SUMMARY OF (EIA) REPORT

(IN ENGLISH AND MARATHI)

FOR

THE PROPOSED EXPANSION THROUGH CAPACITY UTILIZATION OF BULK DRUGS & INTERMEDIATES MANUFACTURING UNIT

BY

SMRUTHI ORGANICS LTD.(SOL)

Unit-II, Plot No.27, MIDC Chincholi ,Dist .: Solapur

PREPARED BY

EQUINOX

Equinox Environments (India) Pvt. Ltd.

EQUINOX ENVIRONMENTS (I) PVT. LTD.,

ENVIRONMENTAL ENGINEERS, CONSULTANTS & ANALYSTS, KOLHAPUR, (M.S.)

AN ISO 9001 : 2008 & QCI - NABET ACCREDITED ORGANIZATION

E-mail: projects@equinoxenvi.com, eia@equinoxenvi.com

2016

Smruthi Organics Limited

REF. NO.: SOL/Unit-II-75/MPCB/2016
DATE: 22.082016

To,
The Member Secretary,
Maharashtra Pollution Control Board (MPCB);
3rd & 4th Floor, Kalpataru Point,
Sion Circle, Sion (E),
MUMBAI - 400 022

Sub.: Application for conducting -**'Public Hearing'** w.r.t proposed expansion through capacity utilization of existing Bulk Drugs and Intermediates Manufacturing unit by **"Smruthi Organics Ltd."** located at Plot No. A-27, MIDC Chincholi, Tal.: Mohol, Dist.: Solapur, Maharashtra State.

Dear Sir,

We – **"M/s. Smruthi Organics Ltd."** have planned to go for expansion through capacity utilization of existing Bulk Drugs and Intermediates Manufacturing unit at **Plot No. A-27, MIDC Chincholi, Tal.: Mohol, Dist.: Solapur. Maharashtra State**

There under, an application in Form – 1 format was submitted to Ministry of Environment, Forests and Climate Change (MoEFCC); New Delhi on 10.02.2015. Subsequently, the application was considered by Expert Appraisal Committee (EAC) in its 36th Meeting held on 16.03.2016 and TORs were issued. Refer **Enclosure – I** for copy of ToRs. During above said meeting, directions were given by the EAC members to conduct Public Hearing w.r.t our proposed expansion project. Now, in order to conduct public hearing, we hereby are submitting all the relevant documents and information to your office.

Along with the public hearing application, a draft EIA Report as per the generic structure stipulated in MoEF Notification No. S.O.1533 (E) dated 14.09.2006 as amended vide Notification No. 3067 (E) dated December 01, 2009 and Executive Summary Report in two languages (English and Marathi) are enclosed separately. The same provide details of Pollution Control Facilities, Production Processes and Raw Materials as well as Finished Products' information and Environmental Management Plan (EMP) etc. regarding the existing and proposed expansion activities.

REGISTERED & CORPORATE OFFICE : 'BALAJI BHAVAN' 165-A, RAILWAY LINES, SOLAPUR-413 001. (INDIA) ■ PHONE : 0091- 217-2310267, 2310367
FAX NO. : 0091 - 217 - 2310268 ■ MUMBAI OFFICE : PH. : 022-24129211 TELEFAX NO. : 0091- 22-24155452
FACTORY : UNIT II : PLOT NO. A-27, M.I.D.C. CHINCHOLI, TAL. MOHOL, DIST. SOLAPUR - 413 255. (INDIA)
PHONE : 2357491 to 2357494 ■ TELEFAX : 0217-2357771 ■ VISIT US : www.smruthiorganics.com
E-mail : eaga@smruthiorganics.com ■ CIN :- L24119PN1989PLC052562

Smruthi Organics
Limited

'Twenty Sets' of various documents, as mentioned above and equivalent number of soft copies of same have been submitted herewith for your information and necessary further action. Also, a Cheque of Rs. 50,000/- (Rs. Fifty Thousand Only) bearing No. 905968 drawn on dated 22.08.2016 towards the Public Hearing charges, as decided by the govt., has also been presented herewith.
Please do the needful and oblige.
Thanking you.

Yours faithfully

R. I. Shaikh
Sr. General Manager-Production & Operation

Encl.: 1. Executive Summary of project
2. A Draft EIA Report
3. A D.D. bearing No. 905968 dated 22.08.2016 drawn on SBI

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भारतीय स्टेट बैंक
State Bank Of India

(01656) - STATION ROAD (SOLAPUR)
42/1,RAILWAY LINES, SOLAPUR
DIST:SOLAPUR, MAHARASHTRA 413001
Tel: 217-2623707 IFS Code : SBIN0001656

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PAY Sub - Regional Officer, Maharashtra Pollution Control Board (MPCB) को या उनके आदेश पर OR ORDER

रुपये RUPEES Fifty Thousand Only

अदा करें ₹ **50,000.00

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CC ACCOUNT

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SMRUTHI ORGANICS LIMITED .

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Please sign above

⑈905968⑈ ⑆130020041⑆ 000065⑈ 30

11-03-2016
MANIPAL TECHNOLOGIES LIMITED, KARNATAKA / CTS-2010

ENCLOSURE

J-11011/38/2015-IA II (I)

Government of India
Ministry of Environment, Forests and Climate Change
(I.A. Division)

Indira Paryavaran Bhawan
Aliganj, Jorbagh Road,
New Delhi -110003

Telefax : 011: 24695313
E-mail: lk.bokolia@nic.in
Dated: 18th May, 2015

To,
Shri E. Purushotham
Managing Director
M/s Smruthi Organics Ltd.
Plot no. A-27, MIDC Chinchcholi,
Mohol, Solapur, Maharashtra- 413255

Email.: eaga@smruthiorganics.com Fax.: 0217-2357491

Subject: Expansion of bulk drug & Intermediate manufacturing unit (123.5 MTPM to 492.5 MTPM) Plot No. A-27 (Gat No. 230,231,232 & 233), MIDC Chincholi, Tahsil Mohol, District Solapur, Maharashtra by M/s. Smruthi Organics Limited.- reg TOR

Ref. No.: Your Letter no. SOL-UII-001/2015 dated 9th February, 2015

Sir,

Kindly refer your letter no. SOL-UII-001/2015 dated 9th February, 2015alongwith project documents including Form-I, Pre-feasibility Report and draft 'Terms of Reference' as per the EIA Notification, 2006. It is noted that proposal is for expansion of bulk drug & Intermediate manufacturing unit (123.5 MTPM to 492.5 MTPM) Plot No. A-27 (Gat No. 230,231,232 & 233), MIDC Chincholi, Tahsil Mohol, District Solapur, Maharashtra by M/s. Smruthi Organics Limited following products as per submission in Form-1 are now proposed to be manufactured:

Sr. No.	Name of Products & by products	Existing Products Quantity MT/Month	Proposed Products Quantity MT/Month	Total MT/Month
1.	Norfloxacin	15	--	15
2.	Pefloxacin	3	1	4
3.	DiloxanideFuroate	5	10	15
4.	Metformin HCL	60	340	400
5.	Ciprofloxacin HCL	9.5	5.5	15
6.	Enrofloxacin	1	1	2
7.	Carbidopa	0.5	--	0.5
8.	Fenofibrate	0.5	--	0.5
9.	Amlodipine Besilate	0.5	3.5	4

10.	2-Furoyl Chloride	0.5	--	0.5
11.	Phthaloyl Amlodipine	5	1	6
12.	Amlodipine Base	1	1	2
13.	S-Amlodipine	0.5	0.5	1
14.	1-Acetyl Amine-5-Nitro- 2-Propoxy Benzene (ANPB)	1	--	1
15.	2-Furoic Acid	0.5	1.5	2
16.	Amlodipine Maleate	0.5	0.5	1
17.	Amisulpride	0.5	--	0.5
18.	Telmisartan	0.5	3.5	4
19.	Losartan Potassium	1	--	1
20.	Zidovudine	5	--	5
21.	Lamivudine	5	--	5
22.	Lamotrigine	2	--	2
23.	Acyclovir	5	--	5
24.	Levodopa	0.5	--	0.5
Total		**123.5**	**369**	**492.5**
Note: From the above list of products, Product nos. 22, 23 and 24 shall be discontinued.				

2.0 Draft Terms of Reference (TOR) have been discussed and finalized during the 36th Reconstituted Expert Appraisal Committee (Industry) held during 16-17th March , 2015 for preparation of EIA/EMP report. The Committee prescribed the following Specific and Additional TOR in addition to Generic TOR provided at Annexure-I for preparation of EIA-EMP report along with Public Hearing:

A. Specific TOR

1. Details on solvents to be used, measures for solvent recovery and for emissions control.
2. Details of process emissions from the proposed unit and its arrangement to control.
3. Ambient air quality data should include VOC, etc.,
4. Work zone monitoring arrangements for hazardous chemicals.
5. Detailed effluent treatment scheme including segregation of effluent streams for units adopting 'Zero' liquid discharge.
6. Action plan for odour control to be submitted.
7. A copy of the Memorandum of Understanding signed with cement manufacturers indicating clearly that they co-process organic solid/hazardous waste generated.
8. Authorization/Membership for the disposal of liquid effluent in CETP and solid/hazardous waste in TSDF, if any.
9. Action plan for utilization of MEE/dryers salts.
10. Material Safety Data Sheet for all the Chemicals are being used/will be used.
11. Authorization/Membership for the disposal of solid/hazardous waste in TSDF are being used/will be used.
12. Authorization/Membership for the disposal of solid/hazardous waste in TSDF.
13. Risk assessment for storage and handling of hazardous chemicals/solvents. Action plan for handling & safety system to be incorporated.
14. Arrangements for ensuring health and safety of workers engaged in handling of toxic materials.

B. Additional TOR

1. Public hearing to be conducted and issues raised and commitments made by the project proponent on the same should be included in EIA/EMP Report in the form of tabular chart with financial budget for complying with the commitments made.

2. A separate chapter on status of compliance of Environmental Conditions granted by State/Centre to be provided. As per circular dated 30th May, 2012 issued by MoEF, a certified report by RO, MoEF on status of compliance of conditions on existing unit to be provided in EIA-EMP report.

3. NBWL approval to be taken as project fall within 10 km distance of GIB sanctuary at Nannaj.

3.0 These 'TORs' should be considered for the preparation of EIA / EMP for expansion of bulk drug & Intermediate manufacturing unit (123.5 MTPM to 492.5 MTPM)Plot No. A-27 (Gat No. 230,231,232 & 233), MIDC Chincholi, Tahsil Mohol, District Solapur, Maharashtra by M/s. Smruthi Organics Limited in addition to all the relevant information as per the 'General Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. The EIA/EMP as per TORs should be submitted to the Chairman, Maharashtra State Pollution Control Board for public consultation. The SPCB shall conduct the public hearing/public consultation as per the provisions of EIA notification, 2006.

4.0 You are requested to kindly submit the final EIA/EMP prepared as per TORs and incorporating all the issues raised during Public Hearing / Public Consultation to the Ministry for considering the proposal for environmental clearance ***within 3 years as per the MoEF O.M. No. J-11013/41/2006-IA.II (I) dated 8th October, 2014***.

5.0 The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India/National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc.

(Lalit Bokolia)
Additional Director

Copy to:

1. The Chairman, Maharashtra Pollution Control Board, Kalpataru Point, 3rd and 4th floor, Opp. Cine Planet, Sion Circle, Mumbai-400 022, Maharashtra
2. Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office, Kendriya Paryavaran Bhavan, Link Road No.3, Bhopal-462016

(Lalit Bokolia)
Additional Director

ANNEXURE -I

GENERIC TERMS OF REFERENCE (TOR) IN RESPECT OF INDUSTRY SECTOR

1. Executive summary *(maximum 2-3 sheets in A4 size paper)* of the project covering project description, description of the environment, anticipated environmental impacts & its mitigation measures, environmental management plan, environmental monitoring programme, public consultation, project benefits, Social impacts including R&R.

2. Site Details:
   - i. Location of the project site covering village, Taluka/Tehsil, District and State on Indian map of 1:1000,000 scale.
   - ii. A toposheet of the study area of radius of 10km and site location on 1:50,000/1:25,000 scale on an A3/A2 sheet.
   - iii. Co-ordinates (lat-long) of all four corners of the site.
   - iv. Google map-Earth downloaded of the project site.
   - v. A map showing environmental sensitivity [land use/land cover, water bodies, reserved forests, wildlife sanctuaries, national parks, tiger reserve etc.] and from critically/severely polluted area(s) and Eco-sensitive Areas within 10km radius of the project site vis-à-vis shortest (aerial) distance from the project. If the project is located within 10km of CPAs/severely Polluted Areas, confirm whether moratorium has been imposed on the area.
   - vi. Layout maps indicating existing unit as well as proposed unit indicating storage area, plant area, greenbelt area, utilities etc. In addition, if located within an Industrial area/Estate/Complex, layout of Industrial Area and location of unit within the Industrial area/Estate/Complex, layout of Industrial Area.
   - vii. Photographs of the proposed and existing (if applicable) plant site. If existing, in addition to site map, provide photographs of plantation/greenbelt in the existing project. If fresh EC application, photographs

3. Landuse break-up of total land of the project site (identified and acquired) – agricultural, forest, wasteland, water bodies, settlements, etc shall be included.

4. A copy of the mutual agreement for land acquisition signed with land oustees.

5. Proposal shall be submitted to the Ministry for environment clearance only after acquiring at least 60% of the total land required for the project. Necessary documents indicating acquisition of land shall be included.

6. **Forest and wildlife related issues:**
   - i. Permission and approval for the use of forest land (forestry clearance), if any, and recommendations of the State Forest Department.
   - ii. Landuse map based on High resolution satellite imagery (GPS) of the proposed site delineating the forestland (*in case of projects involving forest land more than 40 ha)*
   - iii. Status of Application submitted for obtaining the stage I forestry clearance along with latest status shall be submitted.
   - iv. The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden-thereon
   - v. Wildlife Conservation Plan duly authenticated by the Chief Wildlife Warden of the State Government for conservation of Schedule I fauna, if any exists in the study area
   - vi. Copy of application submitted for clearance under the Wildlife (Protection) Act, 1972, to the Standing Committee of the National Board for Wildlife

7. **Expansion/modernization proposals:**
   - i. Copy of all the Environmental Clearance(s) including Amendments thereto obtained for the project from MOEF/SEIAA shall be attached as an Annexure. A certified copy of the latest Monitoring Report of the Regional Office of the Ministry of Environment and Forests as per circular dated 30th May, 2012 on the status of compliance of conditions stipulated in all the existing environmental clearances including Amendments should be provided. In addition, status of compliance of

Consent to Operate for the ongoing /existing operation of the project from SPCB shall be attached with the EIA-EMP report.

ii. In case the existing project has not obtained environmental clearance, reasons for not taking EC under the provisions of the EIA Notification 1994 and/or EIA Notification 2006 shall be provided. Copies of Consent to Establish/No Objection Certificate and Consent to Operate (in case of units operating prior to EIA Notification 2006, CTE and CTO of FY 2005-2006) obtained from the SPCB shall be submitted. Further, compliance report to the conditions of consents from the SPCB shall be submitted.

Details of Industrial Operations

8. A list of major industries with name and type within study area (10km radius) shall be incorporated.
9. Details of proposed raw materials and products along with production capacity. If expansion project, details for existing unit, separately for existing and new (proposed) unit.
10. Details of manufacturing process, major equipment and machinery. If expansion project, details of existing unit, separately for existing and new (proposed) unit.
11. List of raw materials required and its source along with mode of transportation shall be included. All the trucks for raw material and finished product transportation must be "Environmentally Compliant".
12. Quantity of fuel required, its source and characteristics and documentary evidence to substantiate confirmed fuel linkage shall be furnished
13. Project site layout plan to scale using AutoCAD showing raw materials, fly ash and other storage plans, bore well or water storage, aquifers (within 1 km) dumping, waste disposal, green areas, water bodies, rivers/drainage passing through the project site shall be included.
14. Manufacturing process details of all the plants including captive power plant if any along with process flow chart shall be included.
15. Mass balance for the raw material and products shall be included.
16. Energy balance data for all the components of the plant shall be incorporated.

Environmental Status

17. Geological features and Geo-hydrological status of the study area shall be included.
18. Details of Drainage of the project upto 5km radius of study area. If the site is within 1 km radius of any major river, peak and lean river discharge as well as flood occurrence frequency based on peak rainfall data of the past 30 years. Details of RL of the project site and mRL of the river should also be provided.
19. One season site-specific micro-meteorological data using temperature, relative humidity, hourly wind speed and direction and rainfall and AAQ data (except monsoon) at 8 locations for PM_{10}, $PM_{2.5}$, SO_2, NO_x, CO and HC (methane & non-methane) should be collected. The monitoring stations should take into account the pre-dominant wind direction, population zone and sensitive receptors including reserved forests.
20. Surface water quality of nearby River (60m upstream and downstream) and other surface drains at eight locations to be provided.
21. Ground water monitoring minimum at 8 locations shall be included.
22. Noise levels monitoring at 8 locations within the study area.
23. Traffic study of the area for the proposed project in respect of existing traffic, type of vehicles, frequency of vehicles for transportation of materials, additional traffic due to proposed project, parking arrangement etc.
24. Detailed description on flora and fauna (terrestrial and aquatic) exists in the study area shall be given with special reference to rare, endemic and endangered species. If Schedule-I fauna are found within the study area, a Wildlife Conservation Plan shall be prepared and furnished.
25. Emissions (g/second) with and without the air pollution control measures.
26. Cumulative impact of all sources of emissions (including transportation) on the AAQ of the area shall be well assessed. Details of the model used and the input data used for modeling shall also be provided. The air quality contours should be plotted on a location map showing the location of project site, habitation nearby, sensitive receptors, if any.

27. Impact of the transport of the raw materials and end products on the surrounding environment shall be assessed and provided. In this regard, options for transport of raw materials and finished products and wastes (large quantities) by rail or rail-cum road transport or conveyor-cum-rail transport shall be examined.

28. Details of water requirement, water balance chart for new unit or for existing unit as well as proposed expansion (in case of expansion).

29. Source of water supply and quantity and permission of withdrawal of water (surface/ground) from Competent Authority.

30. Details regarding quantity of effluents generated, recycled and reused and discharged to be provided. Methods adopted/to be adopted for the water conservation shall be included. Zero discharge effluent concepts to be adopted.

31. A note on treatment of wastewater from different plant operations, extent recycled and reused for different purposes shall be included. Complete scheme of effluent treatment. Characteristics of untreated and treated effluent to meet the prescribed standards of discharge under E(P) Rules.

32. Action plan for control of ambient air quality parameters as per NAAQES Standards for PM_{10}, $PM_{2.5}$, SO_2 and NO_x, etc as per GSR 826(E) dated 16th November, 2009.

33. An action plan to control and monitor secondary fugitive emissions from all the sources as per the latest permissible limits issued by the Ministry vide G.S.R. 414(E) dated 30th May, 2008.

34. Action plan for solid/hazardous waste generation, storage, utilization and disposal. Copies of MOU regarding utilization of solid waste shall also be included. EMP shall include the concept of waste-minimization, recycle/reuse/recover techniques, Energy conservation, and natural resource conservation.

35. Proper utilization of fly ash shall be ensured as per Fly Ash Notification, 1999 and subsequent amendment in 2003 and 2009. A detailed plan of action should be provided.

36. Action plan for the green belt development plan in 33 % area i.e. land with not less than 1,500 trees per ha. Giving details of species, width of plantation, planning schedule etc. shall be included. The green belt shall be around the project boundary and a scheme for greening of the roads used for the project shall also be incorporated. All rooftops/terraces shall have some green cover.

37. Action plan for rainwater harvesting measures at plant site shall be submitted to harvest rainwater from the roof tops and storm water drains to recharge the ground water and also to use for the various activities at the project site to conserve fresh water and reduce the water requirement from other sources. Rain water harvesting and groundwater recharge structures may also be constructed outside the plant premises in consultation with local Gram Panchayat and Village Heads to augment the ground water level. Incorporation of water harvesting plan for the project is necessary, if source of water is bore well.

38. Environment Management Plan (EMP) to mitigate the adverse impacts due to the project along with item wise cost of its implementation. Total capital cost and recurring cost/annum for environmental pollution control measures shall be included.

39. Details of Rehabilitation & Resettlement (R & R) involving the project. R&R shall be as per policy of the State Govt. and a detailed action plan shall be included.

40. Action plan for post-project environmental monitoring shall be submitted.

41. Disaster Preparedness and Emergency Management Plan including Risk Assessment and damage control needs to be addressed and included.

42. Occupational health:

    i. Details of existing Occupational & Safety Hazards. What are the exposure levels of above mentioned hazards and whether they are within Permissible Exposure level (PEL). If these are not within PEL, what measures the company has adopted to keep them within PEL so that health of the workers can be preserved,

    ii. Details of exposure specific health status evaluation of worker. If the workers' health is being evaluated by pre designed format, chest x rays, Audiometry, Spirometry, Vision testing (Far & Near vision, colour vision and any other ocular defect) ECG, during pre placement and periodical examinations give the details of the same. Details regarding last month analyzed data of abovementioned parameters as per age, sex, duration of exposure and department wise.

iii. Annual report of heath status of workers with special reference to Occupational Health and Safety.

iv. Action plan for the implementation of OHS standards as per OSHAS/USEPA.

v. Plan and fund allocation to ensure the occupational health & safety of all contract and casual workers.

43. Corporate Environment Policy

i. Does the company have a well laid down Environment Policy approved by its Board of Directors? If so, it may be detailed in the EIA report.

ii. Does the Environment Policy prescribe for standard operating process / procedures to bring into focus any infringement / deviation / violation of the environmental or forest norms / conditions? If so, it may be detailed in the EIA.

iii. What is the hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the environmental clearance conditions? Details of this system may be given.

iv. Does the company have system of reporting of non compliances / violations of environmental norms to the Board of Directors of the company and / or shareholders or stakeholders at large? This reporting mechanism shall be detailed in the EIA report

44. Details regarding infrastructure facilities such as sanitation, fuel, restroom etc. to be provided to the labour force during construction as well as to the casual workers including truck drivers during operation phase.

45. At least 5 % of the total cost of the project shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues and item-wise details along with time bound action plan shall be included. Socio-economic development activities need to be elaborated upon.

46. Any litigation pending against the project and/or any direction/order passed by any Court of Law against the project, if so, details thereof shall also be included. Has the unit received any notice under the Section 5 of Environment (Protection) Act, 1986 or relevant Sections of Air and Water Acts? If so, details thereof and compliance/ATR to the notice(s) and present status of the case.

47. The questionnaire for industry sector (available on MOEF website) shall be submitted as an Annexure to the EIA-EMP Report.

48. 'TORs' prescribed by the Expert Appraisal Committee (Industry) shall be considered for preparation of EIA-EMP report for the project in addition to all the relevant information as per the 'Generic Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. Where the documents provided are in a language other than English, an English translation shall be provided. The draft EIA-EMP report shall be submitted to the State Pollution Control Board of the concerned State for conduct of Public Hearing. The SPCB shall conduct the Public Hearing/public consultation, district-wise, as per the provisions of EIA notification, 2006. The issues raised in the Public Hearing and during the consultation process and the commitments made by the project proponent on the same shall be included separately in EIA-EMP Report in the form of tabular chart with financial budget (capital and revenue) along with time-schedule of implementation for complying with the commitments made. The final EIA report shall be submitted to the Ministry for obtaining environmental clearance.

49. A tabular chart with index for point wise compliance of above TORs.

50. The TORs prescribed shall be valid for a period of two years for submission of the EIA-EMP reports along with Public Hearing Proceedings (wherever stipulated).

The following general points shall be noted:

i. All documents shall be properly indexed, page numbered.

ii. Period/date of data collection shall be clearly indicated.

iii. Authenticated English translation of all material in Regional languages shall be provided.

iv. The letter/application for environmental clearance shall quote the MOEF file No. and also attach a copy of the letter.

v. The copy of the letter received from the Ministry shall be also attached as an annexure to the final EIA-EMP Report.

ANNEXURE-5

ADDITIONAL TORs FOR SYNTHETIC ORGANIC CHEMICALS INDUSTRY

1. Manufacturing process details along with the chemical reactions and process flow chart.
2. Name of all the solvents to be used in the process and details of solvent recovery system.
3. Design details of ETP, incinerator, if any along with boiler, scrubbers/bag filters etc.
4. The details of solid and hazardous wastes generation, storage, utilisation and disposal particularly related to the hazardous waste calorific value of hazardous waste and detailed characteristic of the hazardous waste. Action plan for the disposal of fly ash generated from boiler shall be included.
5. Precautions to be taken during storage and transportation of hazardous chemicals shall be clearly mentioned and incorporated.
6. Material Safety Data Sheet for all the Chemicals are being used/will be used. CAS No./RTECS No./DOT/UN etc to be mentioned against each chemicals.
7. Details of VOC monitoring in the working zone environment, and other hazardous emissions such as Cholrine, HCl, etc if any.
8. Authorization/Membership for the disposal of solid/hazardous waste in TSDF.
9. Risk assessment for storage for chemicals/solvents. Action plan for handling & safety system.
10. Details of occupational health programme.
    i) To which chemicals, workers are exposed directly or indirectly.
    ii) Whether these chemicals are within Threshold Limit Values (TLV)/ Permissible Exposure Levels as per ACGIH recommendation.
    iii) What measures company has taken to keep these chemicals within PEL/TLV.
    iv) How the workers are evaluated concerning their exposure to chemicals during pre-placement and periodical medical monitoring.
    v) Liver function tests (LFT) during pre-placement and periodical examination.
10. A Toxic management Plan shall be prepared.
11. A write up on "Safe Practice" followed for handling, storage, transportation and unloading of chemicals to be submitted.
12. What are onsite and offsite emergency plan during chemical disaster.
13. A write up on "Treatment of workers affected by accidental spillage of chemicals".

EXECUTIVE SUMMARY FOR
THE PROPOSED EXPANSION THROUGH CAPACITY UTILIZATION
OF BULK DRUGS & INTERMEDIATES MANUFACTURING UNIT BY
SMRUTHI ORGANICS LTD.
UNIT II,PLOT NO. A-27, MIDC CHINCHOLI, TAL.: MOHOL, DIST.: SOLAPUR, (M.S)

1) THE PROJECT

Smruthi Organics Ltd. (SOL), Unit -I, was established in year 1989 at Akkalkot Road MIDC; Solapur to manufacture 'Active Pharmaceuticals Ingredients (API's) & Intermediates. Subsequently, in year 1996, a Unit-II was established at Chincholi MIDC, Solapur. The ever-increasing demand for bulk drugs in India and abroad has prompted the promoters of SOL to enhance production quantity of existing products at Unit- II through 'Capacity Utilization'.
Chincholi MIDC Notification No. IDC 2187/ (10514) IND14 dated 27.05.1988 as well as the 7/12 extracts of NA land are appended at certificates and other documents. There would be no increase in capital investment as existing infrastructure facility shall be optimally utilized for carrying out expansion production. Total capital investment of existing Bulk Drug & Intermediates manufacturing setup is Rs. 79.29 Crores.

This report is made in the overall context of Environmental Impact Assessment (EIA) Notification No. S. O. 1533 (E) dated 14.09.2006 and amendments thereto issued by the Ministry of Environment, Forest and Climate Change (MoEFCC); New Delhi. As per the said notification the project comes under Category B, listed at item 5 (f). However, applicability of general condition, due to project location at 2.22 Km from Great Indian Bustard Sanctuary and due to project partly established on adjacent Non-MIDC land, the proposal is treated as Category 'A'. Moreover, the expansion project also needs to undergo public hearing as Industry is established partly on NA land adjacent to MIDC plot. The EIA report is prepared by incorporating required information with regards to the project as mentioned in the Terms of Reference issued by MoEFCC, New Delhi vide letter J-11011/38/2015-IA II (I) to SOL in an Expert Appraisal Committee (EAC) meeting held on16th March 2015.

2) THE PLACE

As mentioned above proposed activities under expasnion through capacity utilization shall be carried out in the existing premises of SOL. Geographically the site is located at 17° 45' 26.31" N Latitude and75° 48' 00.29" E Longitude. The site is towards North West at 14 Km from the Solapur city. The site is well connected by road and rail network. National Highway (NH-9) are 1.31 Km away from the proposed project site. The nearest railway station is Solapur railway station, which is about 15 Km from the project site.

The total land acquired by SOL is **88116.32 Sq. M. (i.e. 8.81 Ha)** Out of this, 35506.62 Sq. M.(3.55 Ha) is located in MIDC area whereas 52609.70 Sq. M (5.26 Ha) is an additional land adjacent to MIDC plot. Further, the total built up area under existing activities is 16487 Sq. M. (i.e1.64 Ha). The existing green belt is 5033 Sq. M i.e. 14 % of total plat area. After commissioning of expansion project total green belt is 34106 Sq. M i.e. 38 % of total plat area.

3) The Promoters

The existing project is undertaken and implemented by the management of **"M/s. Smruthi Organics Ltd."** The promoters are well experienced in the said field and have made a thorough study of entire project planning as well as implementation schedule. The name and designation of key promoters are as under-

Table 1 Promoters of SOL

Sr. No.	Name	Designation
1	E. Purushotham	Managing Director
2	Mrs. E. Vaishnavi	Director
3	Mr. Eaga Swapnil	Director & CEO
4	Mr. Jayant Hari Ranade	Director
5	Dr. K. Rama Swamy	Director
6	Mr. K. R. Dhole	Director

4) The Products

The different products that are being manufactured under the existing as well as those to be manufactured under expansion are presented in following table

Table 2 List of Products

Sr. No.	Name of Products & by products	Existing Products (EC granted) Quantity (MT/Month)	Proposed Products Quantity (MT/Month)	Total (MT/Month)
1	Pefloxacin	3	1	4
2	Ciprofloxacin HCL	6	9	15
3	Enrofloxacin	1	1	2
4	Diloxanide Furoate	5	10	15
5	Metformin HCL	60	340	400
6	Amlodipine Besilate	0.5	3.5	4
7	Amlodipine Maleate	0.5	0.5	1
8	Amlodipine Base	1	1	2
9	Phthaloyl Amlodipine	5	1	6
10	S-Amlodipine	0.5	0.5	1
11	2-Furoic Acid	0.5	1.5	2
12	Telmisartan	0.5	3.5	4
13	Norfloxacin	15	--	15
14	Carbidopa	0.5	--	0.5
15	Fenofibrate	0.5		0.5
16	2-Furoyl Chloride	0.5		0.5
17	1-Acetyl Amine -5-Nitro-2- Propoxy Benzene (ANPB)	1	--	1
18	Amisulpride	0.5		0.5
19	Losartan Potassium	1	--	1
20	Zidovudine	5	--	5
21	Lamivudine	5	--	5
22	Lamotrigine	2	--	2
23	Acyclovir	5	--	5
24	Levodopa	0.5	--	0.5
	Total MT/M	**120**	**372.5**	**492.5**
	Total MT/ Day	**4**	**12.4**	**16.4**

Note:

1. From above list, only 10 products shall be manufactured, daily, as per market demand.
2. Recently, products Losartan Potassium, Zidovudine, Lamivudine, Lamotrigine, Acyclovir, Levodopa are no more being manufactured.

The detailed, raw material and mass balance, manufacturing details is enclosed at **Appendix- E and Appendix- F** of EIA report.

5) The Purpose.

India's pharmaceutical industry is the fourth largest in the world in terms of volume of sale. The growth rate of the industry is 13% per year. Around 40 % of the total pharmaceutical produce is exported. Here, 80% of SOL products would be consumed in Indian market demand as well as about 20% would be exported.

Bulk drugs have become a part of our life for sustaining many of our day-to-day activities, preventing and controlling diseases. Bulk drugs manufacturing sector in India is well established and has recorded a steady growth in the overall Indian industrial scenario. The bulk drugs and allied industries have been amongst the fastest growing segments of the Indian industry. This ever-increasing demand for Bulk Drugs and Intermediated in India and abroad as well as changing market conditions for manufacture and sale of products has prompted the promoters to go for expansion of Bulk Drugs.

6) ENVIRONMENTAL ASPECTS

Environmental degradation is the greatest concern world over and as a citizen of India, it is the responsibility of all to strive and bring about a balance between environment, industrial growth and development of economy thereby.

Keeping in view the above fact, an effective Environmental Management Plan (EMP) is being followed in the existing premises of SOL and the same practice shall be followed under the expansion project.

A. Water Use

The description of water usage under existing and proposed expansion through capacity utilization activities of the Bulk Drugs and Intermediates manufacturing unit are as follows –

Table 3 Total Water Requirement For Existing And Expansion Activities

Sr. No.	Description	Water Consumption (M^3/Day)		
		Existing	Expansion	Total
1	**Domestic**	**#22**	**--**	**22 (# 3 + *19)**
2	Industrial			
	a. Processing	**#24**	**# 28**	**# 52**
	b. Lab & Washing	*13	*5	*18
	c. Scrubber	*3	--	*3
	d. DM Plant	*13	*2	*15
	e. Cooling	*27	*3	*30

Sr. No.	Description	Water Consumption (M^3/Day)		
		Existing	Expansion	Total
	d. Boiler Feed	#50	*20	70 (#51+*19)
	Industrial Total	**130** (# 74+ *56)	**58** (#28+ *30)	188 (#103+ * 85)
3	Other (Gardening)	**#5**	**--**	*5
4	Total (1+2 +3)	**157** (#101+ *56) (35.5 % Recycle)	**58** (#28+ *30)	**215** (#106+ *109) (50.5 % Recycle)

Note - # -MIDC Water Source, * -Treated water Recycled from ETP.

Now, the total water requirement for existing and proposed expansion project would be 215 M^3/Day. Out of which 109 M^3/Day (50.5%) shall be the treated water from ETP whereas 106 M^3/Day (49.5%) would be the fresh water met from MIDC water supply scheme. No any fresh water is considered under expansion activities for domestic purpose.

For details on product-wise water consumption of existing products and proposed activities under capacity utilization, refer **Appendix G.**

B. Effluent Treatment

The details on effluent generation for existing and proposed expansion activities are presented in following table-

Table 4 Effluent Generations

Sr. No.	Description	Effluent generation (M^3/Day)			
		Existing	Expansion	Total	Remark
1	**Domestic**	**19.5**	**--**	**19.5**	**Treated in septic tank followed by biological treatment along with Stream II Effluent**
2	**Industrial**				**Stream I : 30** **Stream II : 61.3**
	a. Processing	**24** (♣14+ $10)	**24** (♣16+ $8)	**48** (♣30+ $18)	
	b. Lab & Washing	$10	$4	$14	
	c. DM Plant	$10	$2	$12	
	d. Cooling	$5	$0.3	$5.3	
	e. Boiler Feed	$10	$2	$12	
	Industrial Total	**59 (♣14 + $ 45)**	**32.3 (♣ 16+ $16.3)**	**91.3 (♣30+$61.3)**	

Note:
♣**- Stream I** (High COD and High TDS Effluent)
$ - **Stream II** (Low COD and Low TDS Effluent)

i) Domestic Effluent

The domestic effluent of existing unit is to the tune of 19.5 M^3/ Day. The same is being treated in septic tanks followed by soak pits. The overflow from soak pits is followed to biological treatment unit of Stream II effluent treatment scheme.

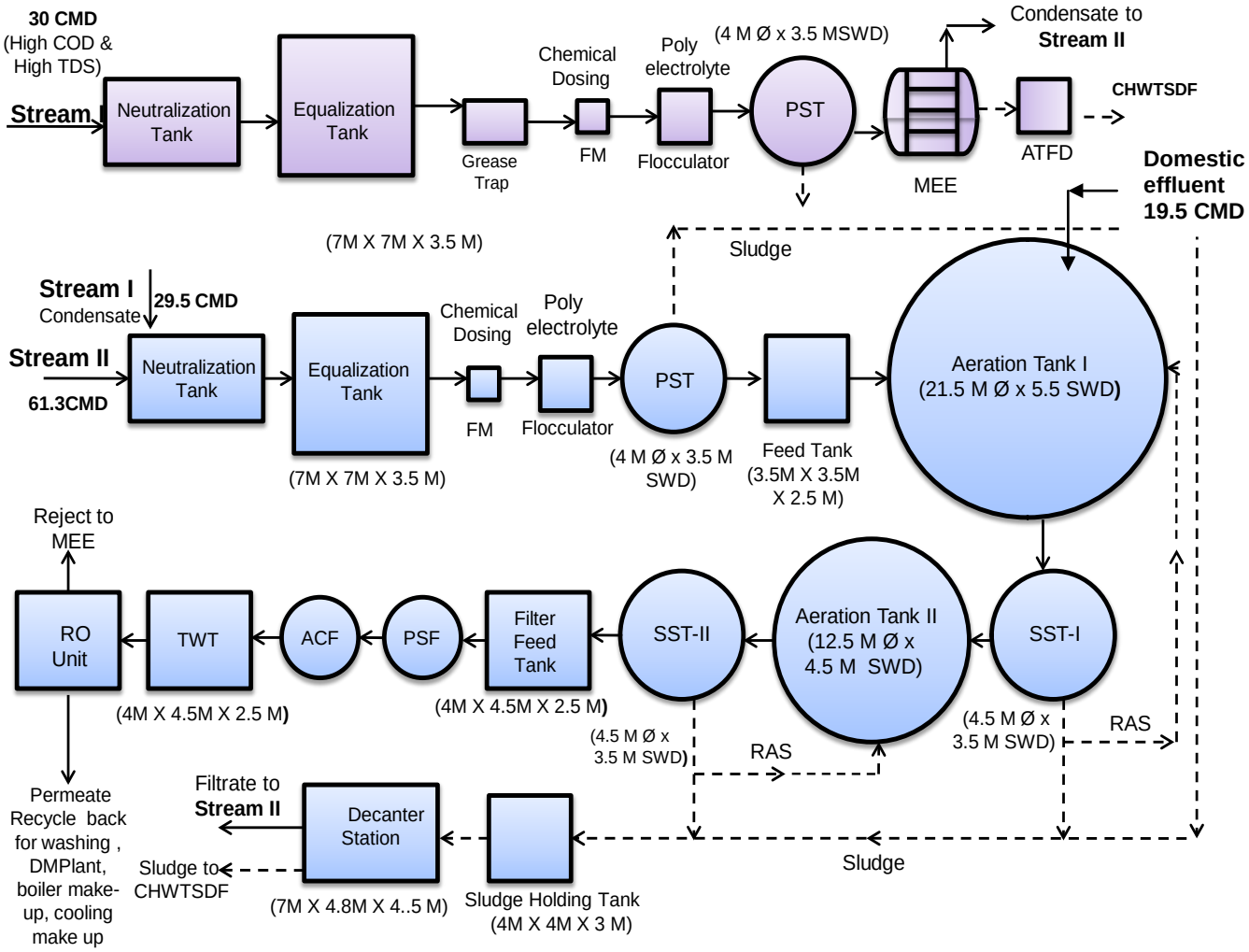
ii) Industrial Effluent

The trade effluent generated from the proposed industrial activities would be segregated into two streams viz. Stream I (High TDS and High COD Effluent) and Stream II (Low TDS and Low COD Effluent).

The **Stream I** effluent generated would be to the tune of 30 M^3 / Day. Same comprise of effluent from manufacturing operations viz. process effluent. This effluent will be treated in an ETP comprising of Neutralization Tank, Equalization Tank, Grease Trap, Chemical Dosing, Flocculator, Primary settling Tank (PST) followed by Triple Effect Evaporator (MEE) and Agitated Thin Film Dryer (ATFD). The condensate from MEE to the tune of 29.5 M^3 / Day would be forwarded to **Stream II** for treatment. Further salts from MEE would be forwarded to CHWTSDF.

The **Stream II** effluents generated would be to the tune of 61.3 M^3 / Day and MEE condensate from **Stream I** of 29.5 M^3 / Day. **Stream II** effluent shall be contributed by DM plant, boiler blow down, Lab, wash and cooling blow down as well as domestic effluent 19.5 M^3 / Day. The same will be treated in Primary, Secondary & Tertiary treatment units consisting of Neutralization Tank, Equalization Tank, Chemical dosing, Flocculator, PST, Two Stage Aeration, 2 stage secondary settling Tank SST- I&II, Filter Feed Tank, Sand and Carbon Filters, Treated Sump followed by and R.O. Unit & Sludge dewatering equipment. The treated water from stream II would be recycled back for washing, DM Plant, boiler make-up, cooling make up. The process effluents generated from the existing and proposed activities are given adequate treatment and completely recycled thereby achieving 'Zero Discharge

Figure 1 Flow diagram of ETP



C. Solvent Recovery System

Various solvents are being used during the process and manufacturing of Bulk Drugs & Intermediates. The solvents used in process are recovered and few of them are recycled back in process. The efficient and effective solvent recovery system is installed which is result in to value addition in the overall project operations. Further, recovery of solvent would be in range of 50-95% of the charged solvents.

D. Air Emissions

Under expansion project, no new boiler/D.G. set shall be installed. The existing boiler (4TPH, 3TPH) & TFH (2 nos. 1 Lakh Kcal/Hr each) are provided with APC equipment in form of Dust collector followed by appropriate stack height. Steam required for expansion activities shall be taken from existing boiler.

Table 5 Details of Stack for Boiler and D.G.Set under Existing Activity

Sr. No.	Description	Boiler			Thermic Fluid Heater	Thermic Fluid Heater	D.G. Set
1	Stack number	1			2	3	4
2	Capacity	4 TPH,3TPH			1 Lakh Kcal / Hr	1 Lakh Kcal Hr	500,325, 250, 125 KVA
3	Fuel type	Coal/Bagasse			HSD	HSD	HSD
4	Fuel quantity	**Existing**	**Expansion**	**Total**	50 Lit/Hr		
		20 / 55 TPD	5/ 10 TPD	25/65 TPD			
5	Height, m, AGL	33			Common Stack; 25		4 M ARL
6	Diameter/size, (m)	1.2			0.5		0.2
7	Control equipment preceding the stack	Multi-Cyclone Dust Collector, Silencer & acoustic enclosure are provided.					
8	Source of Pollution	SPM, SO_2, NOx					

E. Scrubber Details

There would be process emissions in the form of HCL, SO_2 and Acetic acid; it is controlled through installation of Scrubbers under existing unit. In all, three scrubbers are provided on site. Details of same are given in following table-

Table 6 Scrubber Details

Sr. No	Scrubber Attached to Reactor	No. of Scrubber attached	Process Emission from Reactors	Dia. (inch)	Height (M)	Packing Material	Scrubbing Media	Disposal of Scrubbed media
1.	Production Block-A	1	SO_2	8	10	Ball ring	Water	Forwarded to ETP for treatment
2.	Production Block-B	1	HCL	6	12			
3.	Production Block-E	1	Acetic acid	8	16			

F. Noise Pollution Aspect

There would be no major noise generating sources in proposed expansion activities. The noise generating sources under existing unit are Boiler, Reactors, MEE treatment plant, Biological treatment plant, Compressors, and D.G. Set etc. Among these, prominent source of noise would be the Boiler house. Insulation helps in limiting noise levels. Earmuffs, which would give the reduction of 30 dB (A), protect the workers entering the plant. The D.G. Set would also be considered as one of the major sources of noise generation. However, this is not continuous source. Only in case of power failure, D.G. Set would be operated. Moreover, as per Noise Pollution (Regulation and Control) (Amendment) Rules, 2010 it is enclosed in a canopy. Also, a silencer is provided to it as noise pollution control equipment.

G. Hazardous Wastes

Wastes that pose substantial dangers immediately or over a period of time to human, plant, or animal life are classified as Hazardous Wastes (HW). The different types of hazardous wastes that are generated under existing and proposed activities have been shown in following table

Table 7 Hazardous Wastes

Sr. No.	Cat.	Description	Existing Quantity	Expansion Quantity	Mode of Disposal
1.	20.3	Distillation Residue	1.96 MT/M	1.65 MT /M	To be forwarded to CHWTSDF
2.	28.1	Process Residue	4.5 MT/M	Nil	
3.	28.2	Spent Carbon	3.37MT/M	1.88 MT /M	
4.	34.3	ETP Sludge	4.5 MT/M	1.2 MT/M	
5.	33.3	Discarded Containers	50 nos.	50 Nos/M	Re-processor
6.	35.1	Contaminated Filter Cloth	0.5 MT/M	1 MT/M	Burnt In Boiler 2

Appendix -J of EIA report may be referred w.r.t CHWTSDF membership.

H. Solid Wastes

Solid wastes generated from the existing as well as proposed activities are categorized as Hazardous and Non-Hazardous Wastes. Details of solid waste generated / to be generated from existing & expansion activities are given in following table.

Table 8 Solid Waste for Existing and Expansion Activities

Sr. No.	Type	Existing	Expansion	Total	Disposal
1.	Boiler Ash (Coal/ Bagasse)	1 / 1.5 TPD	0.25 /0.3 TPD	1.25/1.8 TPD	Sold to Brick manufacturers

I. Odour Pollution

There are different odour sources in industry, which include raw material & product storage places, process operations, loading/unloading sections etc. which could give rise to smell nuisance. To abate the odour nuisance, the industries following steps are being taken under existing unit.

1. All the feed, loading & unloading pumps for products and raw material are fitted with mechanical seals instead of glands to reduce leakages through pumps.
2. The products and raw materials loading & unloading area are provided with fumes extraction system comprising of circulation pump with blower and scrubber. The bulk storage tanks are connected to scrubber for taking care of fumes coming out from vent.
3. Adoption of Good management practices (GMPs).
4. Arranging awareness and training camps for workers.
5. Use of PPE like masks by everybody associated with odour potential prone areas.
6. Installation of appropriate, adequate and efficient exhaust and ventilation system to remove and control odour from work zone areas.

J. Rainwater Harvesting Aspect

Being a chemical based industry here collection of the rainwater getting accumulated from direct precipitation on the total roof area will taken in to account.

- Roof Top harvesting area – 204.7 M^2
- Roof Top harvesting yield is – 83.9 M^3

K. The Green Belt:

The total plot area of SOL is 88116.32 M^2 (8.81Ha). An area of 16487 M^2 would be the actual area on which the industrial activities would be carried out. As per MoEFCC norms the existing green belt is 5033 Sq. M i.e 14% of the total plot area. After commissioning of the expansion project the existing green belt shall be subsequently augmented in phase wise manner. Hence, the total green belt after expansion shall be 34106 Sq. M i.e. 38 % of the total plot area.

L. Socio-Economic Development:

The existing unit of SOL undertakes number of activities related with social welfare such as providing educational assistance to various schools and institutes as well as education materials among economically deprived students in the nearby villages. Medical checkups of workers in industrial unit are periodically done as well as medical assistance to the economically deprived persons in society. The programmes related to health and hygiene will be arranged and workshops as well as seminars will be conducted in the industry which is open to all the residents in nearby colonies. Moreover, funds shall be allocated for conducting awareness and conservation of the critically endangered bird 'Great Indian Bustard (GIB)

7) ENVIRONMENTAL IMPACTS & MITIGATION MEASURES

A. Impact on Topography

No any topographical changes are envisaged under proposed expansion activity. As the proposed project shall be utilizing its existing infrastructure for expansion activity.

B. Impact on Climate

Impact on the climatic condition due to the proposed expansion activities is not envisaged. Emissions to the atmosphere, of flue gases with very high temperatures, are not expected.

C. Impact on Air Quality

A study area of 10 km radius is considered for determination of impacts.

i. Baseline Ambient Air Concentrations

The 24 hourly 98 percentile concentrations and averages of PM_{10}, $PM_{2.5}$, SO_2, NO_x CO NH_3 and VOC in ambient air have been presented below. The same have been recorded during field study conducted for the season of October - December 2015 and are considered as baseline values. The existing baseline concentrations are summarized in the following table-

Table 9 Average Baseline Concentrations

Parameter	Concentration; μg/M^3
PM_{10}	66.2
$PM_{2.5}$	17.9
SO_2	16.3
NO_X	17
NH_3	11.36
CO	0.09

Parameter	Concentration; μg/M^3
VOC	71.08

ii. The Air Polluting Sources

As mentioned above under expansion project no new boiler/D.G. set shall be installed. Steam required for expansion activities shall be taken from existing boiler. Moreover, the Fugitive emissions under existing activity of SOL are dust emissions. Further, the process emissions may be in the forms of excess and un-reacted gases, VOCs, fumes of reactions etc. which could result during various actions like active product formation process, purging of vessels before loading and unloading, surface evaporations and filling.

D. Impact on Water Resources

i. Impact on Surface Water Quantity and Quality

Water required for existing and proposed expansion activities would be 215 M^3/Day (100 %). Out of the total water requirement 106 M^3/Day (49.5%) shall be fresh water taken from MIDC water supply whereas, 109 M^3/Day (50.5 %) shall be the treated water from effluent treatment plant. Hence, from above figures it can be said that, as much as 50.5 % of water shall be treated water no any major impact is envisaged on surface water quantity.

Further, the total effluent generated from existing as well as proposed expansion activities is to the tune of 91.3 CMD. The same is segregated in two streams as per the pollution load. Stream I (High TDS and High COD Effluent) - 30 CMD and Stream II (Low TDS and Low COD Effluent)- 61.3 CMD + 29.5 CMD (Stream I MEE condensate)

No any effluent shall be let off on the surface water body and Effluent generated from the existing and proposed activities shall result in 'Zero Discharge' of process effluent hence there will not be any impact on the surface water quality.

ii. Impact on Ground Water Quality

Water required for existing and proposed expansion operations shall be met from the MIDC water supply scheme. As ground water will not be a source of fresh water for the proposed expansion project, there will not be any impact on ground water quantity. Moreover, no any untreated effluent shall be used for land application. Thus, chances of pollution / contamination of ground water would be nil. Hence, there shall not be any prominent impact on ground water quality.

E. Impact on Soil

Impact on the soil characteristics is usually attributed to air emissions, wastewater discharges and solid waste disposal. Deposition of particulate matter in ambient air without APC equipment can result in to alteration of properties of soil and its composition. Accidental Discharge of untreated effluent may change soil characteristics and soil fertility slowly; making it saline and non-suitable for agricultural or and any other vegetation to survive. There is no any discharge of air pollutant from existing boiler and hence there shall be no any impact on soil from the proposed operations.

Under existing and proposed expansion project, solid waste in form of boiler ash. The same shall be given to brick manufactures. Also, hazardous waste generated would be forwarded to CHWTSDF. Hence, no any impact on soil characteristics is envisaged due to proposed expansion activities.

F. Impact on Noise Levels

The noise levels in the Work Environment are compared with the standards prescribed by Occupational Safety and Health Administration (OSHA-USA), which in turn were enforced by Government of India through model rules framed under Factories' Act. These standards were established with the emphasis on reducing hearing loss. It would be noted that each shift being of 8 hours duration, maximum permissible limits should not be exceeded. The maximum permissible limit of 115 dB (A) should not be exceeded even for a short duration. Adequate care is taken by providing ear muffs and separate rooms, as sitting place for the operators/workers working on high noise generating machines, should be provided. This will significantly reduce the exposure levels

G. Impact on Land Use

The proposed expansion shall be undertaken in existing premises of SOL. Hence the existing land use shall not be changed and hence there shall be no any major impact. Moreover, the land use of the additional land acquired by SOL is the NA land. The land use of the same shall be changed to green belt development.

H. Impact on Flora and Fauna

Any unfavorable alteration in the quality of soil, water or air will lead the change in quality of habitat for the plants and animals. This alteration may favor growth of some species and may reduce / eliminate others. The resilience to this change will depend on the extent of unfavorable change.

The 10km radius study area around project site includes part of the original and now reconstructed Great Indian Bustard (*Ardeotis nigriceps*) (GIB) Sanctuary spread in Solapur and Ahmednagar districts in Maharashtra. The major part of this sanctuary comprised of grassland with some shrub vegetation, which is a typical habitat required by the GIB. However, over 97 percent of this sanctuary is private land causing local people opposition, which also made difficulties in managing the land use practices inside the GIB sanctuary. Therefore, earlier the Sanctuary area of 1229.24 Sq. Km has been reduced to 366.73 Sq. Km. recently vide Govt. Notification No. WLP-614/CR-II11F-1 dated 05.03.2016. This has caused fragmentation, reduction and alteration of GIB habitat affecting the GIB number. However, the proposed expansion shall be carried out in the existing premises itself hence no any major impact on flora and fauna is envisaged.

I. Impact on Historical Places

There are no historical places in the study area. Hence, no any impact is expected.

8) ENVIRONMENTAL MONITORING PROGRAMME

Reconnaissance survey of the study area was undertaken in the month of October 2015. Field monitoring for measuring meteorological conditions, ambient air quality, water quality, soil quality and noise levels was initiated in October 2015. The report incorporates the data monitored during the period from 1st Oct 2015 to 31st Dec 2015 and secondary data collected from various sources which include Government Departments related to ground water, soil, agriculture, forest etc.

A. Land Use

Land use study requires data regarding topography, zoning, settlement, industry, forest, roads and traffic etc. The collection of this data was done from various secondary sources viz. Census Books, Revenue Records, State and Central Government Offices, Survey of

India Toposheet as well as high resolution satellite image and through primary field surveys. The Land Use/ Land Cover Categories of Study Area as mentioned in following table

Table 10 Area Statistics for Land Use Land Cover Classes

Sr. No.	Land use land cover	Area (Ha)	Percentage (%)
1.	Built up area	1456.36	4.64
2.	Crop Land	9385.35	29.87
3.	Fallow Land	9273.55	29.52
4.	Water Bodies	63.22	0.20
5.	River	103.16	0.33
6.	Barren Land	2702.43	8.60
7.	Grass Land with open scrub	8431.43	26.84
	Total	31415.50	100.00

B. Meteorology

The methodology adopted for monitoring surface observations is as per the standard norms laid down by Bureau of Indian Standards (BIS) and the India Meteorology Department (IMD). On-site monitoring was undertaken for various meteorological variables in order to generate the data. Further, meteorological data has been taken from IMD, Mumbai. The meteorological parameters were monitored during the period from 1st October 2015 to 31st December 2015. The details of parameters monitored, equipments used and the frequency of monitoring are given below

Table 11 Meteorology Parameters

Sr. No.	Parameters	Instrument	Frequency
1.	Wind Speed	Counter Cup Anemometer	Every hour
2.	Wind Direction	Wind Vane	Every hour
3.	Temperature	Min. / Max.: Thermometer	Once in a day
4.	Relative Humidity	Dry/Wet bulb Thermometer	Once in a day

Secondary information on meteorological conditions has been collected from IMD station at Solapur. Wind speed & direction, temperature, relative humidity, rainfall intensity have been compiled from IMD station, Solapur. Similarly, data on cloud cover is compiled from climatologically tables for the Solapur IMD Station.

C. Air Quality

This section describes the selection of sampling locations, includes the methodology of sampling and analytical techniques with frequency of sampling. Presentation of results for the October 2015 to December 2015 survey is followed by observations. All the requisite monitoring assignments, sampling and analysis was conducted through the laboratory of M/s. Horizon Services, Pune which is NABL accredited and MoEFCC; New Delhi approved organization. Further, same has received certifications namely ISO 9001 – 2008, ISO 14001:2004 and OHSAS 18001: 2007 from DNV. Ambient air monitoring was conducted in the study area to assess the quality of air for PM_{10}, $PM_{2.5}$, SO_2, NO_x NH_3, VOC, CO. The various monitoring stations selected are shown in following table

Table 12 Ambient Air Quality-Monitoring (AAQM) Locations

Station Code	Name of the Station	Distance from the Site (Km)	Direction w.r.t. the Site
A1	Site	--	--
A2	Akolekati	5.82	NE
A3	Kondi	4.52	SE
A4	Sawaleshwar	4.38	WSW
A5	Chincholikati	0.76	ENE
A6	Pakni	4.58	SSW

The average PM_{10} and $PM_{2.5}$ values at the selected sampling sites ranged between 37.5 $\mu g/M^3$ to 79.0 $\mu g/M^3$ and 7.8 $\mu g/M^3$ to 21.5 $\mu g/M^3$ respectively which are within the permissible limits . Slight higher values of PM_{10} and $PM_{2.5}$ at industrial site and 3 residential sites may be due to fuel burning in industrial process as well as transportation activities. Average SO_2 concentrations at the industrial site ranged between 19.5$\mu g/M^3$ to 20.9 $\mu g/M^3$ which are found to within the CPCB limits. The average NOx concentration at the selected sampling sites were between 9.5 $\mu g/M^3$ to 28.4 $\mu g/M^3$. Exceptionally, Pakani site recorded higher NOx values as compared to other sites. Ammonia and VOC values were found to be slightly higher at industrial site with an average value of 19.5 $\mu g/M^3$ and 91.5 $\mu g/M^3$ respectively than the residential sites. This may be due to presence of chemical industries located in the Chincholi MIDC. CO values were within the permissible limits of CPCB.

D. Water Quality

Sampling and analysis of water samples for physical, chemical and heavy metals were undertaken through MoEFCC; New Delhi approved laboratory- M/s. Horizon Services, Pune. Chapter 3 of EIA report may be referred for monitoring results for the below mentioned location.

Table 13 Monitoring Locations for Surface Water

Station Code	Name of the Station	Distance from Proposed Site (Km)	Direction w.r.t. the Proposed Site
SW1	Darfal	4.53	N
SW2	Pakni	4.58	SSW
SW3	Sawaleshwar	4.38	W
SW4	Wirwade	6.53	SW

Table 14 Monitoring Locations for Ground Water

Station Code	Name of the Station	Distance from Proposed Site (Km)	Direction w.r.t. the Proposed Site
GW1	Darfal	4.53	N
GW2	Sawaleshwar	4.38	W
GW3	Akolekati	5.82	NE
GW4	Kondi	4.52	SE
GW5	Pakni	4.58	SSW

E. Noise Level Survey

The study area of 10 Km radius with reference to the proposed plant site has been covered for noise environment. The four zones viz. Residential, Commercial, Industrial and Silent Zones have been considered for noise monitoring. Some of the major arterial roads were

covered to assess the noise due to traffic. Noise monitoring was undertaken for at following locations.

Table 15 Noise Sampling Locations

Station Code	Name of Station	Distance w.r.t. Plant Site (Km)	Direction w.r.t. Plant Site
N1	Site	--	--
N2	Darfal	4.53	N
N3	Sawaleshwar	4.38	W
N4	Chincholikati	0.78	ENE
N5	Akolekati	5.82	NE
N6	Lamboti	8.60	WNW
N7	Pakani	4.58	SSW
N8	Karamba	7.40	E

The average noise levels (Leq day and night) in the study area ranged between 31.8 dB to 70 dB. Most sites recorded higher noise levels during day time in the range between 45.1 dB to 70 dB due to various industrial and human activities. Importantly, due to continuous operation of industry (24 hours), the industrial site recorded higher Leq values as compared to other residential sites. However, these values were found to be within the permissible limits.

F. Socio-Economic Profile

The Social Impact Assessment (SIA), as a tool of EIA to study socio-economic conditions of locals, survey of eleven villages, selected out of 24 villages within the 10 Km radius of Chincholi MIDC, was carried out with the help of a structured close ended interview schedule, comprising of 22 questions in Marathi. After conducting the survey it was observed that, Due to the pollution generating industries from Chincholi MIDC, the nearby villages were increasingly affected also the industries in Chincholi MIDC offer very limited employment opportunities to the locals from nearby villages in the study area also. Taking into consideration the above fact SOL shall satisfy the expectations of nearby villagers under their proposed expansion project. For more details, w.r.t Socio-Economic Profile Chapter 3 of EIA report may be referred.

G. Ecology

The dominant ecosystem of the area being savannah type, it is represented by typical natural grassland ecology, habitats and biodiversity therein. The earlier common and now with global restricted distribution large bird species Great Indian Bustard (GIB) (*Ardeotis nigriceps*), as per the IUCN Red data list version 2013.2 is considered as 'Critically Endangered' Species (IUCN, 2015). This species is also included in Schedule-I of the Wildlife Protection Act, 1972. This bird exists in the 10km radius area around project site. Total 11 villages (6 villages from 0 to 5 Km distance and 5 villages between 5 to 10 Km distance) were selected from EB studies. Fourty six bird species and thirty vegetation species were recorded during the field survey. Following observations were made during field study : (1) Natural grassland habitats in the region and particularly around the GIB sanctuary are being fragmented and degraded, (2) Due to poor monsoon in the recent years, all the wetlands area were rapidly drying, thus affected dependent biodiversity, agriculture and human life, (3) Expansion of scrub species on large area, encroachment of exotics and weeds in the marshy areas/nalas and encroachment on natural grassland habitat by agriculture, developmental activity and industry is noticeable. For More details w.r.t Ecology and Biodiversity Survey, Chapter 3 of EIA report may be referred.

9) ADDITIONAL STUDIES & INFORMATION

1. Risks Assessment -

Risk to human health is inherent. It is safe only when the installation is dismantled at the end of its useful life. The following principles should be used as guidelines for the selection of risk criteria-

The following principles should be used as guidelines for the selection of risk criteria-

1. The increase in risk, caused by the presence of the plant to local community (i.e. neighboring public) should be negligible in comparison to the risk they already have in their daily life.
2. The work force on the plant should be expected to accept a potentially greater risk than the members of the local community since the work force have been trained to protect themselves from the chemicals and thus reducing the actual risk to themselves.

The risk criteria considered by Green A.G. (1982) are given as below:

1. Risk to plant: This risk is to be given priority only when it is proved beyond doubt that the risk to life is so low that reducing this risk may not be justified. Under this consideration, the risk to economic damage may be considered.

2. Risk to public and employees: The scale used for risk to employee and public is Fatal Accident Rate (F.A.R.) or more commonly Fatal Accident Frequency Rate (F.A.F.R.). The F.A.R. and F.A.F.R. Is defined as number of deaths from industrial injury expected in a group of 1000 men during their working period.

2. Storage of Chemicals: -

In the chemical industry the major hazard is regarding storage of chemicals. All chemicals would be properly stored within the factory premises. Chemical storage requirements depend on the types or properties of the chemicals, quantity of storage, operational and environmental conditions.

10) ENVIRONMENTAL MANAGEMENT PLAN (EMP)

A. Salient Features of EMP

Environment Management Plan (EMP) is required for ensuring sustainable development of the project. It should not affect the surrounding environment adversely. The EMP aims at controlling pollution at source with available and affordable technology followed by treatment measures. Waste minimization measures are also emphasized. In addition to the industry specific control measures, the project of proposed expansion Bulk Drugs and Intermediates manufacturing unit of SOL has adopt following guidelines –

- Application of low and non waste technology in the production process; and
- Adoption of reuse and recycling technologies to reduce generation of wastes and to optimize the production cost of the industry.

i) Management during construction Phase:

No construction of building would be required for expansion as existing set-up shall be optimally utilized for carrying out expansion. Green belt is to be developed on non MIDC area. Hence, no any impact on topography will envisaged due to proposed expansion activities.

ii) Management during operation phase:

All the Boilers and TFH is already provided with APC equipment in form of MDC followed by appropriate stack height. In case of failure of APC equipment the production process connected to it shall be stopped. Further, under expansion, the Existing unit shall be duly upgraded and ZLD shall be achieved. Online monitoring system shall be installed for monitoring of air and water discharges.Moreover, all the CPCB and CREP norms are being strictly followed under existing unit of SOL and the same practice shall be followed after commissioning of the expansion activity. For More details w.r.t EMP Chapter 9 of the EIA report may be referred.

B. Environmental Management Cell

The SOL is already having an environmental management cell (EMC) functioning under its existing premises. Members of the EMC are well qualified and experienced in their concerned fields. This cell shall be further augmented suitably under expansion.

C. Corporate Social Responsibility (CSR) Planning

Rs. 4 Cr. (5% of Cap. Invest.; Rs.79.29 Cr) have been earmarked by SOL for CSR activities. Activities that are to be undertaken under CSR have been considered based on Socio Economic survey conducted in the study area especially around MIDC region. The same are health check up center for nearby villagers, farmers and residents, Provision of rural sanitation infrastructure, Provision for GIB Protection & Conservation Awareness Campaign, implementation of rain water harvesting, De-silting of pond etc. For more details regarding the CSR budgetary Allocation Chapter 6th of EIA report may be referred.

D. Investments in Pollution Control Infrastructure

The capital as well as O & M cost towards environmental aspects being spent by SOL in existing unit as well as proposed under expansion-

Table 16 Capital as well as O & M costs

Sr. No.	Description	Cost Component			
		Capital (Rs. Lakhs)		O & M per Year (Rs. Lakhs)	
				O & M per Year Of Existing Unit	O & M per Year After Expansion
1.	Capital cost of the ETP comprising of MEE	800		100	125
2.	Cost towards APC equipment comprising of Stack and MDC	25		3	5
3.	Cost towards Noise Level Management	5		2	3
4.	Cost Incurred on the Green Belt Development & Rain Water Harvesting	Existing	Expansion	5	8
		15	25		
5.	Environmental Monitoring & Management	--		5	10
6.	Occupational Health & Safety	10		5	10

Sr. No.	Description	Cost Component		
		Capital (Rs. Lakhs)	O & M per Year (Rs. Lakhs)	
			O & M per Year Of Existing Unit	O & M per Year After Expansion
	Total	**880**	**120**	**161**

E. Monitoring during Post Construction Phase

No.	Description	Location	Parameters	Frequency	Conducted by
1.	Air Emissions	Ambient Air Quality (AAQ) • Upwind-1 location • Downwind-2 location	PM_{10}, $PM_{2.5}$, SO_2, NOx, VOC, CO, NH_3	Six Monthly	MoEFCC and NABL Approved External Laboratory.
		AAQ Two Locations within the industrial premises		Monthly	
		Workzone Air Quality Monitoring in manufacturing blocks.		Monthly	
2.	Stack Emissions	Boiler – 2 Nos. and TFH 2 Nos. D.G Sets	SO_2, SPM, NOx	Monthly	MoEFCC and NABL Approved External Laboratory
3.	Noise	Ambient Noise - 4 village within 5 Km from site Chincholikati, Darfal, Akolekati and Kondi	Spot Noise Level recording; Leq(n), Leq(d), Leq (dn)	Six Monthly	MoEFCC and NABL Approved External Laboratory
		Ambient Noise Locations within the industrial premises - Main gate, ETP area, parking, canteen		Monthly	
		Workzone Noise at areas - Boilers, Production Blocks , DG sets, Recovery Plant		Monthly	
4.	Effluent	ETP - • Treated • Untreated	pH, TSS, TDS, BOD, COD, Chlorides, Sulphates, Oil & Grease	Monthly	MoEFCC and NABL Approved External Laboratory.
5.	Drinking water	Factory canteen	Parameters as per drinking water Std IS10500	Monthly	MoEFCC and NABL Approved External laboratory.
6.	Water Quality (Ground Water & Surface	Locations in Study Area are- Ground Water(GW): Chincholikati,	Comprehensive monitoring as per IS 10500	Six Monthly	MoEFCC and NABL Approved External Laboratory.

No.	Description	Location	Parameters	Frequency	Conducted by
	Water)	Akolekati, Pakni and Kondi. Surface Water (SW): Darphal Wirvade			
7.	Waste management	Implement waste management plan that Identifies and characterizes every waste associated with proposed and expansion activities and which identifies the procedures for collection, handling & disposal of each waste arising.	Records of Solid Waste Generation, Treatment and Disposal shall be maintained	Twice in a year	By SOL
8.	Emergency Preparedness such as fire fighting	Fire protection and safety measures to take care of fire and explosion hazards, to be assessed and steps taken for their prevention.	On site Emergency Plan, Evacuation Plan, fire fighting mock drills	Twice a year	By SOL
9.	Health Check up	Employees and migrant Labour health check ups	All relevant health checkup parameters as per factories act.	Once in a Year	By SOL
10.	Green Belt	Within Industry premises as well as nearby villages	Survival rate of planted sapling	In consultation with DFO.	By SOL
11.	Submission of Compliance report to RO MoEFCC	Compliance towards the point laid down in the Environmental Clearance (EC) order	Conditions laid down in the Environmental Clearance letter	Six Monthly	By SOL

Smruthi Organics
Limited

DECLARATION

This is to state that the 'Executive Summary & Draft EIA Report' submitted herewith has been prepared in respect of our Proposed Expansion through capacity utilization of existing **unit by "Smruthi Organics Ltd." located at Plot No. A-27, MIDC Chincholi, Tal.: Mohol, Dist.: Solapur, Maharashtra State.**

The information, data and details presented in this report are true to the best of our knowledge. The primary and secondary data have been generated through actual exercise conducted from time to time as well as procured from the concerned Govt. offices / departments and has been incorporated here subsequent to necessary processing, formulation and compilation.

Smruthi Organics Ltd;
Plot No.A-27, MIDC Chincholi, Tal.: Mohol,
Dist.: Solapur.Maharashtra State

Project Proponent

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