

ITL/TVM/FAC/SEZ/059/2019

22nd Nov 2019

The Director – IA, III.

Room No. 524, 5th Floor,

The Ministry of Environment & Forest (MOEF),

Paryavaran Bhavan, C.G.O Complex, Lodhi Road,

New Delhi – 110 033

Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of April-2019 to September-2019 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.

Reference: ECC No: 647/SEIAA/EC1/4943/2013 dated 16.02.2016

Dear Sir,

With reference to the above, please find enclosed the copy of the report submitted to SEIAA Trivandrum on 22nd Nov 2019 for the project with relevant annexures.

Thanking You, Yours Faithfully

Devi Padmanabhan Nair Regional Manager – Facilities

Enclosures:

1. Copy of the letter submitted to SIEAA.

2. Reports →

Annexure-1: STP outlet sample analysis report Annexure-2: UGR Out sample analysis report

Annexure-3: Ambient air quality report

Annexure-4: DG Stack emission report

Annexure-5: Noise level monitoring report

Annexure-6: Solar Power generated details

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ITL/TVM/FAC/SEZ/057/2019

21st Nov 2019

The Environmental Engineer,
State Environment Impact Assessment Authority (SEIAA),
K.S.R.T.C Bus Terminal Complex,
4th Floor, Thampanoor
Thiruvananthapuram - 695 001

Dear Sir,

Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of April-2019 to September-2019 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.

Reference: ECC No: 647/SEIAA/EC1/4943/2013 dated 16.02.2016

Please find enclosed Six months' report for the project with relevant annexures.

Thanking You, You's faithfully

Devi Padmanabhan Nai

Regional Manager - Facilities

Enclosures:

1. Reports -

- Annexure-1: STP outlet sample analysis report
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MoEF report for Construction Phase& Operation Phase (SEZ) Apr'19 to Sep'19.

SI No.	Conditions Imposed	Compliance taken by us			
	Water				
1.	Water requirement & sources	Water is sourced through Technopark which is treated and stored in Underground reservoir for operation. Sewage water is treated at the STP within the campus.			
2.	RWH units	2 ponds have been created with a total capacity of 36118cum inside the campus with proper side pitching and desilting towards collecting rain water. Open drains are also created along the rear periphery wall towards collecting the run-off water from the neighborhood.			
3.	Facilities for liquid waste treatment	Sewage generated in the campus is treated through Sewage Treatment Plant (STP) of capacity 500KLD which is based on Membrane Bio Reactor Technology (MBR). Recycled water from Sewage treatment plant will be utilized for Irrigation, flushing & cooling purposes. Treated water quality confirms to KSPCB prescribed standard (Annexure 1). STP Outlet Report detail: Sep 2019.		echnology (MBR). for Irrigation, flushing &	
		Parameter	Stipulated Limit	Results	
		рН	6.5 to 8.5	7.21	
		TSS in MG/L	20 mg/l	3 mg/l	
		Oil and Grease	1 mg/l	BDL	
		BOD in mg/l	3 mg/l	2.64mg/l	
		E-Coli	NIL	Absent	
		Residual Chlorine	1.0 mg/l	0.4 mg/l	
		COD in mg/l	20 mg/l	18.7 mg/l	
		TDS in mg/l	2100 mg/l	612 mg/l	
		Odour	No Odour	No Odour	
 4. 5. 	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers Water quality meeting requirements	No impoundment, damming, realignment or other changes to the hydrology of surface water courses is done. We have a thodu/canal passing through the campus, which has been maintained and water flow has been enhanced by pitching, desilting with additional culvert in the downstream Periodically scheduled monitoring is carried out through a PCB approved external agency to ensure that the water quality meets IS 10500 requirement and reports			
		attached for the last 6 months (Apr 19 to Sep 19) and maintained at site. (Annexure 2)			
6.	Provisions for use of recycled water	Recycled water from STP is utilized for irrigation, flushing and cooling requirements within the campus.			
		LAND			
7.	Access road to the site –Width & Condition	Main Access road to the site is through NH-66 by-pass and service road available for easy entry to the site. As part of Enhancement of Safety, Crash barriers and traffic signals are placed along the service road and NH for the safe movement of the pedestrians and vehicles.			
8.	Storage of explosives/hazardous substances	All precautionary measures have been taken and also obtained valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31 st Dec 2020.			
9.	Facility for solid waste management.	In Operation phase as part of solid waste management, segregation is achieved at source by provision of color coded bins and for an awareness point, signage's are also displayed The food waste generated is fed in to 500kg capacity digester biogas plant wherein the biogas generated is used for cooking purpose. The Citric Waste generated is fed into Organic Waste Converter (OWC). Type of Waste Avg quantity (Apr'19 to Sep'19)			
		Food Waste 12627kg			

10.	Proneness to natural hazardous. Top soil, overburden etc.	As per the Indian Standards Seismic Zoning Map, the campus area comes under Zone – III, moderate damage risk zone. Scheduled Mock drills are conducted so as to make the employees aware on what to do in case of an emergency. Safe Assembly point identified to accommodate all the employees safely in one place in case of an emergency. The top soil is used for landscaping work. Overburden is used for back filling and			
11.	Top soil, overburden etc.	internal road construction purpose		daed for back fil	iiig aiiu
		AIR			
		Dust emission from construction phase	Provision of GI Sheets/green shade as barrica for controlling dust. Also regular monitoring quality is done and report maintained. Report attached. (Annexure 3). Ambient Air Quality Report: Sep'19 Ambient Air Quality (Near SDB III Entrance)		nitoring of air d. Reports
			Parameter S	Stipulated Limit	Results
			Particulate Matter (PM10)	100 μg/m³	46.3 μg/m³
12.	Air quality meeting requirements	Emissions from combustion of fossil fuels	There is no major a except DG sets and construction and o It's ensured that go used for transportionly during non-pe DG's are used as based of Grid power failurs stipulated height is pollution control mof stack emission is last 6 months (Apr' maintained. (Annex Stack Monitoring Rep Parameter Particulate Matter Sulphur Dioxide	vehicular moven peration phase. bod conditioned ving construction mak hours. ackup power genere. Appropriate stiprovided for DG' easures. Monthly done and report 19 to Sep'19) and cure 4).	ehicles are naterials and eration in case tacks with a sas Air monitoring attached for dreport (DG II PII) Results 28 mg/ Nm³
			Oxides of Nitrogen	710 ppmv	7.3 ppmv
13.	Noise level meeting requirements	 ➤ During Construction Phase: There will be some noise generated due to cutting of marble and other stone materials ➤ Uninterrupted movement of heavy and light vehicles at high speeds may cause increase in ambient noise levels on the project road (No significant impacts) 	➤ Marble an from the condesignated effect of mequipped equipmen ➤ It is ensured vehicles and construction in decreased following securities vehicle specified when the construction of the condesignation of the condesigna	Id Tiles are locate operational phase darea thereby de loise pollution. We with Personal Prot's (PPE's). Led that good concre used for transpon materials there of noise levels, the speed limit of posted to keep a leeding. Transport on-peak hours. Loise monitoring it tached for last 6 of Sep'19). (Annexument of the speed limit of the speed for last 6 of Sep'19). (Annexument of the speed limit of the speed for last 6 of Sep'19). (Annexument of the speed limit of the speed for last 6 of speed limit of speed for last 6 of speed limit of speed l	c, ie at screasing the orkers are otective ditioned porting eby resulting also strictly 20km/hr and check on cation is

14.	Likely emissions effecting environment	There is no major air pollutant generating source. DG's are used as backup power generation in case of Grid power failure. Appropriate stacks with stipulated height is provided for DG's as Air pollution control measures. Monthly monitoring of stack emission is done and reports attached for last 6 months (Apr'19 to Sep'19) and report maintained. (Annexure 4).
15.	Hazardous waste generation and management	Hazardous wastes generated are collected, stored and disposed through CPCB & KSPCB authorized vendors. A designated Scrap Yard available inside campus for storing the Hazardous and Non Hazardous waste generated.

		ENEGRY			
L6.	Energy requirement & source	Source of Power supplied to the campus is through Technopark. DG has been installed which is used as backup power generation in case of Grid power failure. Average Power consumption for (Apr'19 to Sep'19) is 776970 kwh/month.			
L7.	Extent of usage of alternative energy resources	Grid connected Solar panels of 826kwp has been installed which caters to 12% of total campus power consumption for the period of Apr'19 till Sep'19 Monthly Power generation from solar power has been attached. (Annexure 6). Average Solar power generated for (Apr'19 till Sep'19) is 90118.5kwh/month.			
		BIODIVERSITY			
L8.	Presence of any endangered species or red listed category		·		
		Plant Name	Common Name		
		Hopea parviflora	Thambakam		
		Vateria indica	White Dammar	1	
		Aphanamixis polystachya	Chemmaram	1	
		Alstonia scholaris	Indian Devil Tree	1	
		Calophyllum Inophyllum	Pinna		
		Pterocarpus santalinus	Red sandal wood	Trees	
		Kingiodendron pinnatum	Kodapaala	1	
		Vateria indica	White Dammar	1	
		Hopea parviflora	Thambakam	1	
		Hopea ponga	Kambakam	1	
		Mesua ferrea	Indian Rose Chestnut	1	
		Semecarpus auriculata	Cari	1	
		Humboldtia decurrens	Kunthani	1	
		Buchanania lanceolate	Mala Mavu	1	
			,	1	
9.	Loss of native species and genetic diversity	As a responsible corporate large number of saplings of native fruit species like Jamun, Mosambi, Mangoes, Custard Apple, Pomegranete, Amla, Chikoo, Gova, Neem, Kadamba, Jack fruits and shrubs like Ixoro, Jasmine, Kanakambaram etc are planted inside campus so as to conserve the biodiversity.			
0.	Likely displacement of fauna	Not Applicable.			
1.	Any introduction of alien/ invasive species	Nil.			

	SOCIAL ASPECTS			
22.	Proximity to nearest habitation	Campus is located within Trivandrum Corporation limits surrounded by UST, NH Bypass and Residential houses.		
23.	CSR Activities	 Regular weekend classes and Talent day activities for school kids of Prathibha Poshini , Thiruvananthapuram Sanjeevani, in association with Sree Chitra Tirunal (SCT) Institute for Medical Sciences and Technology, Thiruvananthapuram organized a blood donation camp in the DC on 24th Apr, 22nd May, 14th Jun and 12th Aug to tide over blood shortage . One day Tour to Kuzhipallam Botanical Garden, Udiyankulangara and Charitra Malika for the students of Government Model Girls Higher Secondary School, Pattom , Thiruvananthapuram Distribution of donation materials at Govt Collection Point at SMV School for the Flood Affected in North Kerala Sanjeevani Organized Independence Day Celebrations at Kulathoor for the beneficiaries of Vijnana to Government Higher Secondary School, Kulathoor 167 Donors for Stem cell donation awareness campaign and signup program was organized in association with DKMS BMST, Bangalore Infoscions donated rice towards the Onam kit for the families of visually impaired at Federation of Blind , PMG, Thiruvananthapuram Sanjeevani organized Onam celebration for the Vijnana beneficiaries . There were cultural activities followed by sweet distribution at Government Model Girls Higher Secondary School, Pattom , Thiruvananthapuram Onam meal program organized by Sanjeevani at Center for Rehabilitation of the Disabled(CRD) and different Schools and Institutions. Baby food items worth INR 5000 was handed over to Ammathottil A library with 300 books were setup at handed over to school. Library card system was introduced too to Government Model Girls Higher Secondary School, Pattom , Thiruvananthapuram Sanjeevani donated notebooks for students from economically backward families at Govt and Govt aided schools (153 Schools -24200 Books) 		
24.	Environment Management plan/ Eco restoration plan (brief details)	As part of Environment management the following measures have been taken: Various events conducted like Quiz, Power sharing competition between wings, taking pledge as part of World Environmental Day Celebration. Awareness mailers sent across to users for the whole week as part of celebration of world Environmental Day. In tie-up with Vegetables and Fruits Promotion Council Kerala (VFPCK), sale of seeds, garden equipment's, grow bags etc was done. An interaction session was conducted inviting all the Green Enthusiasts of campus regarding the topic "Home Gardening ideas and Organic waste management". Tree plantation was conducted inside campus celebrating various events, while the main motive being "Saving Environment". Organic Vegetable stall inside campus as part of Employee Farming Initiative "Sprout". The food waste generated is fed in to 500kg capacity digester biogas plant wherein the biogas generated is used for cooking purpose. Citric waste is fed into organic waste converter.		

25.	Biomedical waste management	Bio-medical waste generated within the campus is disposed through IMAGE. Color coded bins are placed inside Med center with markings for proper segregation at source, also barcode system has been implemented for tracking end disposal. All Biomedical waste handlers has been immunized with Hepatitis B and Tetanus Vaccination. Details on the disposal is been submitted to KSPCB through Form IV annually. Bio Medical Waste Avg Apr'19 to Sep'19 82.82 kg/month.	
26.	E-waste management	E-wastes generated are collected, stored and disposed through CPCB & KSPCB authorized vendors. Details on the disposal is been submitted to SPCB through Form III annually.	
27.	Litigation, if any, against the project	No.	

SPECIFIC CONDITIONS: -

Sl. No.	Conditions	
1.	The Emergency parking facility proposed should be ear marked.	Yes, it is ear marked. In every floor of Multi level parking lot (MLPL) a designated emergency parking space is identified and ear marked.
2.	Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.	Drinking water facilities are provided at construction site. Sanitary facilities are also provided and are connected to the STP. Labors are provided with labor camp facility with dedicated room, cooking area, drinking water facility and toilets.
3.	Disposal of muck during construction phase should not create any adverse effect on the neighboring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.	The muck will be used for refilling the low-lying areas in the project premises. Used for development of internal roads.
4.	Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate water courses and the sump sites for such materials must be secured so that they should not leach into the ground water.	Construction spoils and hazardous materials generated are stored in a safe and secured manner. The placement is on concrete base thereby eliminating any chance of contamination to the water courses.
5.	Any hazardous waste generated during construction phase, should be disposed off as per applicable rules and norms with necessary approvals of Kerala State Pollution Control Board.	Yes, disposed off as per applicable KSPCB rules and norms received.
6.	The diesel generator sets to be used during construction phase should be low Sulphur diesel type and should conform to Environment (Protection) rules prescribed for air and noise emission standards.	DG's are used as backup power generation in case of Grid power failure. DG's are located in secluded areas with proper acoustic facility and with appropriate stacks with stipulated height which acts as Air pollution control measures.
7.	Water demand during construction should be reduced by use of pre-mixed concrete, curing agents and other best practices referred.	Yes, pre-mixed concrete is used.
8.	Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.	Yes, Energy Conservation Building Code is followed.

GENERAL CONDITIONS: -

Sl. No.	Conditions	
(i)	Rain water Harvesting capacity should be installed as per the prevailing provisions of KMBR/ KPMR, unless otherwise specified elsewhere.	2 ponds have been created with a total capacity of 36118cum inside the campus with proper side pitching and desillting towards collecting rain water. Open drains are also created along the rear periphery wall towards collecting the run-off water from the neighborhood.
(ii)	Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.	Yes, formed and functional.
(iii)	Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, inclusive of approach road and internal roads Check with Diva	Avenue trees like Mimusops elengi, Ficus benjamina and Ficus panda are planted in the service roads outside campus for public environmental welfare. Trees like Neem, Kadambu, Ezhilampala, Lakshmitharu, Jack fruit, Fig, Coconut, Water apple are the avenue trees cum fruit trees are also planted inside campus in the year 2018-19 is preserved and nurtured well. Shade trees has been provided along the NH service road. The NH has been planted with flowering plant in the concern with NHAI.
(iv)	The project shall incorporate devices for solar energy generation and utilization to the maximum possible extent with the possibility of contributing the same to the national grid in future.	Grid connected Solar panels of 826kwp has been installed which caters to 12% of total campus power consumption.
(v)	Safety measures should be implemented as per the Fire and Safety Regulations.	Yes, safety measures are implemented as directed by Department of Fire & Rescue services. No Objection certificate from FRS is available for all the buildings. Annual Renewal of the certificate is carried out by FRS after necessary site inspections. All buildings are equipped with Sprinkler systems, hose reels, wet risers, smoke & fire alarm system. External fire hydrants provided around the buildings across the campus. Exclusive fire tanks maintained atop all the high rise buildings in addition to the fire tanks available in our Underground reservoirs. Fire extinguishers are provided as per IS 2190 standard and fire buckets are provided at prominent places.
(vi)	STP should be installed and made functional as per KSPCB guidelines including that for solid waste management	Yes, it's installed. Sewage generated in the campus is treated in the Sewage Treatment Plant (STP) of capacity 500KLD. The STP is based on Membrane Bio Reactor (MBR) technology. Recycled water from Sewage treatment plant will be utilized for landscaping, flushing and cooling tower purpose. Treated water quality confirms to KSPCB required standard. Proper facilities are provided inside campus for solid waste management. The food waste generated is fed in to 500kg capacity digester biogas plant wherein the biogas generated is used for cooking purpose. The dry waste generated is disposed through authorized dealer.

		Adequate number of collection bins are provided for bio-
		degradable waste. Have also ensured that the solid waste
		generated is segregated at source.
(vii)	The conditions specified in the Companies Act, 2013 should be observed for Corporate Social Responsibility.	Yes, Complied.
(viii)	The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.	Yes, saplings comprising of native fruit species and shrubs has been planted inside campus, so as to conserve the biodiversity.
(ix)	Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating activity.	Yes, obtained.
(x)	All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.	Yes, obtained. Possessing valid license from Petroleum and Explosives Safety Organization (PESO) for storage of HSD valid till 31st Dec 2020.
(xi)	In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Authority.	No change in the Scope of the proposed project.
(xii)	The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.	Yes, agreed.
(xiii)	The stipulations by Statutory Authorities under different Acts and Notification should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.	Yes, complied.
(xiv)	The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail). It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of the India and also to the Directorate of Environment and Climate Change, Govt. of Kerala.	Half yearly report submitted to Regional Office of MoEF and to Directorate of Environment and Climate change, Govt of Kerala.
(xv)	The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft. x 3 ft. with green background and yellow letters of Times New Roman font of size of not less than 40.	Yes, the details of EC are prominently displayed.