

Environmental Management Plan Compliance

Discipline	Environmental hazard	Mitigation Measures and Action plan	Compliance Status
Secured Landfill Facility			
Temporary storage of Hazardous waste	Leachate Generation	Collection of leachate and treatment	Complied. Temporary storage of hazardous waste is provided for monsoon period. Leachate generating from the temporary storage is being collected and treated in MEE or sent to ETL.
Loading the hazardous waste in dumper	Fugitive emission	Coverage of the dumper to prevent dusting	Complied. Secured authorized dedicated closed dumpers are being used.
	Spillage of waste on the the floor	Avoid spillages by careful handling of the solid waste Clean the floor regularly and collect the waste & dispose in landfill	Complied. Handling has been carried out to avoid spillage of the solid waste. Regular cleaning is also done.
	Leakage/spillage during transportation	inspection of the dumpers and ensuring that there is no leakage/spillage	Complied. Regular inspection carried out of dumpers for detecting any leakages or spillage.
	Health impacts on the workers	Usage of Hydraulic dumpers/hook loaders to prevent manual handling Usage of PPEs by all Employees Medical checkup - pre employment and routine	Complied. Hydraulic dumpers are used for transporting waste. Appropriate PPEs are provided to the workers while manual handling of the waste. Pre-employment and routine medical checkups are being carried out.
Transportation			

Transportation of Waste	Littering the waste on the road	Inspect the dumpers and ensure that there is no leakage/spillage from the vehicle Loaded dumpers/trucks with waste should be fully covered. Impart training to the drivers Dumpers/trucks should be leak proof	Complied. Regular inspection of the dumpers in also done to ensure that there is no leakage/spillage from the vehicle. Loaded dumpers/ vehicles are being covered, leak proof as well. Drivers are given training also.
	Disposal of waste at non designated place	Manifest System	Complied. We are following valid manifest system according to new hazardous and other waste (Handling and management) rules 2016.
	Contamination of the tyres of vehicles entering landfill area	After loading/unloading the waste, tyres should be washed and washed water shall be sent for treatment	Complied. After loading/ unloading the tires are washed and waste water is sent for treatment.
Final Disposal			
Final Disposal of the hazardous waste into secured landfill facility	Violent reaction/ fire	Strictly to follow the acceptance criteria Check the reactivity of the wastes prior to disposal	Complied. Comprehensive and fingerprint analysis are carried out before accepting the waste to strictly following acceptance criteria for landfill.
	Excessive leachate generation in monsoon season	Cover the sub-cells of the facility with tarpaulin to prevent entry of rain water Close monitoring of the site round the clock during monsoon	Complied. Adequate covering of the sub cells with tarpaulin is done during monsoon.
	Blowing away of the waste dust with the wind	Spray water during summer season Cover the waste layer with fresh soil and compact it.	Complied. Water is being sprayed for dust suppression. And daily coverage of waste with clay layer is being done.

	Disposal of waste at the wrong place in the premises leachate handling	Provide indicators and sign boards for systematic operation. Properly designed leachate collection wells Daily monitoring of levels in the wells Transfer of leachate from the wells to storage for treatment	Complied. Necessary sign board are provided. Adequate numbers of leachet collection wells are constructed, daily level monitoring is being done and transferred to MEE plant or sent to ETL for further processing.
Monitoring Activity (Monitoring activity should continue even after closure of the facility)			
Water Quality	Ground water pollution Contamination of ground water	Monitoring groundwater at upstream and downstream of the site Groundwater monitoring surrounding the site as per pre designed plan Proper barrier systems like impermeable liners, gravity slope and gravel packed channels are constructed for natural flow of leachate and contact water The leachate generated has to be collected in an underground tank from where it can be pumped out to the treatment unit. Thus the chances of ground water contamination can be minimized.	Complied. There are bore wells, which are used to monitor ground water on regular basis. Adequate numbers of leachate collection wells are provided and leachate is being collected and send to MEE or ETL for further treatment.
Air Quality	Air pollution (Fugitive, Dust and gaseous emissions)	Ambient Air Monitoring for various parameters at the site and surroundings Water Dumpers, sprinklers are deployed for water spraying. Tree plantation around the facility area and along the roads. Respirable dust samples are collected and analyzed periodically to ensure that the dust concentration limit is contained within the allowable limits.	Complied. Ambient air monitoring is being done on regular basis for various parameters at the site and surrounding. Tree plantation surrounding the plant area is done. Though it is an ongoing process. Respirable dust samples are being collected and analyzed periodically to ensure that the dust concentration limit is contained within the allowable limits.
Soil Quality	Soil Pollution	Soil Sampling from various locations and	Complied.

	<p>(Project site will undergo a major transformation during landfilling. The waste is to be compacted in layers with proper sloping. Contamination of soil is possible if the lining system is improper. Also littering of the waste while transportation to the disposal facility, blowing of waste particles due to wind shall lead to soil contamination. Spillage of leachate during pumping also will lead to soil pollution localized)</p>	<p>analysis. After landfilling is complete, the liner system consisting of soil cover, HDPE liner and vegetative cover shall be immediately constructed to avoid any contamination of soil</p>	<p>Soil sampling and monitoring is being done on regular basis. Daily coverage and final coverage is done according to GPCB/CPCB criteria and guidelines to avoid any contamination of soil.</p>
<p>Noise</p>	<p>Noise pollution (Noise levels during construction phase will be high during operational phase due to instrumental work, increased truck movement earth movers etc.</p>	<p>These negative impacts are short term. Equipment to be kept and maintained in proper condition to keep the noise level within 75 dB(A) Workers will be provided with necessary protective equipment e.g. ear plug, earmuffs. Provision of green belt and plantation would further help in attenuating noise.</p>	<p>Complied. Noise level monitoring is done on regular basis, adequate green belt is also provided. And employees are provided with suitable PPEs to avoid any short term or long term negative impacts of noise pollution. .</p>

Traffic	Traffic Impacts	BEIL is situated towards one corner of industrial estate of GIDC, as there is no much traffic on this road, no traffic overcrowding is expected and the impact will be insignificant.	Complied. BEIL is situated towards one corner of industrial estate of GIDC, as there is no much traffic on this road, no traffic overcrowding is expected and the impact will be insignificant.
Socio-Economic	Socio-Economic Impacts	The site selected for the disposal of hazardous wastes in Ankleshwar industrial Estate, is not having any visible adverse impact on human populations well as live stock as this site is excluded from any agriculture, forest, ecological sensitive or animal grazing land. Moreover, the site is within the industrial estate and land already meant for that purpose. With the expansion of TSDF phase-III proposed, there will be additional employment Opportunities for about 100 persons (Construction phase) and about 15 persons (Operational Phase). In general, the project is to have positive environmental impacts by collecting and disposing the hazardous waste in the scientific manner, this will reduce the future health hazard.	Complied. The site selected for the disposal of hazardous wastes in Ankleshwar industrial Estate, is not having any visible adverse impact on human populations well as live stock as this site is excluded from any agriculture, forest, ecological sensitive or animal grazing land. Moreover, the site is within the industrial estate and land already meant for that purpose. With the expansion of TSDF phase-III proposed, there will be additional employment Opportunities for about 100 persons (Construction phase) and about 15 persons (Operational Phase). In general, the project is to have positive environmental impacts by collecting and disposing the hazardous waste in the scientific manner, this will reduce the future health hazard.
Fire and Safety	Accidents/disasters related to fire and safety	Since the TSDF site is already operational, this is an expansion of TSDF phase-III Disaster management plan (DMP) is in place A well-laid fire fighting system and fire extinguishers are already installed as per fire safety norms Regular fire safety training will be conducted. Road/Fire	Complied. Since the TSDF site is already operational, this is an expansion of TSDF phase-III Disaster management plan (DMP) is in place A well-laid fire fighting system and fire extinguishers are already installed as per fire safety norms Regular fire safety training will be conducted.

Health and Safety	Injury	<p>Since the TSDf site is already operational, this is an expansion of TSDf phase III; Pre Placement and periodical medical examination of the TSDf site workers Use of personal protective equipment BEIL shall continue the health monitoring program for the employees. It should focus especially on workers who are handling the hazardous waste</p>	<p>Complied. Since the TSDf site is already operational, this is an expansion of TSDf phase III; Pre Placement and periodical medical examination of the TSDf site workers Use of personal protective equipment BEIL shall continue the health monitoring program for the employees. It should focus especially on workers who are handling the hazardous waste</p>
Impact on Agriculture and Livestock	No Impact	<p>This is an expansion of TSDf phase-III, area between phase I and Phase II portion of land for setting up of secured Landfill. The area is a barren land without significant vegetation. Hence no impact on the agriculture is envisaged.</p>	<p>Complied. This is an expansion of TSDf phase-III, area between phase I and Phase II portion of land for setting up of secured Landfill. The area is a barren land without significant vegetation. Hence no impact on the agriculture is envisaged.</p>
Storm Water	-	<p>BEIL is providing coverage system with storm water collection and drainage for the utilized area as per the CPCB guidelines. The first coverage system has been provided in the year 2001. Since the top coverage system is provided with proper liner system including HDPE liner, the rainwater is taken care of properly. The rainwater is going through the drainage system without any contamination The rainwater harvesting system is provided based on the technology given by the Center for Science & Environment, New Delhi. Schematic diagram of rainwater harvesting system is given in figure</p>	<p>Complied.</p>

Green Belt		Adequate green belt will be provided by BEIL around the existing site. Area which has been brought under green belt is to the tune of 41,00 sq. m. Green belt will be properly maintained resulting in formation of a thick canopy of trees around the project site.	Complied. Green belt is developed to a tune of 40,500 sq. mt with thick canopy trees around the project site and 2440 sq. mt. in middle area to mitigate the impacts on the overall air quality at the site.
Operation, Maintenance and Closure of the Facility	Contamination of Environment	The site will be operated, maintained and closure of the facility will be done as per approved plan by SPCB and in accordance with guidelines published by CPCB	Complied. The site is being operated, maintained and closure of the facility will be done as per approved plan by SPCB and in accordance with guidelines published by CPCB
Post Closure Phase	Ambient air Quality	Monitoring of ambient air quality for various parameters	Complied. Monitoring of ambient air quality for various parameters is being done.
	Emission from landfill vents	Monitoring of vents for HCs, VOCs, monthly	Complied. Monitoring of vents for HCs, VOCs is being done.
	Leachate Generation	Sampling and analysis of leachate for various parameters, monthly Treatment of generated leachate in Multiple Effect Evaporator	Complied. Sampling and analysis of leachate for various parameters is being done. Treatment of generated leachate is done in Multiple Effect Evaporator or sent to ETL.
	Ground water Monitoring	Monitoring of Ground Water	Complied. Monitoring of Ground Water on regular basis is being conducted.
	Soil contamination	Monitoring of soil samples	Complied. Monitoring of soil samples on regular basis is being conducted.
	Stability of the landfill	Regular inspection and maintenance of the coverage system	Complied. Regular inspection and maintenance of the coverage system is being done.