Achira Labs Private Limited

Proposal entitled: "Development of an ELISA kit for COVID 19"

- (i) Brief description of the proposed activity

 The project involves optimization of an ELISA kit for the detection of antibodies generated against proteins of SARS-CoV-2 virus in the serum samples of the people infected with the virus.
- (ii) List of environment related regulatory clearances required for the activity.
 - 1. We have a KSPCB (Karnataka State Pollution Control Board) permit for waste disposal, sanction number is AW-306172

	Ins	titu	tional	Arrang	ement
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Area	a of Risk	Yes	No	Details	Proposed Plan
1.	Is there a designated full-time staff for Environment Health and Safety (EHS) issues?	Yes		Representative, is designated for dealing with EHS	We are currently ISO 13485 compliant. We plan to make a committee for EHS issues in the next 6 months.
2.	Does the EHS staff handle the following?			SOP no. SOP_003	Waste Management will
	Occupational Health and Safety	Yes		(Work	be monitored by
	Waste Management	Yes		Environment &	Quality.
	List of consents and regulatory clearances	Yes			Health & Safety by HR
	Record keeping of accidents and procedures	Yes		-	
	EHS trainings for staff	Yes		SOP_058 (Accident Pollution Control Prevention permit for disposal, Form no: F101 number is: AW- Record of Accidents and Mitigation. The last EHS (first aid training) was done on 15/06/2020	Pollution Control Board) permit for waste disposal, sanction number is: AW-306172
	Environment Management Framework compliance for Innovate in India Project	Yes			in India Project will be followed

3.	Is there a reporting structure in place regarding EHS issues?	Yes		structure is outlined in SOP_058 (Accident Prevention Guidelines)	Individual staff report their concerns to the respective manager. Managers report the concerns to the EHS head. This process will be followed throughout.
4.	Are regular EHS training provided to staff?	Yes		Frequency: EHS training is provided to all new employees. EHS training is provided once in six months to staff. The date of last training was 15/06/2020	The next training session for EHS is planned for January 2021. Attendance record and minutes of the meeting will be maintained.
5.	Institutional Bio-Safety Committee (IBSC)		NO		We will institute an IBSC as and when required.
6.	Ethics Committee (EC)	Yes		formal EC, but captured in SOP_003 (Work	We will periodically review (once in 6 months) the need for an EC and institute the same based on the assessment.
	General Occupational Health	and	Safety		
	_				Proposed Plan
7.	Are there Standard Operating Procedures for accidents, hazards, and other emergencies (chemical spills, heat hazards, fire hazards, radioactive hazards etc.)?	Yes		Procedure for Waste Disposal SOP_058 for Chemical Spills and to handle Hazards and other emergencies.	generated, are to be handed over to our current vendors, Maridi Bio Industries and Pai and Pai Chemicals.
8.	Are the following in place?			We have 'First Aid'	We are not using any
	Chemical spill kits		No		hazardous chemicals as
	Eye wash	Yes		to take care in case	of now and if we use such

	Shower stations		No	of First Aid and w	e chemicals we will keep
	First Aid Kit	Yes		have a register for	appropriate anti-dotes
	Fire Extinguishers	Yes		keeping record of	
	Register of accidents and injuries	Yes			s Sufficient quantity of eye
				and injuries.	was bottles, first aid kit,
				We have 2 eye	fire extinguisher will be
				wash stations.	in place.
				We have 17	- Will maintain the
				handheld fire	register for accident and
				extinguishers of	injuries.
				Type ABC. They	
				can be used for fir	e
				on common	
				combustible	,
				material, flammab	
				liquid and electric fires. This covers	
				all the anticipated	
				types of fire	
				incidences in the	
				company.	
				company.	
9.	Are proper signage and storage system in		F8	2 Risk Register	We will evaluate and
	place?		and	_	modify the Risk Register
•	Display of Material Safety Data Sheet	Yes		tigation,	on a periodic basis based
	(MSDS) where relevant			P_023 Risk	on changes to existing
•	Display of emergency numbers and	Yes		-	processes.
	procedures (Person to Contact, Doctor,			U	
	Ambulance, Fire Emergency, Police)		Al.	the Material Safe	ty
	displayed in all critical		Da		·
	places		—ha	`	
		Yes	acc	essible	•
	<u> </u>				
	11 1	Yes	En	nergency number	ers
	to prevent fire hazards?			•	
				_	
				rked at all areas.	
			Fir	e extinguishers a	re
				ovided w	
			r	oropriate signag	ge.
	procedures (Person to Contact, Doctor, Ambulance, Fire Emergency, Police) displayed in all critical places Signage across the facility (labs, storage, hazardous areas, etc.)		All Da hav acc En hav alc pla Ex ma	we been keessible mergency number we been displaying with the Flow at multiple place it signage is clear wheel at all areas. The extinguishers are extinguishers are extinguishers are extinguishers.	ty S) pt ers ed or es. ly

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				Location of all fire	
				extinguishers is	
				included in the Floor	
				plan as well. Floor	
				Plans have been	
				provided at the end of	
				this Annexure	
				These fire	
				extinguishers are of	
				Type ABC.	
				They can be used for	
				fire on common	
				combustible material,	
				flammable liquid and electric fires.	
10	And ample detectors fire alarms and and		NΙς		Wa aumontly have
10.	Are smoke detectors, fire alarms, automatic		INO	We don't have smoke	_
	safety/shut			detectors, but we have	
	off systems, overflow preventors, etc. in				extinguishers and exit
	place and regularly maintained?			We have mechanisms	points at the premises.
				in place to prevent the	We will ensure fire
				o . •1110	extinguishers are
					maintained on a periodic basis
11.	Are there control measures for VOC, air		No		In case of any new
11.	emissions, high operating temperatures,		110		projects that require the
				_	use of live pathogens,
	pathogens/vectors etc. in place?				then we will evaluate
				pathogens	
					and install control
					measures and notify
					appropriate authorities.
12.		Yes			Next drill is planned for
	emergency preparedness and safety?			conducted on a yearly	
				basis.	December 2020. This
					would be performed as
					per schedule.
12	Ano stoff provided with OHC training 2	V		Evany navy inimas is	We also to size OHO
13.	Are staff provided with OHS training?	Yes			We plan to give OHS
				provided with this	training to all new and
				training for OHS.	old staff once every six
					months. The next
					training sessions are
					planned for December
					2020 and June 2021.
					We will prepare planner

					and will impart the training accordingly.
	Biomedica	ıl Wa	aste	(BMW)	<u> </u>
	Area of Risk	Yes	No	Details	Proposed Plan
14.	Is there generation of biomedical waste (as described in Bio-Medical Waste Management Rules, 2016) in the grantee?	Yes		Heat inactivated serum samples are used by us in a BSL-2 hood. They are non-infectious but discarded as biomedical waste.	We will collect all the solid and liquid waste that will come in contact with serum or antibodies as biomedical waste. Solid and liquid waste are collected separately. Both solid and liquid waste will be treated with bleach, 0.4 %, before the disposal. The liquid waste post treatment is disposed of in a designated chemical sink. Before disposal, liquid waste will be separated from solid waste via procedure elaborated in the SOP 041. It is wrapped into a plastic bag and left at a designated place with the date and name of the operator.
15.	Is there trained staff to handle biomedical waste in the grantee?	Yes			The summary of SOP is rprovided on the previous erow.
16.	Has the grantee obtained authorization from State Pollution Control Board /Pollution Control Committee?	Yes		306172	-proper approvals in future will be taken.
17.	Is the biomedical waste segregated at point of generation in the facility and stored in suitable containers?	Yes		and glas	SOP_003 and SOP_041, detail the procedures for Biomedical Waste generated will be followed throughout the Project.

			White	paper needles, sharps Glass bottle , broken			
				glass			
18.	Is the bar code system for the segregated waste in place?	1	We do segregation waste at the being ge putting is colored bing.	manual of the ne time it is nerated by n different as vstem will be ed after	Industries Pai Pai private lim switch to a when i available.	Maridi Pvt. Ltd. Chemited so we coded sys	Bio and icals can stem

19.	Is the biomedical waste being sent to an authorized common BMW facility?	Yes	Name and address of CBMWF:Maridi Eco Industries Pvt Ltd Off. No.5, 2nd Floor, C.M.Plaza #71, 8th Cross, 1st Main S.R.Nagar, Bangalore - 560027	SOP 041-Procedure for Waste Disposal The BMW is carried away by an authorized company and we keep a record of the dated collection slips.
			Distance from facility:13 Kms Frequency and Mode of transport: Once a week:	
			Who transports? Vendor picks up the BMW	
20	Does the grantee have an in-house BMW treatment facility?	No	We do not currently have in house BMW	

	Is the treatment facility own (individual)?		No	treatment facilities. authorized people and
	Is the treatment facility a shared facility		No	We do following we will keep a record
	in an industrial park?			two types of of the dates and the
	•			pretreatments to the collection slips.
				biomedical waste
				that we generate
				depending on the
				type of the waste.
				1. Autoclaving
				2. Bleach
				3. pH
				neutralization
				neutranzation
				Authorization: Our
				vendors Maridi Bio
				Industries Pvt. Ltd.
				and Pai Pai
				Chemicals private
				limited are
				authorized for
				collecting and
				disposal of the
				BMW.
				Distance of
				nearest CBWM
				from facility: 20
				km
				Types of treatment:
				Our vendors Maridi
				Bio Industries Pvt.
				Ltd. and Pai Pai
				Chemicals private
				limited treat the
				waste as per the
				PCB norms.
21	Are lab waste, microbiological waste and	Yes		Types of treatment: SOP 041-Procedure
	chemical liquid waste pre-treated before			1. Autoclaving for Waste Disposal
	storing and sending to			2. Bleach treatment will be followed.
	treatment facilities according to			(0.4 %) Briefly,
	guidelines prescribed in BWM, 2016			3. pH The non-hazardous
	regulations?			neutralization solid and liquid
				chemical waste will be

			collected and disposed of separately. Any plastic or paper that comes in contact with laboratory chemicals will be collected separately and care will be taken that there is not liquid in it. The liquid chemicals those have pH in range 5-10 will be disposed off in the chemical sink as it is. The non hazardous liquid chemicals those do not have pH in range 5-10 will be neutralized before discarding. Hazardous, nonconvertible or explosive chemicals will never be discarded into the sink. A bottle/container to collect these waste is kept, and then it is handed over to a vendor Pai and Pai or Maridi Bio Industries. Example of such waste: Chlorinated solvents (dichloromethane)
22.	Is the liquid waste checked for active cells before sending to treatment plant?	Yes	SOP 041-ProcedureLiquid waste that are for Waste Disposal.likely to have active We are neutralizingcells will be all biomedical waste autoclaved before it is with bleach sent for treatment.

23.	Are necessary waste pre-treatment equipment in place?	Yes		List of equipment	
	Do the equipment adhere to prescribed norms by State Pollution Control Board (SPCB)?		No	Autoclaves: 2 Shredders: 1 Incinerators: None Details of waste pre-treatment: Depending on the waste we use following type of pretreatments 1. Autoclaving 2. Bleach	disinfection is done (detail) Most of the biomedical waste is sterilized using bleach (0.4%). The waste that has biomolecules and micro-organisms is autoclaved for sterilization. Examples of such waste include the agar plate used for estimation of microbial contamination, any reagents in which microbial contamination/growth is detected or suspected. This process will be followed throughout the Project.
24.	Are chlorinated plastic gloves and bags phased out in the grantee?	Yes			.We plan to not use chlorinated plastic gloves and bags.
25.	Are grantee's personnel involved in handling BMW provided with regular training?	Yes		Two personnel have	The plan is to have training once every six months.
26.	Are medical examination provided to personnel involved in BMW waste handling and are they provided with relevant immunization like Hepatitis B and Tetanus?	Yes		Hepatitis B immunization has been done regularly for all employees. Last immunization date was in 20 December 2019	November 2020. Next immunisation is scheduled for the last

27. 28.	Is a daily register for biomedical waste maintained including accident reporting record? Are annual reports on BWM submitted to SPCB as per required form (see Bio-Medical Waste Rules 2016)? rdous Waste (HW)	Yes		away by authorized people and we keep a record of the dates of the collection slips. We do have a record	Separate register will be lmaintained for sreporting accidents in the lab.
Haza	Area of Risk	Yes	No	Details	Proposed Plan
29.	Is there generation of hazardous waste (as per Hazardous Waste Rules, 2016) in the grantee?		No	None of our processes have hazardous chemicals usage and if any, we will be collected separately and will be handed over to the vendor for disposal. Please find a list of all waste produced in the facility below. The list of common waste generated at Achira, Aqueous solutions or buffers in the pH range of 5-10 (containing phosphate PBS, tris, bicarbonate, acetate, glycine, sucrose, mannitol, dextran, trehalose, (all mono, di and polysaccharides), PEG, Tween, Triton-x, NaCl, KCl,	Before using any new chemical or assay in the the company the possibility of generating hazardous waste is and will be analysed. If there is any hazardous waste being generated it is included in the list of waste in SOP 041. Employees will be informed and trained to handle it properly. We plan to conduct a Hazardous Waste training session in January 2021

30.	Is there trained staff in the facility to identify and handle hazardous waste?	Yes		acrylation-washes, conjugation- washes), IPA (isopropyl alcohol), ethanol, dilute acids (HCl < 1% or 0.3M), dilute bases (NaOH < 0.1 M), DMSO, IPA, Acetone Quality Control Quality Control personnel has been personnel will conduct trained on hazardous training sessions for all
31.	Does the grantee have authorization from SPCB for hazardous waste?		No	wastes employees. We do not require We will apply for authorization for authorization if required Hazardous Waste
32.	Is there a secure location for storage of HW with propersignage? Are hazardous waste stored for more than 90 days in the grantee's premises?		No	We do not use hazardous material and hence we do not require any special storage.
33.	Is the hazardous being send to an authorized disposal facility or user? Is the disposal facility in house? Is the disposal facility external/outsourced?		No	We do not generate hazardous waste and waste generated is sent to the following disposal facilities 1. Pai and Pai Chemical Pvt Ltd. 438/1, 20 the block, 1st block, Rajajinagar, Bengaluru-560010, India 2. Maridi Bio Industries Pvt. Ltd. Building # 8, Sunaga Arcade, 1st main, 8th cross, S.R. Nagar,

				Sengaluru-560027,	
34.	Is a register maintained on production and treatment, and a manifest system followed for transport of hazardous waste from the grantee to treatment facility?	No	We o		In case any hazardous waste would be generated by future projects, we will put appropriate plans in place and notify relevant authorities
E-Wa	ste and Batteries				
	Area of Risk	Yes	No	Details	Proposed Plan
35.	Does the grantee generate e-waste, produce or manufacture electrical and electronic equipment?		No	not create E-	We will periodically review if waste management plans should include e-waste. Battery waste if produced in future will be sent to authorized Recycler.
36.	Has the grantee obtained SPCB authorization of e-waste?	n	No		Will obtain necessary permission or authorization as and when required.
37.	Does the grantee channelize the e-waste to authorized recycling or disposal facility?	0	No	We do not currently have any authorized vendors for e-waste and till now we have not generated e-waste. Soon considering vendors contract for e-waste collection and disposal.	We plan to appoint an e- waste recycler when the need arises

38.	Does the manufacturing grantee have Extended Producer Responsibility system and EPR-authorizationin place?		No	We do not require this	
39.	Does the grantee practice reduction in the usage of hazardous substances in the manufacture of electrical and electronic equipment and its parts?		No	We do not generate e-waste	
40.	Does the grantee provide detailed information on the constituents of the equipment and their components/spares and declaration of conformation to Reduction in Hazardous Substances in the product userdocumentation?		No	We do not generate e-waste	
41.	Does the grantee maintain a record of collection, storage, sale and transport of e-waste?		No	We do not generate e-waste	
42.	Does the grantee submit annual reports on e-waste to SPCB?		No	We do not generate e-waste	
43.	Is there accident reporting and records in place?	Yes		Yes - As per Factories Act	Will ensure a register is being maintained recording any such incidents in future.
44.	Are PPEs available to staff?	Yes			Use of PPE's for staff will be made mandatory. Ensure regular and sufficient provision under the project.
45.	Is the grantee involved in manufacture of batteries?		No	We do not manufacture batteries	
46.	Does the grantee generate battery waste?		No		Battery waste if generated in future will be sent to authorized Recycler.
47.	Does the grantee deposit the battery waste to registered recycler/dealer/manufacturer/reconditioner/colle ction center?		No	generate any	Battery waste if generated in future will be sent to authorized Recycler.
48.	In case of manufacturing, does the grantee comply to Battery Management Rules 2000 and ensure		No		We are not manufacturing any batteries

	collection of old batteries?			
Comn	nunity Health and Safety and risk mitigation			
		Yes	No	Details Proposed Plan
49.	Safety Transportation Management System (for transport Of hazardous material)		No	We do not In the future, if a hazardous waste Hazardous generated, the vendors would contacted for sa transport Vendors: • Pai and Formula of the block, he block of the block of th
50.	Emergency preparedness and participation of local authorities and potentially affected communities	Yes		We have We plan to periodical displayed review emergency pla information for with local fire station reaching hospitals and poli
				appropriate local authorities. authorities on premises, to be used for emergencies

		Other	
	,	Other	

	Area of Risk	Yes	No	Details	Proposed Plan
51.	Does the grantee use any radioactive materials (isotopes tracers, radiation equipment, etc)?		No		We will incorporate plans for radioactive materials if we plan to use any radioactive material.
	Does the grantee have appropriate radioactive materialand waste storage and disposal system in place?		No	We do not generate any radioactive waste	
	Are radioactive warning signs in place?		No	We do not generate any radioactive waste	
52.	Is the lab/room air regularly checked for microbial contamination?	Yes		For all areas, we are performing in-house testing for microbial contamination as per	

			performed with air particulate count.
53	Are there any odor control measures in place?		No We do not currently We will evaluate odor contro have any processes measures as and when new that generate foul processes are introduced. odors. Lab areas in the premises are well-ventilated.
54.	Are fume hoods and exhausts regularly checked and maintained?	Yes	The fume hoods and Fume hoods and exhaust are exhausts were checked checked every quarter for in the last week of preventive maintenance. October 2020.
55.	Does the grantee have consent for DG > 15 KVA?		We plan to control for noise by Yes. We have 100 providing ear plugs to ou KVA Diesel Generator employees.
	Are emissions from boilers and DG sets regularly monitored to be within the prescribed norms?	Yes	Yes. we do have We get the DG set serviced consent for DG > 15 regularly so it functions KVA properly Yes. Generally Serviced
56.	process for solid and plastic waste in compliance to Solid WasteManagement Rules, 2016 and Plastic Waste Management Rules, 2016?	Yes	Yes. As per KSPCBBBMP is the assigned vendors. SOP 041-Procedure for Waste Disposal Pre-treatment of contaminated Solid and Plastic waste is done in-house, and handed over to vendors for further disposal.
57.	Is wastewater treated separately by the grantee? (Liquid waste from laboratory, chemicals, fluids, solvents, medium and cultures, coolants, etc.)	Yes	Yes. As per KSPCB Norms. General Waste Water gets disposed off through BWSSB sewage line. Chemical liquid and other laboratory fluid waste is collected in a tank and

	<u> </u>	1		1
				neutralized in-house
				and handed over to '
				Pai & Pai
				Chemicals" for
				further disposal.
				-
				Appropriate signage
				is displayed on this
				chemical collection
				tank.
	Are there sludge management and cut off		No	Our current processes In case of new processes or
	drains in place for wastewater?			do not generate sludge.projects that would generate
				sludge, we will evaluate and
				implement appropriate
				measures.
58.	Are necessary provisions for noise		No	Ear plugs are provided Will keep reviewing the noise
	cancellation in place?			to employees in casegenerated and cap them
	Paulo III Paulo I			of loud noise during according to the existing
				equipment operation cancellation. provisions.
				Cancenation, provisions.
59.	Are there any settlements, water bodies,		Nο	There are noSince, no water bodies or
57.	cultivated land, or any other eco-sensitive			settlements, watercultivable land nearby, no
	areas near the grantee's premises?			bodies, cultivatedenvironmental risk.
	areas near the grantee's premises:			land, or any other eco-
				sensitive areas near the
	1 00 0 111			grantee's premises.
60.	Are there any buffers, fire vehicle routes in			Achira premises is all required in future Fire vehicle
	the grantee's premises?			small single building routes and buffers will be
				unit with easy accessaccessed in our existing
				for fire engines. premises.
	COVID Precaution	ıs &	Gui	delines Implementation
61	Guidelines of CPCB/SPCB/GoI for	Yes		We are only using heat We will continue to
	Handling, Treatment, and Disposal of			inactivated serum samples comply with the latest
	COVID Waste Generated is whether being			of covid 19, and following Govt. guidelines
	followed?			appropriate guidelines for
	ionowed?			the disposal of waste.
62	SOP on preventive measures to contain	Yes		Yes, we have being taking Employees are trained on
	spread of COVID-19 issued by ICMR/GoI			preventive measures to COVID - 19 measures
	from time to time is whether being			contain the spread ofregularly.
	followed?			COVID-19 issued by GoI
	ronowed:			and BBMP time to time,
				including:
				1.All employees have
				± •
				Arogya Setu app on
				their mobile for contract

Achira Labs Private Limited

tracing. 2.We ensured the 14 day quarantine of the employees who traveled from different states during lockdown periods. 3.All employees wear
masks and appropriate PPE is provided to staff dealing with samples. 4. We make sure all the meetings are online, and lunch timings are dispersed to avoid crowding at the canteen. 5. We disinfect premises regularly

Notwithstanding the above other risk (relevant to the project activities) that will be identified in the course shall be addressed as per standard mitigation monitoring parameters and manner of records keeping shall be in accordance to the recommendations of the project monitoring committee on subject experts engaged by BIRAC.