EXECUTIVE SUMMARY

for

PROPOSED MANUFACTURING PLANT OF CALCIUM THIOSUPHATE (CaTs®) & POTASSIUM THIOSUPHATE (KTS®)

at

Plot No. 303, Sector-3, JNPA SEZ, Village-Sawarkhar, Uran, Navi Mumbai, District – Raigad, Maharashtra-400707

Type of Project	Greenfield Project
Total Plot Area	16026 Sqm
Cost of the Project	55 Cr.
Category:	Item 5(a), Category A
Production Capacity	Calcium Thiosulphate (CaTs®)/Potassium Thiosulphate (KTS®) – 20000 MTPA
TOR Details	File No. IA-J-11011/58/2024-IA-II(I) dated 15.03.2024
Monitoring Season and Laboratory:	March-May 2024 (ECOBAL ENERGY SYSTEM LLP) JV with J. P Test House & Research Centre Shahibabad Industrial Area Shahibabad Ghaziabad (UP); NABL Accredited- Certificate No. TC-11604 valid till 01/05/2025)
NABET Acc. No.:	NABET/EIA/2225/RA0303 dated 18.09.2023 valid till 23.11.2025

Proposed By:

M/S TESSENDERLO KERLEY INDIA PVT. LTD.

Plot No. 303, Sector-3, JNPA SEZ,
Navi Mumbai, Maharashtra-400707

Environmental Consultant:

(Approved Consultant)

M/S EQMS GLOBAL PVT LTD.

(Formerly Known as EQMS INDIA PVT. LTD)
304-305, 3rd Floor, Plot No. 16, Rishabh Corporate Tower,
Community Centre, Karkardooma, Delhi – 110092
Phone: 011-42270087, 43062757
Website: https://eqmsglobal.com ; E-mail: skjain@eqmsglobal.com

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M/s Tessenderlo Kerley India Private Limited ("TKIPL") is a wholly owned subsidiary of Belgium based Tessenderlo Group NV ("TG"). Tessenderlo Group is a diversified industrial group that focuses on agriculture, valorizing bio-residuals, energy, and providing industrial solutions with a focus on water. With its headquarters in Belgium, the group is active in over 100 countries, and it has a global team of more than 7,000 employees.

TG through TKIPL is under process for setting up manufacturing unit of **Calcium Thiosulphate ("CaTs®")** and **Potassium Thiosulphate ("KTS®")** (collectively the "Products") in Jawaharlal Nehru Port Authority- Special Economic Zone, Navi Mumbai ("JNPA-SEZ"). TKIPL has obtained plot on lease in JNPA-SEZ measuring 16026 sqm.

On September 21st, 2021, the Ministry of Agriculture and Farmers Welfare, GoI issued the Fertilizer (Inorganic, Organic or Mixed) (Control) Sixth Amendment Order, 2021 ("Amendment Order"), amending Part A of Schedule I of the **Fertilizer (Inorganic, Organic or Mixed) (Control) Order, 1985 ("FCO"), vide which the Products i.e., CaTs® and KTS® have been added as liquid fertilizers.**

CaTs® is a clear liquid fertilizer containing calcium and sulfur that reduces the harmful effects of salt, such as sodium, in the soil, and it can work as a soil amendment. KTS® is a clear, chloride-free solution that features the highest liquid potassium and sulfur content available in the market.

Project will consist of multiple production lines which will include a batch reactor for production of desired product, pre-filter tank and filter-press to filter and condition the final product prior to it being transferred to storage. Layout will also include storage and unloading facilities for raw materials, storage and loading facilities for final products, an Oxygen vaporizer, utilities such as Cooling Tower, supporting facilities such as office building, warehouse, control room, lab, parking, roads, etc.

As per the Government of India (Ministry of Environment, Forests & Climate Change (MoEF&CC) EIA Notification,2006 and further amendments, the proposed project will be covered under ***Activity 5(a); Category A*** and hence requires environmental clearance from MoEF&CC, New Delhi.

Environmental clearance was taken by JNPT for Industrial area under 8(b) category for Development of Port based Multi product SEZ vide letter no. SEIAA-EC-0000002270 dated 24.06.2020 and SEAC-2014/CR-302/TC2 dated 05.12.2014. The details of the project have been provided below

S. No.	Particulars		Unit	Details
1	Project Status		-	New
2	Project cost including Environmental controlling equipment		Rs. (Crores)	55
Production Capacity				
3	Products	Calcium Thiosulphate ("CaTs®")/ Potassium Thiosulphate ("KTS®")	MTPA	20,000
4	Total Plot Area		Sqm	16026
Employment				
5	Permanent Employee (Direct employment)		No.	25
6	Indirect employment (fully functional unit)		No.	50
7	Total Manpower		No.	75
Environment Details				
8	Total Water Requirement		KLD	212
9	Fresh Water Requirement		KLD	177
10	Recycled Water		KLD	35
11	Industrial Wastewater Generation		KLD	38
12	Domestic Wastewater Generation		KLD	2.7
13	Total Wastewater Generation		KLD	40.7
14	Wastewater Treatment Unit (ETP/Pretreatment)		KLD	ETP- 40 KLD
15	Power Requirement		KVA	1000
16	Power Backup		KVA	500

1. Plant location and area classification

The proposed project is located at plot no. 303, Sector-3, JNPA SEZ, Navi Mumbai, Maharashtra-400707. The development will be done on total plot area of 16026 sqm. The coordinates of site are 18°54'44.92"N & 73° 0'4.83"E. Project is located in Industrial Area, JNPA, hence land use of the site is industrial, and no further change is required. The nearest National highway (NH-348A), Port (JNPT) and Ranjanpada Railway Station is located at 0.1 Km(S), 5.8 Km (NW) and 1.2 Km (SE), respectively.

S. No.	Description	Area	Percentage
		(Square meter)	(%)
1	Warehousing & Production area	2680	16.72
2	Workshop & Electric Room	455	2.84
3	Green belt area	3,686	23.00
4	Open space & road infrastructure	5373	33.53
5	Future Expansion	1720	10.73
6	Other infrastructure (Parking, office building, entrance)	2112	13.18
Total		**16026**	**100**

2. Green belt

The Project is proposed on the plot area of 16026 Sqm located in JNPA SEZ area. The total plot area of JNPA SEZ is 277.38 Ha out of which 10.88% of the total land has been provided as Common Greenbelt, which indicates that 10.88% (1743.63 Sqm) of our plot is also developed by JNPA in the Common greenbelt area proposed. The common greenbelt of the JNPA is abutting the proposed project site. As per the MoEF&CC OM 19-74/2020-IA.III dated 27.10.2020, 10.88% greenbelt of our area has been developed in JNPA common greenbelt area, which is adjacent to our proposed project site, thus remaining 23% (3690 Sqm) of our plot is proposed as greenbelt within the unit for complying with the mandatory requirement of the 33% of the greenbelt.

3. Water requirement

Construction Stage: Approx. 10 KLD (Domestic use: 5 KLD + Construction use: 5 KLD) of water shall be required during construction phase. The water during construction phase shall be taken from JNPA. Drinking water supply will be provided by JNPA.

***Operational Phase**:* The total water requirement of the plant (during dry season) will be approx. 212 KLD. Out of total, 177 KLD will be sourced from JNPA, and rest of the water requirement will be sufficed by reusing 35 KLD within the premises. Use of recycled water will reduce freshwater demand.

4. Power requirement & supply/ source

Construction Phase: The Estimated Construction Power is 50 KVA which will be sourced from Maharashtra Electricity Regulatory Commission (MERC).

***Operational Phase*:** The total power requirement of the proposed plant will be 1000 KVA which shall be sourced through Maharashtra Electricity Regulatory Commission (MERC). For Power Backup, DG set of 500 KVA will be installed at site.

5. Effluent Management

Construction Phase: 5 KLD of domestic sewage will be generated from construction workers and will be disposed to septic tanks followed by soak pits.

Operation Phase: The total wastewater generation from the project will be 40.7 KLD {Industrial effluent- 38 KLD; Domestic Sewage- 2.7 KLD}.

Domestic Sewage: 2.7 KLD of sewage will be sent to JNPA sewer line which will be treated in JNPA STP.

Industrial Effluent- Industrial effluent will include only Cooling tower blowdown of 38 KLD, which will be treated in inhouse ETP. Treated water from ETP shall be recycled in gardening. During monsoon, rainwater will maximally be used as process and cooling water make-up. In case of excess treated blowdown water that cannot be used in gardening, it will be discharged to JNPA sewer line. All the standards given by JNPA shall be maintained prior to disposal in JNPA sewer line. After installation of common STP (CSTP) of JNPA, we may discharge blowdown to CSTP for further treated after getting prior approval from JNPA and other concern department.

There will be no discharge of wastewater from the proposed site. All the treated wastewaters will be reused in the plant. Only during monsoon, it will be discharged to storm water line of JNPA. Storm water (and cooling tower blowdowns) will be reused at site for irrigation purposes. Excess storm water will be discharged to storm water line of JNPA.

6. Air Emission & Management

Construction Phase: The main sources of air emissions will be construction machinery like drills, cranes and vehicular movement. To control air emissions during construction, following measures will be implemented: -

- Barricading will be done around the project boundary to control dust dispersion into the surroundings.
- Construction material vehicles will be covered during transportation.
- Dust suppression will be done by regular water sprinkling in and around the project site.
- Water Sprinkling shall be carried out to reduce the dust emission due to construction activity.

Operational Phase: The manufacturing process of CaTs® and KTS® is a closed reactor vessel setup with controlled vent to atmosphere. The product vapor pressure from intermediate and end products is minimal, hence, manufacturing process will not contribute to reportable air emissions.

However, facility will have few sources of fugitive emissions, limited to dust from the lime silo and other solid raw materials (KOH and Sulfur flakes or prills). Air emissions are limited to dust emissions for the lime unloading and storage, calculated to be less than 700 grams per year *(Source: environmental permit similar Fresno, CA facility")*. Dust generated during raw material handling shall be collected through a Dust collector system. The reactor vents have minimal emissions, and the final product storage (CaTs®/KTS®) have only water vapor as air emissions.

No process stack is proposed in the project. A utility stack is provided for evacuation of flue gas emissions coming from the gas-fired boiler and eventual emissions from the diesel-fired emergency back-up generator. There shall be limited flue gaseous emission from proposed plant. All measures shall be adopted during transportation and handling of Raw Material and Product to reduce fugitive emissions.

7. Solid & Hazardous waste management

SOLID WASTE MANAGEMENT

Construction Phase: Waste generated from the construction activity shall be disposed as per C&D waste Management Rule. Non-recyclable waste shall be disposed at the nearby C&D waste disposal site. Recyclable waste shall be sold to recyclers. Approx. 30 kg/day of solid waste will be generated from labours which will be disposed at nearby solid waste site.

Operation Phase: The municipal solid waste generation at the project site will be approximately 23 kg/day that will be segregated in biodegradable waste and recyclable waste. Biodegradable waste will be disposed at central Solid waste management site of JNPA. Solid Waste Management Rules, 2016 will be followed at site.

HAZARDOUS WASTE MANAGEMENT

There will be generations of limited number of hazardous wastes from associated activities i.e., material handling, machineries, onsite/offsite facilities etc. which will be disposed off as per Hazardous and Other Wastes (Management and Transboundary Movement) Amendment Rules, 2023.

Sr. No	Name of Waste	Source of Generation	Category No. (As per Sch-I&II 2016)	Quantity	Mode of Treatment & Disposal Method
1	Discarded Barrels/Containers/	Storage & Handling of Raw Materials	Sch-I/33.1	300 Nos.	Collection, Storage, Decontamination and sale to authorized decontamination facility/ authorized recycler.
2	Used/Spent Oil	Machineries	Sch-I/5.1	0.5 MTPA	Collection, storage in MS drum, transportation and disposal by selling to registered Re-refiners.
3	Carbon Filters	Cooling water blowdown treatment	Sch-I/36.2	12 Nos.	Sold out to carbon filter vendor, who regenerates the filter at their own premises
4	Filter cake	Production	-	800 MTPA	Collected in Drying Pits, stored in HDPE bags, Transported and disposed off to approved TSDF site.

8. Noise Pollution Management

Construction Phase: - The main sources of noise will be construction machineries and vehicular movement during installation of the plant.

Mitigation Measures: -

- Construction machineries will be provided with acoustic pads for noise reduction during operation.
- PPE will be provided to labourers.
- The construction activity will be carried out mostly during daytime.
- Proper maintenance of noise generating transport vehicles.

Operation Phase: The main sources of noise generation in the proposed project are various types of ID fans, pumps & compressors, etc.

Mitigation Measures:

- Equipment meeting the standard of noise shall be used.
- All engineering control practice shall be undertaken during the installation of machinery to maintain noise level.
- As needed, acoustical Enclosures and Mufflers will be provided at all required locations.
- As needed, vibration pads and foundation will be provided at all heavy machinery areas.

- Earmuffs will be used while in high noisy areas.
- Well-developed roads will be constructed within the plant, for smooth and hassle-free movement of personnel.
- Proper and timely maintenance of machineries and preventive maintenance of vehicles will be done.
- Plantation will be done all over the plant area to provide noise barrier.
- Important Instructions will be displayed all over the plant area.

9. Budget for environmental management plan

Company will spend cost on environment management plan for compliance of standards, norms laid down by GoI and environmental sustainability. The cost proposed in Environmental management plan is given in Table.

Particulars	Capital Cost (Lacs)
Air pollution control schemes	20.00
Water pollution control schemes	90
Solid Waste Management	15
Environment monitoring and management	5
Occupational health	15
Greenbelt development	50
Total	195.00