

ITL/TVM/FAC/SEZ/023/2019

21st May 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

Dear Sir/Madam,

Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of October-2018 to March-2019 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.

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

With reference to the above, please find enclosed the copy of the report submitted to SEIAA Trivandrum on 21st May 2019 for the project with relevant annexures.

Thanking You, Yours Faithfully

Devi Padmanabhan f Regional Manager – I

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

ACTIONER TONER TONERS & Climate Change of Environment, Forests of

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ITL/TVM/FAC/SEZ/021/2019

20th May 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,

<u>Sub: Six monthly post ECC - Operation and construction phase monitoring report for the period of October-2018 to March-2019 of Software Development IT Park (SEZ) at Attippra Village. Trivandrum District.</u>

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,
Yours faithfully

Devi Padmanabhan Nan

Regional Manager – Facilities

Enclosures:

1. 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
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INFOSYS LIMITED
SEZ Unit 1, Plot No. 1
Technopark Campus II
Attipra Village
Thiruvananthapuram 695 583, India

MoEF report for Construction Phase& Operation Phase (SEZ) Oct'18 to Mar'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 ST	P within the campus.
2.	RWH units	2 ponds have been created with a total capacity of 36118cum inside the campus with		cum inside the campus with
		proper side pitching and desilting	g towards collecting rain v	water. Open drains are also
		created along the rear periphery	wall towards collecting the	ne run-off water from the
-	E de la companya de l	neighborhood.		==
3.	Facilities for liquid waste treatment	Sewage generated in the campus	s is treated through Sewa	ge Treatment Plant (STP) of
		capacity 500KLD which is based of	on Membrane Bio Reactor	r Technology (MBR).
		Recycled water from Sewage trea	atment plant will be utilize	ed for Irrigation, flushing &
		cooling purposes. Treated water (Annexure 1).	quality confirms to KSPCE	3 prescribed standard
		STP Outlet Report detail: Mar 201	٥	
		Parameter Parameter	Stipulated Limit	Results
1		pH	6.5 to 8.5	7.33
		TSS in MG/L	20 mg/l	BDL
		Oil and Grease	1 mg/l	BDL
		BOD in mg/l	3 mg/l	2.1mg/l
		E-Coli	NIL.	Absent
		Residual Chlorine	1.0 mg/l	0.6 mg/l
		COD in mg/l	20 mg/l	14.7 mg/l
		TDS in mg/l	2100 mg/l	910 mg/l
		Odour	No Odour	No Odour
4.	Impoundment, damming, culverting,	No impoundment, damming, real	ignment or other change	
	realignment or other changes to the	water courses is done.		,
	hydrology of watercourses or aquifers	We have a thodu/canal passing th	rough the campus, which	n has been maintained and
		water flow has been enhanced by	\prime pitching, desilting with a	dditional culvert in the
5.	Motor	downstream		
Э.	Water quality meeting requirements	Periodically scheduled monitoring		
		agency to ensure that the water of		
6.	Provisions for use of recycled water	attached for the last 6 months (A	or 18 to Sep 18) and main	tained at site. (Annexure 2).
0.	Trovisions for use of recycled water	Recycled water from STP is utilize within the campus.	d for irrigation, flushing a	nd cooling requirements
		LAND		70
7.	Access road to the site –Width &	Main Access road to the site is thr	rough NH-66 by-pass and	sorvice read available for
	Condition	easy entry to the site.	ough Mil-oo by-pass and	service road available for
		As part of Enhancement of Safety	. Crash barriers and traffic	signals are placed along
		the service road and NH for the sa	afe movement of the pede	estrians and vehicles.
8.	Storage of explosives/hazardous	All precautionary measures have l		
	substances	Petroleum and Explosives Safety (Organization (PESO) for st	orage of HSD valid till 31st
	•	Dec 2020.		
9.	Facility for solid waste management.	In Operation phase as part of solid	d waste management, seg	regation is achieved at
	·	source by provision of color coded	d bins and for an awarene	ss point, signage's are also
		displayed		
		The food waste generated is fed in	n to 500kg capacity digest	er biogas plant wherein the
		biogas generated is used for cooki		
		Type of Waste		Oct'18 to Mar'19)
10	Dropopose to noticed by	Food Waste	11848kg	
10.	Proneness to natural hazardous.	As per the Indian Standards Seism	ic Zoning Map, the campu	ıs area comes under Zone –
1		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.			
11.	Top soil, overburden etc.	The top soil is used for landscaping work. Overburden is used for back filling and internal road construction purpose.			
		AIR			
		Dust emission from construction phase	Provision of GI She for controlling dus quality is done and attached. (Annexu Ambient Air Qualit	t. Also regular mor I report maintaine re 3).	nitoring of air d. Reports
				Stipulated Limit	Results
			Particulate Matter (PM10)	100 μg/m³	63.2 μg/m³
		Emissions from combustion of fossil fuels	There is no major a except DG sets and construction and c	d vehicular movem peration phase. ood conditioned veng construction m	ent during
12.	Air quality meeting requirements		DG's are used as boof Grid power failustipulated height is pollution control mof stack emission is last 6 months (Aprimaintained. (Annex Stack Monitoring Rep	re. Appropriate sta provided for DG's leasures. Monthly done and reports 18 to Sep'18) and kure 4).	acks with as Air monitoring attached for report
			Parameter	Stipulated Limit	Results
			Particulate Matter	150 mg/ Nm ³	26 mg/ Nm³
			Sulphur Dioxide	1200 mg/ Nm ³	74 mg/ Nm³
12	Main Inc. Inc.		Oxides of Nitrogen	450 mg/ Nm ³	47 mg/ Nm ³
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) 	 Cutting processes are done in designated areas thereby decreasing the effect of noise pollution. Workers are equipped with Personal Protective equipment's (PPE's). It is ensured that good conditioned vehicles are used for transporting construction materials thereby resulting in decrease of noise levels, also strictly following the speed limit of 20km/hr and securities posted to keep a check on vehicle speeding. Transportation is during non-peak hours. Monthly noise monitoring is done and reports attached for last 6months (Oct'18 to Mar'19). (Annexure 5). 		
			(Oct. 18 to	Mar 19). (Annexur	e 5).
14.	Likely emissions effecting environment	There is no major air pollutant gene generation in case of Grid power fai provided for DG's as Air pollution co	rating source. DG's a lure. Appropriate sta	are used as backup acks with stipulated	power height is

		emission is done and reports attached for last 6 months (Apr'18 to Sep'18) and report maintained. (Annexure 4).
15.	Hazardous waste generation and management	Hazardous wastes generated are collected, stored and disposed through CPCB & KSPCB authorized vendors.

		ENEGRY		
16.	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 (Oct'18 to Mar'19) is 670030 kwh/month.		
17.	Extent of usage of alternative energy resources	Grid connected Solar panels of 126kwp has been installed which caters to 4% of total campus power consumption for the period of Oct'18 till Mar'19 and an additional of 699.84kwp solar panels has been installed and commissioned for the month of March 2019. Monthly Power generation from solar power has been attached. (Annexure 6). Average Solar power generated for (Oct'18 till Mar'19) is 26995kwh/month.		
		BIODIVERSITY	un Mai 19) is 20995kWn/mont	n.
18.	Presence of any endangered species or red listed category			
			RET ZONE DETAILS	
		Scientific Name	Local Name	
		Vateria Indica	White Dammar	
		Aphanamixis Polystachya	Chemmaram	
		Hopea Parviflora	Kambakam	Tree
		Calophyllum Inophyllum	Pinna	
		Pterocarpus santalinus	Red Sandal Wood	
		Kneama Attenuata	Chorapali	
		Humboldtia Decurrens	Kunthani	
		Syzygium densiflorum	Vellanjaval	
		Calophyllum Apetalum	Manjapunna	Sapling
		Gluta Travancorica	_	
		Cinnamomum Riparium	Aattuvayana	
		Myristica Malabarica	Kattujathi	
		Garcinia Wightii	Attukaruka	
		Humboldtia Vahliana	Korathi	
19.	Loss of native species and genetic diversity	As a responsible corporate large number of saplings of native fruit species and shrubs are planted inside campus so as to conserve the biodiversity.		
20.	Likely displacement of fauna	Not Applicable.		
21.	Any introduction of alien/ invasive species	Nil.		
	10 10 de 100	SOCIAL ASPECTS		
22.	Proximity to nearest habitation	Campus is located within Trivandrum and Residential houses.	n Corporation limits surrounde	d by UST, NH Bypass

	 members while doing relief support. Educational support for the Tribal students. Support to Pulwama attack martyr soldier's family. MRI equipment has been issued to RK Ashrama Charitable Hospital. Gandhi Jayanti celebrations - Sanjeevani organized Gandhi Jayanti celebrations at Government H.S.S. Kulathoor. With the help of staff and students of school, 30 Sanjeevani volunteers came together to set up a garden in the school yard. Around 900 saplings were planted around the school premises Chirag: The Sponsor a Child program by Sanjeevani gave away scholarships to30 students at Govt. Higher Secondary School. Thonnakkal. The scholarships and Notebook Distribution was done by Dr. Sambath, Honorable Member of Parliament Vijnan Jyothi: A new track of Vijnana (the academic track of Sanjeevani) in association with Government child welfare society was formally inaugurated by
	Dr. Sambath, Honorable Member of Parliament. The event took place at Government Model Girls Higher Secondary School, Pattom, Thiruvananthapuram > Self Defense workshop: Sanjeevani in association with the Pink Police, a focus
	group from Kerala Police, organized a self-defense workshop for women on 3rd December
	Samyam: The third edition of Samyam took place on 5th December Govt. Higher Secondary School, Pallithura, Thiruvananthapuram. The focus of the campaign was to educate the students on the health hazards associated with the use of drugs and the importance of leading a healthy and safe lifestyle.
	Blood Donation Camp: Sanjeevani, in association with Sree Chitra Tirunal Institute for Medical Sciences, Thiruvananthapuram organized a blood donation camp in the DC on 6th December and February 19 to help meet the soaring demand for blood units at SCT Hospital
	 Painting Competition: Sanjeevani extended volunteer support for conducting national level painting competition for differently abled kids (event organized by the District Child Welfare Society)
	Gaja Cyclone Relief Work: Sanjeevani distributed essentials to families in one of the communities which was affected by Gaja cyclone
	 Medical Camp: Medical Camp in collaboration with Ananthapuri Hospitals and Research Institute, Thiruvananthapuram for a village in coastal area Social Visit: Sanjeevani volunteers visited special school for differently abled, distributed bedsheets, organized some performances by kids and did a cake cutting
	 Cleanliness Drive: A cleanliness drive was organized for couple of wards in the Govt. Medical college
	 Cultural Evening at old-age home: Christmas celebrations, cultural evening & dinner for the beneficiaries at the old age home were organized by Sanjeevani
	Voice Donation: A unique move from Sanjeevani to Donate Voice. The voice donation booth was inaugurated by Sunil, the DC head by reading a moral story. The recorded voice clips will be shared with the Govt. schools for the visually impaired
	Hour of Code: Campus visit for the beneficiaries of Vijnana, Sanjeevani's weekend classes. The kids were able to take part in "Hour of Code" from Infosys campus.
	 Thanks Giving: Thanksgiving session was organized for contract staffs in view of 15th anniversary. Thanksgiving note was followed by games, DC quiz & a cake cutting by milestone achievers. The session ended with high tea and photo session.

Microscopes has been issued to Trivandrum Medical college.

Classroom construction for Bharateeya Vidhya Nikethan school.
 Kerala floor relief activities including support to families who lost their

Distribution of Sanitary Napkins to Chitra Poor home.

23.

CSR Activities

	T	
		Library Setup: 300 books were donated and library card system was
		introduced. In addition to that another 150 books will be used as a mobile
		library
		Outing for destitute children: Kids from Sree Chitra Home for Destitute &
		Infirm, Thiruvananthapuram, had an outing in double decker bus.
		> Talent Day: Vijnana volunteers organized Talent Day program for Prathibha
		Poshini students. The program which spanned across 3 months, gave students
		an opportunity to showcase their skills through various competitions like essay
		writing, poem writing, elocution, story writing, music recitals, recitations etc.
		Vijnana: Regular weekend classes were conducted at Fort School, Kulathoor
l		Government School, Prathibha Poshini and Cotton Hill School by Vijnana
		volunteers.
		Donation Drive - Sanjeevani donated stationery items, uniforms, plates, school
		bags, chairs, tables etc. to flood affected Govt. LP and High Schools, Parippu,
		Kottayam. A RO System for Purified Water was donated to Government Higher
		Secondary School Ayamprambu, Kottayam
		The clothes, shoes and other domestic items collected through the drive were
,		donated to the inmates of Sadhana Renewal Center, Kulathoor
		Study tour - organized a study tour for differently abled kids from Alappuzha
		district at Infosys Campus
		 Dental checkup for construction laborers - Sanjeevani, in association with
		Indian Dental Association (IDA), organized a free dental camp for the
24.	Environment Management plan/ Eco	construction laborers in the Infosys campus
۷4.		As part of Environment management the following measures have been taken:
	restoration plan (brief details)	Commissioning of Greenhouse structure with German technology which is
		used for drying the sludge.
		Sewage generated in the campus is treated in the existing Sewage Treatment
		Plant (STP) which is based on Membrane Bio Reactor Technology (MBR).
		Recycled water from Sewage treatment plant will be utilized for Landscaping,
		flushing & cooling purposes.
		As a part of Organic Farming initiative "Sprout", employees are allowed to grow
		the vegetables inside the campus.
		In Underground reservoir, new UV Plant has been installed so as to eliminate
		the use of chlorine in treatment.
		The non-biodegradable wastes generated during construction is given to
		authorized vendors. In Operation phase proper facilities are provided inside
		campus for solid waste management and the segregation is achieved at source
		by providing bins. Non-bio degradable and recyclable wastes is given to
- 1		authorized vendors.
		 The food waste generated is fed in to 500kg capacity digester biogas plant
1		
		wherein the biogas generated is used for cooking purpose. Citric waste is fed
l		into organic waste converter.
		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
		maintained at site.
		As part of World Water Day, Awareness mailers was sent to all the employees.
		Tree plantation done inside campus to mark certain Occasions, VIP Visits,
		achievement etc.
		➤ In tie-up with the Department of Forest, a stall of Natural products are made
		available inside the campus in a periodic basis.
		· · ·

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 Oct'18 to Mar'19 73.98 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	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 and median.
(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 126kwp has been installed which caters to 4% of total campus power consumption and an additional 699.84kwp solar system at Multi Level Parking Lot Terrace has been installed and commissioned on March 2019.
(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 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.
(×)	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.
	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.
	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.