (A) to 54.5 dB (A). The noise levels at all the locations were below the permissible limits of 55 dB (A).

Commercial Area: The day time noise levels in Commercial Area (N6) was 62.6 dB (A), which is below the permissible limits of 65 dB (A).

Night time Noise Levels (L Night)

Industrial Zone: The night time noise level in the Project area was 56.8 dB (A), which is below the permissible limits of 70 dB (A).

Residential Area: The night time noise levels in all the residential locations (N2.N3, N4, N5) were



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observed to be in the range of 42.9 dB (A) to 44.3dB (A). The noise levels at all the locations were below the permissible limits of 45 dB (A).

Commercial Area: The night time noise levels in Commercial Area (N6) was 52.6 dB (A), which is below the permissible limits of 55 dB (A)

10.3.7 Soil Environment

The analysis of physico-chemical parameters of soil samples collected from project site and surrounding area indicated that the soil water holding capacity varied from 45.1 – 54.1 %, it indicates low to Moderate WHC. The texture of the soil is Silty Clay loam in project site and clay type in S3 (Khandwani Town), S4(Bhandewadi) and S5 (Tarodi Khurd) samples. The soil EC ranges varies 221 to 2432, highest Ec observed in project site. The pH ranged from 7.69 – 8.34, Maximum PH is obtained at Tarodi Khurd (S5), indicating that soils are normal to alkaline in nature. Organic carbon of soil varies from 0.57% to 1.29 % this indicates low organic matter is present in soil. Available nitrogen varies from 122.2 mg/kg to 433.3 mg/kg, Available nitrogen Highest value was in project site and low value was at S5 (Tarodi Khurd) is detected among six samples.

10.4 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Adequate environmental management measures will be incorporated during the construction and operation stages of the project to minimize the adverse environmental impacts and assure sustainable development of the area. The impacts during the construction phase will be temporary in nature.

10.4.1 AIR ENVIRONMENT

A. During construction phase

Potential Impacts

- Particulate Matter (PM₁₀ & PM_{2.5}) is the main pollutant.
- The activities those are responsible for the adverse air quality and fugitive dust are site clearing and preparation, grading of the site- dredging and filling and from the use of unpaved routes.
- Construction equipments and earth moving machinery would be generate huge amount of fugitive dust in the area
- Trucks carrying construction materials and soil would also add into other pollutants, viz. carbon monoxide (CO), oxides of nitrogen (NO_x) and inhalable particles besides fugitive dust.

Mitigation Measures

- Provide sheet of 3 m height around construction area to prevent dust nuisance.
- Vehicles carrying raw materials will be covered with tarpaulin or plastic sheets.
- Loading and unloading areas will be covered with temporary sheets of 3 m height to act as barriers for dust control.
- Machinery shall be properly maintained to minimize emission of CO, PM, SO₂ & NO_x and only PUC certified vehicles will be allowed during construction activities.



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- Water sprinkling over exposed development area should be done at least twice a day to reduce dust generation
- The workers will be provided with personal protective equipment (PPE) like masks, helmet, glasses etc.
- Tree plantation along boundary of the facility will be done during early stages of project, 2 to 3 years old saplings will be planted to keep the area moist for most part of the day.

B. During Operation phase

Potential Impacts

- The activities those are responsible for the adverse air quality, fugitive dust and the odour nuisance are the vehicular operations carrying waste to the project site
- vehicles carrying waste would add into CO, NO_x and PM besides fugitive dust.

Mitigation Measures

- Internal roads to be black topped / CC for smooth movement of vehicles & proper maintenance of roads shall be carried out to minimise dust generation
- Vehicles brining MSW shall be covered with tarpaulin to prevent spillage of dirt during transit
- Only PUC certified vehicles will be allowed during construction activities.
- Inventory of odours compounds should be maintained and release of such compounds due to leakages should be prevented by strictly following relevant guidelines for storage and handling of such materials
- Dilution or neutralisation of odour by spraying Ecosorb or herbal pesticides around odour generation areas at regular interval
- All the working /storage sheds and compost area will be provided with adequate number of exhaust fans, blowers, vent and ducts to handle odour emissions for efficient odour control
- Develop Greenbelt around odour generating sources with plants like Eucalyptus, Tulasi & Turmeric to reduce the odour
- To manage gas generation a venting system with flaring arrangement shall be provided

10.4.2 NOISE ENVIRONMENT

During construction phase

Potential Impacts

Noise is generated by equipments used for site clearing and preparation, grading of the site-dredging and filling and the vehicles carrying soil and other materials to the site.

Mitigation Measures

10.4.2.1 Development activities, equipment generating noise to be used only during day time. Avoided during night in order to maintain calm conditions

10.4.2.2 Periodic maintenance of machinery & vehicles to be carried out

10.4.2.3 Workers involved in operating noise generating equipment will be provided with PPE like ear plugs/ear muffs etc.



During Operation phase

Potential Impacts

10.4.2.4 All the noise producing equipments such as blowers, shredders, D G and compressors would be housed in an acoustic enclosure, hence the ambient noise is not anticipated to be very high.

10.4.2.5 Noise from blowers

10.4.2.6 Noise due to vehicular movement inside the plant premises

Mitigation Measures

10.4.2.7 Improvement in design of machine, proper maintenance & tuning done regularly.

10.4.2.8 Acoustically designed cabins for noise generating equipment will be provided

10.4.2.9 Periodic noise level monitoring shall be done to identify discrepancies & take corrective action, wherever required.

10.4.2.10 Avenue plantation of 2 m width on both sides of the road will be developed

10.4.3 WATER ENVIRONMENT

10.4.3.1 Surface Water

A. During construction phase

Potential Impacts

- Water consumption for developmental activities causes depletion or reduced availability of water.
- Domestic sewage generation impact on surface water quality
- Curing/ watering, spill overs & cleaning of instruments

Mitigation Measures

- Proper drainage and collection systems would be provided so that the runoff water from development area gets collected in sedimentation pit / tank. This would help avoid waste water stagnation in the form of cesspools promoting breeding of mosquitoes and creating insanitary conditions
- Collected wastewater will be diverted to nearby greenbelt or plantation area, reused for construction purposes and for sprinkling of water on roads to control dust emissions.
- Wastewater generated from temporary sanitation facilities provided for the work force during construction will be diverted to septic tank followed by soak pit
- Used oil and lubricants generated from the site workshop will be segregated and disposed to authorized recyclers

B. During Operation phase

Potential Impacts

- Impacts on water environment due to leachate generated from facility
- Rainwater runoff from the facility will be contaminate surface water
- A landfill may aggravate the local flooding of adjacent lands.

Mitigation Measures

- Reuse leachate to reduce fresh water requirement



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Rainwater runoff from the facility will be collected in a tank /sump and used within the facility. There by reducing fresh water requirement of the facility

- Leachate minimization by re-circulating collected leachate onto composting heap to reduce fresh water requirement & SLF for dust suppression

10.4.3.2 Ground Water

A. During construction phase

Potential Impacts

- Impact on ground water quality due to site developmental activities
- landfill development work, which includes, removal of topsoil, and exposure of lower permeability subsoil, soil compaction, may have impacts on the ground water quality
- Ground water quality alters due to Leaching of contaminant in soils, leakage of hydraulic fluids, and contaminated drainage from rain fall on unpaved areas

Mitigation Measures

- To prevent impact on GW, bottom liner of the SLF will be 2 m above highest GW table
- Monitoring of bore-well water regularly
- SLF with base liner and leachate collection/ drainage system to prevent leakage of leachate to ground & GW
- To minimise leachate generation from compost plant, area is planned under shed.

B. During Operation phase

Potential Impacts

10.4.3.1 Improper leachate collection and management system for landfill development causes Ground water pollution

Mitigation Measures

- 10.4.3.2 Proper leachate collection and management system for landfill development along with its treatment and final disposal in Sewage Treatment plant
- 10.4.3.3 Treated water from STP will be used for development of Greenbelt at project site.
- 10.4.3.4 The ground water quality shall be monitored at regular intervals in the operational phase of the project to check for contamination if any.

10.4.4 LAND ENVIRONMENT

A. During construction phase

Potential Impacts

- 10.4.4.1 The physical effects of developments can lead to changes in local topography and soil damage and erosion.
- 10.4.4.2 The effects of physical disturbance of soil can have impacts upon soil microorganisms, natural flora and fauna, crops and livestock, groundwater and surface hydrology



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Mitigation Measures

- 10.4.4.2.1 Earth material / soil generated during site clearance, site formation and excavation work is inert and will be stored in heaps properly covered
- 10.4.4.2.2 Top soil excavated shall be handled carefully and utilized for greenbelt development.
- 10.4.4.2.3 Balance earth material / soil will be reused for construction, levelling, roads/ pavement and buffer development within the facility
- 10.4.4.2.4 On completion of construction work, all temporary structures, surplus material and waste shall be handled and disposed as per applicable regulations

B. During Operational Phase

Potential Impacts

No significant impact is expected on the soil in and around the site, due to the following mitigation measures

Mitigation Measures

- 10.4.4.2.5 All solid wastes from the plant complex are properly collected, stored and disposed.
- 10.4.4.2.6 The entire plant site area is well drained and thus there is no leaching of any substances in case of spills, which are well confined and decontaminated.
- 10.4.4.2.7 Greenbelt developed within the facility shall improve ambience of the area and help
- 10.4.4.2.8 Impact on aesthetics of the area.

10.4.5 BIOLOGICAL ENVIRONMENT

A. During construction phase

Potential Impacts

- The disturbance to the flora and fauna may cause due to occupation of land and changes in landform etc., damage to the habitat around the site.
- Incursion of workers into ecologically sensitive areas can cause the loss to the habitat of Flora & Fauna
- The removal of the soil cover will in turn destruct the vegetation and destroy the terrestrial inhabitants

Mitigation Measures

- Care will be taken to avoid any disturbance to flora and fauna of the area
- In case of situation demanding tree felling, they will be compensated in the ratio of 1:3 as part of greenbelt development
- Greenbelt development will be initiated during construction phase

B. During Operational Phase

Potential Impacts

Noise, Air, soil, water Pollution and other disturbances impact on Flora & Fauna

Mitigation Measures

- Design of plant that produces clean emissions
- Maintenance of buffer zone particularly around the site to minimize the disturbance to grazing animals
- Minimization of litter blow by good cover, fencing and hand-picking
- Use of localized variations in soil type, differing, drainage properties and vegetation cover across landfill restoration areas to encourage ecological diversity



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10.4.6 SOCIO-ECONOMIC ENVIRONMENT

A. During construction phase

Potential Impacts

- Traffic in the area is likely to increase
- The increase in traffic may create congestion, potential delays and inconvenience for the residents accessing the localities
- Due to the migrant workers there would be impact on the existing infrastructure facilities in the surrounding villages.

Mitigation Measures

- Transportation Management Plan being developed for the project would further reduce the negative impact of the traffic increase.
- Provide medical facilities within site to improve health & safety of construction workers
- There will be overall development & prosperity around the site due to increase in demand and expansion of services like retail outlets, hotels, lodges, public transport to cater to the needs of construction labour

B. During Operational Phase

Potential Impacts

- There will be structural changes in occupation and alternative works will be performed
- Due to the proposed activities surrounding village people are in fear of their Health and livelihood.
- Increase in the cost of man power in the agriculture sector due to services wage rates. This may affect cultivation

Mitigation Measures

- To prevent environmental pollution, adequate scientific measures will be implemented as per the pollution control regulatory standards.
- Periodical monitoring of families in surrounding villages. Regular medical check-up and developing infrastructure.
- Initiating skill development programs for better opportunities for the educated youth.

Detailed Anticipated Environmental Impacts and Mitigation Measures are presented in **Chapter-4.**

10.5 Analysis of Alternatives : Discussed in Chapter 5

10.6 ENVIRONMENTAL MONITORING PROGRAMME

Monitoring is an important component of a management system. To assess the status of environment during project operations, regular monitoring of environmental parameters is of immense importance. With the knowledge of baseline conditions, the monitoring programme will serve as an indicator for any variation in the environmental conditions due to operation of the project.



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The objective of an environmental monitoring programme is

- (a) To find out whether a site is performing as designed and
- (b) To ensure that the site is conforming to the regulatory environmental standards.

Table 10.3 Proposed Monitoring Program during Construction Phase

Sl.No.	Type	Locations	Parameters	Period & Frequency	Methodology
1	Ambient Air Quality Monitoring	Project Site,	PM10, PM2.5, SO ₂ NO _x , and CO	24 Hour Sample Monthly once	As per CPCB Standards (NAAQS-2009)
2	Ambient Noise Monitoring	Project site	Noise level L_{eq} both during daytime and night time	24 Hour Monthly once	As per CPCB Standards for Industrial area
3	Water Quality Testing (Surface and Underground)	In 2.0 KM Radius from project site	Drinking water parameters as per IS 10500:2012	Quarterly	As per CPCB Standards
4	Soil Quality	Project site	pH, Humidity, Texture, Organic matter, NPK, Sulphate, Calcium, Magnesium, C: N ratio	Half yearly	IS 2720 and USDA Guidelines
5	Stack Emissions Monitoring	DG stack	PM, SO ₂ , NO _x , CO, HC	Half Yearly	As per CPCB Standards

Table 10.4 Proposed Monitoring Program during Operational Phase

Sl.No.	Type	Locations	Parameters	Period & Frequency	Methodology
1	Ambient Air Quality Monitoring	At one location in and around Project Site	PM10, PM2.5, SO ₂ , NO _x , CO ₂ and Odour	Monthly once	As per CPCB Standards (NAAQS-2009)
2	Ambient Noise Monitoring	At one location in and around Project Site	Noise level L_{eq} both during daytime and night time	Monthly once	As per CPCB Standards for Industrial area
3	Water Quality Testing (Surface and Underground)	At one location in Project Site (Ground water) At one location From nearby village (Surface	Drinking water parameters as per IS 10500:2012.	Monthly once	As per CPCB Standards



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		water)			
4	Soil Quality	At one location in and around Project Site	pH, Humidity, Texture, Organic matter, NPK, Sulphate, Calcium, Magnesium, C: N ratio	Monthly once	IS 2720 and USDA Guidelines
5	Leachate	Compost plant, Secured landfill	Parameters as per MSW Rules	Monthly once	As per MSW Rules
6	Compost	Final Product	Parameters as per MSW Rules	Monthly once	As per MSW Rules
7	Plantation	Green	Survival of plants and replacement of immature plants.	Once half yearly	As per ICAR Manual
8	Stack Emissions Monitoring	DG stack	PM, SO ₂ , NO _x , CO, HC	Monthly once	As per CPCB Standards

Detailed Environmental Monitoring Programme are presented in **Chapter-6**.

10.7 ADDITIONAL STUDIES

Additional studies have been included in chapter -7 is presented below,

- 10.5.1 Public Consultation
- 10.5.2 Risk Assessment
- 10.5.3 Disaster Management Plan
- 10.5.4 Occupational Health and Safety

Management System Detailed Additional Studies is

presented in **Chapter-7**.

10.8 PROJECT BENEFITS

Proposed project facility intended to give improvements in the direct and indirect economic benefits in form of employment, development of ancillaries, and establishment of service facilities. The proposed projects are likely to benefit the people living in the surrounding areas through different steps which will lead to overall improvement of the environment. Moreover the compost will be produce from the proposed project which will generate the revenue. The above said project benefits will emerge due to the commissioning of the project.



Detailed Project Benefits are presented in **Chapter-8**

10.9 ENVIRONMENTAL MANAGEMENT PLAN

Anticipated environmental impacts are due to proposed project during construction phase and operation phase. Major potential environmental impacts from proposed project will be from leachate generation, odor generation and generation of unhygienic condition. However, an effective environment management plan reduces level of significant impact on the environment. MC Nagpur will implement effective occupational health and safety measures. Hence, proposed project will be environment friendly and safe. Approx. 920 Nos. of trees will be planted within next 2 years. Rs. 14.7.0 Lakhs is allotted as capital cost and Rs. 9.38 Lakhs/annum is allotted as a recurring cost for EMP.

10.9.1 Greenbelt Development Plan

Selection of the plant species will be based on their adaptability to the existing geographical conditions. During the development of the green belt within the project area, it has to be emphasized that those native plant species should be planted which have good ornamental values and are fast growing with excellent canopy cover.

A wide green area has been planned in the periphery of the proposed project site along with the other planned green areas within the site, will cover about 12% of the total project area. Close plantation is recommended for accommodating more number of trees per unit area resulting in more leaf surface.

Total 920 Plant species will be planted in entire 2 year plantation programs. Required nutrients/water/ manure and protect ion mess shall be provided. Ground flora will also be developed in open area. Survival of plant shall also be monitored. Consultation will be taken from Local Forest department, horticulture department for selection of plant species. Water for plantation will be sourced from nearby village through tankers.

Detailed Environmental Management Plan is presented in **Chapter-9**.

10.10 CONCLUSION

Proposed project does not attract rehabilitation and resettlement of people, since the proposed site in open and vacant.

- Proposed project does not anticipate any adverse impacts on environment.
- Production process is environmentally safe as there is no discharge of effluent is envisaged.
- Loss of vegetation and habitat will not be attributed.
- Odor problems will be ensured that material is turned or aerated often enough to maintain aerobic conditions.
- Workplace/ operation hazards, which will be minimized by providing personal protective equipment's, safety precautions, emergency plan & disaster management plan.

Consequently, impacts on air, water, land and ecological environments are insignificant and the socio-economic benefits are predominantly positive.

Thus, overall project features, process, potential of pollution, pollution prevention measures and environmental management plan proposed by proponent illustrates that proposed project will not have any considerable impacts on environment as well as on socio-economic & ecological conditions of the project area. Therefore, proposed project is environmentally safe.