Executive Summary of

Draft Environmental Impact Assessment Report

for

Common Effluent Treatment Plant (CETP)-

Boiler capacity expansion from 10 TPH to 22 TPH

at Village - Saidpura, Tehsil – Dera Bassi, District -SAS Nagar, Mohali, Punjab

Project Proponent

M/s. Saidpura Envirotech Pvt. Ltd. (SEPL)

Village: Saidpura, Dera Bassi, SAS Nagar, Mohali, Punjab-140507

Executive Summary

1 Introduction

M/s. Saidpura Envirotech Pvt. Ltd. has proposed to develop CETP with latest technology. The capacity of CETP is 5 MLD (2 MLD in Phase-I and 3 MLD in Phase-2). Environmental Clearance for the existing CETP project was issued from Ministry of Environment Forest & Climate Change (MoEF&CC) Vide F. No. 10-66/2013-IA.III dated 23rd March, 2015. Latest Consent to Establish (CTE) was issued from Punjab Pollution Control Board (PPCB) Vide Letter No. CTE/Ext./SAS/2024/25022709 dated 26th March, 2024 and valid till 20th June, 2024. The present proposal is expansion of CETP Plant (addition of biomass/ rice husk-based boiler of 12 TPH capacity within the existing CETP premises).

2 Requirement of project

2.1 Area requirement

Total area of project is 7.0 acres (2.83 Ha). This is Shamlat land (Community-owned land that is meant to be used for the benefit of the entire village or community). Land is given by Village panchayat on lease for 33 years.

2.2 Water requirement

Total water requirement during construction phase will be 50 KLD whereas during operation phase it will be only 20 KLD. The same will be sourced from ground water source. Waste water generated from facility will be managed within the CETP unit.

2.3 Power and fuel requirement

Required power will be sourced from Punjab State Transmission Corporation Limited (PSTC Ltd.). The project will be developed in two phases and power will be required under two phases as given below:

Table 1. Power and fuel requirement

Particulars	Unit	Quantity	Remarks
Power Requirement-Phase-I			
Power demand	**kW**	**1060**	**Sourced: PSTC Ltd. & Cogen Plant**
DG set	**kVA**	**1000**	**For emergency power backup**
Power Requirement-Phase-II			
Power demand	kW	1060	Sourced: PSTC Ltd. & Cogen Plant
DG set	kVA	1000	For emergency power backup

2.4 Manpower requirement

Company has already appointed 20 people locally for construction work. Project will create direct & indirect employment opportunities within the surrounding region. During operation phase, total no. of employee would be 58 which will be appointed locally.

3 Baseline environmental status

Field investigations were undertaken to collect the existing baseline environment status in respect to Air, Water, Noise, Soil, Ecological and Socio-economic Conditions. Study area of 10

Km radius from the project site is identified to establish the present environmental conditions for the above environmental components. The field data generation is undertaken during the Winter season from Dec. 2023 to Feb. 2024.

3.1 Meteorological data

The Meteorological data is collected from the nearest IMD station at Chandigarh. The pre-dominant wind direction recorded is from NW. Calm conditions prevailed for 28.02 % of the total time. Average wind speed observed for the season is around 2.50 m/s.

3.2 Ambient Air Quality

Ambient Air quality was monitored at 10 locations within the study area of the project site. The locations were identified in downwind, cross wind and up wind directions. The air pollutants monitored are PM_{10} & $PM_{2.5}$, SO_2, NOx on 24-hourly basis as per the standard MoEF&CC guidelines and results were compared with CPCB Standards.

The minimum and maximum levels of $PM_{2.5}$ are recorded in the range of 29.5 $\mu g/m^3$ to 47.8 $\mu g/m^3$, whereas the PM_{10} are in the range of 48.6 $\mu g/m^3$ to 78.5 $\mu g/m^3$. The SO_2 concentrations within the study are observed are in the range of 9.8 $\mu g/m^3$ to 15.3 $\mu g/m^3$ and the NOx observed are in the range of 18.8 $\mu g/m^3$ to 28.6 $\mu g/m^3$. The observed pollutant levels were compared with CPCB Standards for PM_{10} (100 $\mu g/m^3$) for $PM_{2.5}$ (60 $\mu g/m^3$) and SO_2 and NOx is (80 $\mu g/m^3$) and found to be well within the limits indicating the baseline environmental status in terms of air pollution is satisfactory. Ozone concentrations were also monitored in the study area and are found to be in the range of BDL to 25.6 $\mu g/m^3$. Air Quality Index (AQI) at the study area is ranging from 49 to 79 which is in the range of good to Satisfactory level.

3.3 Water quality monitoring (GW/SW)

Surface water (SW) and Ground water (GW) samples were collected from different sources within the study area and analysed for all important physio-chemical and biological parameters to establish the quality of water prevailing in the project surroundings. Around 9 GW and 2 SW samples were collected. The GW samples were collected mainly from hand pumps, bore wells those are used by the villages for domestic purposes. The SW collected from Ghaggar River (at Mubarikpur village) and Dangri River (at Sultanpur village).

The pH of GW observed is from 7.1 to 7.8 and in SW it is from 7.2 to 7.4, the TDS level of GW is from 395 mg/L to 562 mg/L, whereas in SW the levels are 168 mg/L to 266 mg/L. The chloride concentrations in GW is between 53 mg/L to 101 mg/L, whereas the SW has a chloride values are less than 22.0 mg/L to 60.0 mg/L. The hardness observed in GW is 213 mg/L to 302 mg/L. and in SW the hardness found to be between 97.0 mg/L to 185 mg/L. Fluoride concentrations observed for GW are 0.93 mg/L to 1.6 mg/L and SW 0.6 mg/L to 0.8 mg/L.

3.4 Noise & traffic monitoring

Noise level was monitored at 9 locations within the study area. The locations were identified for assessment of existing noise level status, keeping in view of the land use pattern, residential areas in villages, schools, bus stands, etc. Day levels of noise monitored during 6 AM to 10 PM and in night during 10 PM to 6 AM. The noise levels were monitored as per the Ambient Noise Standards of residential and industrial area standards. The noise levels during the day are ranging in between 50.2 to 55.2 dB (A), whereas in night noise levels are ranging between 40.3 to 44.8 dB (A).

The minimum and maximum level of traffic at the Road is 388 PCU/hr. and 1091 PCU/hr respectively. Where is present road capacity is 1500 PCU's/hr of the road surveyed. It was observed that the existing level of service is Fair/Average. This implies that traffic will not have a major impact due to the proposed expansion project.

3.5 Soil quality

Soil quality was monitored at 10 locations within the study area. The locations were selected to assess the existing soil conditions representing various land use conditions and geological features. The important physical, chemical parameter concentrations were determined from all the samples. The pH values in the study area are varying from 7.2 to 7.8, the Electrical Conductivity varies from 134 µS/cm to 360 µS/cm, the Organic Carbon is varying from 0.45 % to 0.88 %, the available Nitrogen is varying from 190 kg/Ha to 325 kg/Ha, the available Phosphorus is varying from 11 kg/Ha to 27 kg/Ha, and the available Potassium is varying between 146 kg/Ha to 291 kg/Ha.

3.6 Ecological environment

Total 10 km radius area including core zone has been visited for flora survey. Total 28 tree species, 18 shrub species and 38 herb species were identified which also include climbers and grass species. No any species is categorized under conservation category. All are the common and widely distributed in the area. Only *Aegle marmelos* (Bel) is categorized under Near Threatened (NT) category as per IUCN Red data list.

There is no National Park (NP), Wildlife Sanctuary (WLS), Biosphere Reserve (BR) present with 10 km radius from the project site. Total 3 Protected Forest (PF) i.e. Bir Kheri PF at 3.0 Km SW direction, Bir Baqarpura PF at 4.0 Km SW direction, Bir Barauli PF at 8.2 km SW direction and 2 Reserve Forest (RF) i.e. Bir Dadrala RF at 2.5 Km SW direction and Bir Pir Machhela RF at 6.5 km NW direction from the project area. No forest land involved or present within the project site.

Total 7 mammal species, 5 reptiles, 5 amphibians and 28 bird species and 7 butterfly species are reported in the area. No any species are falling under conservation category as per IUCN categorization except *Rousettus leschenaultii (*Fruit bat) which is categorized under Near Threatened category globally but it is categorized under Scheduled-V in the IWPA, 1972 which is safe category. No any Schedule-I species as per IWPA, 1972 found or reported within the study area.

3.7 Socio-Economic environment

The socio-economic study categorizes the study area into following zones, namely the core zone (project site), buffer zone of 0 to 2 km radius, 2 to 5 km radius and other villages which are within 5 to 10 km radius of the proposed expansion project site. The socio-economic secondary data is collected from SAS Nagar district of Punjab comprising 37 villages/CT and 16 villages/ towns in Punchkula district of Haryana from Primary Census Abstract (PCA) 2011, Punjab and Haryana district handbook respectively.

Total population of the study area is 39813 consisting 21185 male population and 18628 female population. Total SC Population is 8017. No ST population present in the area. Average literacy rate of 67.9%. Male literacy rate of the study area is 58 %, whereas the literacy rate among women, which is an important indicator for social change, is estimated to be as low as 42% of the total literate. Total 31% are main workers where marginal workers and non-workers constitute 5% and 63% of the total working population, respectively.

Study area indicates that the region is well facilitated with necessary basic amenities like a source of drinking water, a source of lighting, better housing services, drainage and sewage network etc. The majority of the settlements in the study area have evidenced a proper source of drinking water within or nearby premises. Most of the houses in the villages and urban centres are in good and liveable condition, with concrete roofs and burnt brick walls. Quite a good number of settlements have proper latrine facilities within their residing premises.

4 Anticipated Environmental Impacts and Mitigation Measures

A summary of anticipated environmental impact and mitigation measures are given below**:**

Table 2: Details of anticipate impacts and mitigation measures

Parameter/ component	Construction		Operation	
	Impact	**Mitigation measures**	**Impact**	**Mitigation measures**
Ambient Air Quality	▪ Impact on health due to dust generation ▪ Impact of vegetation growth due to dust ▪ Degradation of Air quality of the area ▪ Vegetation loss due to land preparation	▪ Regular water sprinkling ▪ Controlled speed of vehicles in unpaved areas ▪ Duration of stockpiling will be kept as short as possible ▪ Covering of piles of soil and debris ▪ Maintenance of machinery ▪ PUC and regular monitoring will be carried out ▪ The CETP plant is already developed and present proposal only involved installation of boiler which will not have major dust generation whereas above Air Pollution controlling measures shall be adopted.	▪ Odour generation and associated impact on health from the process ▪ Odour generation and associated from ▪ Emissions from DG set ▪ The project involved installation of biomass based Boiler which will produce the ash which will lead the air pollution and associated health impacts.	▪ The DG set will be used only during emergency shut down ▪ Proper height of stack with DG set & Boiler ▪ Boiler will be attached with the Bag filters and other Air Pollution controlling equipment ▪ Thick greenbelt will be developed which will help in air pollution control as well as odour control.

Parameter/ component	Construction		Operation	
	Impact	**Mitigation measures**	**Impact**	**Mitigation measures**
Water	▪ Impact on water quality if wastewater drains into water body ▪ Low sanitation problem due to improper management of domestic sewage ▪ Impact of aquatic flora, fauna if untreated WW mixed with water source ▪ Surface runoff and movement of slurred material towards downstream area and increase in pollution load	▪ All the water resulting from the equipment washed will be diverted to the working pit in order to arrest the suspended solids. ▪ The domestic sewage generated will be treated in portable STP during construction phase ▪ No GW extraction for construction phase ▪ Storm water runoff system will be designed as per the average rainfall.	▪ Impact on quality of water bodies ▪ Health impact due to consumption of polluted water ▪ Impact on aquatic flora and fauna ▪ Runoff may carry the waste and pollute the water quality	▪ Domestic wastewater will be treated through in-house Common Sewage Treatment Plant. ▪ This is CETP plant for treatment of effluent from the industries. ▪ The effluent will be transported to facility through dedicated tankers which will be GPS equipped. ▪ Surface runoff from the catchment area will be diverted to drains for underground water tank ▪ The treatment process involved two stream i.e. HTDS and LTDS. The unit involved conventional treatment as well as ZLD unit which include RO, MEE, ATFD. RO permeate will be reused and reject will be sent to MEE, ATFD.

Parameter/ component	Construction		Operation	
	Impact	**Mitigation measures**	**Impact**	**Mitigation measures**
				▪ Drinking water facility will be arranged at site.
Noise	▪ Social disturbance and hearing difficulty ▪ Disturbance in natural movement of birds and other animal ▪ Overall increase in Noise level	▪ Use of low noise generating equipment ▪ Transportation during day time only ▪ PPEs will be provided to all the workers ▪ Regular maintenance of equipment and machineries ▪ Greenbelt development around the noise generating area ▪ PPE like ear plugs/ muffs to all workers Sufficient engineering control during installation of equipment and machineries	▪ CETP operation does not produce much noise except noise generation near to the Boiler operation and from vehicular movement	▪ Acoustic enclosures will be provided to DG set & Boiler ▪ Uses of machineries will be avoided during night time ▪ Movement of heavy vehicles will be map during day time ▪ Unnecessary of blowing horns will be prohibited ▪ PPE like ear plugs/ muffs to all workers ▪ Greenbelt development around the noise generating area ▪ Noise level monitoring on regular interval
Land	▪ Impact on soil quality due to disposal of construction debris	▪ Most of the construction activities have been completed and no major construction work will	▪ Impact of soil quality in case disposal of haz. Waste (Sludge & MEE Salt) openly	▪ Removed soil will be stored in safe place and will be used for Greenbelt development

Parameter/ component	Construction		Operation	
	Impact	**Mitigation measures**	**Impact**	**Mitigation measures**
	▪ Impact of surface soil due to dust settled on it ▪ Loss of topsoil and increase in pollution load	be required in the present proposal. ▪ Land preparation work already done during development of CETP plant. ▪ Construction debris will be stored separately and will be managed as per C&D Rules, 2016.	▪ Loss of soil fertility due to increase on pollutants ▪ Impact on surface soil quality due to settlement of dust on soil surface	▪ No disposal of waste on open land ▪ Haz. waste will be transported through covered trucks via dedicated route and will be sent to TSDF ▪ No discharge of wastewater on the open land ▪ Greenbelt will be developed which will help to bind the soil and increase the soil nutrient.
Ecology & Biodiversity	▪ No land clearing involved as the project development work is at advance stage. ▪ There will not be any vegetation removal for boiler installation.	▪ Avenue plantation will be done ▪ Greenbelt work will be in initiated from early stage of the project	▪ Impact on surrounding flora due to dust falling ▪ Disturbance of movement of fauna specially birds ▪ Positive impact due to development of Greenbelt all around the plot area	▪ APCDs to be attached with Boiler and DG set ▪ Development of thick Greenbelt on all around the project area ▪ Avenue plantation ▪ Awareness program

Parameter/ component	Construction		Operation	
	Impact	**Mitigation measures**	**Impact**	**Mitigation measures**
Socio-economic	▪ Increased traffic volumes and congestion ▪ Damage to and/or destruction of sub-surface heritage resources ▪ Positive impact due to employment generation	▪ Proper monitoring of traffic congestion and volume ▪ Preference will be given to local ▪ Skill development training to the workers ▪ CER activities will be done in local area	▪ Heath impact in case of direct exposure of Haz. Waste (MEE Salt and Sludge) ▪ Impact on health if contaminated/ polluted water consumed ▪ Possibility of accident while handling of industrial effluent ▪ Improvement of economic condition due to employment ▪ Generation of indirect income source	▪ PPEs will be provided to the workers ▪ Handling of effluent through trained workers as per SOP ▪ Facility of safe drinking water ▪ Proper sanitation facility to be arranged ▪ Preference will be given to local for employment ▪ CER activities which included skill development, health support ▪ Regular health check-up of workers and nearby people

5 Environmental Monitoring Program

Environmental Monitoring Program has been designed for assessing the efficiency of implementation of Environment Management Plan (EMP) and to take corrective measures in case of any degradation in the surrounding environment. Different activities involved in the proposed expansion project and their impact on various environmental attributes have been considered while designing a detailed environmental monitoring program. Implementation of EMP and periodic monitoring is proposed to be carried out at plant level and area level for the proposed CETP. A comprehensive monitoring mechanism has been devised for monitoring of impacts due to proposed expansion project. Plant level environmental protection measures like dust suppression, treatment and recycling of wastewater, plantation and noise control in the plant premises, ash handling, hazardous waste handling, housekeeping, implementation of EMP and Environmental Clearance conditions will be monitored by the plant authorities.

6 Risk Analysis

Risk assessment was carried out to identify and quantify major hazards and the risk associated with various operations of the proposed expansion project that may lead to an emergency situation which affect public safety and health. A systematic analysis of the chemicals and their quantities of storage have been carried out to determine threshold quantities as notified in MSIHC Rules, 1989 and amended in 2000. Onsite and offsite emergency action plan has been proposed. The plan is based on probable scenarios like fire, explosion, natural calamities etc. Dedicated team to handle emergency situations will be formed.

7 Project Benefits

The main benefits of the proposed expansion project are:

- The project will help to manage the industrial effluent generated from the nearby pharmaceutical industries
- It provides a one stop solution for the management of various types of effluent in scientific manner
- Minimizes pollution load on environment with an additional benefit of green and clean surroundings
- Management of effluent is relatively easier and economically viable at a common facility
- Most viable option in the absence or availability of expertise
- Prevention of natural resource contamination
- Employment opportunity is envisioned for the nearby inhabitants thereby improving their lifestyle & economic conditions
- New infrastructure and development of amenities in and around the project site is expected

8 Conclusions

The EIA study has made an overall assessment of the potential environmental impacts likely to arise from the proposed expansion of CETP plant. The impact predictions indicate that the maximum GLC levels of PM_{10} & $PM_{2.5}$, SO_2 and NOx superimposed on the baseline levels the expected impacts are minimized within the site boundary from the release of stack and were

well within the prescribed limits of CPCB standards. MEE & ATFD has been proposed to ensure the ZLD. Mitigation measures are proposed to minimize the adverse impacts.

The total cost of the Phase-I of project is Rs. 63.0 Crores whereas for Phase-II it will be Rs. 80.0 Crores. The EMP capital cost of the project is 86.3 Lakhs whereas recurring cost will be 28.25 Lakhs/year. Around 65.0 lakhs is earmarked for CER activities for a period of 3 years from execution of project. However, in addition to the above, if any further requirements are raised during public consultation, the same will be included in the CER activities.