









General Consultant for Mumbai Trans Harbour Link Project

Ref No: MTHL/GC/MMRDA/LT/ENV-3462/2023 11th March 2023

To,
Engineer-in-Chief
Engineering Division
Mumbai Metropolitan Regional Development Authority (MMRDA)
2nd Floor, New MMRDA Building,
Plot No R-06 & R-12, 'E' Block
Bandra Kurla Complex, Bandra (E),
Mumbai, Maharashtra, India 400051.

Sub: General Consultancy services for Mumbai Trans Harbour Link (MTHL) project – Submission of Half Yearly Report No. 14 from July to December 2022

Dear Sir,

We are hereby attaching the Half Yearly Report No. 14 from July to December 2022. You may please forward the same to the concerned departments for their record.

Thanking you, Yours faithfully,

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11 March 2023

Dr. S H Robin Sham, CBE (BSc, PhD, DIC, FCGI, FRSA, CEng, FICE, FIStructE, FHKIE) The Engineer General Consultant (MTHL)

Encl: Half Yearly Report No. 14 from July to December 2022

CC: Superintending Engineer – MMRDA - Mr. Purushottam Nimje
Executive Engineer – MMRDA – Mr. Arjun Korgaonkar
Superintending Engineer – MMRDA - Mr. Yatin Sakhalkar
Executive Engineer – MMRDA – Mr. Abhijit Bhisikar
Executive Engineer – MMRDA – Mr. M. P. Singh

14Th HALF YEARLY REPORT FOR MUMBAI TRANS HARBOUR LINK

July - December 2022



Submitted toMaharashtra Pollution Control Board (MPCB)

Submitted by



Information of Project officer and Nodal officer

Name of Project officer	Executive Engineer,	
Email	MTHL- Project Implementation Unit 2nd & 5th floor, New Administrative building, MMRDA, Engineering Division, Mumbai Metropolitan Region Development Authority (MMRDA), E-Block, Bandra Kurla Complex, Bandra East, Mumbai, Maharashtra 400051	
Phone /Fax Number	Phone No.: 022-26594034	
Name of Nodal officers	Engineer In Chief,	
15	MTHL Project Implementation Unit	
Email	2 nd floor, New Administrative building, MMRDA, Engineering Division, Mumbai Metropolitan Region Development Authority (MMRDA), E-Block, BKC, Bandra	
	Kurla Complex, Bandra East, Mumbai, Maharashtra 400051	
Phone /Fax Number	Email: engineerinchief@mailmmrda.maharashtra.gov.in Phone No.: 022-26594032	
	Email Phone /Fax Number Name of Nodal officers Email	



Photographs showing present progress of work

Please refer to the Quarterly Progress Report No. 21 (April to June 22) and 22 (July -Sept 2022) for the photographs of the progress



Monitoring the Implementation of Environmental Safeguards

Ministry of environmental & Forest Western Region, Regional Office, Bhopal Monitoring Report

PART - I DATA SHEET

_		_	DATA SHEET
No.	Particular		Information
1.	Project type: River Valley / Mining / Industry / Thermal / Nuclear / Others (specify)	:	Infrastructure
2.	Name of the Project	:	Mumbai Trans Harbour Link Project
3.	Clearance letter (s) / OM No. and date	:	F. No. 11-65/2012-IA.III on 25th January, 2016
4.	Location		Start point: Sewri in Mumbai City
	a) District (s)	:	End Point: Chirle in Raigad District
	b) State (s)	:	Maharashtra
	c) Location latitude / longitude	:	Start: Latitude: 18°59'48.57"N Longitude: 72°51'20.67"E End: Latitude: 18°56'18.33"N
			Longitude: 73° 1'52.92"E
5.	Address for Correspondence a) Address of the Concerned Project Chief Engineer (with Pin code & Telephone / Telex / Fax Numbers) b) Address of the Concerned Project Chief Engineer (with Pin code & Telephone / Telex / Fax Numbers)		Engineer In Chief, MTHL Project Implementation Unit 2nd floor, New Administrative building, MMRDA, Engineering Division, Mumbai Metropolitan Region Development Authority (MMRDA), E-Block, BKC, Bandra Kurla Complex, Bandra East, Mumbai, Maharashtra 400051 Phone No.: 022-26594034
6.	a) of the Project	=	The proposed Mumbai Trans Harbour Link ('MTHL') is proposed to facilitate decongestion of the island city by improving connectivity between Island city and main land (Navi Mumbai) and development of Navi Mumbai Region.

No	. Particular	T	Information
			Mumbai Trans Harbour Link Project is 22 km long 6- lane bridge across the Mumbai Bay connecting Sewri on Mumbai side to Chirle on Navi Mumbai side.
	b) of the Environmental		 Benefits: Saving in travel time, Vehicle Operating Cost and Fuel Savings Accelerated growth of Navi Mumbai Decongestion of island city of Mumbai Connectivity to MbPT and JNPT Ports Faster access to Navi Mumbai International Airport Connectivity to Pune Expressway and to South India
	Management Plans		Various measures stipulated in the Environmental Management Plan mentioned in the CRZ clearance are being complied.
7.	a) Submergence area: forest & non forest	-	Total Area of Right of Way: 120.228 Ha Forest area: 47.417 Ha Non-Forest area: 72.811 Ha
	b) Others		
8.	Breakup of the project affected population with the enumeration of those losing Houses / Dwelling units only, Agricultural Land & Landless Laborers / Artisans:	:	Project affected population: Please refer to the Quarterly Progress Report No. 20 and 21 for the project affected population attached as Annexure-VI
	a) SC, ST / Adivasi b) Others (Please indicate whether these figures are based on any scientific and systematic survey carried out or only provisional figures, if a survey is carried out give details & year of survey)		MMRDA has approved eligibility of 6645 fisher folks as project affected so far. Accordingly, fisheries department, Gov. of Maharashtra has paid compensation to eligible fisher-folk as per approved Fisherman Compensation Policy
)	Financial Details: Project cost as originally planned and subsequent revised estimates and the year of price reference	-	The total cost of the project is Rs. 17,843 Crore Year of reference: 2016
)	Allocation made for	: 4	Allocation of Rs. 335 Crore has been made for the

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No.	Particular		Information
	environmental management plans with item wise and year wise breakup		implementation of Environment Management Plan for the MTHL project. The item-wise cost breakup of the EMP is attached as Annexure-II.
c)	Benefit cost ratio/Internal rate of Return and the year of assessment	;	-
d)	Whether (c)includes the cost of environmental management as shown in the above	:	-
e)	Actual expenditure incurred on the project so far	:	Rs. 15,300.38 Crore
f)	Actual expenditure incurred on the environmental management plans so far	:	Please refer Annexure-VII for actual expenditure incurred on the environmental management plans so far.
10	Forest Land Requirement		
a)	The status of approval for diversion of forest land for non-forestry use	:	Stage – I clearance approval for diversion of forest land for non-forestry use has been received from MoEF & CC on 22 nd January 2016 vide letter F.No.8-89/2013-FC.
b)	The status of clearing felling	•	NOC from Hon. High Court for cutting of mangroves is received on 28th November 2016. Working Permission from Forest Department received
			on 22 May 2017.
c)	The status of compensatory afforestation, if any Comments on the viability & sustainability of compensatory afforestation program in the light of actual field experience so far		Rs. 91.42 crores have been transferred to Mangrove cell of Mangroves & Marine Biodiversity Foundation, setup under Maharashtra State Forest Department for Compensatory Afforestation (CA). Mangrove cell, Mumbai submitted updated status report
			of plantation (Attached as Annexure-VIII)
11	The status of clear felling in non-forest areas (such as submergence area or reservoir, approach roads.), if		Commencement Letters have been issued to the Contractors of Package-1, Package-2 and Package-3 on 23 March 2018.
Reo.	any with quantitative information required.		Permission for cutting/transplantation in non-forest area of Navi Mumbai side has been granted by CIDCO. Copy of permission letter is attached herewith as

No.	Particular		Information
			Annexure-IX.
			However, felling in non-forest area has not started yet
12	Status of construction (Actual&/or planned)		Commencement Letters have been issued to the Contractors of Package-1, Package-2 and Package-3 on 23 March 2018.
			Please refer to the Quarterly Progress Report No. 20 and 21 attached with this report as Annexure-VI .
a)	Date of commencement (Actual & / or planned)	:	Commencement Letters have been issued to the Contractors of Package-1, Package-2 and Package-3 on 23 March 2018.
b)	Date of completion (Actual &/or planned)	:	Date of completion planned of Package 1 & 2 is 21-09-2022 and for Package 3 is 21-09-2021.
			Extension of Time (EoT) has been granted to the contractors is below:
			Package 1: 30-09-20 23
			Package 2: 27-09-20 23
			Package 3: 03-03-20 23
13	Reasons for the delay if the project is yet to start	:	Due to Covid 19 pandemic situation and Land Acquisition issues a project was delayed and Extension of Time (EoT) has been granted up to September 2023. Annexure – XI.
14	Dates of Site Visits		
a)	The dates on which the project was monitored by the Regional Office on previous occasions, if any	:	
5)	Date of site visits for this monitoring report	:	



Name: - Shri. S. A. Wandhekar

Engineer In Chief, MTHL Project Implementation Unit

New Administrative building, MMRDA, 2nd floor, Engineering Department, Mumbai Metropolitan Region Development Authority (MMRDA), E-Block, BKC, Bandra Kurla Complex, Bandra East, Mumbai, Maharashtra 400051

Phone No.: 022-26594034

Signature: Mandhela.

Stamp:

ENGINEER-IN-CHIEF ENGINEERING DIVISION M.M.R.D.A.



HALF YEARLY COMPLIANCE REPORT

Project Type	:	Infrastructure
Name of the Project	:	Mumbai Trans Harbour Link (MTHL) Project
Clearance letter and date	:	F. No. 11-65/2012-IA.III on 25th January, 2016
Location	:	
a. District	:	Start point: Sewri in Mumbai City
		End Point: Chirle in Raigad District
b. State	:	Maharashtra
c. Latitude/Longitude	:	Start:
		Latitude: 18°59'48.57"N
		Longitude: 72°51'20.67"E
		End:
		Latitude: 18°56'18.33"N
		Longitude: 73° 1'52.92"E
Address of correspondence		
a. Address of concerned	:	Chief Engineer / Engineer in Chief,
project Head		MTHL Project Implementation Unit
		2 nd floor, New Administrative building, MMRDA, Engineering Division, Mumbai Metropolitan Region Development Authority (MMRDA), E-Block, Bandra Kurla Complex, Bandra East, Mumbai, Maharashtra 400051 Phone No.: 022-26594034
	Name of the Project Clearance letter and date Location a. District b. State c. Latitude/Longitude Address of correspondence a. Address of concerned	Name of the Project : Clearance letter and date : Location : a. District : b. State : c. Latitude/Longitude : Address of correspondence a. Address of concerned :



Compliance to the Conditions Recommended in CRZ Clearance-2013

S. No.	Condition of 2013 clearance	Compliance
7. Spec	cific Conditions	
(i)	As per the CRZ Notification 2011, at least five times the number of mangroves destroyed/cut during the construction process shall be replanted. Mangrove plantation in an area of 30 ha shall be carried out as committed against loss of 0.1776 ha mudflats/mangroves. Permission from the High Court of Bombay shall be obtained with respect to mangrove cutting.	contributed by MMRDA to Mangroves Fund, as an initiative by Govt. of Maharashtra for Conservation and Protection of Mangroves in Coastal areas.
(ii)	Proponent shall provide lighting in consulting with the Bombay Natural History Society (BNHS) so as to minimize the likely impacts to the migratory birds.	Noted and being complied (embedded lighting, to be finalized in consultation by BNHS)
(iii)	All the construction equipment's shall be provided with exhaust silencers as committed.	Noted, all the construction equipment used by contractors are provided with exhaust silencers to reduce noise. Photographic evidence of same attached as Annexure-III
(iv)	Noise containment barriers shall be provided on both sides of the bridge in mudflat areas (CRZ-IA) so as to minimize the likely impacts to the migratory birds as committed	Noise containment barriers have to be provided by the Package-I and Package-II on both sides of the bridges to minimize the likely impact to the migratory birds. Till date 1.14 crore have been spent by packages on the temporary barriers.
(v)	There shall be no dredging and reclamation for the project	The proposed project is for the construction of 6 lane road bridge across the Mumbai Harbour between Sewari in MbPT area and Chirle in Navi Mumbai to improve connectivity and facilitate traffic decongestion and hence does not involve dredging and reclamation works
	Pre-stressed super structure shall be used in the mud flat area for construction as committed	Noted and is being proposed in the mudflat area
vii)	The muck materials shall be analyses	Noted and is being complied on. Muck

S. No.	Condition of 2013 clearance	Compliance
	prior to dumping/disposal in the identified locations with the approval of the competent authority to ensure that it do not cause any impact to the	to dumping/disposal at identified locations.
	environment.	Muck analysis report from Package-I attached as Annexure-IV
		Excavation work has been completed for pkg 2
(viii)	Proponent informed that there is no fishing activity in the area since it is a navigation channel for the nearby ports. However, navigational channel is provided with 25 m from ships and 9.1 m from fishing boats.	Noted and being complied
(ix)	All the recommendations of the MCZMA shall be strictly complied with.	Noted and being scrupulously complied
(x)	There shall be no building construction beyond 20,000 sqm.	The proposed project is for the construction of 6 lane road bridge across the Mumbai Harbour between Sewari in MbPT area and Chirle in Navi Mumbai to improve connectivity and does not involve construction of buildings. However, during construction phase of the project temporary site offices and work camps will be constructed which will be well within 20,000 sqm area
(xi)	There shall be no water drawal in CRZ area.	The proposed project does not involve abstraction of the ground water in CRZ area. The water demand for the proposed project is being met through tanker water
(xii)	There shall be no disposal of solid or liquid waste on coastal area. Solid waste	The project strictly complies with the new SWM rules 2016 and subsequent
	management shall be as per Municipal	amendments and the solid and liquid
	Solid (Management and Handling) Rules, 2000.	waste and segregated at source, collected and disposed as per the abovesaid rules.
		Biodegradable waste is being used for composting at site and non-biodegradable
		waste will be handed over to authorized agencies for disposal.
(xiii)	Sewage shall be treated and Treatment Facility shall be provided in accordance	Noted and will be complied
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S. No.	Condition of 2013 clearance	Compliance
	with the Coastal Regulation Zone Notifications 2011, The disposal of treated water shall conform to the regulation of the State Pollution Control Board.	
(xiv)	The project proponent shall set up a separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of senior executive	An Environmental Management Cell has been set up and the structure of the committee comprise experts from National Institute of Oceanography; Representative of BNHS; renowned expert in Ornithology; Director, Fisheries Institute, Versova, Andheri; Head of Coastal Engineering, IIT, Mumbai and Representative of Environment Department and Maharashtra Pollution Control Board. The officer of MMRDA is acting as a Member Secretary to coordinate the quarterly meetings of the committee. Six meetings with the members have already commenced till date.
(xv)	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purpose.	Noted, Total fund allocated for the environmental management is 335 crores and till date 346.5 Cr has been spent EMP expenditure details attached as Annexure-V.
8. Gene	ral Conditions	
(i)	Full support shall be extended to the officers of the Ministry/Regional Office of Bhopal by the project proponent during inspection of the project for monitoring purpose by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities	Noted and being complied

S. No.	Condition of 2013 clearance	Compliance
(ii)	A six-monthly monitoring report shall need to be submitted by the project proponent to the regional office of this ministry at Bhopal regarding the implementation of the stipulated conditions	
(iii)	Ministry of Environment and Forest or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary, in the interest of environment and same shall be complied with	
(iv)	The Ministry reserve the right to revoke this clearance if any of the conditions stipulated are not complied with to the satisfaction of the Ministry	Noted and will be adhered
(v)	In the event of a change in project profile or change in the implementation agency, afresh reference shall be made to the Ministry of Environment and Forests	Noted and will be adhered
(vi)	The project proponents shall inform to the Regional office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of land development work	Noted and will be adhered
(vii)	A copy of the clearance letter shall be marked to concerned Panchayat/local NGO if any, from whom any suggestions/representations has been made a received while processing the proposal	Noted and complied. Annexure-X
(viii)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's office/Tehsildar's office for 30 days.	
!	The above stipulations would be enforced among others under the provisions of Water (Prevention and	Noted and complied

S. No.	Condition of 2013 clearance	Compliance
	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 1994 including the amendments and rules made thereafter	
10.	All other statuary clearances such as approvals for storage of diesel from Chief Controller of Explosive, Fire Department, Civil Aviation Department and clearances under the Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities	Noted and complied. Clearances under Forest Conservation Act, 1980 has been taken by MMRDA from MoEF & CC on 22nd January 2016 vide letter F.No.8-89/2013-FC. The project proponent had allotted the construction work to L&T and JV of Daewoo and Tata through contract and the statuary clearances such as approvals for storage of diesel from Chief Controller of Explosive, Fire Department, Civil Aviation Department has been taken by them. After completion of the project MMRDA
	The project proponent shall advertise in at least two local newspapers widely circulate in the region, one of which shall be in a vernacular language informing that the project has been accorded CRZ Clearance and copies of the clearance letter are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forest at http://www.envfor.nic.in. The advertisement should be made within 10 days from the date of the receipt of the clearance letter and a copy of the same should be forwarded to the Regional office of this ministry at Bhopal	Noted and complied. The advertisement for accord of the CRZ clearance was published in the (Lok Satta and Indian Express on 30.01. 2016) Annexure-X
不	The clearance is subject to final order of the Hon'ble Supreme Court of India in	Noted

Sr. No.	SPECIFIC CONDITIONS	COMPLIANCE STATUS
	night hours.	2017 having file no F. No. 11-65/2012-
		IA. III. Refer Annexure-VI (QPR)
vii.	The proposal indicates the diversion of	
777	47.417 ha forest land for which the	o pp. o.m.
	proponent shall obtain the requisite Forest	The state of the s
	Clearance. The project may be executed in	11021 & 00
	the entire stretch in non-forest land, and	, , ,
	while making application to get the Forest	. '
	Clearance, the execution of work on non-	stage - If application is submitted to
	forest land shall not be cited as a reason for	Deputy Conservator of Forest vide
	grant of FC and in case FC is declined, the	MMRDA letter 6-3-2017 and latest
	forest land shall be maintained at its	I COMPUSAÇE CURMITTAL ON TO OU 2010
	existing condition. The PP shall submit an	
	undertaking to this effect at the earliest to	process, the earlier land allocated for CA
	the concerned Regional Office to this	was short by 11 Ha. Of land in Roha
	Ministry.	Forest Division in Tala Taluka has been
		identified and is in the process of
1		handover. After the handover the Stage
		Il Clearance will be finally processed by
		the Forest Department.
viii.	All the wildlife mitigation measures as	Noted and shall be complied
	proposed by BNHS in their report dated	
	23.09.2015 for original alignment shall be	
	implemented with the following modification	
	modification	
	a) Construction of jetty on both the ends	Noted
	passing through mud flats and	
	mangroves must not exceed 30 months	
	and construction of actual spans must	
	not exceed more that further 12 months.	
	b) The distance between the supporting	The distance between the piers is
	pillars shall remain 50 m as currently	maintained more than 50 m.
	proposed by the MMRDA.	
	c) MMRDA will partly bear the cost of	Noted and being complied
	setting of effluent treatment plant in the	Growphou
	region as suggested by BNHS.	
ix.	The project proponent shall not undertake	This condition has been revised by
		MoEF&CC vide letter dated 28th August
		2017 having file no F. No. 11-65/2012-
		IA. III.

Sr.No.	GENERAL CONDITIONS	COMPLIANCE STATUS
1	Adequate provision for infrastructure facilities including water supply, fuel and sanitation must be ensured for construction workers during the construction phase of the project to avoid any damage to the environment.	
2	Full support shall be extended to the officers of this Ministry/Regional Office at Nagpur by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities.	Noted and shall be complied.
3	A Six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Nagpur regarding the implementation of the stipulated conditions.	Noted and is being complied. List of Six-monthly compliance report uploaded are: 1. January to June 2016. 2. July to December 2016. 3. January to June 2017. 4. July to December 2017. 5. January to June 2018. 6. July to December 2018. 7. January to June 2019. 8. July to December 2019 9. January to June 2020 10. July to December 2020 11. January to June 2021 12. July to December 2021 13. January to June 2022
4	MoEF&CC or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary, in the interest of environment and the same shall be complied with.	Noted and shall be complied
5	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with to the satisfaction of the Ministry.	Noted.
	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the MoEF & CC.	Noted.
PE I	The project proponents shall inform to the Regional Office as well as the Ministry, the date of financial closure and final approval of the	Noted.

Sr.No	. GENERAL CONDITIONS	COMPLIANCE STATUS
	project by the concerned authorities and the date of start of land development work.	
8	A copy of the clearance letter shall be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/ representation has been made received while processing the proposal	
9	A copy of the CRZ Clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The Clearance letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/Tehsildar's Office for 30 days.	*
10	The above stipulations would be enforced among others under 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 1994, including the amendments and rules made thereafter.	Noted and will be complied.
11	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, and clearances under the Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	Noted and are being complied.
	The project proponent shall advertise in at least two local newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest & Climate Change at. The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the regional office of this Ministry at Nagpur.	Complied.

Sr.No.	GENERAL CONDITIONS	COMPLIANCE STATUS
13	This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.	
14	Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.	
15	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent on its website.	Stipulated environmental conditions as mentioned in CRZ are complied in six monthly compliance reports. Environmental Safeguards are incorporated in Environmental Management Plan which is being implemented as per the budgetary provisions mentioned in CRZ. Reports & Publications: Half Yearly Report (https://mmrda.maharashtra.gov.in)
16	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	Complied.
17	The proponent Shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.	Noted. Six monthly reports on compliance & monitoring results of conditions stipulated in CRZ clearance is being submitted to MPCB Regional, sub regional office, Nagpur MPCB office, MCZMA & SEIAA.
OUP	The project proponent shall also submit six monthly 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) to the respective Regional Office of MoEF & CC, the respective Zonal Office of CPCB	Noted. Six monthly reports on compliance & monitoring results of conditions stipulated in CRZ clearance is being submitted to MPCB Regional, sub regional office, Nagpur MPCB office, MCZMA & SEIAA.

Sr.No.	GENERAL CONDITIONS	COMPLIANCE STATUS
	and the SPCB.	
19	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of EC conditions and shall also be sent to the respective Regional Offices of MoEF & CC by e-mail.	Individual construction packages have obtained CTE for batching plant and casting yards and the stipulations are being adhered to and are uploaded on the website of MMRDA



Annexures

Annexure No.	Annexure No. Particulars								
Annexure I	Permission copy of High court for Mangrove Cutting								
Annexure II	Item wise cost breakup of the Environmental Management Plan								
Annexure III	Photographic evidence of construction equipment used by contractors are provided with exhaust silencers to reduce noise								
Annexure IV	Muck analysis report from Package-I & II								
Annexure V	EMP Expenditure details								
Annexure VI	Quarterly Progress Reports 21 (April to June 22) & 22 (July to September 2022)								
Annexure VII	Actual expenditure incurred on the environmental management plans for (July to Dec 2022)								
Annexure VIII	Status report on Mangrove plantation								
Annexure IX	A-Permission letter for Tree cutting by CIDCO								
	B-Permission letter for Tree cutting by CIDCO								
Annexure X	Clearance letter marked to concerned Panchayat /local NGO								
Annexure XI	EOT letters issue to Contractors up to Sept. 2023	<u> </u>							
Annexure XII MCZMA mom for granting CRZ Extension									

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Annexure I

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NM/307/2016

BDPPS

IN THE HIGH COURT OF JUDICATURE AT BOMBAY ORDINARY ORIGINAL CIVIL JURISDICITON NOTICE OF MOTION NO.307 OF 2016

IN

PUBLIC INTEREST LITIGATION NO.87 OF 2006

Mumbai Metropolitan Region Development Authority

... Applicant.

In the matter between

Bombay Environment Action Group and Another

.....Petitioners.

V/s

State of Maharashtra and Others.

.... Respondents.

Mr. Saket Mone axw Mr. Subit Chakrabarti i/b Vidhi Partners for applicant in Notice of Motion No. 307 of 2016 in PIL No.87 of 2016.

Mr. Navroz Seervai, Senior Counsel a/w Ms. Shreya Parikh for the Petitioner in PIL No.87 of 2006.

Mrs. P.H. Kantharia, AGP for Respondent/State in PIL No.87 of 2006.

Ms. Trupti Puranik for Respondent/BMC.

Ms. Sharmila Deshmukh for CRZ.

CORAM: V. M. KANADE &

MS. NUTAN D. SARDESSAI, JJ.

DATE: 28th November, 2016



NM/307/2016

P.C.:-

- 1. This Notice of Motion is taken out by the Applicant for carrying out construction of the proposed Mumbai Trans Harbour Link (a proposed 22 km freeway grade road bridge connecting the island city of Mumbai with Navi Mumbai).
- 2. The learned Counsel appearing on behalf of the Applicant submits that Applicant has obtained clearance from all the concerned authorities. He submitted that Ministry of Environment and Forest, Government of India has granted approval on 22/01/2016 and CRZ clearance has been granted on 25/01/2016. Applicant has given an undertaking in paras 12 and 27 of the affidavit in support of the Notice of Motion. The said undertaking is accepted. Applicant shall comply with all the conditions which are imposed in the said letters of sanction granted by both the authorities.

We are satisfied that the said project is public utility project and we grant leave in terms of prayer clause (a) of the Notice of Motion subject to conditions imposed by both the authorities.

4. Notice of Motion is accordingly allowed in terms of prayer clause(a) and disposed of.

(MS. NUTAN D. SARDESSAI, J.) (V.M. KANADE, J.)



Annexure-II Environment Management Plan stipulated in CRZ clearance

Sr. No	Environmental attribute	Cost in Crores
1.	Environmental Monitoring- Air Act, Water Act, Noise levels	8
2.	Compensatory Restoration Plan (Mangroves)	25
3.	Implementation of the suggestions given by BNHS	25
4.	Noise barriers	45
5.	Mitigation of marine water pollution caused due to the surrounding industries and Sewage from Urban Bodies, by providing Funding and Capacity Building for Enabling Effluent Treatment	40
6.	 Contribution to Mangroves Fund, an initiative by Govt. of Maharashtra for Conservation and Protection of Mangroves in Coastal areas by depositing Seed Money. This can be used for Survey & Demarcation of Notified areas Purchase of vehicles and equipment for anti-Encroachment drives, etc. 	25
7.	Oil Spill Mitigation Plan	10
8.	Habitat quality assessment and monitoring Surveillance management and monitoring team for migratory birds, marine flora, turbidity in sea floor, etc Corpus fund for mudflat restoration program	20
9.	Appointment of Bird Monitor and his assistant till Restoration of Baseline data	4
10.	DMP, Firefighting, Risk Analysis	15
11.	Sustainable development including establishing Nature Interpretation Centre	10
12.	Safety and Security	15
13.	Energy conservation	10
14.	Landscaping-Plantation of trees, flower in plants etc.	8
15.	Compensation and Capacity Building of Fisher folks due to Temporary and Permanent Loss of Fishing round	75
		335 crores



Annexure -III

Photographic evidences of construction equipment used by contractors are provided with exhaust silencers to reduce noise

Attachment III









D





Photographic evidences of construction equipment used by contractors are provided with exhaust silencers to reduce noise

Attachment III









2

Photographic evidences of construction equipment used by contractors are provided with exhaust silencers to reduce noise

Attachment III





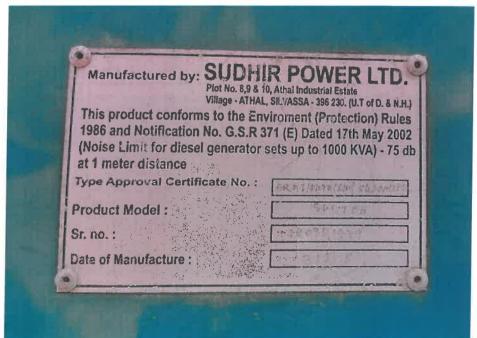


Photographic evidences of construction equipment used by contractors are provided with exhaust silencers to reduce noise

Attachment III









Annexure IV



Netel (India) Limited

TEST REPORT

[11							
	e of Organization ; M/s. L & T Constructions						
$\overline{}$	tomer Address : Gate No. 1 Sewri Timber Pond, Near GadiAdda, Sewri(East), Mumbai.						
Custo	ustomer Reference : EH401WOD8000155 Dated 21.04.2022						
MoEF	CC Validity	: 16th Oct 2024					
	line/Group	: Chemical- Pol	lution & Environment	Test Repo	rt No. : NIL/SO/08/22/001		
	е Туре	: Muck		Sample Co			
Sampl	ing Method	: NIL/Soil/SOP-	11		emperature : 25°C		
	ing Date	: 24.08.2022			ceive Date : 24.08.2022		
Analys	is Start Date	: 25.08.2022		Analysis E			
Report	ing Date	: 30.08.2022		Sample Qty	/ & Pkng. : 1 kg ,Plastic Zip Lock bag		
Sampli	Sampling Location : C1P18 Muck Sample		ample	Sampling Done By : Netel India Limited			
Sr. No			Result	Unit	Method		
Genera	l Analyzed Parame	eters					
1	Cadmium(Cd)		1.2	mg/kg	Lab SOP No:NIL/SOP/15 dt 01/07/14		
2	Lead(Pb)		25.83	mg/kg	Lab SOP No:NIL/SOP/15 dt 01/07/14		
3	Chromium (as Cr6-	+)	<0.25	mg/kg	APHA 3500-Cr-B		
	Arsenic (As)		<0.01	mg/kg	EPA 3050B & By FIAS		
5	Total Mercury (Hg)		<0.01	mg/kg	EPA 3050B & By FIAS		
	Copper (Cu)		79.33	mg/kg	Lab SOP No:NIL/SOP/15 dt 01/07/14		
7	Dichloromethane		<1	mg/kg	By GC-FID		
	Carbon Tetrachlorio	le	<1	mg/kg	By GC-FID		
	Benzene		<1		APHA 6200-C		
	Selenium (Se)		<0.01	mg/kg	EPA 3050B & By FIAS		
1-4-							

Note:

- 1. This Test Report shall not be reproduced except in full, without written approval of the Laboratory
- 2. This Test Report refers only to the sample tested.
- 3. Any correction in this certificate invalidates the certificate.
- The testing results reported reflects the quality of sample at the time of testing.
- 5 The Complaint register is available with the Laboratory as per Environment Protection Act 1986.

End of Report

Verified by

Surekha Jamdar Technical Manager THE STATE OF THE S

Issued by

Shraddha Kere
Quality Manager



Page 1 of 1





TEST REPORT

la r				······································	
	e of Organization : M/s. L & T Comer Address : Gate No. 1	Constructions Sewri Timber Pond, I	Moor CodiAdd	o Countr	net Mumboi
-		8000155 Dated 21.0		ia, Sewrite	isi), iviumbal.
			74.2022		
	FCC Validity : 16th Oct 202			4 3.8	
	pline/Group : Chemical- P ple Type : Muck	ollution & Environme			: NIL/SO/08/22/001
	pling Method : NIL/Soil/SOF	2.11	Sample Co Ambient To	**************************************	: NIL/SO/08/22/001
	oling Date : 24.08.2022				: 24.08.2022
	rsis Start Date : 25.08.2022		Analysis E		: 30.08.2022
	rting Date : 30.08.2022		Sample Qty		: 1 kg ,Plastic Zip Lock bag
Samp	ling Location : C1P18 Muck	Sample	Sampling D	one By	: Netel India Limited
Sr. N	Parameter	Result	Limit (Schedule II)	Unit	Method
1	Cadmium (Cd)	<1	1.0	mg/lit	EPA Method 1311& by AAS
2	Lead (Pb)	0.11	5.0	mg/lit	EPA Method 1311& by AAS
3	Chromium (as Cr6+)	<0.25	5.0	mg/lit	EPA Method 1311& by AAS
4	Arsenic (As)	<0.01	5.0	mg/lit	EPA Method 1311& By FIAS
5	Total Mercury (Hg)	<0.01	0.2	mg/lit	EPA Method 1311& by FIAS
6	Copper (Cu)	0.08	25	mg/lit	EPA Method 1311& by AAS
7	Silver (Ag)	0.01	5.0	mg/lit	EPA Method 1311 &by AAS
8	Zinc (Zn)	0.29	250	mg/lit	EPA Method 1311 &by AAS
9	Selenium (Se)	<0.01	1.0	mg/lit	EPA Method 1311 &by FIAS
10	Antimony	<1	15	mg/lit	EPA Method 1311 &by AAS
11	Barium (as Ba)	<15	100	mg/lit	EPA Method 1311 &by AAS
12	Beryllium	<0.5	0.75	mg/lit	EPA Method 1311 &by AAS
13	Fluoride (F-)	26.6	180	ma/lit i	EPA Method 1311 &by UV-VIS. Spectroscopy
14	Ammonium Compound	76.5	50	3111(1/11)	EPA Method 1311 &by UV-VIS. Spectroscopy

Page 1 of 2

CIN: U74999MH2003PLC142228

terwala Group Company





Netel (India) Limited

	pling Location : C1P18 Muck	Sample	Test Report No. : NIL/SO/08/22/001			
Sample Type : Muck			Sample Code : NIL/SO/08/22/001			
	Sampling Date : 24.08.2022			Sample Receive Date : 24.08.2022		
	Analysis Start Date : 25.08.2022			Analysis End Date : 30.08.2022		
Repo	rting Date : 30.08.2022		Sample Qty	& Pkng.	: 1 kg ,Plastic Zip Lock bag	
Sr. N	o Parameter	Result	(Schedule	Unit	Method	
15	Dibromochloromethane	<1	10	mg/lit	EPA Method 1311 &By GC-FID	
16	Chlorobenzene	<1	100	mg/lit	EPA Method 1311 &By GC-FID	
17	Methyl Ethyl Ketone	<1	200	mg/lit	EPA Method 1311 &By GC-FID	
18	Naphthanlene	<1	5.00	mg/lit	EPA Method 1311 & By HPLC	
19	Benzo (a) Pyrene	<0.001	0.001	mg/lit	EPA Method 1311 & By HPLC	
20	Aldrin	<0.01	0.14	mg/lit	EPA Method 1311 by GC-ECD	
21	Dieldrin	<0.01	0.8	mg/lit	EPA Method 1311 by GC-ECD	
22	Chlordane	<0.01	0.03	mg/lit	EPA Method 1311 by GC-ECD	
23	Dichlorodiphenyltrichloroethane (DDT)	<0.01	0.1	mg/lit	EPA Method 1311 by GC-ECD	
24	MethoxychlorDichlorodiphenydichloroethylene(DDE)	<0.01	10	mg/lit	EPA Method 1311 by GC-ECD	
25	Dichlorodiphenyldichloroethane(DD)	<0.01	0.1	mg/lit	EPA Method 1311 by GC-ECD	
26	2,4-Dichlorophenoxyacetic Acid(2,4-D)	<0.01	10	mg/lit	EPA Method 1311 by GC-ECD	
27	Endrin	<0.01	0.02	mg/lit	EPA Method 1311 by GC-ECD	
28	Heptachlor	<0.001	0.008	mg/lit	EPA Method 1311 by GC-ECD	
29	Lindane	<0.01	0.4	mg/lit	EPA Method 1311 by GC-ECD	

Note:

- 1. This Test Report refers only to the sample tested.
- 2. This Test Report shall not be reproduced except in full, without written approval of the Laboratory.
- 3 The complaint register is available with the Laboratory as per Environment Protection Act, 1986.
- 4 Lab SOP Based on manual o Soil testing in India , Ministry of Agriculture, GOI:2011

Verified by

Surekha Jamdar Technical Manager Issued by

Shraddha Kere Quality Manager

Page 2 of 2

A Neterwala Group Company

CIN: U74999MH2003PLC142228

Office & Laboratory: W-408, Rabale MIDC, TTC Industrial Area, Navi Mumbai - 400 701.

Phone: 72080976 92 / 93 / 94 / 95 · Website: www.netel-india.com · E-mail: ems@netel-india.com

Registered office: Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020

""End of Report""





Netel (India) Limited

Name	Name of Organization : M/s.L & T Construction					
Addr		Sewri Timber Pond, Ne	ar Gadi Adda	, Sewri(East), Mumbai.	
Custo	omer Reference : EH401WOD	08000155 Dated 21.04.	2022			
MoEF	MoEFCC Validity : 16th October 2024			Validity	: 16th June 2024	
Disci	oline/ Group : Chemical-W	ater ater	Test Repo	rt No.	: NIL/W/08/22/219	
Samp	le Type : Drinking Wa	ter	Sample Co	de	: NIL/W/08/22/219	
Samp	ling Method : IS 3025 (P-1	}	Ambient Te	mperature	: 25°C	
	ling Date : 24.08.2022			ceive Date	: 24.08.2022	
	sis Start Date : 25.08.2022		Analysis E		: 02.09.2022	
L	ting Date : 02.09.2022			/ & Pkng.		
		rd Workers Rest D/W	Sampling [: Netel India Limited	
Sr. No	<u> </u>	Result	Limit	Unit	Method	
	al Parameter		·	•		
1	pH @ 25 °C	7.19	6.5 - 8.5	-	IS 3025(Part 11)	
2	Turbidity	<1.0	1	NTU	IS 3025(Part 10)	
3	Total Dissolved Solids	87	500	mg/lit	IS 3025(Part 16)	
	cal Parameter					
4	Boron(B)	<0.4	0.5	mg/lit	IS 3025(Part 57)	
5	Calcium(Ca)	13.1	75	mg/lit	IS 3025(Part 40)	
6	Chloride(CI)	13.3	250	mg/lit	IS 3025(Part 32)	
7	Copper(Cu)	<0.04	0.05	mg/lit	APHA 3111-B,23rd AAS	
8	Fluoride(F-)	<0.2	1	mg/lit	IS 3025(Part 60)	
9	Iron(Fe)	<0.1	0.3	mg/lit	APHA 3111-B,23rd AAS	
10	Magnesium(Mg)	<5	30	mg/lit	IS 3025 (Part 46)	
11	Manganese(Mn)	<0.1	0.1	mg/lit	APHA 3111-B,23rd AAS	
12	Nitrate(NO3-)	<0.5	45	mg/lit	IS 3025(Part 34)	
	Silver(Ag)	<0.05	0.1	mg/lit	APHA 3111-B,23rd AAS	
14	Sulphate(SO4)	2.6	200	mg/lit	IS 3025(Part 24)	
15	Total Alkalinity	36.5	200	mg/lit	IS 3025(Part 23)	
16	6 Total Hardness 48.9		200 5	mg/lit	IS 3025(Part 21)	
				mg/lit	APHA 3111-B,23rd AAS	
	ubstance					
	Nickel(NI)	<0.01	0.02	mg/lit	APHA 3111-B,23rd AAS	
19	Total Chromium(Cr)	<0.01	0.05	mg/lit	APHA 3111-B,23rd AAS	

Note:

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- 2. This Test Report refers only to the sample tested.

3. The Complaint register is available with the laboratory as per Environment protection act 1986

Verified by:

Surekha Jamdar Technical Manager ""End of Report"

Issued by:

Shraddha Kere **Quality Manager**

A Neterwala Group Company

CIN: U74999MH2003PLC142228

Office & Laboratory: W-408, Rabale MIDC, TTC Industrial Area, Navi Mumbai - 400 701.

Phone: 72080976 92 / 93 / 94 / 95 • Website: www.netel-india.com • E-mail: ems@netel-india.com

Registered office: Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020.



TEST REPORT Netel (India) Limited Name of Organization : M/s.L & T Construction Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai. Customer Reference : EH401WOD8000155 Dated 21.04.2022 **MoEFCC Validity** : 16th October 2024 Discipline/ Group : Chemical-Water : NIL/W/08/22/219 Test Report No. Sample Type : Drinking Water Sample Code : NIL/W/08/22/219 Sampling Method : IS 3025 (P-1) Ambient Temperature : 25°C Sampling Date : 24.08.2022 Sample Receive Date : 24.08.2022 Analysis Start Date : 25.08.2022 **Analysis End Date** : 02.09.2022 Reporting Date : 02.09.2022 Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle Sampling Location : Pre Cast yard Workers Rest D/W Sampling Done By : Netel India Limited Sr. No Parameter Result Limit Unit Method Physical Parameter 20 Colour <5 5 IS 3025 (Part 4) Hazen 21 Odour Agreeable ---IS 3025(Part 5) 22 Taste Agreeable IS 3025(Part 7 & 8) Chemical Parameter Aluminium < 0.03 0.03 IS 3025 (Part 55) mg/lit 24 Ammonia < 0.4 0.5 IS 3025 (Part 34) mg/lit 25 Anionic Detergents < 0.2 0.2 mg/lit IS 13428 (Annex K) 26 Barium < 0.1 0.7 mg/lit IS 13428 (Annex F) 27 Chloramines <4 4 IS 3025 (Part 26) mg/lit 28 Residual Free Chlorine 0.6 0.2 IS 3025 (Part 26) mg/lit 29 Mineral Oil < 0.5 0.5 mg/lit IS 3025 (Part 39, Clause 6) 30 Phenolic Compounds < 0.001 0.001 IS 3025 (Part 43) mg/lit 31 Selenium < 0.01 0.01 mg/lit IS 3025 (Part 56) 32 Sulphide < 0.02 0.05 IS 3025 (Part 29) mg/lit 33 Total Suspended Solids <5 mg/lit IS 3025 (Part 17) **Toxic Substance** 34 Cadmium < 0.003 0.003 mq/lit APHA 3111-B,23rd AAS 35 Cyanide (CN-) < 0.05 0.05 mg/lit APHA 3111-B,23rd AAS 36 Lead < 0.01 0.01 mg/lit APHA 3111-B,23rd AAS 37 Mercury < 0.001 0.001 mq/lit APHA 3111-B,23rd AAS 38 Molybdenum < 0.05 0.07 mg/lit IS 3025 (Part 2) 39 Arsenic < 0.001 0.01 mg/lit IS 3025 (Part 37) 40 Polyaromatic Hydrocarbon < 0.0001 0.0001 mg/lit APHA 6440-B 41 Polychlorinated biphenyls < 0.0005 0.0005 mq/lit APHA 6131- B 42 Trihalomethanes < 0.05 0.2 **APHA 6232** mg/lit 43 Pesticides į. Alachlor BDL 20 APHA 6630-B µg/l Altrazine BDL 2 APHA 6630-B µg/l Aldrin/Diedrin BDL 0.03 µg/l APHA 6630-B

Page 2 of 3

APHA 6630-B

A Neterwala Group Company

Alpha-HCH

CIN: U74999MH2003PLC142228

Office & Laboratory: W-408, Rabale MIDC, TTC Industrial Area, Navi Mumbai - 400 701.

Phone: 72080976 92 / 93 / 94 / 95 • Website: www.netel-india.com • E-mail: ems@netel-india.com

Registered office: Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020.

0.01

µg/l

BDL



Sam	inline Leastion 1 Pro Cost yard V	Vorkora Poet D/W	Test Report No. : NIL/W/08/22/219		
Sampling Location : Pre Cast yard Workers Rest D/W			Sample Code : NIL/W/08/22/219		
Samp	oling Date : 24.08.2022		Sample Re	ceive Date	: 24.08.2022
Analy	rsis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022
Repo	rting Date : 02.09.2022		Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle
Sr. No	Parameter	Result	Limit	Unit	Method
٧	Bita-HCH	BDL	0.04	µg/l	APHA 6630-B
vi	Butachlor	BDL	125	µg/l	APHA 6630-B
Vİİ	Chlorpyriphos	BDL	30	µg/l	APHA 6630-B
Viii	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B
vili	Gamma-HCH	BDL	2	µg/l	APHA 6630-B
ix	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	АРНА 6630-В
Х	DDT	BDL	1	µg/l	APHA 6630-B
χi	Endosulfan	BDL	0.4	µg/l	APHA 6630-B
XII	Ethion	BDL	3	µg/l	APHA 6630-B
xiii	Isoproturon	BDL	9	µg/l	АРНА 6630-В
VİX	Malathion	BDL	190	µg/l	АРНА 6630-В
XV	Methyl parathion	BDL	0.3	µg/l	APHA 6630-B
χνἴ	Monocrotophos	BDL	1	µg/l	APHA 6630-B
xvii	Phorate	BDL	2	µg/l	АРНА 6630-В
Bacter	ological Parameter				
44	Total Coliform	<1.8	0	MPN/100ml	IS 1622
45	E Coli	Absent	Absent		IS 1622

Note:

- 1. This Test Report shall not be reproduced except in full, without written approval of the Laboratory.
- 2. This Test Report refers only to the sample tested.
- 3. The Complaint register is available with the laboratory as per Environment protection act 1986.

End of Report

Verified by

Surekha Jamdar Technical Manager MANUAL CONTRACTOR OF THE PARTY

Issued by:

Shraddha Kere Quality Manager



Page 3 of 3



			IES	I KEPU	KI	Netel (India) Limi	
	Name of Organization : M/s.L & T Construction						
Add		: Gate No. 1-	Sewri Timber Pond,	Near Gadi A	dda, Sewri(E	ast), Mumbai.	
Cust	omer Reference	: EH401WO	08000155 Dated 21.	.04.2022			
MoE	FCC Validity	: 16th Octobe	er 2024	QCI-NABL	. Validity	: 16th June 2024	
Disc	ipline/ Group	: Chemical-W	/ater	Test Repo	rt No.	: NIL/W/08/22/220	
Sam	ple Type	: Drinking Wa	iter	Sample Co	ode	: NIL/W/08/22/220	
Sam	oling Method	: IS 3025 (P-1	1)	Ambient To	emperature	: 25°C	
Samı	oling Date	: 24.08.2022		Sample Re	ceive Date	: 24.08.2022	
Analy	sis Start Date	: 25.08.2022		Analysis E	nd Date	: 02.09.2022	
	rting Date	: 02.09.2022		Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle	
Samp	ling Location	: Staff Cantee	n D/W	Sampling I	Done By	: Netel India Limited	
Sr. N	o Param	neter	Result	Limit	Unit	Method	
Physi	cal Parameter						
1	pH @ 25 °C		7.23	6.5 - 8.5	-	IS 3025(Part 11)	
2	Turbidity		<1.0	1	NTU	IS 3025(Part 10)	
3	Total Dissolved S	olids	72	500	mg/lit	IS 3025(Part 16)	
Chem	ical Parameter						
4	Boron(B)		<0.4	0.5	mg/lit	IS 3025(Part 57)	
5	Calcium(Ca)		12.3	75	mg/lit	IS 3025(Part 40)	
6	Chloride(CI)		11.8	250	mg/lit	IS 3025(Part 32)	
7	Copper(Cu)		<0.04	0.05	mg/lit	APHA 3111-B,23rd AAS	
8	Fluoride(F-)		<0.2	1	mg/lit	IS 3025(Part 60)	
9	Iron(Fe)		<0.1	0.3	mg/lit	APHA 3111-B,23rd AAS	
10	Magnesium(Mg)		5.1	30	mg/lit	IS 3025 (Part 46)	
11	Manganese(Mn)		<0.1	0.1	mg/lit	APHA 3111-B,23rd AAS	
12	Nitrate(NO3-)		<0.5	45	mg/lit	IS 3025(Part 34)	
13	Silver(Ag)		<0.05	0.1	mg/lit	APHA 3111-B,23rd AAS	
14	Sulphate(SO4)		2.6	200	mg/lit	IS 3025(Part 24)	
15	Total Alkalinity		49.8	200	mg/lit	IS 3025(Part 23)	
16	Total Hardness		51.8	200	mg/lit	IS 3025(Part 21)	
	Zinc(Zn)		<0.2	5	mg/lit	APHA 3111-B,23rd AAS	
	ubstance						
	Nickel(NI)		<0.01	0.02	mg/lit	APHA 3111-B,23rd AAS	
4 O I	Unkal Changes 14 / O.	. 1	-0.04	1			

19 Note :

1. This Test Report shall not be reproduced except in full, without written approval of the Laboratory.

< 0.01

2. This Test Report refers only to the sample tested.

Total Chromium(Cr)

3. The Complaint register is available with the laboratory as per Environment protection act 1986.

Verified by:

Surekha Jamdar Technical Manager ***End of Report***

0.05

mg/lit

Issued by:

APHA 3111-B,23rd AAS

Shraddha Kere Quality Manager

A Neterwala Group Company

Page 1 of 3 CIN: U74999MH2003PLC142228

Registered office: Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020





	ame of Organization : M/s.L & T Construction ddress : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.						
Addı				ia, Sewrite	ist), Mumbai.		
		D8000155 Dated 21.0	14.2022				
	FCC Validity : 16th Octob						
	pline/ Group : Chemical-V	Vater	Test Repo		: NIL/W/08/22/220		
	ole Type : Drinking W		Sample C		: NIL/W/08/22/220		
Sam	oling Method : IS 3025 (P-	<u> </u>		emperature			
Samp	oling Date : 24.08.2022			ceive Date	: 24.08.2022		
Analy	ysis Start Date : 25.08.2022		Analysis E		: 02.09.2022		
Repo	rting Date : 02,09.2022			ty & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Samp	oling Location : Staff Cante	en D/W	Sampling	Done By	: Netel India Limited		
Sr. No	Parameter	Result	Limit	Unit	Method		
Physi	cal Parameter						
20	Colour	<5	5	Hazen	IS 3025 (Part 4)		
21	Odour	Agreeable		_	IS 3025(Part 5)		
22	Taste	Agreeable		_	IS 3025(Part 7 & 8)		
Chem	ical Parameter						
23	Aluminium	<0.03	0.03	mg/lit	IS 3025 (Part 55)		
24	Ammonia	<0.4	0.5	mg/lit	IS 3025 (Part 34)		
25	Anionic Detergents	<0.2	0.2	mg/lit	IS 13428 (Annex K)		
26	Barium	<0.1	0.7	mg/lit	IS 13428 (Annex F)		
27	Chloramines	<4	4	mg/lit	IS 3025 (Part 26)		
28	Residual Free Chlorine	0.5	0.2	mg/lit	IS 3025 (Part 26)		
29	Mineral Oil	<0.5	0.5	mg/lit	IS 3025 (Part 39, Clause 6)		
30	Phenolic Compounds	<0.001	0.001	mg/lit	IS 3025 (Part 43)		
31	Selenium	<0.01	0.01	mg/lit	IS 3025 (Part 56)		
32	Sulphide	<0.02	0.05	mg/lit	IS 3025 (Part 29)		
33	Total Suspended Solids	<5	-	mg/lit	IS 3025 (Part 17)		
oxic S	Substance			_			
34	Cadmium	<0.003	0.003	mg/lit	APHA 3111-B,23rd AAS		
35	Cyanide (CN-)	<0.05	0.05	mg/lit	APHA 3111-B,23rd AAS		
	Lead	<0.01	0.01	mg/lit	APHA 3111-B,23rd AAS		
37	Mercury	<0.001	0,001	mg/lit	APHA 3111-B,23rd AAS		
38	Molybdenum	<0.05	0.07	mg/lit	IS 3025 (Part 2)		
	Arsenic	<0.001	0.01	mg/lit	IS 3025 (Part 37)		
	Polyaromatic Hydrocarbon	<0.0001	0.0001	mg/lit	APHA 6440-B		
41	Polychlorinated biphenyls	<0.0005	0.0005	mg/lit	APHA 6131- B		
42	Trihalomethanes	<0.05	0.2	mg/lit	APHA 6232		
43	Pesticides		_				
Ĭ,	Alachlor	BDL	20	µg/l	APHA 6630-B		
ii /	Altrazine	BDL	2	µg/l	APHA 6630-B		
ìii /	Aldrin/Diedrin	BDL	0.03	µg/l	APHA 6630-B		
iV /	Alpha-HCH	BDL	0.01	µg/l	APHA 6630-B		
and the second							

Page 2 of 3

CIN: U74999MH2003PLC142228

Netarwala Group Company





Sam	Sampling Location : Staff Canteen D/W			Test Report No. : NIL/W/08/22/220 Sample Code : NIL/W/08/22/220			
Oan							
Samp	oling Date : 24.08.2022		Sample Re	eceive Date	: 24.08.2022		
Analy	rsis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022		
Repo	rting Date : 02.09.2022		Sample Q	y & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sr. No	Parameter	Result	Limit	Unit	Method		
٧	Bita-HCH	BDL	0.04	µg/l	APHA 6630-B		
VÌ	Butachlor	BDL	125	µg/l	APHA 6630-B		
Vİİ	Chlorpyriphos	BDL	30	µg/l	APHA 6630-B		
VÌÌÍ	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B		
Viii	Gamma-HCH	BDL	2	µg/l	APHA 6630-B		
İΧ	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	АРНА 6630-В		
Х	DDT	BDL	1	µg/l	АРНА 6630-В		
χi	Endosulfan	BDL	0.4	µg/l	APHA 6630-B		
ilx	Ethion	BDL	3	µg/l	APHA 6630-B		
Xiii	Isoproturon	BDL	9	μg/l	APHA 6630-B		
xiv	Malathion	BDL	190	μg/l	APHA 6630-B		
ΧV	Methyl parathion	BDL	0.3	µg/l	APHA 6630-B		
χVΪ	Monocrotophos	BDL	1	µg/l	APHA 6630-B		
xvii	xvii Phorate BDL		2	µg/l	APHA 6630-B		
acteri	ological Parameter						
44	Total Coliform	<1.8	0	MPN/100ml	IS 1622		
45	E Coli	Absent	Absent	_	IS 1622		

Note:

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End of Report

Verified by:

Surekha Jamdar

Technical Manager

Issued by:

Shraddha Kere **Quality Manager**



Page 3 of 3

A Neterwala Group Company

CIN: U74999MH2003PLC142228





Netel (India) Limited

				IVEI OI	* 1	increa (intolog milli		
Name	ame of Organization : M/s.L & T Construction							
Addr	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.							
Custo	Customer Reference : EH401WOD8000155 Dated 21.04.2022							
MoEF	CC Validity	: 16th Octobe	r 2024	QCI-NABL	Validity	: 16th June 2024		
Disci	pline/ Group	: Chemical-W	ater	Test Repor	rt No.	: NIL/W/08/22/221		
Samp	је Туре	: Drinking Wat	ter	Sample Co	de	: NIL/W/08/22/221		
Samp	ling Method	: IS 3025 (P-1)	Ambient Te	mperature	: 25°C		
Samp	ling Date	: 24.08.2022		1		: 24.08.2022		
Analy	sis Start Date	: 25.08.2022		Analysis E		: 02.09.2022		
		: 02.09.2022				: 2 lit Plastic Can & Micro Bottle		
Samp	ling Location	: Water Filtrati	on Plant Sewari D/V	Sampling I	Oone By	: Netel India Limited		
Sr. No	Parame	eter	Result	Limit	Unit	Method		
Physic	cal Parameter			*				
1	pH @ 25 °C		6.48	6.5 - 8.5	-	IS 3025(Part 11)		
2	Turbidity		<1.0	1	NTU	IS 3025(Part 10)		
3	Total Dissolved So	olids	65	500	mg/lit	IS 3025(Part 16)		
Chemi	cal Parameter			,				
4	Boron(B)		<0.4	0.5	mg/lit	IS 3025(Part 57)		
5	Calcium(Ca)		<5	75	mg/lit	IS 3025(Part 40)		
6	Chloride(Cl)		5.4	250	mg/lit	IS 3025(Part 32)		
7	Copper(Cu)		<0.04	0.05	mg/lit	APHA 3111-B,23rd AAS		
8	Fluoride(F-)		<0.2	1	mg/lit	IS 3025(Part 60)		
9	Iron(Fe)		<0.1	0.3	mg/lit	APHA 3111-B,23rd AAS		
10	Magnesium(Mg)		<5	30	mg/lit	IS 3025 (Part 46)		
11	Manganese(Mn)		<0.1	0.1	mg/lit	APHA 3111-B,23rd AAS		
12	Nitrate(NO3-)		<0.5	45	mg/lit	IS 3025(Part 34)		
13	Silver(Ag)		<0.05	0.1	mg/lit	APHA 3111-B,23rd AAS		
14			200	mg/lit	IS 3025(Part 24)			
15			200	mg/lit	IS 3025(Part 23)			
16			200	mg/lit	IS 3025(Part 21)			
	17 Zinc(Zn) <0.2		5	mg/lit	APHA 3111-B,23rd AAS			
	ubstance							
	Nickel(NI)		<0.01	0.02	mg/lit	APHA 3111-B,23rd AAS		
	Total Chromium(Cr))	<0.01	0.05	mg/lit	APHA 3111-B,23rd AAS		
** 4								

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Verified by:

Surekha Jamdar Technical Manager "End of Report"

Issued by:

Shraddha Kere Quality Manager

A Neterwala Group Company

Page 1 of 3 CIN: U74999MH2003PLC142228





_							
	Name of Organization : M/s.L & T Construction						
1	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.						
Cus	Customer Reference : EH401WOD8000155 Dated 21.04.2022						
MoE	FCC Validity : 16th October	er 2024					
Disc	ipline/ Group : Chemical-V	Vater	Test Rep	ort No.	: NIL/W/08/22/221		
Sam	ple Type : Drinking Wa	ater	Sample C	ode	: NIL/W/08/22/221		
Sam	pling Method : IS 3025 (P-	1)	Ambient 1	remperature	: 25°C		
Sam	pling Date : 24.08.2022		Sample R	eceive Date	: 24.08.2022		
Anal	ysis Start Date : 25.08.2022		Analysis	End Date	: 02.09.2022		
Repo	orting Date : 02.09.2022		Sample C	ty & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sam	oling Location : Water Filtra	ion Plant Sewari D/W	Sampling	Done By	: Netel India Limited		
Sr. N	o Parameter	Result	Limit	Unit	Method		
Phys	ical Parameter						
20	Colour	<5	5	Hazen	IS 3025 (Part 4)		
21	Odour	Agreeable		_	IS 3025(Part 5)		
22	Taste	Agreeable		_	IS 3025(Part 7 & 8)		
Chem	ical Parameter						
23	Aluminium	<0.03	0.03	mg/lit	IS 3025 (Part 55)		
24	Ammonia	<0.4	0.5	mg/lit	IS 3025 (Part 34)		
25	Anionic Detergents	<0.2	0.2	mg/lit	IS 13428 (Annex K)		
26	Barium	<0.1	0.7	mg/lit	IS 13428 (Annex F)		
27	Chloramines	<4	4	mg/lit	IS 3025 (Part 26)		
28	Residual Free Chlorine	<0.1	0.2	mg/lit	IS 3025 (Part 26)		
29	Mineral Oil	<0.5	0.5	mg/lit	IS 3025 (Part 39, Clause 6)		
30	Phenolic Compounds	<0.001	0.001	mg/lit	IS 3025 (Part 43)		
31	Selenium	<0.01	0.01	mg/lit	IS 3025 (Part 56)		
32	Sulphide	<0.02	0.05	mg/lit	IS 3025 (Part 29)		
33	Total Suspended Solids	<5	-	mg/lit	IS 3025 (Part 17)		
Toxic :	Substance						
34	Cadmium	<0.003	0.003	mg/lit	APHA 3111-B,23rd AAS		
	Cyanide (CN-)	<0.05	0.05	mg/lit	APHA 3111-B,23rd AAS		
36	Lead	<0.01	0.01	mg/lit	APHA 3111-B,23rd AAS		
	Mercury	<0.001	0.001	mg/lit	APHA 3111-B,23rd AAS		
	Molybdenum	<0.05	0.07	mg/lit	IS 3025 (Part 2)		
	Arsenic	<0.001	0.01	mg/lit	IS 3025 (Part 37)		
	Polyaromatic Hydrocarbon	<0.0001	0.0001	mg/lit	APHA 6440-B		
	Polychlorinated biphenyls	<0.0005	0.0005	mg/lit	APHA 6131- B		
	Trihalomethanes	<0.05	0.2	mg/lit	APHA 6232		
	Pesticides						
	Alachlor	BDL	20	µg/l	APHA 6630-B		
	Altrazine	BDL	2	µg/l	APHA 6630-B		
	Aldrin/Died ri n	BDL	0.03	µg/l	APHA 6630-B		
iV /	Alpha-HCH	BDL	0.01	µg/l	APHA 6630-B		

Page 2 of 3

A Neterwala Group Company

CIN: U74999MH2003PLC142228





Sam	nling Location : Water Filtration	Plant Soweri D/M	Test Report No. : NIL/W/08/22/221				
Sall	Sampling Location : Water Filtration Plant Sewari D/W			Sample Code : NIL/W/08/22/221			
Samp	ling Date : 24.08.2022		Sample Re	eceive Date	: 24.08.2022		
Analy	sis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022		
Repo	ting Date : 02.09.2022		Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sr. No	Parameter	Result	Limit	Unit	Method		
V	Bita-HCH	BDL	0.04	µg/l	АРНА 6630-В		
vi	Butachlor	BDL	125	µg/l	АРНА 6630-В		
Vii	Chlorpyriphos	BDL	30	µg/l	АРНА 6630-В		
viii	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B		
viii	Gamma-HCH	BDL	2	µg/l	APHA 6630-B		
έχ	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	АРНА 6630-В		
Х	DDT	BDL	1	µg/l	АРНА 6630-В		
XI	Endosulfan	BDL	0.4	µg/l	АРНА 6630-В		
хіі	Ethion	BDL	3	µg/l	АРНА 6630-В		
XIII	Isoproturon	BDL	9	µg/l	АРНА 6630-В		
xiv	Malathion	BDL	190	µg/l	АРНА 6630-В		
ΧV	Methyl parathion	BDL	0.3	µg/l	АРНА 6630-В		
xvi	Monocrotophos BDL		1	µg/l	APHA 6630-B		
xvii	xvii Phorate BDL		2	µg/l	APHA 6630-B		
Bacter	ological Parameter						
44	44 Total Coliform <1.8		0	MPN/100ml	IS 1622		
45	E Coli	Absent	Absent	-	IS 1622		

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End of Report

Verified by:

Surekha Jamdar Technical Manager Issued by:

Shraddha Kere Quality Manager



Page 3 of 3

A Neterwala Group Company

CIN: U74999MH2003PLC142228





Netel (India) Limited

	e of Organization : M/s.L & T							
	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.							
Cust	omer Reference : EH401WC	D8000155 Dated 2	1.04.2022					
MoE	FCC Validity : 16th Octob	er 2024	QCI-NABL	. Validity	: 16th June 2024			
Disc	pline/ Group : Chemical-\	Vater	Test Repo	rt No.	: NIL/W/08/22/222			
·	ole Type : Drinking W	ater	Sample Co	ode	: NIL/W/08/22/222			
Sam	oling Method : IS 3025 (P-	-1)	Ambient T	emperature	: 25°C			
	oling Date : 24.08.2022		Sample Re	eceive Date	: 24.08.2022			
Analy	rsis Start Date : 25.08.2022		Analysis E	nd Date	: 02.09.2022			
	rting Date : 02.09.2022		Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle			
Samp	ling Location : Drinking Wa	ater TAB	Sampling	Done By	: Netel India Limited			
Sr. N		Result	Limit	Unit	Method			
Physi	cal Parameter							
1	pH @ 25 °C .	7.19	6.5 - 8.5	_	IS 3025(Part 11)			
2	Turbidity	<1.0	1	NTU	IS 3025(Part 10)			
3	Total Dissolved Solids	48	500	mg/lit	IS 3025(Part 16)			
Chem	ical Parameter							
4	Boron(B)	<0.4	0.5	mg/lit	IS 3025(Part 57)			
5	Calcium(Ca)	13.4	75	mg/lit	IS 3025(Part 40)			
6	Chloride(CI)	13.8	250	mg/lit	IS 3025(Part 32)			
7	Copper(Cu)	<0.04	0.05	mg/lit	APHA 3111-B,23rd AAS			
8	Fluoride(F-)	<0.2	1	mg/lit	IS 3025(Part 60)			
9	Iron(Fe)	<0.1	0.3	mg/lit	APHA 3111-B,23rd AAS			
10	Magnesium(Mg)	<5	30	mg/lit	IS 3025 (Part 46)			
11	Manganese(Mn)	<0.1	0.1	mg/lit	APHA 3111-B,23rd AAS			
12	Nitrate(NO3-)	<0.5	45	mg/lit	IS 3025(Part 34)			
13	Silver(Ag)	<0.05	0.1	mg/lit	APHA 3111-B,23rd AAS			
14	Sulphate(SO4)	2.9	200	mg/lit	IS 3025(Part 24)			
15			200	mg/lit	IS 3025(Part 23)			
16				mg/lit	IS 3025(Part 21)			
	17 Zinc(Zn) <0.2			mg/lit	APHA 3111-B,23rd AAS			
	ubstance							
	Nickel(NI)	<0.01	0.02		APHA 3111-B,23rd AAS			
19	Total Chromium(Cr)	<0.01	0.05	mg/lit	APHA 3111-B,23rd AAS			

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End of Report

Verified by:

Surekha Jamdar

Technical Manager

Issued by:

Shraddha Kere **Quality Manager**

A Neterwala Group Company

CIN: U74999MH2003PLC142228





Nar	lame of Organization : M/s.L & T Construction						
Add	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai						
Cus	tomer Reference : EH401WOI	D8000155 Dated 21.04	1.2022				
MoE	FCC Validity : 16th Octob	er 2024					
Disc	cipline/ Group : Chemical-V	Vater	Test Repo	ort No.	: NIL/W/08/22/222		
	ple Type : Drinking Wa		Sample C		: NIL/W/08/22/222		
	pling Method : IS 3025 (P-			emperature			
	pling Date : 24.08.2022	<u></u>		ceive Date	: 24.08.2022		
	ysis Start Date : 25.08.2022		Analysis I	End Date	: 02.09.2022		
	orting Date : 02.09.2022			ty & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sam	pling Location : Drinking Wa	iter TAB	Sampling	Done By	: Netel India Limited		
Sr. N	o Parameter	Result	Limit	Unit	Method		
Phys	ical Parameter						
20	Colour	<5	5	Hazen	IS 3025 (Part 4)		
21	Odour	Agreeable	***	-	IS 3025(Part 5)		
22	Taste	Agreeable	***	-	IS 3025(Part 7 & 8)		
Chen	nical Parameter		*				
23	Aluminium	<0.03	0.03	mg/lit	IS 3025 (Part 55)		
24	Ammonia	<0.4	0.5	mg/lit	IS 3025 (Part 34)		
25	Anionic Detergents	<0.2	0.2	mg/lit	IS 13428 (Annex K)		
26	Barium	<0.1	0.7	mg/lit	IS 13428 (Annex F)		
27	Chloramines	<4	4	mg/lit	IS 3025 (Part 26)		
28	Residual Free Chlorine	0.6	0.2	mg/lit	IS 3025 (Part 26)		
29	Mineral Oil	<0.5	0.5	mg/lit	IS 3025 (Part 39, Clause 6)		
30	Phenolic Compounds	<0.001	0.001	mg/lit	IS 3025 (Part 43)		
31	Selenium	<0.01	0.01	mg/lit	IS 3025 (Part 56)		
32	Sulphide	<0.02	0.05	mg/lit	IS 3025 (Part 29)		
33	Total Suspended Solids	<5	<u> </u>	mg/lit	IS 3025 (Part 17)		
	Substance		•				
34	Cadmium	<0.003	0.003	mg/lit	APHA 3111-B,23rd AAS		
35	Cyanide (CN-)	<0.05	0.05	mg/lit	APHA 3111-B,23rd AAS		
36	Lead	<0.01	0.01	mg/lit	APHA 3111-B,23rd AAS		
37	Mercury	<0.001	0.001	mg/lit	APHA 3111-B,23rd AAS		
38	Molybdenum	<0.05	0.07	mg/lit	IS 3025 (Part 2)		
39	Arsenic	<0.001	0.01	mg/lit	IS 3025 (Part 37)		
40	Polyaromatic Hydrocarbon	<0.0001	0.0001	mg/lit	APHA 6440-B		
41	Polychlorinated biphenyls	<0.0005	0.0005	mg/lit	APHA 6131- B		
	42 Trihalomethanes <0.05		0.2	mg/lit	APHA 6232		
43	Pesticides						
i	Alachlor	BDL	20	µg/l	APHA 6630-B		
	Altrazin e	BDL	2	µg/l	APHA 6630-B		
	Aldrin/Diedrin	BDL	0.03	µg/l	APHA 6630-B		
ĺν	Alpha-HCH	BDL	0.01	µg/l	APHA 6630-B		

Page 2 of 3

CIN: U74999MH2003PLC142228

vala Group Company





Sampling Location : Drinking Water TAB			Test Repo	Test Report No. ; NIL/W/08/22/222			
Jaili	ounpling Location . Dimking Water 1715		Sample Code : NIL/W/08/22/222				
Samp	ling Date : 24.08.2022		Sample Re	eceive Date	: 24.08.2022		
Analy	rsis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022		
Repo	rting Date : 02.09.2022		Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sr. No	Parameter	Result	Limit	Unit	Method		
V	Bita-HCH	BDL	0.04	µg/l	APHA 6630-B		
VĬ	Butachlor	BDL	125	µg/l	АРНА 6630-В		
Vií	Chlorpyriphos	BDL	30	µg/l	APHA 6630-B		
viii	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B		
VIII	Gamma-HCH	BDL	2	µg/l	APHA 6630-B		
ix	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	APHA 6630-B		
Х	DDT	BDL	1	µg/l	APHA 6630-B		
χi	Endosulfan	BDL	0.4	µg/i	APHA 6630-B		
xli	Ethion	BDL	3	µg/l	APHA 6630-B		
xiii	Isoproturon	BDL	9	µg/l	APHA 6630-B		
ΧİV	Malathion	BDL	190	µg/l	APHA 6630-B		
XV	Methyl parathion	BDL	0.3	µg/l	APHA 6630-B		
ΧVÎ	Monocrotophos	BDL	1	µg/l	APHA 6630-B		
xvii Phorate BDL		2	µg/l	APHA 6630-B			
Bacteri	ological Parameter			de la la la la la la la la la la la la la			
44	Total Coliform	<1.8	0	MPN/100ml	IS 1622		
45	E Coli	Absent	Absent	-	IS 1622		

Note:

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End of Report

Verified by:

Surekha Jamdar

Technical Manager

Issued by:

Shraddha Kere **Quality Manager**



Page 3 of 3



Netel (India) Limited

					* 1	140tol (Illiaid) Ellilli	
Nam	Name of Organization: M/s.L & T Construction						
Addr	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.						
Customer Reference : EH401WOD8000155 Dated 21.04.2022							
MoE	CC Validity	: 16th Octobe	er 2024	QCI-NABL	Validity	: 16th June 2024	
Disci	pline/ Group	: Chemical-W	ater ater	Test Repo	rt No.	: NIL/W/08/22/223	
	le Type	: Drinking Wa	ter	Sample Co	de	: NIL/W/08/22/223	
Samp	ling Method	: IS 3025 (P-1)	Ambient Te	emperature	: 25°C	
		: 24.08.2022		Sample Re	ceive Date	: 24.08.2022	
Analy	sis Start Date	: 25.08.2022		Analysis E	nd Date	: 02.09.2022	
		: 02.09.2022		, , , , , , , , , , , , , , , , , , ,	y & Pkng.	: 2 lit Plastic Can & Micro Bottle	
		: Darukhana	Labour Camp D/W	Sampling [Done By	: Netel India Limited	
Sr. No		eter	Result	Limit	Unit	Method	
Physic	cal Parameter						
1	pH @ 25 °C		7.83	6.5 - 8.5		IS 3025(Part 11)	
2	Turbidity		<1.0	1	NTU	IS 3025(Part 10)	
3	Total Dissolved So	olids	65	500	mg/lit	IS 3025(Part 16)	
Chemi	cal Parameter			·	·		
4	Boron(B)		<0.4	0.5	mg/lit	IS 3025(Part 57)	
5	Calcium(Ca)		16.1	75	mg/lit	IS 3025(Part 40)	
6	Chloride(CI)		11.3	250	mg/lit	IS 3025(Part 32)	
7	Copper(Cu)		<0.04	0.05	mg/lit	APHA 3111-B,23rd AAS	
8	Fluoride(F-)		<0.2	1	mg/lit	IS 3025(Part 60)	
9	Iron(Fe)		<0.1	0.3	mg/lit	APHA 3111-B,23rd AAS	
10	Magnesium(Mg)		<5	30	mg/lit	IS 3025 (Part 46)	
11	Manganese(Mn)		<0.1	0.1	mg/lit	APHA 3111-B,23rd AAS	
12	Nitrate(NO3-)		<0.5	45	mg/lit	IS 3025(Part 34)	
13	Silver(Ag)		<0.05	0.1	mg/lit	APHA 3111-B,23rd AAS	
14	Sulphate(SO4)		3.5	200	mg/lit	IS 3025(Part 24)	
15 Total Alkalinity 58.6		200	mg/lit	IS 3025(Part 23)			
16 Total Hardness 62.8		200	mg/lit	IS 3025(Part 21)			
17 Zinc(Zn) <0.2		5	mg/lit	APHA 3111-B,23rd AAS			
	ubstance		r				
	Nickel(NI)		<0.01	0.02		APHA 3111-B,23rd AAS	
	Total Chromium(Cr)	<0.01	0.05	mg/lit	APHA 3111-B,23rd AAS	

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3. The Complaint register is available with the laboratory as per Environment protection act 1986.

Verified by:

Surekha Jamdar Technical Manager Issued by:

Shraddha Kere Quality Manager

eterwhia Group Company

CIN: U74999MH2003PLC142228





Netel (India) Limited

Nam	lame of Organization : M/s.L & T Construction						
Add	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.						
Cust	Customer Reference : EH401WOD8000155 Dated 21.04.2022						
MoE	MoEFCC Validity : 16th October 2024						
Disc	ipline/ Group : Chemical-W	/ater	Test Repo	ort No.	: NIL/W/08/22/223		
Sam	ple Type : Drinking Wa	iter	Sample C	ode	: NIL/W/08/22/223		
Sam	pling Method : IS 3025 (P-	1)	Ambient T	emperature	: 25°C		
Sam	pling Date : 24.08.2022		Sample Re	eceive Date	: 24.08.2022		
Analy	ysis Start Date : 25.08.2022		Analysis I	End Date	: 02.09.2022		
Repo	rting Date : 02.09.2022		Sample Q	ty & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Samp	oling Location : Darukhana	Labour Camp D/W	Sampling	Done By	: Netel India Limited		
Sr. N	o Parameter	Result	Limit	Unit	Method		
Physi	ical Parameter						
20	Colour	<5	5	Hazen	IS 3025 (Part 4)		
21	Odour	Agreeable		-	IS 3025(Part 5)		
22	Taste	Agreeable	***		IS 3025(Part 7 & 8)		
Chem	ical Parameter						
23	Aluminium	<0.03	0.03	mg/lit	IS 3025 (Part 55)		
24	Ammonia	<0.4	0.5	mg/lit	IS 3025 (Part 34)		
25	Anionic Detergents	<0.2	0.2	mg/lit	IS 13428 (Annex K)		
26	Barium	<0.1	0.7	mg/lit	IS 13428 (Annex F)		
27	Chloramines	<4	4	mg/lit	IS 3025 (Part 26)		
28	Residual Free Chlorine	0.6	0.2	mg/lit	IS 3025 (Part 26)		
29	Mineral Oil	<0.5	0.5	mg/lit	IS 3025 (Part 39, Clause 6)		
30	Phenolic Compounds	<0.001	0.001	mg/lit	IS 3025 (Part 43)		
31	Selenium	<0.01	0.01	mg/lit	IS 3025 (Part 56)		
32	Sulphide	<0.02	0.05	mg/lit	IS 3025 (Part 29)		
33	Total Suspended Solids	<5	-	mg/lit	IS 3025 (Part 17)		
Toxic S	Substance						
	Cadmium	<0.003	0.003	mg/lit	APHA 3111-B,23rd AAS		
	Cyanide (CN-)	<0.05	0.05	mg/lit	APHA 3111-B,23rd AAS		
	Lead	<0.01	0.01	mg/lit	APHA 3111-B,23rd AAS		
	Mercury	<0.001	0.001	mg/lit	APHA 3111-B,23rd AAS		
	Molybdenum	<0.05	0.07	mg/lit	IS 3025 (Part 2)		
	Arsenic	<0.001	0.01	mg/lit	IS 3025 (Part 37)		
	Polyaromatic Hydrocarbon	<0.0001	0.0001	mg/lit	APHA 6440-B		
	Polychlorinated biphenyls	<0.0005	0.0005 0.2	mg/lit	APHA 6131- B		
				mg/lit	APHA 6232		
	Pesticides						
	Alachlor	BDL	20	µg/l	APHA 6630-B		
	Altrazine	BDL	2	µg/l	APHA 6630-B		
	Aldrin/Diedrin	BDL	0.03	µg/l	APHA 6630-B		
iv /	Alpha-HCH	BDL	0.01	µg/l	APHA 6630-B		

Page 2 of 3

A Neterwala Group Company

CIN: U74999MH2003PLC142228





Sam	nling Location : Darukhana Lah	OUR Comp. DAM	Test Repo	rt No.	: NIL/W/08/22/223		
Sall	Sampling Location : Darukhana Labour Camp D/W			Sample Code : NIL/W/08/22/223			
Samp	ling Date : 24.08.2022		Sample Re	eceive Date	: 24.08.2022		
Analy	sis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022		
Repo	rting Date : 02.09.2022		Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sr. No	Parameter	Result	Limit	Unit	Method		
٧	Bita-HCH	BDL	0.04	µg/l	APHA 6630-B		
Vİ	Butachlor	BDL	125	µg/!	APHA 6630-B		
Viİ	Chlorpyriphos	BDL	30	µg/l	APHA 6630-B		
Viii	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B		
viii	Gamma-HCH	BDL	2	µg/l	APHA 6630-B		
ix	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	APHA 6630-B		
Х	DDT	BDL	1	µg/l	APHA 6630-B		
χi	Endosulfan	BDL	0.4	µg/l	APHA 6630-B		
XII	Ethion	BDL	3	µg/l	APHA 6630-B		
XIII	Isoproturon	BDL	9	µg/l	APHA 6630-B		
xiv	Malathion	BDL	190	µg/l	APHA 6630-B		
X۷	Methyl parathion	BDL	0.3	µg/l	APHA 6630-B		
XVI	Monocrotophos	BDL	1	µg/l	APHA 6630-B		
xvii Phorate BDL		2	µg/l	APHA 6630-B			
Bacteriological Parameter							
44	Total Coliform	<1.8	0	MPN/100ml	IS 1622		
45	E Coli	Absent	Absent		IS 1622		

Note:

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- 2. This Test Report refers only to the sample tested.
- 3. The Complaint register is available with the laboratory as per Environment protection act 1986.

End of Report

Verified by:

Surekha Jamdar Technical Manager Issued by:

Shraddha Kere Quality Manager



Page 3 of 3



Name of Organization			TES	T REPO	RT	Netel (India) Lim
Customer Reference EH401WOD8000155 Dated 21.04.2022 MoEFCC Validity : 16th October 2024 QCI-NABL Validity : 16th June 2024 Sample Type : Drinking Water Sample Code : NIL/W/08/22/224 Sample Type : Drinking Water Sample Code : NIL/W/08/22/224 Sampling Method : IS 3025 (P-1) Ambient Temperature : 25°C Sampling Date : 24.08.2022 Sample Receive Date : 24.08.2022 Analysis End Date : 02.09.2022 Sample Gty & Pkng. : 2 lit Plastic Can & Micro Bottle Sampling Location : Kuria Labour Camp D/W Sampling Done By : Netel India Limited Sr. No	Nam	e of Organization : M/s.L & T (Construction		·	
MoEFCC Validity : 16th October 2024 QCI-NABL Validity : 16th June 2024			Sewri Timber Pond	l, Near Gadi A	dda, Sewri(f	East), Mumbai.
Discipline/ Group Chemical-Water Sample Code Code	Cust	omer Reference : EH401WOI	D8000155 Dated 2	1.04.2022		
Sample Type Drinking Water Sample Code Drinking Water Sampling Method Date	MoE	FCC Validity : 16th October	er 2024	QCI-NABL	. Validity	: 16th June 2024
Sampling Method : IS 3025 (P-1) Ambient Temperature : 25°C			/ater	Test Repo	rt No.	: NIL/W/08/22/224
Sampling Date : 24.08.2022 Sample Receive Date : 24.08.2022 Analysis Start Date : 25.08.2022 Analysis End Date : 02.09.2022 Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle Sampling Location : Kurla Labour Camp D/W Sampling Done By : Netel India Limited			ater	Sample Co	ode	: NIL/W/08/22/224
Analysis Start Date : 25.08.2022 Analysis End Date : 02.09.2022 Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle	Samp	oling Method : IS 3025 (P-	1)	Ambient Te	emperature	: 25°C
Sample City				Sample Re	ceive Date	: 24.08.2022
Sampling Location Sampling Done By Sampling D				Analysis E	nd Date	: 02.09.2022
Sr. No				Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle
Physical Parameter 1 pH @ 25 °C 7.22 6.5 - 8.5 - IS 3025(Part 11) 2 Turbidity <1.0 1 NTU IS 3025(Part 10) 3 Total Dissolved Solids 65 500 mg/lit IS 3025(Part 16) Chemical Parameter 4 Boron(B) <0.4 0.5 mg/lit IS 3025(Part 40) 6 Calcium(Ca) 9.6 75 mg/lit IS 3025(Part 32) 7 Copper(Cu) <0.04 0.05 mg/lit IS 3025(Part 32) 7 Copper(Cu) <0.04 0.05 mg/lit IS 3025(Part 32) 8 Fluoride(F-) 0.2 1 mg/lit IS 3025(Part 60) 9 Iron(Fe) <0.1 0.3 mg/lit IS 3025(Part 60) 9 Iron(Fe) <0.1 0.3 mg/lit IS 3025(Part 46) 11 Manganese(Mn) <0.1 0.1 mg/lit IS 3025 (Part 46) 12 Nitrate(NO3-) <0.5 45 mg/lit IS 3025(Part 34) 13 Silver(Ag) <0.05 0.1 mg/lit IS 3025(Part 34) 14 Sulphate(SO4) 2.1 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 39.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit IS 3025(Part 21)	Samp	ling Location : Kurla Labou	r Camp D/W	Sampling I	Done By	: Netel India Limited
1 pH @ 25 °C 7.22 6.5 - 8.5 — IS 3025(Part 11) 2 Turbidity <1.0	Sr. No	Parameter	Result	Limit	Unit	Method
2 Turbidity <1.0	hysi	cal Parameter				
Total Dissolved Solids 65 500 mg/lit IS 3025(Part 16)			7.22	6.5 - 8.5		IS 3025(Part 11)
Boron(B)			<1.0	1	NTU	IS 3025(Part 10)
4 Boron(B) <0.4	3	Total Dissolved Solids	65	500	mg/lit	IS 3025(Part 16)
5 Calcium(Ca) 9.6 75 mg/lit IS 3025(Part 40) 6 Chloride(Cl) 13.3 250 mg/lit IS 3025(Part 32) 7 Copper(Cu) <0.04	hemi	cal Parameter				
6 Chloride(Cl) 13.3 250 mg/lit IS 3025(Part 32) 7 Copper(Cu) <0.04 0.05 mg/lit APHA 3111-B,23rd AAS 8 Fluoride(F-) <0.2 1 mg/lit IS 3025(Part 60) 9 Iron(Fe) <0.1 0.3 mg/lit APHA 3111-B,23rd AAS 10 Magnesium(Mg) <5 30 mg/lit IS 3025 (Part 46) 11 Manganese(Mn) <0.1 0.1 mg/lit APHA 3111-B,23rd AAS 12 Nitrate(NO3-) <0.5 45 mg/lit IS 3025(Part 34) 13 Silver(Ag) <0.05 0.1 mg/lit APHA 3111-B,23rd AAS 14 Sulphate(SO4) 2.1 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 39.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS	4	Boron(B)	<0.4	0.5	mg/lit	IS 3025(Part 57)
7 Copper(Cu) <0.04 0.05 mg/lit APHA 3111-B,23rd AAS 8 Fluoride(F-) <0.2		<u> </u>	9.6	75	mg/lit	IS 3025(Part 40)
8 Fluoride(F-) <0.2 1 mg/lit IS 3025(Part 60) 9 Iron(Fe) <0.1			13.3	250	mg/lit	IS 3025(Part 32)
9 Iron(Fe) <0.1 0.3 mg/lit APHA 3111-B,23rd AAS 10 Magnesium(Mg) <5 30 mg/lit IS 3025 (Part 46) 11 Manganese(Mn) <0.1 0.1 mg/lit APHA 3111-B,23rd AAS 12 Nitrate(NO3-) <0.5 45 mg/lit IS 3025(Part 34) 13 Silver(Ag) <0.05 0.1 mg/lit APHA 3111-B,23rd AAS 14 Sulphate(SO4) 2.1 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 39.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS			<0.04	0.05	mg/lit	APHA 3111-B,23rd AAS
10 Magnesium(Mg) <5 30 mg/lit IS 3025 (Part 46) 11 Manganese(Mn) <0.1 0.1 mg/lit APHA 3111-B,23rd AAS 12 Nitrate(NO3-) <0.5 45 mg/lit IS 3025(Part 34) 13 Silver(Ag) <0.05 0.1 mg/lit APHA 3111-B,23rd AAS 14 Sulphate(SO4) 2.1 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 39.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS		Fluoride(F-)	<0.2	1	mg/lit	IS 3025(Part 60)
11 Manganese(Mn) <0.1			<0.1	0.3	mg/lit	APHA 3111-B,23rd AAS
12 Nitrate(NO3-) <0.5			-	30	mg/lit	IS 3025 (Part 46)
13 Silver(Ag) <0.05 0.1 mg/lit APHA 3111-B,23rd AAS 14 Sulphate(SO4) 2.1 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 39.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS			<0.1	0.1	mg/lit	APHA 3111-B,23rd AAS
14 Sulphate(SO4) 2.1 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 39.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2			<0.5	45	mg/lit	IS 3025(Part 34)
Total Alkalinity 39.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS			<0.05	0.1	mg/lit	APHA 3111-B,23rd AAS
16 Total Hardness 41.5 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2				200	mg/lit	IS 3025(Part 24)
17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS		4		200	mg/lit	IS 3025(Part 23)
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				200	mg/lit	IS 3025(Part 21)
xic Substance			<0.2	5	mg/lit	APHA 3111-B,23rd AAS
	xic S	ubstance				

19 Note:

18

Nickel(NI)

Total Chromium(Cr)

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< 0.01

< 0.01

2. This Test Report refers only to the sample tested.

3. The Complaint register is available with the laboratory as per Environment protection act 1986.

Verified by:

Surekha Jamdar **Technical Manager** ***End of Report***

0.02

0.05

mg/lit

mg/lit

Issued by:

cele

APHA 3111-B,23rd AAS

APHA 3111-B,23rd AAS

Shraddha Kere **Quality Manager**

A Neterwala Group Company

CIN: U74999MH2003PLC





Nan	ne of Organization : M/s.L & T (Construction					
Add	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.						
Cus		D8000155 Dated 21.04					
MoE	MoEFCC Validity : 16th October 2024						
Disc	ipline/ Group : Chemical-V	Vater	Test Repo	ort No.	: NIL/W/08/22/224		
	ple Type : Drinking Wa		Sample C		: NIL/W/08/22/224		
	pling Method : IS 3025 (P-	· · · · · · · · · · · · · · · · · · ·	<u> </u>	emperature	: 25°C		
	pling Date : 24.08.2022			eceive Date	: 24.08.2022		
<u></u>	ysis Start Date : 25.08.2022		Analysis I	End Date	: 02.09.2022		
Repo	orting Date : 02.09.2022		Sample Q	ty & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sam	pling Location : Kurla Labou	r Camp D/W	Sampling	Done By	: Netel India Limited		
Sr. N	o Parameter	Result	Limit	Unit	Method		
Phys	ical Parameter						
20	Colour	<5	5	Hazen	IS 3025 (Part 4)		
21	Odour	Agreeable	***	-	IS 3025(Part 5)		
22	Taste	Agreeable		-	IS 3025(Part 7 & 8)		
Chen	nical Parameter	<u> </u>					
23	Aluminium	<0.03	0.03	mg/lit	IS 3025 (Part 55)		
24	Ammonia	<0.4	0.5	mg/lit	IS 3025 (Part 34)		
25	Anionic Detergents	<0.2	0.2	mg/lit	IS 13428 (Annex K)		
26	Barium	<0.1	0.7	mg/lit	IS 13428 (Annex F)		
27	Chloramines	<4	4	mg/lit	IS 3025 (Part 26)		
28	Residual Free Chlorine	<0.1	0.2	mg/lit	IS 3025 (Part 26)		
29	Mineral Oil	<0.5	0.5	mg/lit	IS 3025 (Part 39, Clause 6)		
30	Phenolic Compounds	<0.001	0.001	mg/lit	IS 3025 (Part 43)		
31	Selenium	<0.01	0.01	mg/lit	IS 3025 (Part 56)		
32	Sulphide -	<0.02	0.05	mg/lit	IS 3025 (Part 29)		
33	Total Suspended Solids	<5	-	mg/lit	IS 3025 (Part 17)		
	Substance			1			
34	Cadmium	<0.003	0.003	mg/lit	APHA 3111-B,23rd AAS		
35	Cyanide (CN-)	<0.05	0.05	mg/lit	APHA 3111-B,23rd AAS		
36	Lead	<0.01	0.01	mg/lit	APHA 3111-B,23rd AAS		
37	Mercury	<0.001	0.001	mg/lit	APHA 3111-B,23rd AAS		
38	Molybdenum	<0.05	0.07	mg/lit	IS 3025 (Part 2)		
39	Arsenic	<0.001	0.01	mg/lit	IS 3025 (Part 37)		
40	Polyaromatic Hydrocarbon	<0.0001	0.0001	mg/lit	APHA 6440-B		
41	Polychlorinated biphenyls	<0.0005	0.0005	mg/lit	APHA 6131- B		
42	Trihalomethanes	<0.05	0.2	mg/lit	APHA 6232		
43	Pesticides	·					
Í	Alachlor	BDL	20	ha\l	APHA 6630-B		
	Altrazine	BDL	2		APHA 6630-B		
	Aldrin/Diedrin	BDL	0.03		APHA 6630-B		
ōix	Alpha-HCH	BDL	0.01	µg/l	APHA 6630-B		

Page 2 of 3

CIN: U74999MH2003PLC142228

Office & Laboratory: W-408, Rabale MIDC, TTC Industrial Area, Navi Mumbai - 400 701.

Phone: 72080976 92 / 93 / 94 / 95 • Website: www.netel-india.com • E-mail: ems@netel-india.com

Registered office: Liberty Building, 3rd Floor, Sir Vithaldas Thackersey Marg, (New Marine Lines), Mumbai - 400 020.

Neigroup Company





Sampling Location : Kurla Labour Camp D/W			Test Report No. : NIL/W/08/22/224				
		Sample C	Sample Code : NIL/W/08/22/224				
	oling Date : 24.08.2022		Sample R	eceive Date	: 24.08.2022		
Analy	rsis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022		
		Sample Q	y & Pkng.	: 2 lit Plastic Can & Micro Bottle			
Sr. No	Parameter	Result	Limit	Unit	Method		
٧	Bita-HCH	BDL	0.04	µg/l	APHA 6630-B		
VÍ	Butachlor	BDL	125	µg/l	APHA 6630-B		
Vii	Chlorpyriphos	BDL	30	µg/l	APHA 6630-B		
viii	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B		
Viii	Gamma-HCH	BDL	2	µg/l	APHA 6630-B		
İX	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	APHA 6630-B		
Х	DDT	BDL	1	µg/l	APHA 6630-B		
Xi	Endosulfan	BDL	0.4	µg/l	APHA 6630-B		
XÌÍ	Ethion	BDL	3	µg/l	APHA 6630-B		
XÍÏ	Isoproturon	BDL	9	µg/l	APHA 6630-B		
XIV	Malathion	BDL	190	µg/l	APHA 6630-B		
ΧV	Methyl parathion	BDL	0.3	µg/l	APHA 6630-B		
xvi	Monocrotophos	BDL	1	µg/l	APHA 6630-B		
XVİİ	xvii Phorate BDL		2				
acteriological Parameter							
44	Total Coliform	<1.8	0	MPN/100ml	IS 1622		
45	E Coli	Absent	Absent		IS 1622		

Note:

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Verified by:

Surekha Jamdar

Technical Manager

issued by:

Shraddha Kere Quality Manager



Page 3 of 3



Netel (India) Limited

Name of Organization : M/s.L & T Construction				VEI OIVI		Herei (IIIaia) Filili		
Customer Reference EH401WOD8000155 Dated 21.04.2022 MoEFCC Validity : 16th October 2024 QCI-NABL Validity : 16th June 2024 Discipline/ Group : Chemical-Water Test Report No. : NIL/W/08/22/225 Sample Type : Drinking Water Sample Code : NIL/W/08/22/225 Sample Method : Is 3025 (P-1) Ambient Temperature : 25°C Sampling Date : 24.08.2022 Sample Receive Date : 24.08.2022 Analysis End Date : 02.09.2022 Sample Receive Date : 24.08.2022 Analysis End Date : 02.09.2022 Sampling Location : Belapur Water Filtration Plant D/W Sampling Done By : Nete India Limited Sr. No	_	Name of Organization : M/s.L & T Construction						
MoEFCC Validity 16th October 2024 QCI-NABL Validity 16th June 2024					, Sewri(East), Mumbai.		
Discipline Group : Chemical-Water Sample Code : NilL/W/08/22/225	Custo	mer Reference : EH401WOD	8000155 Dated 21.04.					
Sample Type Drinking Water Sample Code Drinking Water Sampling Method Drinking Water Sample Code Drinking Water Sampling Method Drinking Water Sample Receive Date 25°C Sample Receive Date 24.08.2022 Sample Receive Date 24.08.2022 Analysis Start Date Drinking Water Date Drinking Water Date Drinking Water Date Drinking Water Date Drinking Water Date Drinking Water Date Drinking Water Date Drinking Water Date Drinking Water Date Drinking Water Date Date Drinking Water Date Date Date Date Date Date Date Date	MoEF	CC Validity : 16th Octobe	r 2024			: 16th June 2024		
Sampling Method IS 3025 (P-1) Ambient Temperature 25°C	Discip	oline/ Group : Chemical-W	ater	Test Repor	t No.	: NIL/W/08/22/225		
Sampling Date 24.08.2022 Sample Receive Date 24.08.2022 Analysis Start Date 25.08.2022 Analysis End Date 20.09.2022 Sample Qty & Pkng. 2 lit Plastic Can & Micro Bottle Sampling Location 3 leapur Water Filtration Plant D/W Sampling Done By 3 leapur Water All Salozs (Part 10) 3 leapur Water All Salozs (Part 10) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (Part 40) 3 leapur Water All Salozs (P	Samp	le Type : Drinking Wa	ter	Sample Co	de	: NIL/W/08/22/225		
Analysis Start Date : 25.08.2022 Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle	Samp	ling Method: IS 3025 (P-1)	Ambient Te	mperature	: 25°C		
Sample Sample Sample Sample Sample Sample Sampling	Samp	ling Date : 24.08.2022		Sample Re	ceive Date	: 24.08.2022		
Sampling Location Selapur Water Filtration Plant D/W Sampling Done By Sampling Location Nethod	Analy	sis Start Date : 25.08.2022		Analysis E	nd Date			
Parameter Result Limit Unit Method								
Physical Parameter ph @ 25 °C 7.55 6.5 - 8.5 - IS 3025(Part 11) 2 Turbidity 41.0 1 NTU IS 3025(Part 10) 3 Total Dissolved Solids 63 500 mg/lit IS 3025(Part 16) Chemical Parameter	Sampl	ing Location : Belapur Wate	er Filtration Plant D/W	Sampling D	one By	: Netel India Limited		
Turbidity	Sr. No	Parameter	Result	Limit	Unit	Method		
2 Turbidity <1.0	Physic	al Parameter						
Total Dissolved Solids 63 500 mg/lit IS 3025(Part 16)	1	pH @ 25 °C		6.5 - 8.5				
Boron(B)	2	Turbidity	<1.0	1	NTU	IS 3025(Part 10)		
4 Boron(B) <0.4 0.5 mg/lit IS 3025(Part 57) 5 Calcium(Ca) 8.1 75 mg/lit IS 3025(Part 40) 6 Chloride(Cl) 8.4 250 mg/lit IS 3025(Part 32) 7 Copper(Cu) <0.04	3	Total Dissolved Solids	63	500	mg/lit	IS 3025(Part 16)		
5 Calcium(Ca) 8.1 75 mg/lit IS 3025(Part 40) 6 Chloride(Cl) 8.4 250 mg/lit IS 3025(Part 32) 7 Copper(Cu) <0.04	Chemi	cal Parameter						
6 Chloride(CI) 8.4 250 mg/lit IS 3025(Part 32) 7 Copper(Cu) <0.04 0.05 mg/lit APHA 3111-B,23rd AAS 8 Fluoride(F-) <0.2 1 mg/lit IS 3025(Part 60) 9 Iron(Fe) <0.1 0.3 mg/lit APHA 3111-B,23rd AAS 10 Magnesium(Mg) <5 30 mg/lit IS 3025 (Part 46) 11 Manganese(Mn) <0.1 0.1 mg/lit APHA 3111-B,23rd AAS 12 Nitrate(NO3-) <0.5 45 mg/lit IS 3025 (Part 34) 13 Silver(Ag) <0.05 0.1 mg/lit APHA 3111-B,23rd AAS 14 Sulphate(SO4) 2.5 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 34.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 29.8 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS 18 Nickel(NI) <0.01 0.02 mg/lit APHA 3111-B,23rd AAS	4	Boron(B)			mg/lit			
7 Copper(Cu) <0.04 0.05 mg/lit APHA 3111-B,23rd AAS 8 Fluoride(F-) <0.2	5				mg/lit			
8 Fluoride(F-) <0.2	6							
9 Iron(Fe) <0.1	7				mg/lit	APHA 3111-B,23rd AAS		
10 Magnesium(Mg) <5						- 		
11 Manganese(Mn) <0.1					<u>-~</u>	The same of the sa		
12 Nitrate(NO3-) <0.5								
13 Silver(Ag) <0.05 0.1 mg/lit APHA 3111-B,23rd AAS 14 Sulphate(SO4) 2.5 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 34.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 29.8 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2 5 mg/lit APHA 3111-B,23rd AAS 20 20 20 20 20 20 20 20		The second secon						
14 Sulphate(SO4) 2.5 200 mg/lit IS 3025(Part 24) 15 Total Alkalinity 34.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 29.8 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2								
15 Total Alkalinity 34.4 200 mg/lit IS 3025(Part 23) 16 Total Hardness 29.8 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2								
16 Total Hardness 29.8 200 mg/lit IS 3025(Part 21) 17 Zinc(Zn) <0.2				با برو د بسم بوسم سموست				
17 Zinc(Zn) <0.2								
Dxic Substance 18 Nickel(NI) <0.01 0.02 mg/lit APHA 3111-B,23rd AAS	16 Total Hardness 29.8				<u> </u>			
18 Nickel(NI) <0.01 0.02 mg/lit APHA 3111-B,23rd AAS			<0.2	5	mg/lit	APHA 3111-B,23rd AAS		
19 Total Chromium(Cr) <0.01 0.05 mg/lit APHA 3111-B,23rd AAS								
	19	Total Chromium(Cr)	<0.01	0.05	mg/lit	APHA 3111-B,23rd AAS		

Note:

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2. This Test Report refers only to the sample tested.

3. The Complaint register is available with the laboratory as per Environment protection act 1986.

Verified by:

Surekha Jamdar Technical Manager ***End of Report*** Issued by:

> Shraddha Kere **Quality Manager**

Page 1 of 3 CIN: U74999MH2083PLC142228







Nar	Name of Organization : M/s.L & T Construction							
Add	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.							
Cus	Customer Reference : EH401WOD8000155 Dated 21.04.2022							
MoEFCC Validity : 16th October 2024								
Disc	cipline/ Group : Chemical-V	Vater	Test Rep	ort No.	; NIL/W/08/22/225			
Sam	ple Type : Drinking Wa	ater	Sample C	ode	; NIL/W/08/22/225			
Sam	pling Method : IS 3025 (P-	1)	Ambient 1	emperature	: 25°C			
	pling Date : 24.08.2022		Sample R	eceive Date	: 24.08.2022			
Anal	ysis Start Date : 25.08.2022		Analysis	End Date	: 02.09.2022			
Repo	orting Date : 02.09.2022		Sample Q	ty & Pkng.	: 2 lit Plastic Can & Micro Bottle			
Sam	pling Location : Belapur Wa	ter Filtration Plant D/W	Sampling	Done By	: Netel India Limited			
Sr. N	o Parameter	Result	Limit	Unit	Method			
Phys	ical Parameter							
20	Colour	<5	5	Hazen	IS 3025 (Part 4)			
21	Odour	Agreeable		_	IS 3025(Part 5)			
22	Taste	Agreeable		_	IS 3025(Part 7 & 8)			
Chen	nical Parameter							
23	Aluminium	<0.03	0.03	mg/lit	IS 3025 (Part 55)			
24	Ammonia	<0.4	0.5	mg/lit	IS 3025 (Part 34)			
25	Anionic Detergents	<0.2	0.2	mg/lit	IS 13428 (Annex K)			
26	Barium	<0.1	0.7	mg/lit	IS 13428 (Annex F)			
27	Chloramines	<4	4	mg/lit	IS 3025 (Part 26)			
28	Residual Free Chlorine	<0.1	0.2	mg/lit	IS 3025 (Part 26)			
29	Mineral Oil	<0.5	0.5	mg/lit	IS 3025 (Part 39, Clause 6)			
30	Phenolic Compounds	<0.001	0.001	mg/lit	IS 3025 (Part 43)			
31	Selenium	<0.01	0.01	mg/lit	IS 3025 (Part 56)			
32	Sulphide	<0.02	0.05	mg/lit	IS 3025 (Part 29)			
33	Total Suspended Solids	<5	-	mg/lit	IS 3025 (Part 17)			
	Substance							
34	Cadmium	<0.003	0.003	mg/lit	APHA 3111-B,23rd AAS			
35	Cyanide (CN-)	<0.05	0.05	mg/lit	APHA 3111-B,23rd AAS			
36	Lead	<0.01	0.01	mg/lit	APHA 3111-B,23rd AAS			
37	Mercury	<0.001	0.001	mg/lit	APHA 3111-B,23rd AAS			
	Molybdenum	<0.05	0.07	mg/lit	IS 3025 (Part 2)			
	Arsenic	<0.001	0.01	mg/lit	IS 3025 (Part 37)			
	Polyaromatic Hydrocarbon	<0.0001	0.0001	mg/lit	APHA 6440-B			
	Polychlorinated biphenyls	<0.0005	0.0005	mg/lit	APHA 6131- B			
	Trihalomethanes	<0.05	0.2	mg/lit	APHA 6232			
	Pesticides							
	Alachlor	BDL	20		APHA 6630-B			
	Altrazine	BDL	2		APHA 6630-B			
	Aldrin/Diedrin	BDL	0.03		APHA 6630-B			
iv /	Alpha-HCH	BDL	0.01	µg/l	APHA 6630-B			

Page 2 of 3

A Neterwala Group Company

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CIN: U74999MH2003PLC142228





Sam	pling Location : Belapur Water F	Sitration Plant D/M	Test Repo	Test Report No. : NIL/W/08/22/225			
Sumpling Essensi - Bolapar Tracor - Manager Flant D/77		Sample Code : NIL/W/08/22/225					
Samp	ling Date : 24.08.2022		Sample Re	eceive Date	: 24.08.2022		
Analy	sis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022		
Repo	ting Date : 02.09.2022		Sample Qt	y & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Sr. No	Parameter	Result	Limit	Unit	Method		
٧	Bita-HCH	BDL	0.04	µg/l	APHA 6630-B		
Vi	Butachlor	BDL	125	µg/l	АРНА 6630-В		
vii	Chlorpyriphos	BDL	30	µg/l	АРНА 6630-В		
viii	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B		
vili	Gamma-HCH	BDL	2	µg/l	APHA 6630-B		
ix	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	APHA 6630-B		
Х	DDT	BDL	1	μg/l	APHA 6630-B		
хi	Endosulfan	BDL	0.4	µg/l	APHA 6630-B		
xii	Ethion	BDL	3	µg/l	APHA 6630-B		
xiii	Isoproturon	BDL	9	µg/l	APHA 6630-B		
χίν	Malathion	BDL	190	μg/l	APHA 6630-B		
ΧV	Methyl parathion	BDL	0.3	µg/l	APHA 6630-B		
xvi	Monocrotophos	BDL	1	µg/l	АРНА 6630-В		
xvii	xvii Phorate BDL		2	µg/l	АРНА 6630-В		
3acter	ological Parameter						
44	Total Coliform	<1.8	0	MPN/100ml	IS 1622		
45	E Coli	Absent	Absent	449	IS 1622		

Note:

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Verified by:

Surekha Jamdar Technical Manager Issued by:

Shraddha Kere Quality Manager



Page 3 of 3

CIN: U74999MH2003PLC142228



Netel (India) Limited

Man	of Organization + M/s !	P. T. Construction			Motor (mora) Cir		
	Name of Organization: M/s.L & T Construction Address: Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.						
		ctober 2024	QCI-NABL		: 16th June 2024		
		cal-Water	Test Repo		: NIL/W/08/22/226		
	ole Type : Drinkin	g Water	Sample Co	ode	: NIL/W/08/22/226		
	ling Method : IS 302		Ambient Te	emperature	: 25°C		
	ling Date : 24.08.2	2022	Sample Re	ceive Date	: 24.08.2022		
	sis Start Date : 25.08.2	2022	Analysis E	nd Date	: 02.09.2022		
	ting Date : 02.09.2	2022		y & Pkng.	: 2 lit Plastic Can & Micro Bottle		
Samp	ling Location : Turbhe	Labour Camp D/W	Sampling I	Done By	: Netel India Limited		
Sr. No	Parameter	Result	Limit	Unit	Method		
hysic	cal Parameter						
1	рН @ 25 °C	7.68	6.5 - 8.5	_	IS 3025(Part 11)		
2	Turbidity	<1.0	1	NTU	IS 3025(Part 10)		
3	Total Dissolved Solids	56	500	mg/lit	IS 3025(Part 16)		
hemi	cal Parameter						
4	Boron(B)	<0.4	0.5	mg/lit	IS 3025(Part 57)		
5	Calcium(Ca)	44.6	75	mg/lit	IS 3025(Part 40)		
6	Chloride(CI)	27.6	250	mg/lit	IS 3025(Part 32)		
7	Copper(Cu)	<0.04	0.05	mg/lit	APHA 3111-B,23rd AAS		
8	Fluoride(F-)	<0.2	1	mg/lit	IS 3025(Part 60)		
9	Iron(Fe)	<0.1	0.3	mg/lit	APHA 3111-B,23rd AAS		
10	Magnesium(Mg)	<5	30	mg/lit	IS 3025 (Part 46)		
11	Manganese(Mn)	<0.1	0.1	mg/lit	APHA 3111-B,23rd AAS		
12	Nitrate(NO3-)	<0.5	45	mg/lit	IS 3025(Part 34)		
13	Silver(Ag)	<0.05	0.1	mg/lit	APHA 3111-B,23rd AAS		
14	Sulphate(SO4)	3.1	200	mg/lit	IS 3025(Part 24)		
15	Total Alkalinity	194.3	200	mg/lit	IS 3025(Part 23)		
16	Total Hardness	199.7	200	mg/lit	IS 3025(Part 21)		
17	Zinc(Zn)	<0.2	5 mg/lit APHA 3111-B,23rd AAS				
xic S	ubstance						
18	Nickel(NI)	<0.01	0.02	mg/lit	APHA 3111-B,23rd AAS		
19	Total Chromium(Cr)	<0.01	0.05	mg/lit	APHA 3111-B,23rd AAS		
lote :							

Note:

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- 2. This Test Report refers only to the sample tested.
- 3. The Complaint register is available with the laboratory as per Environment protection act 1986.

Verified by:

Surekha Jamdar Technical Manager DIA

Issued by:

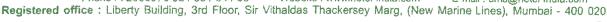
Shraddha Kere Quality Manager

A Neterwala Group Company

CIN: U74999MH2003PLC142228

Office & Laboratory: W-408, Rabale MIDC, TTC Industrial Area, Navi Mumbai - 400 701.

Phone: 72080976 92 / 93 / 94 / 95 • Website: www.netel-india.com • E-mail: ems@netel-india.com







Netel (India) Limited

,			CLI OITI		Meter (III ala) Eli
	e of Organization : M/s.L & T				
Add		1-Sewri Timber Pond, N		a, Sewri(Eas	st), Mumbai.
		D8000155 Dated 21.04	4.2022		
MoE	FCC Validity : 16th Octob	per 2024			
Disci	pline/ Group : Chemical-	Water	Test Repo	ort No.	: NIL/W/08/22/226
Samj	ole Type : Drinking W	/ater	Sample C	ode	: NIL/W/08/22/226
Samp	oling Method : IS 3025 (P	-1)	Ambient T	emperature	: 25°C
Samp	oling Date : 24.08.2022	2	Sample Re	eceive Date	: 24.08.2022
Analy	sis Start Date : 25.08.2022	2	Analysis I	End Date	: 02.09.2022
Repo	rting Date : 02.09.2022	2	Sample Q	ty & Pkng.	: 2 lit Plastic Can & Micro Bottle
Samp	oling Location : Turbhe Lat	oour Camp D/W	Sampling	Done By	: Netel India Limited
Sr. No	Parameter	Result	Limit	Unit	Method
² hysi	cal Parameter	The second section of the second section of the second section of the second section of the second section of			
20	Colour	<5	5	Hazen	IS 3025 (Part 4)
21	Odour	Agreeable		_	IS 3025(Part 5)
22	Taste	Agreeable		-	IS 3025(Part 7 & 8)
hem	ical Parameter		····		4
23	Aluminium	<0.03	0.03	mg/lit	IS 3025 (Part 55)
24	Ammonia	<0.4	0.5	mg/lit	IS 3025 (Part 34)
25	Anionic Detergents	<0.2	0.2	mg/lit	IS 13428 (Annex K)
26	Barium	<0.1	0.7	mg/lit	IS 13428 (Annex F)
27	Chloramines	<4	4	mg/lit	IS 3025 (Part 26)
28	Residual Free Chlorine	<0.1	0.2	mg/lit	IS 3025 (Part 26)
29	Mineral Oil	<0.5	0.5	mg/lit	IS 3025 (Part 39, Clause 6)
30	Phenolic Compounds	<0.001	0.001	mg/lit	IS 3025 (Part 43)
31	Selenium	<0.01	0.01	mg/lit	IS 3025 (Part 56)
32	Sulphide	<0.02	0.05	mg/lit	IS 3025 (Part 29)
33	Total Suspended Solids	<5		mg/lit	IS 3025 (Part 17)
oxic S	Substance				
34	Cadmium	< 0.003	0.003	mg/lit	APHA 3111-B,23rd AAS
35	Cyanide (CN-)	<0.05	0.05	mg/lit	APHA 3111-B,23rd AAS
36	Lead	<0.01	0.01	mg/lit	APHA 3111-B,23rd AAS
37	Mercury	<0.001	0.001	mg/lit	APHA 3111-B,23rd AAS
38	Molybdenum	<0.05	0.07	mg/lit	IS 3025 (Part 2)
39	Arsenic	<0.001	0.01	mg/lit	IS 3025 (Part 37)
40	Polyaromatic Hydrocarbon	<0.0001	0.0001	mg/lit	APHA 6440-B
11	Polychlorinated biphenyls	<0.0005	0.0005	mg/lit	APHA 6131- B
2	Trihalomethanes	<0.05	0.2	mg/lit	APHA 6232
13	Pesticides				
i /	Alachlor	BDL	20	µg/l	APHA 6630-B
ii /	Altrazine	BDL	2	μg/l	APHA 6630-B
ii /	Aldrin/Diedrin	BDL	0.03	µg/l	APHA 6630-B
V /	Alpha-HCH	BDL	0.01	µg/l	APHA 6630-B
4 7367					

Page 2 of 3

A Neterwala Group Company

CIN: U74999MH2003PLC142228







Sampling Location : Turbhe Labour Camp D/W			Test Report No. : NIL/W/08/22/226			
		Sample Code : NIL/W/08/22/226				
	ling Date : 24.08.2022		Sample R	eceive Date	: 24.08.2022	
	sis Start Date : 25.08.2022		Analysis F	inish Date	: 02.09.2022	
	rting Date : 02.09.2022		Sample Q	ty & Pkng.	: 2 lit Plastic Can & Micro Bottle	
Sr. No	Parameter	Result	Limit	Unit	Method	
٧	Bita-HCH	BDL	0.04	µg/l	APHA 6630-B	
Vi	Butachlor	BDL	125	µg/l	APHA 6630-B	
VÌİ	Chlorpyriphos	BDL	30	µg/l	APHA 6630-B	
Vİİİ	Delta-HCH	BDL	0.04	µg/l	APHA 6630-B	
viii	Gamma-HCH	BDL	2	µg/l	APHA 6630-B	
ĪΧ	2,4-Dichlorophenoxyacetic Acid	BDL	30	µg/l	APHA 6630-B	
Х	DDT	BDL	1	µg/l	APHA 6630-B	
Χİ	Endosulfan	BDL	0.4	µg/l	APHA 6630-B	
Ϊίχ	Ethion	BDL	3	µg/l	APHA 6630-B	
XIII	Isoproturon	BDL	9	µg/l	АРНА 6630-В	
ΧĪV	Malathion	BDL	190	µg/l	APHA 6630-B	
ΧV	Methyl parathion	BDL	0.3	µg/l	APHA 6630-B	
XVI	Monocrotophos	BDL	1	µg/l	APHA 6630-B	
xvii	Phorate	BDL	2	µg/l	APHA 6630-B	
acteri	ological Parameter	- The second second second second second second second second second second second second second second second				
44	Total Coliform	<1.8	0	MPN/100ml	IS 1622	
45 E	E Coli	Absent	Absent	_	IS 1622	

Note:

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End of Report

Verified by:

Surekha Jamdar

Technical Manager

Issued by:

Shraddha Kere

Quality Manager



Page 3 of 3





TEST REPORT

	1201 KEI OKI								
	Name of Organization : M/s.L & T Construction								
	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.								
Custo	Customer Reference : EH401WOD8000155 Dated 21.04.2022								
MoEF	CC Validity : 16 October, 2024		QCI-NABL	. Validity	: 16 June 2024				
Discip	line/ Group : Chemical-Environ	ment & Pollution	Test Repo	rt No.	: NIL/W/08/22/227				
	e Type : Waste Water		Sample Co		: NIL/W/08/22/227				
Sampl	ing Method : APHA 1060 (B & 0	()	Ambient T	emperature	e : 27°C				
·	ing Date : 24.08.2022				: 24.08.2022				
	sis Start Date : 25.08.2022				: 02.09.2022				
<u> </u>	ting Date : 02.09.2022		Sample Qt		: 2 lit Plastic Can & Micro Bottle				
	ing Location : Pre Cast Yard Bio	Toilet No 36	Sampling	·,··	: Netel India Limited				
Sr. No	Parameter		Limit	Unit	Method				
1	рН @ 25°C	7.36	5.5 - 9.0		APHA 4500-H ,23rd Ed :2017				
2	Turbidity	197	-	NTU	APHA 2130-B,23ed				
3	Total suspended Solids	292	600	mg/lit	IS 3025(Part 17):1984				
4	Total Dissolved Solids	2554	-	mg/lit	APHA 2350-C 23rd				
5	Sulphate(SO4)	38.3		mg/lit	APHA 4500-CI-B 23rd				
6	Nitrate(NO3-)	<0.5	0.5	mg/lit	APHA 4500-NO3-B 23rd				
/ 1	Biochemical Oxygen Demand(BOD) 3 days 27°C	290	350	mg/lit	IS 3025(Part 44):1993				
8	Chemical Oxygen Demand(COD) 785		-	mg/lit	APHA 5220-B 23rd Ed				
9	Phosphate	101.2		mg/lit	APHA 4500-P© 23rd Ed				
10	Oil & Grease	32	20	mg/lit	APHA 5520-B,23rd Ed				

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End of Report*

Verified by:

Surekha Jamdar Technical Manager Issued by:

Shraddha Kere Quality Manager

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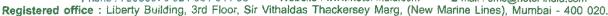
Page 1 of 2

A Neterwala Group Company

CIN: U74999MH2003PLC142228

Office & Laboratory: W-408, Rabale MIDC, TTC Industrial Area, Navi Mumbai - 400 701.

Phone: 72080976 92 / 93 / 94 / 95 • Website: www.netel-india.com • E-mail: ems@netel-india.com







	I LOT ILL OIL						
Name	Name of Organization : M/s.L & T Construction						
Addre	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.						
Custo	mer Reference : EH401WOD8	000155 Dated 21.0	04.2022				
MoEF	CC Validity: 16 October, 2024						
Discip	line/ Group : Chemical-Environ	ment & Pollution	Test Report	No. :	NIL/W/08/22/227		
Sampl	e Type : Waste Water		Sample Code	9 :	NIL/W/08/22/227		
Sampl	ing Method: APHA 1060 (B & 0	C)	Ambient Ten	perature :	27°C		
Sampling Date : 24.08.2022			Sample Rece	Sample Receive Date : 24.08.2022			
Analys	is Start Date : 25.08.2022		Analysis Finish Date : 02.09.2022				
Report	ing Date : 02.09.2022		Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle				
Sampli	ing Location : Pre Cast Yard Bio	Toilet No 36	Sampling Done By : Netel India Limited				
Sr. No	Parameter	Result	Limit	Unit	Method		
11	Dissolved Oxygen	4.7	•	mg/lit	APHA 2150(O)-B		
12	E Coli	Present	Absent	-	IS 1622:181		
13	Total Bacterial Count Count	18 x 10 4	-	cfu	IS 1622:181		

Note:

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End of Report

Verified by:

Surekha Jamdar Technical Manager Issued by:

Shraddha Kere Quality Manager



Page 2 of 2





TEST REPORT

	TEOT KEI OKI								
	Name of Organization : M/s.L & T Construction								
Addr	Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.								
Cust	Customer Reference : EH401WOD8000155 Dated 21.04,2022								
MoE	FCC Validity : 16 October, 2024		QCI-NABI	_ Validity	: 16 June 2024				
	pline/ Group : Chemical-Environ	ment & Pollution	Test Repo	ort No.	: NIL/W/08/22/228				
	le Type : Waste Water		Sample C	ode	: NIL/W/08/22/228				
Samp	ling Method : APHA 1060 (B & 0	C)	Ambient 7	emperatur	e: 27°C				
	ling Date : 24.08.2022				24.08.2022				
	sis Start Date : 25.08.2022				: 02.09.2022				
	ting Date : 02.09.2022			ty & Pkng.					
	ling Location : Store Office	`		Done By	: Netel India Limited				
Sr. No	Parameter	Result	Limit	Unit	Method				
1	pH @ 25°C	7.46	5.5 - 9.0	Spa me	APHA 4500-H ,23rd Ed :2017				
2	Turbidity	211.3	-	NTU	APHA 2130-B,23ed				
3	Total suspended Solids	380	600	mg/lit	IS 3025(Part 17):1984				
4	Total Dissolved Solids	2488	•	mg/lit	APHA 2350-C 23rd				
5	Sulphate(SO4)	29.1	-	mg/lit	APHA 4500-CI-B 23rd				
6	Nitrate(NO3-)	<0.5	0.5	mg/lit	APHA 4500-NO3-B 23rd				
7	Biochemical Oxygen Demand(BOD) 3 days 27°C	330	350	mg/lit	IS 3025(Part 44):1993				
8	8 Chemical Oxygen Demand(COD) 1012		-	mg/lit	APHA 5220-B 23rd Ed				
9 Phosphate 89.4			-	mg/lit	APHA 4500-P© 23rd Ed				
10	Oil & Grease	21	20	mg/lit	APHA 5520-B,23rd Ed				
			l						

Note:

1. This Test Report shall not be reproduced except in full, without written approval of the Laboratory.

2. This Test Report refers only to the sample tested.

3. The Complaint register is available with the laboratory as per Environment protection act 1986

Verified by:

Surekha Jamdar Technical Manager Issued by:

Shraddha Kere Quality Manager

Page 1 of 2

Neteprela Group Company

CIN: U74999MH2003PLC142228

"End of Report"





Name of Organization : M/s.L & T Construction							
Address : Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(East), Mumbai.							
Customer Reference : EH401WOD8000155 Dated 21.04.2022							
CC Validity : 16 October, 2024							
line/ Group ; Chemical-Environ	ment & Pollution	Test Report	No. :	NIL/W/08/22/228			
le Type : Waste Water		Sample Code	:	NIL/W/08/22/228			
ing Method: APHA 1060 (B & 0	D)	Ambient Ten	perature :	27°C			
Sampling Date : 24.08.2022		Sample Rece	Sample Receive Date : 24.08.2022				
sis Start Date : 25.08.2022		Analysis Finish Date : 02.09.2022					
ing Date : 02.09.2022		Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle					
ing Location : Store Office		Sampling Done By : Netel India Limited					
Parameter	Result	Limit	Unit	Method			
Dissolved Oxygen	4.5	•	mg/lit	APHA 2150(O)-B			
E Coli	Present	Absent	-	IS 1622:181			
Total Bacterial Count Count	12 x 10 3	-	cfu	IS 1622:181			
	### Gate No. 1-Signer Reference : EH401WOD8 ### CC Validity : 16 October, 2024 ### Chemical-Environ ### Waste Water ### Image	: Gate No. 1-Sewri Timber Pond, Nomer Reference : EH401WOD8000155 Dated 21.0 CC Validity : 16 October, 2024 Iline/ Group : Chemical-Environment & Pollution le Type : Waste Water ling Method : APHA 1060 (B & C) ling Date : 24.08.2022 ling Date : 02.09.2022 ling Location : Store Office Parameter Result Dissolved Oxygen 4.5 E Coli Present	: Gate No. 1-Sewri Timber Pond, Near Gadi Adda omer Reference : EH401WOD8000155 Dated 21.04.2022 CC Validity : 16 October, 2024 Iline/ Group : Chemical-Environment & Pollution	: Gate No. 1-Sewri Timber Pond, Near Gadi Adda, Sewri(Easterner Reference : EH401WOD8000155 Dated 21.04.2022 CC Validity : 16 October, 2024 Siline/ Group : Chemical-Environment & Pollution			

Note:

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End of Report

Verified by:

Surekha Jamdar **Technical Manager**

Issued by:

Shraddha Kere **Quality Manager**



Page 2 of 2





TEST REPORT

ILSI KLFOKI						
e of Organization : M/s.L & T Co.	nstruction					
	ewri Timber Pond	d, Near Gadi	Adda, Sew	ri(East), Mumbai		
omer Reference : EH401WOD8	000155 Dated 2	1.04.2022				
FCC Validity : 16 October, 2024		QCI-NABI	_ Validity	: 16 June 2024		
pline/ Group : Chemical-Environ	ment & Pollution	Test Repo	ort No.	: NIL/W/08/22/229		
		Sample C	ode	: NIL/W/08/22/229		
ling Method : APHA 1060 (B & 0	C)	Ambient 1	emperatur	e : 27°C		
			· · · · · · · · · · · · · · · · · · ·	: Netel India Limited		
Parameter	Result	Limit	Unit	Method		
pH @ 25°C	6.96	5.5 - 9.0		APHA 4500-H ,23rd Ed :2017		
Turbidity	89.5	•	NTU	APHA 2130-B,23ed		
Total suspended Solids	140	600	mg/lit	IS 3025(Part 17):1984		
Total Dissolved Solids	1645	•	mg/lit	APHA 2350-C 23rd		
Sulphate(SO4)	36.9	-	mg/lit	APHA 4500-CI-B 23rd		
Nitrate(NO3-)	<0.5	0.5	mg/lit	APHA 4500-NO3-B 23rd		
Biochemical Oxygen Demand(BOD) 3 days 27°C	215	350	mg/lit	IS 3025(Part 44):1993		
Chemical Oxygen Demand(COD)	575	•	mg/lit	APHA 5220-B 23rd Ed		
Phosphate	152.9	•	mg/lit	APHA 4500-P© 23rd Ed		
Oil & Grease	28	20	mg/lit	APHA 5520-B,23rd Ed		
	ess : Gate No. 1-Seconder Reference : EH401WOD8 FCC Validity : 16 October, 2024 pline/ Group : Chemical-Environable Type : Waste Water pling Method : APHA 1060 (B & Color of the Color of	e of Organization : M/s.L & T Construction ess : Gate No. 1-Sewri Timber Pond omer Reference : EH401WOD8000155 Dated 2 FCC Validity : 16 October, 2024 pline/ Group : Chemical-Environment & Pollution ple Type : Waste Water pling Method : APHA 1060 (B & C) ling Date : 24.08.2022 sis Start Date : 25.08.2022 ting Date : 02.09.2022 ling Location : MP-20 Bio Toilet pH @ 25°C 6.96 Turbidity 89.5 Total suspended Solids 140 Total Dissolved Solids 1645 Sulphate(SO4) 36.9 Nitrate(NO3-) <0.5 Biochemical Oxygen Demand(BOD) 3 days 27°C Chemical Oxygen Demand(COD) 575 Phosphate 152.9	Formula Form	Sample S		

Note:

- 1. This Test Report shall not be reproduced except in full, without written approval of the Laboratory
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End of Report

Verified by:

Surekha Jamdar Technical Manager

issued by:

Shraddha Kere **Quality Manager**

Page 1 of 2

A Neterwala Group Company

CIN: U74999MH2003PLC142228







Name of	Organization : M/s.L & T Cor	nstruction						
Address	: Gate No. 1-Se	wri Timber Pond, N	lear Gadi Adda	, Sewri(Eas	t), Mumbai.			
Custome	r Reference : EH401WOD80	000155 Dated 21.0	4.2022					
MoEFCC	Validity: 16 October, 2024							
Discipline	/ Group : Chemical-Environr	nent & Pollution	Test Report	No. :	NIL/W/08/22/229			
Sample T	ype : Waste Water	-	Sample Code	;	NIL/W/08/22/229			
Sampling	Method : APHA 1060 (B & C)	Ambient Ten	perature :	27°C			
Sampling	Date : 24.08.2022		Sample Receive Date : 24.08.2022					
Analysis S	Start Date : 25.08.2022		Analysis Finish Date : 02.09.2022					
Reporting	Date : 02.09.2022		Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle					
Sampling	Location : MP-20 Bio Toilet		Sampling Do	ne By :	Netel India Limited			
Sr. No	Parameter	Result	Limit	Unit	Method			
11 Dis	ssolved Oxygen	5.7	•	mg/lit	APHA 2150(O)-B			
12 E (Coli	Present	Absent	-	IS 1622:181			
13 To	tal Bacterial Count Count	26 x 10 4	-	cfu	IS 1622:181			
· · · · · · · · · · · · · · · · · · ·								

Note:

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End of Report

Verified by:

Surekha Jamdar Technical Manager STORY TO STORY THE STORY T

Issued by:

Shraddha Kere Quality Manager



Page 2 of 2





TEST REPORT

) LOT KLFOKT						
Name	of Organization : M/s.L & T Cor						
Addre		ewri Timber Pond		Adda, Sewri	(East), Mumbai.		
Custo	omer Reference : EH401WOD80	000155 Dated 2	1.04.2022				
MoEF	CC Validity : 16 October, 2024		QCI-NABL Validity : 16 June 2024				
Discip	oline/ Group : Chemical-Environr	ment & Pollution	Test Repo	rt No.	: NIL/W/08/22/230		
·	le Type : Waste Water		Sample Co		: NIL/W/08/22/230		
Samp	ling Method: APHA 1060 (B & C	5)	Ambient T	emperature	: 27°C		
<u> </u>	ing Date : 24.08.2022		1		: 24.08.2022		
	sis Start Date : 25.08.2022				: 02.09.2022		
	ting Date : 02.09.2022			y & Pkng.	: 2 lit Plastic Can & Micro Bottle		
-	ing Location : MP-36 Bio Toilet		Sampling I		: Netel India Limited		
Sr. No	Parameter	Result	Limit	Unit	Method		
1	pH @ 25°C	6.92	5.5 - 9.0		APHA 4500-H ,23rd Ed :2017		
2	Turbidity	76.8	-	NTU	APHA 2130-B,23ed		
3	Total suspended Solids	80	600	mg/lit	IS 3025(Part 17):1984		
4	Total Dissolved Solids	1672	-	mg/lit	APHA 2350-C 23rd		
5	Sulphate(SO4)	44.7	-	mg/lit	APHA 4500-CI-B 23rd		
6	Nitrate(NO3-)	<0.5	0.5	mg/lit	APHA 4500-NO3-B 23rd		
7	Biochemical Oxygen Demand(BOD) 3 days 27°C	105	350	mg/lit	IS 3025(Part 44):1993		
8	Chemical Oxygen Demand(COD)	312	-	mg/lit	APHA 5220-B 23rd Ed		
9 Phosphate 150.6 - mg/lit APHA 4500-P© 23rd Ed							
10	Oil & Grease	24	20	mg/lit	APHA 5520-B,23rd Ed		

Note:

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Verified by:

Surekha Jamdar

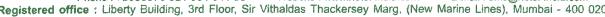
Technical Manager

Issued by:

cere

Shraddha Kere **Quality Manager**

Page 1 of 2





DAEWOO-TPLJV

C/O TATA Projects Limited, 11th Floor, Hiranandani Knowledge Park, Technology Street, Powai, Mumbai-400 076, India

Ref: MTHL/DW-TPL/GC/LT/ENV/2022-4272

Date: 12 Oct 2022

10,

: The Engineer

General Consultant for MTHL Project

6th Floor, A Wing, MMRDA Old Building, Bandra-Kurla Complex

Bandra (E), Mumbai 400 051

Kind Attn.

: Dr. Sham, Siu hung Robin

Project

: Procurement of Mumbai Trans Harbour Link Project (Package 2) Construction of 7.807km long bridge section (CH 10+380-CH 18+187) across Mumbai Bay including

Shivaji Nagar Interchange

Subject

Submission of Quarterly Environmental Monitoring Reports (July 2022 to

September 2022)

nef.

: 1. Contract Agreement no. MMRDA/ENG1/00753 dated 19-01-2018

Dear Sir,

The Contractor is submitting herewith Quarterly Environmental Monitoring Reports for the period July 2022 to September 2022.

This is for your information & records.

Yours truly,

For Daewoo-TPLJV

Tae-il KIM / Project Director

Encl: Quarterly Environmental Monitoring Reports for the period July 2022 to September 2022

CC:

- 1) Mr. S. A. Wandhekar, Engineer-In-Chief, MMRDA
- 2) Mr. Yatin Sakhalkar, Superintendent Engineer, MMRDA
- 3) Mr. Abhijit Bhisikar, Executive Engineer, MMRDA
- 4) Mr. Hohsing Lee, PE, SE, Resident Engineer, General Consultant (MTHL)





Lab Gazetted by MoEF&CC-Govt of India

Lab Accredited by NASL - ISO/IEC 17025:2017 [TC-5600 Valid until 03:08 2024 in the field of Testing] QCI-NABET Accredited EIA Consulting Organization

STP/ETP/WIP Project Management Consultarity



PSO 9001 2015 ISC 45001 2518

Lab (Survey No. 93/A, Conformity Hissa No 2 G V Brothers Bldg., Bala Compound, Kliepat, Near Flower Valley, Thane (West), 400 E01, Maharashira, India Tele: +91 22 2547 49 07 (+91 22 2547 62 17 Email: lab@ultratech in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: DAEWOO-TATA PROJECTS LIMITED- JV

3rd Floor, Transocean House, Lake Boulevard Road, Hiranadani Gardens,

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Your Project: "MTHL Package 2 Project"

REPORT NO.

AMBIENT NOISE LEVEL MONITORING

UT/ELS/REPORT/5455/10-2022

ISSUE DATE YOUR REF.

06/10/2022

REF, DATE

83000164-A6

27/01/2022

SAMPLE PARTICULARS Sampling Plan Ref. No.

23-09/2022

UT/LQMS/SOP/NO1

Sample Lab Code Survey Done By

UT/ELS/337/09-2022

Sampling Procedure Date of Monitoring

20/09/2022 to 21/09/2022

ULTRA TECH

	THE STATE OF THE S			Noise	Level Rea	ding in dB(A) Leq			
Sr. No.	Location	Time (Hrs)		Day dB(A)	Mari Pris A	,	Vight dB[/	4)
		rine (ms)	Leg	Lenca	Lean	Time (Hrs)	Leg	Larin	Lma
01.	At Nhava Temporary Bridge MP-218	06:00 to 07:00	66.4	59.1	74.0	22:00 to 23:00	66.9	59.7	76.5
	Co-ordinates	07:00 to 08:00	70.6	59.1	H3.1	23:00 to 00:00	65.5	57.8	74.3
	18 56 38.8"N, 72 59'43.3"E	0H:0H to 09:00	68.2	59.6	70.5	-00:00 to 01:00	64.1	55.1	72.7
		09:00 to 10:00	67.6	59.5	77,7	Ø1:00 to 02:00	61.5	52.2	72.1
		10:00 to 11:00	68.9	59.5	77.5	02:00 to 03:00	593	49.6	69.0
		11:00 to 12:00	70.1	61.2	79.6	03:00 to 04:00	62.4	46.7	76.3
		12:00 to 13:00	70.4	63.1	79.8	04:00 to 05:00	62.7	50.2	74.2
		13:00 to 14:00	73.4	67.4	82.6	05:00 to 06:00	44 i	54.1	73.6
		14:00 to 15:00	72.7	65.0	82.5		••		714 Jan
		15:00 to 16:00	72.4	61.6	83.1	1-	4-2	4/A	
		16:00 to 17:00	72.9	61.6	83.6	44			
		17:00 to 18:00	72.2	59.1	B1.H				
		18:00 to 19:00	70.2	58.5	78.7	4-	Marie Company of the		
		19:00 to 20:00	76,6	66.0	00.5				
		20:00 to 21:00	6B.3	59.9	77.1	1.0	A TRANSMITTER		2.
		21:00 to 22:00	66.0	54.7	74.2	-		33.	est of Leaves
		Lze		73.0		Limits	n dB(A) L	ed as bar	
		Lso		65.4		THE NOISE POLI	OL) RULE	5. 2000	
İ		L ₉₀		62.0		(See rule 3(1) an Standard	d 4(1)) An s in respec	ubjent Air 4 of Naise	Quality
		Day Leq		71.3			75		
		Night Leq		63,9			70		A STATE OF THE STA

Remark/Statement of Conformity:

The observed values for LegdB(A) for Day Time & Night Time are within the standard limits as per Ambient Air Quality Standards in respect of Noise prescribed in The Noise Pollution (Regulation and Control) Rules, 2000 for Industrial Zone

Note:

Monitoring area coming under industrial Zene

2 Day Time - 56 00 Hrs to 22 00 Hrs and Night Time - 22:00 Hrs to 66 00 Hrs.

Sampling Equipment	Instrument Used	Make & Model	Calibration Status
Details	Sound Level Meter	Make -Eutron: Model = SL4033SD Sr. No. Q660350	Valid up to - 13/10/2022
Man 1 Thus tout mount of	- Land and Land State and a state of the	A Section of the sect	

This first respect refers only to the monitoring conducted

2. This test report may not be reproduced in part, without the permission of this laboratory.

3. Any correction invalidates this test report.

END OF REPORT

Mana

Par ULTRA TECH.

Meghan Patil (Authorized Signatory)

Page 1 of 1



Lati-Gazetted by MoEF&CC-Govt, of India Las. Accredited by NASL - ISO/IEC 17025 2017 [FC-5606 Valid until 03.08 2024 in the field of Testing] QCI-NASET Accredited EIA Consulting Organization STP/ETP/WTP Project Management Consultants

ISO 9001 2015 ISO 45001 2018

Lab :Survey No. 93/A. Conformity Hissa No. 2 G.V. Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. DAEWOO-TATA PROJECTS LIMITED- JV

3rd Floor, Transocean House, Lake Boulevard Road, Hiranandani Gardens,

MHADA Colony 19, Powai, Mumbai = 400076, Maharashtra, India.

For Project: "MTHL Package 2 Project"

ULR NO.

REPORT NO. : UT/ELS/ REPORT/ 5392/10-2022

ISSUE DATE : 01/10/2022

YOUR REF. : 83000164-A6 REF. DATE : 27/01/2022

SAMPLE PARTICULARS

Sample Registration Date

Analysis Completion Date

Ambient Air Temperature

Analysis Starting Date

Relative Humidity

Sampling Plan Ref. No.: 23-09/2022 Sampling Procedure Date & Time of Sampling

UT/LQMS/SOP/AA01A 20/09/2022 14:30 21/09/2022 14:30 Hrs. Location Code Sample Location : AM2 : At Casting Yard Between Batching Plant No. 1 & 2 (Fortnightly 149 of 212)

21/09/2022 21/09/2022

30/09/2022 Sec.

24.4 27.3 69.5 86.5 វិញ

GPS Co-ordinates Sample Collected By

Sample Lab Code

AMBIENT AIR QUALITY MONITORING

N 18957'57.7", E 73900'39.7" : ULTRA TECH

Height of Sampler : 1 Meter Sampling Duration

Hours:Minutes : 24:00 : UT/ELS/336/09-2022

Sr. No.	Test Parameter	Test Method	Test Result	Unit	NAAQMS industrial, Residential, Rural and Other Area 24 Hrs. or 1 Hrab
1 1	otal VOCs (as BTX)	IS 5182 (Part 11): 2006	2.7	μg/m ^T	34 113:00 1111

to

Bemark/Statement of Conformity

Sampling	instrument (lsed	Lab ID	Make	Model	\$1. No.	Calibration Valid up to
Equipment Details	Low Flow Air Sampler	UT/LAB/180	Politech	PEM - LFAS 4	116	10/61/2023
	15. A. J. G. 15.	183		5		-)

were collected by following laboratory's SOF (UT/LDMS/SOP/AAD1A) based on CPCB Gaidelinex - National Ambient Air Quality Monitoring Series: NAAQMS/2003-04 and respective test methods.

2. This test tepret refers only to the sample tested

Monitoring area coming under Industrial areas and observed values are relevant to sample collected only

This test report may not be reproduced in part, without the permission of this laboratory.

Any correction invalidates this test report.
Weather during sampling was Rainy and Cloudy.

*Annual arithmetic mean of minimum 1014 measurements in a year at a natricular site taken twice a week 24 hourly at uniform intervals

Time wrighted average shall be complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the time, they may exceed the limits but not at the complied with 08% of the time in a year, 2% of the t

END OF REPORT -

For ULTRATECH,

Meghan Patil

(Authorized Signatory)





Lab.Gazeited by MoEF&CC-Govt, of India

Lah. Accredited by NABL - ISO/IEC 17825:2017 [TC 5680, Valid until 03 08, 2024 in the field of Testing]

OCI-NABET Accredited EIA Consulting Organization

STP/ETP/WTP Project Management Consultants



100.5600

150 9001 ISO 45001 2018

Lab (Survey No. 93/A, Conformity Hissa No 2 G V Brothers Bidg , Sata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech in Visit us at : www.ultratech in

TEST REPORT

ISSUED TO: M/s. DAEWOO-TATA PROJECTS LIMITED- IV

3rd Floor, Transocean House, Lake Boulevard Road, Hiranandani Gardens.

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Project: "MTHL Package 2 Project"

ULR NO. ULR-TC560022000003297F

: UT/ELS/REPORT/ 5457/10-2022 REPORT NO.

ISSUE DATE : 06/10/2022 YOUR REF.

: 83000164-A6 REF. DATE : 27/03/2022

SAMPLE PARTICULARS

Date & Time of Sampling

Sample Registration Date

Analysis Completion Date

Analysis Starting Date

Sampling Plan Ref. No.: Sampling Procedure

23-09/2022

UT/EQMS/SOP/AA01A

22/09/2022

29/09/2022

21/09/2022 14:45

22/09/2022 14:45 Hrs. 22/09/2022

Hrs. 10

to 30.1 Q. **BB.6**

AMBIENT AIR QUALITY MONITORING

Location Code : AM2

Sample Location : At Casting Yard Hetween Batching Plant

No. 1 & 2 (Fortnightly 151 of 212)

GPS Co-ordinates : N 19957'57.7", E 73900'39.7".

Sample Collected By : ULTRA TECH Height of Sampler : I Meter

: 24:00 Hours:Minures

Ambient Air Temperature 26.9 °C Sampling Duration **Relative Humidity** 72.6 % : UT/ELS/382/09-2022 Sample Lab Code

Sr. No.	Test Parameter	Test Method	Test Result	Unit	NAAQMS Industrial, Revidential, Rural and Other Area 24 Hrs. or 1 Hr**
1	Sulphur Dioxide (SO _d)	15 5182 (Part 2) : 2001	BDE[DL=5]	ng/m	80
2	Nitrogen Dioxide (NO ₂)	15 5182 (Part 6) : 2006	27	µg/m³	EQ.
3	Particulate Matter (PM ₁₀)	EPA/6Z5/R-96/0101 CM IO-Z.1	90	µg/m²	100
4	Particulate Matter (PM _{2.5})	fS 5182 (Part 24): 2019	33	ug/m	60
5	Ozone (O,)	IS 5182 (Part 9): 1974	RDL[DL=20]	µg/m²	180
б	Lead (Pb)	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	0.07	µg/m	1.0
7	Carbon Monoxide (CO) [†]	IS 5182 (Part 10): 1999	1,3	mg/m ³	4
8	Ammonia (NH ₃)	ISC 16th Ed. Method 401	54	μg/m	409
9	Benzene (C _n H _n)	IS 5182 (Part 11) : 2006	2.9	ng/m	5.4
10	Benzo(a)Pyrene (BaF) - Paticulate Phase	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	BDL[DL=0.5]	ng/m	11.
11	Arsenic (As)	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	RDL[DL=2]	ng/m	6*
12	Nicket (Ni)	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	BDL[DL=7]	ng/m	20*
: Sam	pling Period 1 Hr.	RDL: Below Detection Limit		112	L=Detection Limit

Remark/ Statement of Conformity:

The parameters tested above are found to be within 24 hourly FWA of National Ambient Air Quality Monitoring Standard (NAAQMS), Part III- Section IV

Sampling	instrument Used	Lab ID	Make	Model	St. No.	Calibration Valid up to
Equipment	Respirable Dust Sampler	UT/LAB/190	Folkech	PEM-R115 5	9111	28/12/2022
Details	Fine Dust Sampler	UT/LAB/217	Politech	PEM-ABS 2.5/10µ	3270	17/02/2023

1. Samples were collected by following laboratory's SOP (UT/LQMS/SOP/AAGLA) based on CPCB Gordebnes. - National Ambient Air Quality Monitoring Series: NAAQMS/2003-04 Note and respective test methods.

2. This test report refers only to the sample tested.

4. Mainturing area coming under Industrial areas and observed values are relevant to sample collected only.

4 This test report may not be reproduced in part, without the permission of this laboratory

Any connection invalidates this test report.
 Weather during sampling was. Rainy and Cloudy.

6. Weather training sampling was many one country.

7. "Annual arithmetic mean of minimum 104 measurements in a year at a particular size taken twice a week 24 hearly at undopulatorials.

8. "Three weighted average shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but only a way com-

Courte monte orage.

END OF REPORT -



of Ultra Tech,

/Meghan Patil (Adthorized Signatory)

1 of 1

H.O.: Unit No. 224.225.206, Jai Commercial Complex, Eastern Express Highway. Opp. Carlbury Factory, Khopat, Thane (W) 400-601. Maharashtra, India. Tel : +91-22+2538 01 98 / 2545 03 72 / 2544 62 61 | Fax : +91-22-2542 96 50 Email : sales@ultrotech.in

Pune: +91-29-29525517 - pune@ultratach.in | Kochr: +91-048-14011173 / +91-0895200526 - kochi@ultrajach.in

Kolkata: +033-40089145 / +91-9674488198 - kolkata@ultratech in



Lab. Gazetted by MoEF&CC-Govt, of India Lab. Accredited by NABL - ISO/IEC 17025/2017 [TC-5600 View until 03 08 2024 in the field of Testing] QCI-NABET Accredited EIA Consuling Organization STP/ETP/WTP Project Management Consultants



TC:5600

ISO 9001 2015 SO 45001 2016

Lab :Survey No. 93/A, Conformity Hissa No.2 G V Brothers Belg : Bata Compound, Knopat, Near Flower Valley. Thane (West) - 400 601. Maharashira, India Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: M/s. DAEWOO-TATA PROJECTS LIMITED- IV

3rd Floor, Transocean House, Lake Boulevard Road, Hiranandani Gardens,

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Project: "MTHL Package 2 Project"

ULR-TC560022000003248F

REPORT NO. : UT/ELS/ REPORT/ 5389/10-2022

ISSUE DATE : 01/10/2022

YOUR REF. : B3000164-A6 REF. DATE : 27/01/2022

SAMPLE PARTICULARS

Date & Time of Sampling

Sample Registration Date

Analysis Starting Date

Sampling Plan Ref. No.: Sampling Procedure

23-09/2022 UT/LQMS/SOP/AA01A

20/09/2022 14:00 Hrs.

21/09/2022 14:00 Hrs.

21/09/2022 21/09/2022

Analysis Completion Date 30/09/2022 "C Ambient Air Temperature 24.3 Relative Humidity

69.4 %

Éta 27.2 °C to 86.4

AMBIENT AIR QUALITY MONITORING **Location Code** : AM3

Sample Location : NHAVA Temporary Bridge Nr. MP-218

(Fortnightly 150 of 212) **GPS Co-ordinates** : N 18958'38.6", E 729S9'42.8"

Sample Collected By : ULTRA TECH Height of Sampler : 1 Meter

Sampling Duration Hours: Minutes : 24:00 Sample Lab Code HT/FLS/335/09-2023

Sr. No.	Test Parameter Sulphur Dioxide (SO ₂)	Test Method	Test Result	Unit	NAAQMS industrial, Residential, Rural and Other Area 24 Hrs. or 1 He**
1		IS 5182 (Part 2) : 2001	BDL[DL=5]	µg/m	80
	Nitrogen Dioxide (NO ₂)	IS 5182 (Part 6) : 2006	24	μg/m³	80
3	Particulate Matter (PM ₁₀)	EPA/625/R-96/0101 CM IO-2.1	79	μg/m	100
4	Particulate Matter (PM ₂₋₁)	IS 5182 (Past 24) : 2019	34	pg/m²	60
5	Ozone (O ₁) ¹	IS 5182 (Part 9): 1974	HDL/DL=20	μg/m ³	180
6	Lead (Ph)	GPCB Guidelines, Volume-I, NAAQMS/36/2012-13	0.07	µg/m	1.0
7	Carbon Monoxide (CO)*	15 5182 (Part 10): 1999	1.4	mg/m	4
	Ammonia (NH _d)	ISC 16th Ed. Method 407	56	ng/m	400
9	Benzene [C ₈ H ₃]	IS 5182 (Part 11): 2006	2.4	μg/m	5*
10	Benzo(n)Pyrene (RaF) - Paticulate Phase	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	BDL[DL=0.5]	ng/m	
11	Arsenic (As)	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	BDL[DL=2]		1*
12	Nickel (Ni)	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13		ng/m [*]	6*
Sam	pling Period 1 Hr.	BDL: Below Detection Limit	BDL[DL=7]	ng/m	20° L=Detection Limit

Remark/Statement of Conformity:

The parameters tested above are found to be within 24 tourly TWA of National Ambient Air Quality Mountering Standard (NAAQMS), Part III- Section IV.

	Contract of the Contract of th			and the same of th		
Sampling	Instrument Used	Labifi	Make	Model	St. No.	Calibration Valid up to
Equipment	Respirable Dust Sample:	111/EA.1/11	Politech	PRM-RBS 4	1618	23701/2523
Details	Eine Bast Sampler	UT/LAB/121	Polltreb	PEM-Abs 2.5/10g	19013	116/50/2023

1. Samples were collected by following Schotstery's SUP (UT/LQMS/SUP/AA01A) based on CPCE Guidelines - National Ambient Air Quality Monitoring Service: NAAQMS/2003-04 and respective test methods.

2. This test report refers only to the sample rested.

Monitoring area commit under industrial areas and observed values are relevant to sample collected only

4. This test report may not be reproduced in part, without the permission of this laboratory

5. Any correction invalidates this test conort.
6. Weather during sampling was. Bailey and Cloudy

7. "Annual arithmetic mean of manimum 104 measurements in a year at a particular site taken twice a week 24 hoursy at inclored interval." R. Time weighted average shall be complied with 93% of the time is a year. 2% of the time, they may exceed the linera last for 2. This test report shall be referred alone with Test Report Sp. 91/E15/REPORT/5390/10 2072 Dated 01/10/2022 for final contents.

ative monitorings.

- END OF REPORT -

ኒስ ሀኒፐ RA TECH, ind.

> Meghan Patil (Authorized Signatory)

2 of 2

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Kolkata: +033-40089145 / +91-9674488198 - kolkata@ultratechun



Lab.Gazetted by MoEF&CC-Govt, of India

Lab. Accredited by NABL - ISO/IEC 17025-2017 [TC-5600, Valid until 03-98-2024 in the held of Testing]

QCI-NABET Accredited EIA Consulting Organization

STP/ETP/WTP Project Management Consultants



TCL56th0

190 9001 2015 ISC 45001 | 2018

Lab :Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bidg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 901, Maharastitin, India Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: fab@ultratech.in Visit us at: www.ultratech.in

TEST REPORT

ISSUED TO: M/s. DAEWOO-TATA PROJECTS LIMITED- IV

3rd Floor, Transocean House, Lake Boulevard Road, Hiranandani Gardens,

MHADA Colony 19, Powal, Mumbai - 400076, Maharashtra, India.

For Project: "MTHL Package 2 Project"

ULR-TC560022000003298F

REPORT NO. : UT/ELS/REPORT/ 5458/10-2022

ISSUE DATE : 06/10/2022 YOUR REF. : 83000164-A6

REF. DATE : 27/01/2022

SAMPLE PARTICULARS Sampling Plan Ref. No.:

23-09/2022

Sampling Procedure Date & Time of Sampling

Sample Registration Date

Analysis Completion Date

Analysis Starting Date

UT/LQMS/SOP/AA01A 21/09/2022 14:15 22/09/2022 14:15

22/09/2022 22/09/2022 29/09/2022

Ambient Air Temperature 26.9

30.1 "O ξĎ 896 tn.

His.

Hrs.

tu

AMBIENT AIR QUALITY MONITORING

Location Code ; AM2

: NHAVA Temporary Bridge Nr. MP-218 Sample Location

(Fortnightly 152 of 212) **GPS Co-ordinates**

Sample Collected By Height of Sampler

Sampling Duration Sample Lab Code

: N 18158'38.6", E 72159'42.8"

: ULTRA TECH : 1 Meter

24:00 Hours:Minutes UT/ELS/383/09-2022

Sr. No.	tive Humidity : 72.8 % Test Parameter	Test Method	Test Result	Unit	NAAQMS Industrial, Residential, Bural and Other Area 24 Hrs or 1 Re**
1	Sulphur Dioxide (SO ₂)	IS 5182 (Part 2): 2001	BDL[DL=5]	µg/m	80
2	Nitrogen Dioxide (NO ₂)	IS 5182 (Part 6) : 2006	28	µg/m [*]	80
3	Particulate Matter (PM ₁₀)	EPA/625/R-96/0101 CM 10-2.1	83	μg/m ^T	100
4	Particulate Matter (PM _{2.5})	IS 5182 (Part 24) : 2019	.31	ug/m	60
5	Ozone (O ₃)'	IS 5182 (Part 9): 1974	BDL[DL=20]	ug/m²	TEO
6	Lead (Pb)	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	0.06	$\mu g/m^2$	1.0
7	Carbon Monoxide (CO) ¹	IS 518Z (Part 10): 1999	1.1	mg/m	4
8	Animonia (NH ₁)	ISC 16th Ed. Method 401	47	ng/m³	400
9	Benzene (C ₆ H ₆)	IS 5182 (Part 11): 2006	2.7	pg/m	5*
10	Benzo(α)Pyrene (BaP) - Paticulate Phase	CPC8 Guidelines, Volume-I, NAAQMS/36/2012-13	BDL[DL=0.5]	ng/m	1*
11	Arsenic (As)	CPCB Guidelines, Volume-I, NAAQMS/36/2012-13	BDL[DL=2]	ng/m ²	6"
12	Nickel (Ni)	CPCR Guidelines, Volume-I, NAAQMS/36/2012-13	BDL[DL=7]	ng/m	Z0*
Sam	pling Period 1 Hr.	BDL: Below Detection Limit		- 2	L=Detection Limi

Remark/ Statement of Conformity:

The parameters tested above are found to be within 24 hourly TWA of National Ambient Air Quality Monitoring Standard [NAAQMS], Part III- Section IV. NAAQMS is provided as Annexure-1 for your reference [Turnover to find Annexure]

2-110-100-100-100-100-100-100-100-100-10	(2336)		manage, and			
Sampling	Instrument Used	Lab (D	Make	Model	St. No.	Calibration Valid up to
Equipment	Respirable Dust Sampler	UT/LAB/191	Folltech	PEM-RUS 9	1018	21/91/2023
Details	Fine Dust Sampler	UT/LAB/121	Politech	PEM-ADS 2.5/10µ	19013	06/10/2022

1 Samples were collected by following liberatory's SDP [UT/kQM5/SOP/AADIA] based on CPLB Guidelines - National Ambient Air Quality Manistering Series: NAAQM5/2003-04 and respective test methods

2. This test report refers only to the sample tested.

Monitoring area coming under Industrial areas and observed values are relevant to sample collected unity.

4. This test region may not be reproduced in part, without the permission of this laboratory

5. Any currection invalidates this test report.

6. Weather during sampling was Rainy and Gloudy

Z. *Annual arithmetic mean of minimum 104 measurements in a year at a particular size taken twice a week 24 huardy at uniform adjected.

8. **Time weighted average shall be complied with 98% of the time in a year. 2% of the time, they may exceed the imms but het but twice twent days curive mentionings.

END OF REPORT -

Kor ULTRA (TECH,

Meghan Patil (Authorized Signatury)

1 of 1

H.O.: Unit No. 224,225 206, Jai Commercial Complex, Eastern Express Highway, Opp. Cadbury Factory, Khopat, Thane (W) 400 601, Maharashtra, India Tel: +91-22+2538 01 98 / 2545 03 72 / 2544 82 51 Fax: +91-22-2542 96 50 Email: sales@ultratech.in

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Lab Gazetted by MoEF&CC-Govt, of India Lab. Accordised by NABL - ISO/IEC 17025.2017 [TC-5608 Valid until 03-08-2024 in the field of Testing] QCI-NABET Accredited EIA Consulting Organization STP/ETP/WTP Project Management Consultants

ISO 9001 2015 ISO 45001 2018

Lab (Survey No. 93/A, Conformity Hissa No 2 G V Stothers Bldg , Bata Compound, Khopal, Near Flower Valley, Thane (West) - 400 661, Maharashtra, India Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech in Visit us at: www.ultratech.in

TEST REPORT

ISSUED TO: M/s. DAEWOO-TATA PROJECTS LIMITED- IV

3rd Floor, Transocean House, Lake Boolevard Road, Hiranandani Gardens,

20/09/2022 14:00

21/09/2022 14:00

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Project: "MTHL Package 2 Project"

ULR NO.

REPORT NO. : UT/ELS/ REPORT/ 5390/10-2022

ISSUE DATE : 01/10/2022 YOUR REF. : 83000164-A6

REF. DATE : 27/01/2022

0.1

1.1%

SAMPLE PARTICULARS AMBIENT AIR QUALITY MONITORING Sampling Plan Ref. No.:

Hrs.

Hrs.

23-09/2022 Location Code : AM3 UT/LQMS/SOP/AAUTA

Sample Location : NHAVA Temporary Bridge Nr. MP-218

(Fortnightly 150 of 212)

to Sample Registration Date 21/09/2022 **GPS** Co-ordinates : N 18°58'38.6", E 72°59'42.8" Analysis Starting Date 21/09/2022

Sample Collected By ; ULTRA TECH Analysis Completion Date 30/09/2022 Height of Sampler : 1 Meter

Ambient Air Temperature : 24.3 "C to 27.2 Sampling Duration 24:00 Hours: Minutes

Relative Humidity 69.4 % 86.4 10 : UT/ELS/335/09-2022 Sample Lab Code

Sr. No.	Test Parameter	Test Method	Test Result	Unit	NAAQMS Industrial, Residential, Rural and Other Area
1 T	otal VOCs (us BTX)	IS 5182 (Part 11): 2006	2.4	μg/m ³	Z4 Hrs. or 1 Hr**

Remark/ Statement of Conformity:

Sampling Procedure

Date & Time of Sampling

Sampling	Instrument Used	10 اطفا	Make	Model	SI, No.	Calibration Valid up to
Equipment Details	Low Flow Art Sampler	OT/EAB/181	Pollrech	PEM - LEAS 4	216	10/01/2023
174 12121			201	*9	-	/*

Note: 1. Samples were collected by following laboratory's SUP [HT/LQMS/SOP/AMHA]: based on CPUB Guidelines - National Ambient Air Quality Monitoring Series. NAAQMS/2003-1M and respective test methods.

2. This test report refers only to the sample tested.

- 3. Monitoring area considering under Industrial areas and observed values are relevant to sample collected only.
- This test report may not be reproduced in part, without the permussion of this laboratory Any correction invalidates this test report

Weather during tampling was Ramy and Cloudy.

- Annual architectic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.
- Time weighted accorage shall be cominied with 98% of the time in a year, 2% of the time, they may exceed the limits had not sent connective monitorings.
 This test report shall be referred along eath Yest Remot No. BT/FLS/REPORT/5389/10-2022 Dates 01/10/2022 for this conclusion.

END OF REPORT -

For ULTRA TECH.

Meghan Patil

(Authorized Signatory)





Lab Gazetted by MoEF&CC-Govt. of India

Lab. Accredited by NABL - ISO/IEC 17025 2017 (TC-560). Valid until 03 08 2024 in the field of Testinal

QCI-NABET Accredited EIA Consulting Organization

STP/ETP/WTP Project Management Consultants

ISO 9001 12015 ISO 45001 2018

Lab :Survey No. 93/A, Conformity Hissa No. 2 G.V Brothers Bldg. Bata Compound, Xhopat, Near Flower Valley. Thane (West). 400 691, Maharashtra, India Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech.in Visit us at : www.ultratech.in

TEST REPORT

ISSUED TO: DAEWOO-TATA PROJECTS LIMITED- JV

3rd Floor, Transocean House, Lake Boulevard Road, Hiranadani Gardens,

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Your Project: "MTHL Package 2 Project"

REPORT NO.

UT/ELS/REPORT/5421/10-2022

ISSUE DATE YOUR REF.

MARINE WATER QUALITY MONITORING SAMPLE

03/10/2022

REF, DATE

83000164-A6 27/01/2022

SAMPLE PARTICULARS Sampling Plan Ref. No.

Sampling Procedure

23.09/2022

UT/LQMS/SOP/W01A

Sample Type Sample Location Marine Water

20/09/2022 4

At Marine Zone

mig/i.

mg/L

mg/L

mg/L

mg/L

Sample Registration Date Date & Time of Sampling **Analysis Starting Date**

20/09/2022 at 12:20Hrs 20/09/2022

Sample Quantity & Packing Details

Co-ordinates: 18°59'33.20"N, 72°57'36.90"E 11 in Wide Mouth Glass Bottle for Oil

and Grease, 300ml BOD Bottle with

stopper for DO and 21. In Plastic Container for other parameters.

Analysis Completion Date Sample Collected By

29/09/2022 **ULTRA TECH**

Sample Lab Code

UT/ELS/326/09-2022

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standards Limits (Primary Water (pasity Citizets for Class SW IV Waters (For Harbour Waters) EP Rides - 1966)
1.	Temperature	IS 3025 (Part 09):1984	28.7	Υ.C	1
79 80	Turbidity	IS 3025 (Part 10):1984	16.8	NTU	
3	pH	IS 3025 (Part 11):2022	7.5		60 to 9.0
4,	Dissolved Oxygen	IS 3025 (Part 38):1989	6.0	mg/L	Man. 3.0
ţ.	Biochemical Oxygen demand (At 27°C for 3 Days)	IS 3025 (Part 44):1993	BDL[DL=2]	nig/l.	5.0
ti	Chemical Oxygen demand	IS 3025 (Part 46):1994	12	mg/L	
7	Total Alkalinity as CaCO ₁	IS 3025 (Part 23):1986	143	nig/L	
8	Total Hardness as CaCO ₂	IS 3025 (Part 21):2009	isRuu	mg/[,	
9	Salimity	COMAPS	29.5	Pht _p	**************************************
10.	Oil & Grease	IS 3025 (Part 39): 2021	BDL[DL=2]	mg/L	10
11.	Arsenic as As	APHA 23rt Ed. 3114 C	BDL/DL=0.0031	mg/L	84

IS 3025 (Part 52):2003

IS 3025 (Part 41):1992

IS 3025 (Part 47):1994

IS 3025 (Part 54):2003

APHA 23™ Ed. 3112 B

BDL-Below Detection Limit Remark/ Statement of Conformity:

Chromium as Cr

Cadmium as Cd

Lead as Ph

Nickel as Ni

Mercury as Hg

The given sample confirms with specifications as per standard tabulated above for set of analyzed parameters.

BDL[D1=0.02]

BDL[DL=0.015]

BDL[DL=0.6]

BDL[DL=0.6]

BDL[DL=0.006]

12.

13.

14

15.

10.

5 Samples was collected using laboratory's SOP (UT/LQMS/SOP/WO1A) based on CPCB's Guide Manual. Water & Wastewater Analysis, APHA 21st Edition and 183025.

2. This test report rebers only to the sample tested.

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4. Any correction invalidates this test report

END OF REPORT

For ULTRA TECH,

DL-Detection Limit

Meghan Patil **Authorized Signatory**

Page 1 of 1



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ISO 9001 2015 (SO 45001 2018

Lab (Survey No. 93/A, Conformity Hissa No 2 G V Brothers Sidg , Bata Compound, Khopat, Nest Flower Valley, Thans (West) - 400 501, Maharashtra, India. Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@utratech in Visit us at : www.ultratech in

TEST REPORT

ISSUED TO: DAEWOO-TATA PROJECTS LIMITED- IV

3re Floor, Transocean House, Lake Boulevard Road, Hiranadani Gardens, MHADA Colony 19, Powat, Mumbai - 400076, Maharashtra, India.

For Your Project: "MTHL Package 2 Project"

REPORT NO.

UT/ELS/REPORT/5422/10-2022

ISSUE DATE YOUR REF.

03/10/2022

REF. DATE

Sample Quantity

& Packing Details

83000164-A6 27/01/2022

SAMPLE PARTICULARS Sampling Plan Ref. No.

Sampling Procedure

Sample Registration Date

Date & Time of Sampling

Analysis Completion Date

Analysis Starting Date

23-09/2022

UT/LQMS/SOP/W01A

20/09/2022

20/09/2022 at 11:55Hrs

20/09/2022 29/09/2022

Sample Collected By Sample Lab Code

ULTRA TECH UT/ELS/325/09-2022 MARINE WATER QUALITY MONITORING

Sample Type Marine Water Sample Location

At Intertidal Zone

Co-ordinates: 18°58'49.70"N, 72°59'27.80"E 1L in Wide Mouth Glass Bottle for Oil

and Grease, 300ml BOD Bottle with stopper for DO and 2L In Plastic

Container for other parameters.

Sr. No.	Test Parameter	Test Method	Test Result	Unit	Standards Limits (Primary Water Quality Criteria for Class SW-IV Water's (For Harbour Waters) EP Rules - 1986)
1.	Temperature	IS 3025 (Part 09):1984	28.7	*C	
2	Turbidity	IS 3025 (Part 10):1984	18.4	NTU	-
3.	Į gli	IS 3025 (Part 11):2022	7.5	4.0	6.0 to 9.0
ŵ.	Dissolved Oxygen	IS 3025 (Part 38):1989	5.6	mg/L	Min. 3.0
5	Biochemical Oxygen demand (At 27°C for 3 Days)	IS 3025 [Part 44]:1993	BDL[DL=2]	mg/L	5.0
ti.	Chemical Oxygen demand	IS 3025 (Part 46):1994	16	mg/L	
7.	Total Alkalimity as CaCO:	IS 3025 (Part 23):1986	134	mg/L	
8.	Total Hardness as CaCth	IS 3025 (Part 21) 2009	6300	mg/L	
ġ,	Salimity	COMAPS	26.3	ppth	
ΙП.	Oil & Grease	IS 3025 (Part 39): 2021	BOL[DL=2]	mg/L	10
2.1	Arsenic as As	APHA 23rd Ed. 3114 C	BDL[DL=0.003]	my/L	Cont.
12:	Chromium as Cr	15 3025 (Part 52):2003	BDL[DL=0.02]	mg/L	6.2
1,3.	Codressee as Cd	IS 3025 (Part 41):1992	BDL/DL=0.015	mg/L	**
14.	Lead as Ph	1S 3025 (Part 47):1994	HDL[DL=0.6]	mg/L	5-6
15.	Nickel as Ni	IS 3025 (Part S4):2003	801.[01,=0.6]	mg/L	The state of the s
16.	Mercury as Hg	APHA 23 rd Ed. 3112 8	BDL(DL=0.006)	mg/L	A STATE OF THE STA
L-Below	Detection Limit	4		7	DL-Detection Limit

Remark/ Statement of Conformity:

The given sample confirms with specifications as per standard tabulated above for set of analyzed parameters

1. Samples was collected using laboratory's SOF (UT/LQMS/SOF/WO3A) based on GPGB's Guide Marinal. Water & Wastewater Analysis. APHA 23rd Edition and IS3025 (Part 1).

2. This test rejuct refers only to the sample tested

3. This lest report may not be reproduced in part, without the permission of this laboratory.

4. Any correction invalidates this test report

- END OF REPORT

ULTRA TECH.

Meghan Patil Authorized Signatory

Page 1 of 1

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Kolkata: +633-40089145 / +91-9674468198 - kolkatai@ultratech.in



THE RESERVE

Environmental Consultancy & Laboratory

Lab.Gazetted by MoEF&CC-Govt. of India

1 1

Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]

QCI-NABET Accredited EIA Consulting Organization

STP/ETP/WTP Project Management Consultants



ISO 9001: 2015 ISO 45001: 2018

Lab: Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India, Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech.in Visit us at: www.ultratech.in

TEST REPORT

ISSUED TO: DAEWOO-TATA PROJECTS LIMITED- JV

3rd Floor, Transocean House, Lake Boulevard Road, Hiranandani Gardens, ISSUE DATE

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Your Project: "MTHL Package 2 Project"

UT/ELS/REPORT/5417/10-2022 REPORT NO.

03/10/2022

YOUR REF.

SOIL QUALITY MONITORING

83000164-A6 REF. DATE 27/01/2022

: Soil Sample

: At Casting Yard

3 3

SAMPLE PARTICULARS

Sampling Plan Ref. No.

Sampling Procedure

Sample Collected By

;

23-09/2022

UT/LQMS/SOP/S01A

20/09/2022

20/09/2022 at 11:30Hrs

Date & Time of Sampling **Analysis Starting Date** 20/09/2022

Analysis Completion Date

Sample Registration Date

28/09/2022 **ULTRA TECH** :

Sample Quantity

Sample Type

Sample Location

: 1kg In Plastic Bag Contained in Zip Lock Bag

& Packing Details

HT/FLS/327/09-2022

Sr. No.	Test Parameter	Test Method	Test Result	Unit	
1. Bulk Density		UT/LQMS/SOP/S03	1177	kg/m³	
2.	Total Organic Carbon	IS:2720 (Part 22) : 1972	0.4	%	
3.	pH	IS:2720 (Part 26): 1987	7.8	•	
4.	Conductivity(1:2soil:Water Extract)	IS:14767- 2000	512	μS/cm	
5.	Moisture Content	IS:2720 (Part 02): 1973	18.3	%	
6.	Sodium as Na	UT/LQMS/SOP/S19	620	mg/kg	
7.	Potassium as K	UT/LQMS/SOP/S20	41	mg/kg	
8.	Calcium as Ca	UT/LQMS/SOP/S21	248	mg/kg	
9.	Magnesium as Mg	UT/LQMS/SOP/S22	217	mg/kg	
10.	Sodium Adsorption Ratio	UT/LQMS/SOP/S26	15.4	(meq/kg)1/2	
11.	Cation Exchange Capacity	UT/LQMS/SOP/S18	30.3	meq/100g	
12.	Porosity	UT/LQMS/SOP/S40	50.3	%	
13.	Silt	UT/LQMS/SOP/S39	65.4	%	
14.	Clay	UT/LQMS/SOP/S39	31.8	%	
15.	Cadmium as Cd	UT/LQMS/SOP/S35 & S37	BDL[DL=2]	mg/kg	
16.	Chromium as Cr	UT/LQMS/SOP/S35 & S37	19	mg/kg	
17.	Cobalt as Co	UT/LQMS/SOP/S35 & S37	13	mg/kg	
18.	Copper as Cu	UT/LQMS/SOP/S35 & S37	100	mg/kg	
19.	Iron as Fe	UT/LQMS/SOP/S35 & S37	42963	mg/kg	
20.	Lead as Pb	UT/LQMS/SOP/S35 & S37	BDL[DL=5]	mg/kg	
21.	Manganese as Mn	UT/LQMS/SOP/S35 & S37	712	mg/kg	
22.	Nickel as Ni	UT/LQMS/SOP/S35 & S37	32	mg/kg	
23.	Zinc as Zn	UT/LQMS/SOP/S35 & S37	45	mg/kg	
DI	L-Below Detection Limit		DI-1	Detection Limit	

Remark/ Statement of Conformity:

1.Samples were collected by following laboratory's SOP (UT/LQMS/SOP/S01A) based on Methods Manual: Soil Testing in India by DA&FW, MoA, GOI.1. This test report Note: refers only to the sample tested.

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4. Any correction invalidates this test report.

5. This test report shall be referred along with Test Report No. UT/ELS/REPORT/5418/10-2022 Dated 02

END OF REPORT

INDIA PIN-400 601

CONSULTANC

or ULTRA TECH MNamosh

Manasi Namjoshi (uthorized Signatory)





Environmental Consultancy & Laboratory

Lab.Gazetted by MoEF&CC-Govt. of India

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Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]

1 1 1 1

QCI-NABET Accredited EIA Consulting Organization

STP/ETP/WTP Project Management Consultants

ISO 9001: 2015

ISO 45001: 2018

Lab :Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat. Near Flower Valley, Thane (West) - 400 601, Maharashtra, India. Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech.in Visit us at: www.ultratech.in

TEST REPORT

ISSUED TO: DAEWOO-TATA PROJECTS LIMITED- IV

3rd Floor, Transocean House, LakeBoulevard Road, Hiranandani Gardens,

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Your Project: "MTHL Package 2 Project"

REPORT NO. UT/ELS/REPORT/5418/10-2022

ISSUE DATE 03/10/2022 YOUR REF.

Sample Location : At Casting Yard

REF. DATE

SOIL QUALITY MONITORING

83000164-A6 27/01/2022

: Soil Sample

SAMPLE PARTICULARS

Sampling Procedure

Sampling Plan Ref. No.

23-09/2022

UT/LQMS/SOP/S01A

20/09/2022

Sample Registration Date Date & Time of Sampling

20/09/2022 at 11:30Hrs

Analysis Starting Date Analysis Completion Date

28/09/2022

ULTRA TECH

20/09/2022

Sample Type

Sample Quantity: 1kg In Plastic Bag Contained in Zip Lock

100 100 100 110

& Packing Details

Sample Collected By Sample Lab Code

UT/ELS/327/09-2022

Sr. No.	Test Parameter	Test Method	Test Result	Unit	
Salinity (1:2 soil: Water Extract)		Calculated in terms of Total Dissolved Solids	317	mg/L	
2. Gravel		UT/LQMS/SOP/S39	0.76	%	
3.	Coarse Sand	UT/LQMS/SOP/S39	0.51	%	
4.	Medium Sand	UT/LQMS/SOP/S39	2.94	%	
5.	Fine Sand	UT/LQMS/SOP/S39	0.97	%	
6.	Barium as Ba	UT/LQMS/SOP/S35 & S37	3172	mg/kg	

Remark/ Statement of Conformity:

1. Samples were collected by following laboratory's SOP (UT/LQMS/SOP/SO1A) based on Methods Manual: Soil Testing in India by DA&FW, MoA, GOI.1. This test report refers only to the sample tested.

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4. Any correction invalidates this test report.

5. Parameter/s Tasted is/are not covered under NABL scope.

6. This test report shall be referred along with Test Report No. UT/ELS/REPORT/5417/10-2022 Dated 03/10/2022 for final conclusion.

- END OF REPORT -

For ULTRA TECH My Namjostu $W_{O/3}$ Manasi Namjoshi [Authorized Signatory]



Environmental Consultancy & Laboratory

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Lab. Accredited by NABL - ISO/IEC 17025:2017 [TC-5600, Valid until 03.08.2024 in the field of Testing]

QCI-NABET Accredited EIA Consulting Organization

STP/ETP/WTP Project Management Consultants



ISO 9001: 2015 ISO 45001: 2018

Lab :Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech.in Visit us at: www.ultratech.in

1 1 1 1

TEST REPORT

ISSUED TO: DAEWOO-TATA PROJECTS LIMITED- JV

3rd Floor, Transocean House, LakeBoulevard Road, Hiranandani Gardens, ISSUE DATE

MHADA Colony 19, Powai, Mumbai - 400076, Maharashtra, India.

For Your Project: "MTHL Package 2 Project"

REPORT NO.

UT/ELS/REPORT/5419/10-2022

YOUR REF.

SOIL QUALITY MONITORING

03/10/2022 83000164-A6

REF. DATE

27/01/2022

SAMPLE PARTICULARS Sampling Plan Ref. No.

23-09/2022

Sample Type

: Soil Sample

Sampling Procedure

Sample Collected By

UT/LQMS/SOP/S01A

Sample Location : Nhava Temporary Bridge Near MP-240

Sample Registration Date Date & Time of Sampling

20/09/2022

20/09/2022 at 14:20Hrs

Analysis Starting Date Analysis Completion Date 20/09/2022 28/09/2022

Sample Quantity: 1kg In Plastic Bag Contained in Zip Lock

ULTRA TECH

& Packing Details

Bag

Sample Lab Code UT/ELS/328/09-2022 Sr. No. **Test Parameter** Test Method Test Result Unit **Bulk Density** UT/LQMS/SOP/S03 1196 kg/m³ **Total Organic Carbon** 2. IS:2720 (Part 22): 1972 0.35 % 3. pН IS:2720 (Part 26): 1987 7.9 Conductivity(1:2soil:Water Extract) IS:14767-2000 9291 4. μS/cm Moisture Content IS:2720 (Part 02): 1973 17.6 % UT/LOMS/SOP/S19 3511 Sodium as Na 6. mg/kg Potassium as K UT/LQMS/SOP/S20 45 7. mg/kg UT/LQMS/SOP/S21 Calcium as Ca 357 mg/kg 9. Magnesium as Mg UT/LQMS/SOP/S22 255 mg/kg 10. Sodium Adsorption Ratio UT/LQMS/SOP/S26 16.1 (meq/kg)1/2 **Cation Exchange Capacity** UT/LQMS/SOP/S18 11. 43.5 meq/100g UT/LQMS/SOP/S40 12 Porosity 53.0 % Silt UT/LQMS/SOP/S39 13. 68.7 % 14. UT/LQMS/SOP/S39 Clav 33.4 % 15. Cadmium as Cd UT/LQMS/SOP/S35 & S37 BDL[DL=2] mg/kg 16. Chromium as Cr UT/LQMS/SOP/S35 & S37 24 mg/kg UT/LQMS/SOP/S35 & S37 17. Cobalt as Co 19 mg/kg 18 Copper as Cu UT/LQMS/SOP/S35 & S37 92 mg/kg 19. UT/LQMS/SOP/S35 & S37 52315 Iron as Fe mg/kg

Remark/ Statement of Conformity:

Lead as Pb

Nickel as Ni

Zinc as Zn

Manganese as Mn

BDL-Below DetectionLimit

20.

21

22.

23.

1.Samples were collected by following laboratory's SOP (UT/LQMS/SOP/S01A) based on Methods Manual: Soil Testing in India by DA&FW, MoA, GOI.1. This test report refers only to the sample tested.

UT/LQMS/SOP/S35 & S37

UT/LQMS/SOP/S35 & S37

UT/LQMS/SOP/S35 & S37

UT/LQMS/SOP/S35 & S37

2. This test report refers only to the sample tested.

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4. Any correction invalidates this test report.

5. This test report shall be referred along with Test Report No. UT/ELS/REPORT/5420/10-2022 Date

- END OF REPORT

delusion

BDL[DL=5]

726

33

54

MOEF GO

THANE (VI)

CONTRACTOR

For ULTRA TECH

DL- Detection Limit

mg/kg

mg/kg

mg/kg

mg/kg

Manasi Namjoshi

(Authorized Signatory)





Environmental Consultancy & Laboratory

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Lab :Survey No. 93/A, Conformity Hissa No.2 G.V.Brothers Bldg., Bata Compound, Khopat, Near Flower Valley, Thane (West) - 400 601, Maharashtra, India. Tele: +91 22 2547 49 07 / +91 22 2547 62 17 Email: lab@ultratech.in Visit us at: www.ultratech.in

TEST REPORT

ISSUED TO: DAEWOO-TATA PROJECTS LIMITED- JV

REPORT NO.

UT/ELS/REPORT/5420/10-2022

3rd Floor, Transocean House, Lake Boulevard Road, Hiranandani Gardens, ISSUE DATE

03/10/2022

101010

MHADA Colony 19, Powai, Mumbai – 400076, Maharashtra, India.

YOUR REF.

83000164-A6

For Your Project: "MTHL Package 2 Project"

REF. DATE

27/01/2022

SAMPLE PARTICULARS

SOIL QUALITY MONITORING

: Soil Sample

Sampling Plan Ref. No. Sampling Procedure

23-09/2022 UT/LQMS/SOP/S01A Sample Type

Sample Location: Nhava Temporary Bridge Near MP-240

Sample Registration Date

20/09/2022

Date & Time of Sampling Analysis Starting Date Analysis Completion Date

20/09/2022 at 14:20Hrs : :

20/09/2022 28/09/2022

Sample Quantity: 1kg In Plastic Bag Contained in Zip Lock

Sample Collected By

ULTRA TECH

& Packing Details

Sample Lab Code HT/FLS/328/09-2022

r. No. Test Parameter		Test Method	Test Result	Unit	
1.	Salinity (1:2 soil: Water Extract)	Calculated in terms of Total Dissolved Solids	5760.42	mg/L	
2.	Gravel	UT/LQMS/SOP/S39	1.89	%	
3.	Coarse Sand	UT/LQMS/SOP/S39	0.66	%	
4.	Medium Sand	UT/LQMS/SOP/S39	0.72	%	
5.	Fine Sand	UT/LQMS/SOP/S39	0.19	%	
6.	Barium as Ba	UT/LQMS/SOP/S35 & S37	3511	mg/kg	

Remark/ Statement of Conformity:

1.Samples were collected by following laboratory's SOP (UT/LQMS/SOP/SO1A) based on Methods Manual: Soil Testing in India by DA&FW, MoA, GOI.1. This test report refers only to the sample tested.

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6. This test report shall be referred along with Test Report No. UT/ELS/REPORT/5419/10-2022 Dated 03/10/2022 for final conclusion

- END OF REPORT -

HIDIA

AT CONSULTS

Manasi Namjoshi **Xuthorized Signatory)**

For ULTRA TECH



Larsen & Toubro Limited, L&T Construction Heavy Civil Infrastructure Mount Poonamaliee Road Manapakkam, P. B. No. 979 Chennai - 600 089 INDIA

Ref: MTHL/ P3/L&T/GC/LT/HSE-0003221/2022

Date: 04.07.2022

To

The Engineer,

M/s AECOM Asia Company Ltd., -PADECO Co. Ltd – Dar Al-Handasah Consultants –TY Lin International Consortium, General Consultant for MTHL Project, 6th Floor, 'A' Wing, MMRDA Old Building,

Bandra-Kurla Complex, Bandra (E),

Mumbai 400 051.

Project: Procurement of Mumbai Trans Harbour Link Project (Package-3)-Construction of a 3.613 km long viaduct section (CH 18+187 to CH21+800) including interchange at State Highway-54 and at National Highway-4B near Chirle in Navi Mumbai. IFB No.: MMRDA/ENG1/000754.

Subject: Environment Monitoring Test Reports of 1st quarter.

Ref: 1. MoEF CC letter no 11-65/2012-IA.III dated 25.1.2016 granting CRZ clearance to the Mumbai Trans Harbour Link Project.

GC letter MTHL/GC/L&T/Env /2019/757 dated 08.11.2019

Dear Sir/Madam,

We hereby submit the following test reports of June 2022 for your kind information and records.

- 1. Ambient Air quality (48 hrs)
- 2. Ambient Noise quality
- 3. Effluent water quality (labour colony)
- 4. DG Set Stack Monitoring

Thanking you and assuring you of our best services at all times.

Yours faithfully.

For LARSEN & TOUBRO LIMITED.

Satya Prakash Project Manager

Mumbai Trans Harbour Link Project - Pkg. 3

CC: The Chief Engineer, MTHL-PIU, MMRDA, Mumbai, INDIA 400 051

Encl: MTHL PACKAGE-3 Sept -2021 Environment Monitoring Test Reports. Last Payes

ONSULTE ON SULTE





- . ENVIRONMENTAL MONITORING
- . FOOD & MICROBIOLOGICAL TESTING
- TEXTILE TESTING
- · ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002195F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0148)

REPORT DATE :27/06/2022 **CUSTOMER REF: VERBAL**

REF DATE

:04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

SAMPLE REGISTRATION NO.

: AAM (22-23-0148) SAMPLING PLAN& METHOD NO.

:As per Reference Method :21/06/222 to 22/06/2022

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

SAMPLING DATE SAMPLING TIME

:02:40 PM TO 02:40 PM

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS START DATE

:23/06/2022 :27/06/2022

ANALYSIS COMPLETE DATE Test Parameter Duration Unit Result Limitⁱ Sr.No. Reference Method Particulate Matter **24 HRS** 1. µg/m³ 52.7 100 IS:5182, (Part 23) RA July-2017: 2006 as PM10 Particulate Matter LAB SOP NO - 02 based on CPCB Guidelines 2. **24 HRS** µg/m³ 29.3 60 as PM2. 5 NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012 Sulphur Dioxide **24 HRS** 3. цg/m³ 8.4 80 IS:5182, (Part 2) RA July-2017: 2001 (502)Nitrogen Oxide $\mu g/m^3$ **24 HRS** 20.5 80 4. IS: 5182, (Part 6), RA July - 2017: 2006 (NOx) Method 411, Methods of Air Sampling and Analysis, 3rd 100 S. Ozone (03) 8 HRS µg/m³ <20 Edition, 1988: 1988 Method 401, Methods of Air Sampling and Analysis, 3rd Ammonia (NH3) **24 HRS** µg/m³ 400 6. 14.2 Edition, 1988: 1988 **24 HRS** ug/m3 7. Benzene (C6H6) < 0.10 5 IS 5182 (Part 11) RAJULY-2017: 2006 LAB SOP NO - 018 based on CPCB Guidelines 8. Benzo(a)pyrene **24 HRS** ng/m³ < 0.5 1 NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012 Method 822, Methods of Air Sampling and Analysis, 3rd 9. Metal-Lead **24 HRS** µg/m³ < 0.1 1 Edition, 1988: 1988 Method 302, Methods of Air Sampling and Analysis, 3rd **24 HRS** ng/m³ 10. Metal-Arsenic <1 6 Edition, 1988: 1988 Method 822, Methods of Air Sampling and Analysis, 3rd Metal-Nickel **24 HRS** ng/m³ 1 24 20 11 Edition, 1988: 1988

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

NiCal

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

1. This report reflects findings only for the above sample tested/monitored and only for time and place of monitoring/testing.

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Add.: 202, CFC - 3, Asmeeta Texpa, Addl. Kalyan - Bhiwandi Industrial Area, MIDC, Village Kon, Tal. Bhiwandi.

Dist. Thane, Maharashtra, INDIA, Pincode - 421311

Mob. No. - 9867577309 / 310 / 312 / 9930060058

Email mails@skylabenviro.com Website - www.skylabenviro.com





- ENVIRONMENTAL MONITORING
- . FOOD & MICROBIOLOGICAL TESTING
- TEXTILE TESTING
- ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0148)

REPORT DATE :27/06/2022

CUSTOMER REF: VERBAL

REF DATE

:04/04/2022

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

SAMPLING PLAN& METHOD NO.

SAMPLING DATE

:As per Reference Method :21/06/222 to 22/06/2022

SAMPLING TIME **ANALYSIS START DATE**

ANALYSIS COMPLETE DATE

:02:40 PM TO 02:40 PM

: AAM (22-23-0148)

:23/06/2022 :27/06/2022 AMBIENT AIR QUALITY MONITORING

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

SAMPLE COLLECTED BY: SKYLAB

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.5	-	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	0.6	16	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/ m³	0.58	2	IS 5182 (Part 10): 1999

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines,

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- ENVIRONMENTAL MONITORING
- . FOOD & MICROBIOLOGICAL TESTING
- . TEXTILE TESTING
- ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002196F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S .L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0156)

REPORT DATE :01/07/2022

REF DATE

CUSTOMER REF: VERBAL :04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

SAMPLE REGISTRATION NO.

: AAM (22-23-0156)

SAMPLING PLAN& METHOD NO. : As per Reference Method

SAMPLING DATE

:27/06/222 to 28/06/2022

LOCATION : Chirle

SAMPLING TIME ANALYSIS START DATE

:01:14 PM TO 01:14 PM :29/06/2022

SAMPLE COLLECTED BY: SKYLAB

ANALYS	IS COMPLETE DATE	:01/0	7/2022			
Sr.No.	Test Parameter	Duration	Unit	Result	Limit*	Reference Method
1.	Particulate Matter as PM10	24 HRS	μg/m³	55.4	100	IS:5182, (Part 23) RA July-2017: 2006
2.	Particulate Matter as PM2. 5	24 HRS	μg/m³	24.1	60	LAB SOP NO - 02 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012
3.	Sulphur Dioxide (SO2)	24 HRS	μg/m³	8.5	80	IS:5182, (Part 2) RA July-2017: 2001
4.	Nitrogen Oxide (NOx)	24 HRS	μg/m³	22.3	80	IS: 5182, {Part 6}, RA July - 2017: 2006
5.	Ozone (O3)	8 HRS	μg/m³	<20	100	Method 411, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
6.	Ammonia (NH3)	24 HRS	μg/m³	11.6	400	Method 401, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
7.	Benzene (C6H6)	24 HRS	μg/m³	<0.10	5	IS 5182 (Part 11) RAJULY-2017: 2006
8.	Benzo(a)pyrene	24 HRS	ng/m³	<0.5	1	LAB SOP NO – 018 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012
9.	Metal-Lead	24 HRS	μg/m³	<0.1	1	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
10.	Metal-Arsenic	24 HRS	ng/m³	<1	6	Method 302, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
11.	Metal-Nickel	24 HRS	ng/m³	0.73	20	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988

^{*:} As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atal Shahane Chemist

M.I.I

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

- 1. This report reflects findings only for the above sample tested/monitored and only for time and place of monitoring/testing.
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Mob. No. - 9867577309 / 310 / 312 / 9930060058

Email - mails@skylabenviro.com Website - www.skylabenviro.com

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- · ENVIRONMENTAL MONITORING
- . FOOD & MICROBIOLOGICAL TESTING
- TEXTILE TESTING
- * ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

LOCATION

:SAL/FM/58/ L&TU/ AAM (22-23-0156)

REPORT DATE :01/07/2022

CUSTOMER REF: VERBAL REF DATE

:04/04/2022 **AMBIENT AIR QUALITY MONITORING**

:Chirle

SAMPLE TYPE:

SAMPLING TIME

SAMPLE REGISTRATION NO.

SAMPLING PLAN& METHOD NO. SAMPLING DATE

:As per Reference Method

:27/06/222 to 28/06/2022 :01:14 PM TO 01:14 PM

: AAM (22-23-0156)

:29/06/2022

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS START DATE ANALYSIS COMPLETE DATE

:01/07/2022

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.3	-	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	0.3	-	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/m³	0.51	2	IS 5182 (Part 10): 1999

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested semple are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- TEXTILE TESTING
- · ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002197F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai – 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0157)

REPORT DATE :01/07/2022

CUSTOMER REF:VERBAL

REF DATE

LOCATION

:04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

SAMPLE REGISTRATION NO. SAMPLING PLAN& METHOD NO.

: AAM (22-23-0157)

:As per Reference Method

SAMPLING DATE **SAMPLING TIME**

:27/06/222 to 28/06/2022

:01:40 PM TO 01:40 PM

:29/06/2022

: Chirle

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS COMPLETE DATE

ANALYSIS START DATE

:01/07/2022

	IS COMPLETE DATE		1/2022			
Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
1.	Particulate Matter as PM10	24 HRS	μg/m³	60.8	100	IS:5182, (Part 23) RA July-2017: 2006
2.	Particulate Matter as PM2. 5	24 HRS	μg/m³	27.6	60	LAB SOP NO - 02 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012
3.	Sulphur Dioxide (SO2)	24 HRS	μg/m³	10.3	80	IS:5182, (Part 2) RA July-2017: 2001
4.	Nitrogen Oxide (NOx)	24 HRS	μg/m³	25.1	80	IS: 5182, (Part 6), RA July - 2017: 2006
5.	Ozone (O3)	8 HRS	μg/m³	<20	100	Method 411, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
6.	Ammonia (NH3)	24 HRS	μg/m³	13.2	400	Method 401, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
7.	Benzene (C6H6)	24 HRS	μg/m³	<0.10	5	IS 5182 (Part 11) RAJULY-2017: 2006
8.	Benzo(a)pyrene	24 HRS	ng/m³	<0.5	1	LAB SOP NO – 018 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012
9.	Metal-Lead	24 HRS	μg/m³	<0.1	1	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
10.	Metal-Arsenic	24 HRS	ng/m³	<1	6	Method 302, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
11.	Metal-Nickel	24 HRS	ng/m³	0.82	20	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988

": As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

tical

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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- . FOOD & MICROBIOLOGICAL TESTING
- . TEXTILE TESTING
- ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

LOCATION

:SAL/FM/58/ L&TU/ AAM (22-23-0157)

REPORT DATE :01/07/2022 **CUSTOMER REF: VERBAL**

REF DATE

:04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

:Chirle

SAMPLE REGISTRATION NO.

: AAM (22-23-0157)

SAMPLING DATE

SAMPLING PLAN& METHOD NO. : As per Reference Method :27/06/222 to 28/06/2022

SAMPLING TIME

:01:40 PM TO 01:40 PM

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS START DATE

:29/06/2022

ANALYSIS COMPLETE DATE

:01/07/2022

Sr.No.	Test Parameter	Duration	Unit	Result	Limit*	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.5	-	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	0.7	•	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/ m ³	0.58	2	IS 5182 (Part 10): 1999

*: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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- * ENVIRONMENTAL MONITORING
- FOOD & MICROBIOLOGICAL TESTING
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- . TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

REPORT NO :SAL/FM/58/ L&TU/ DGSM (22-23-0185)

REPORT DATE :01/07/2022

CUSTOMER KF :: EH383WOD1000025

DG STACK EMISSION MONITORING

REF DATE :23/03/2021

SAMPLE TYPE:

: DGSM (22-23-0185)

LOCATION

:DG Stack-1,(250 KVA)

(Near Main Gate)

SAMPLING PLAN & METHOD NO. : As per Reference Method

SAMPLE REGISTRATION NO.

SAMPLE COLLECTED BY STACK HEIGHT

: SKYLAB

SAMPLING DATE SAMPLING TIME

:27/06/2022 :01:15 PM

SHAPE OF STACK

: 3.5 Meters : Round

ANALYSIS START DATE ANALYSIS COMPLETE DATE :29/06/2022 :01/07/2022 MATERIAL OF STACK

:MS FUEL USED (CONSUMPTION) : Diesel

Sr. No.	Test Parameter	Unit	Result	Limit"	Reference Method
1.	Dimensions of Stack	m	0.1	NA	2.1
2.	Cross section area of Stack	m²	0.008	NA	e-
3.	Temperature:	°c	132	NA	IS 11255 (Part 1), RA July-2014: 1985
4.	Velocity	m/s	8.6	NA	IS 11255 (Part 1), RA July-2014: 1985
5.	Flue Gas Discharge	Nm³/hr	179.5	NA	IS 11255 (Part 1), RA July-2014: 1985
_	Total Particulate Matter (TPM)	mg/Nm³	49.2	-	IS 11255 (Part 1), RA July-2014: 1985
6.	Total Particulate Matter (TPM)	g/kwh	0.044	≤ 0.2 g/kwh	IS 11255 (Part 1), RA July-2014: 1985
-	Carbon Monoxide (CO)	mg/Nm³	101		Instrumental
7.	Carbon Monoxide (CO)	g/kwh	0.091	≤ 3.5 g/kwh	Instrumental
	Nitrogen Oxide (NOx)	mg/Nm³	88.4		IS 11255, (Part 7):2005
8.	Nitrogen Oxide (NOx)	g/kwh	0.079	≤ 4.0 g/kwh	IS 11255, (Part 7):2005
	Hydrocarbon (HC)	mg/Nm³	79		Instrumental
9.	Hydrocarbon (HC)	g/kwh	0.071		Instrumental

NS: Not Specified. NA: Not Applicable. *: As per CPCB Guidelines.

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per CPCB quideline.

Verified by

Mr. Atul Shahane Chemist

stylic.

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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NAME & ADDRESS OF CUSTOMER:

M/S.L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ DGSM (22-23-0186)

REPORT DATE :01/07/2022

CUSTOMER REF: EH383WOD1000025

:23/03/2021

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

: DGSM (22-23-0186)

SAMPLING PLAN & METHOD NO. : As per Reference Method :27/06/2022

SAMPLING DATE SAMPLING TIME :01:40 PM

ANALYSIS START DATE :29/06/2022 ANALYSIS COMBLETE DATE ·01 /07 /2022

DG STACK EMISSION MONITORING

LOCATION

:DG Stack-2,(250 KVA) (Near Site Office)

SAMPLE COLLECTED BY

STACK HEIGHT : 3.5 Meters **SHAPE OF STACK** : Round **MATERIAL OF STACK**

:MS

: SKYLAB

	YSIS COMPLETE DATE	:01/07/2022		FUEL USED (COM	NSUMPTION) : Diesel
Sr. No.	Test Parameter	Unit	Result	Limit*	Reference Method
1.	Dimensions of Stack	m	0.1	NA NA	*
2.	Cross section area of Stack	m²	0.008	NA	*
3.	Temperature	°c	138	NA	IS 11255 (Part 1), RA July-2014: 1985
4.	Velocity	m/s	8.8	NA NA	IS 11255 (Part 1), RA July-2014: 1985
5.	Flue Gas Discharge	Nm³/hr	180	NA	IS 11255 (Part 1), RA July-2014: 1985
6.	Total Particulate Matter (TPM)	mg/Nm³	49.8	_	IS 11255 (Part 1), RA July-2014: 1985
0.	Total Particulate Matter (TPM)	g/kwh	0.045	≤ 0.2 g/kwh	IS 11255 (Part 1), RA July-2014: 1985
7.	Carbon Monoxide (CO)	mg/Nm³	102	No.	Instrumental
7.	Carbon Monoxide (CO)	g/kwh	0.092	≤ 3.5 g/kwh	Instrumental
	Nitrogen Oxide (NOx)	mg/Nm³	91.3		IS 11255, (Part 7):2005
8.	Nitrogen Oxide (NOx)	g/kwh	0.082	1	IS 11255, (Part 7):2005
^	Hydrocarbon (HC)	mg/Nm³	83	≤ 4.0 g/kwh	Instrumental
9.	Hydrocarbon (HC)	g/kwh	0.075		Instrumental

NS: Not Specified. NA: Not Applicable. *: As per CPCB Guidelines.

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per CPCB guideline.

Verified by

Mr. Atul Shahane

Chemist

END OF REPORT

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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NAME & ADDRESS OF CUSTOMER:

M/S.L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO :SAL/FM/58/ L&TU/ DGSM (22-23-0187)

REPORT DATE :01/07/2022

CUSTOMER REF: EH383WOD1000025

REF DATE :23/03/2021

SAMPLE TYPE:

SAMPLE REGISTRATION NO. : DGSM (22-23-0187)

SAMPLING PLAN & METHOD NO. : As per Reference Method

:27/06/2022

SAMPLING DATE SAMPLING TIME ANALYSIS START DATE

:29/06/2022 :01/07/2022

:01:40 PM

DG STACK EMISSION MONITORING

LOCATION

:DG Stack-3,(62.5 KVA), (Jasai)

SAMPLE COLLECTED BY STACK HEIGHT

: SKYLAB : 2 Meters : Round

SHAPE OF STACK **MATERIAL OF STACK**

:MS

ANAL	YSIS COMPLETE DATE	:01/07/2022 FUEL USED (CONSUMPTION) : Diesel					
Sr. No.	Test Parameter	Unit	Result	Limit"	Reference Method		
1.	Dimensions of Stack	m	0.1	NA			
2.	Cross section area of Stack	m²	0.008	NA			
3.	Temperature	°c	117	NA	IS 11255 (Part 1), RA July-2014: 1985		
4.	Velocity	m/s	7.2	NA	IS 11255 (Part 1), RA July-2014: 1985		
5.	Flue Gas Discharge	Nm³/hr	156.1	NA	IS 11255 (Part 1), RA July-2014: 1985		
6.	Total Particulate Matter (TPM)	mg/Nm³	42.1		IS 11255 (Part 1), RA July-2014: 1985		
0.	Total Particulate Matter (TPM)	g/kwh	0.13	≤ 0.3 g/kwh	IS 11255 (Part 1), RA July-2014: 1985		
7.	Carbon Monoxide (CO)	mg/Nm³	83		Instrumental		
/,	Carbon Monoxide (CO)	g/kwh	0.26	≤ 3.5 g/kwh	Instrumental		
	Nitrogen Oxide (NOx)	mg/Nm ³	61.1		IS 11255, (Part 7):2005		
8.	Nitrogen Oxide (NOx)	g/kwh	0.19		IS 11255, (Part 7):2005		
	Hydrocarbon (HC)	mg/Nm ³	56	≤4.7 g/kwh	Instrumental		
9.	Hydrocarbon (HC)	g/kwh	0.175		Instrumental		

NS: Not Specified. NA: Not Applicable. *: As per CPCB Guidelines.

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per CPCB guideline.

Verified by

Mr. Atul Shahane

Chemist



For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- . FNVIRONMENTAL MONITORING
- . FOOD & MICROBIOLOGICAL TESTING
- *** TEXTILE TESTING**
- ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

REPORT NO SAL/FM/58/ L&TU/ DGSM (22-23-0188)

REPORT DATE :01/07/2022

CUSTOMER REF: EH383WOD1000025

REF DATE :23/03/2021

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

: DGSM (22-23-0188)

DG STACK EMISSION MONITORING LOCATION

:DG Stack-5.(15 KVA) (Near labor colony)

SAMPLING PLAN & METHOD NO. : As per Reference Method SAMPLING DATE

ANALYSIS START DATE

ANALYSIS COMPLETE DATE

SAMPLING TIME

:27/06/2022

:03:00 PM

STACK HEIGHT SHAPE OF STACK

SAMPLE COLLECTED BY

: Round :MS

: SKYLAB

: 1.5 Meters

:29/06/2022 :01/07/2022 **MATERIAL OF STACK**

FUEL USED (CONSUMPTION) : Diesel

	//			restantiate trote) a picaci
Test Parameter	Unit	Result	Limit*	Reference Method
Dimensions of Stack	m	0.05	NA	*
Cross section area of Stack	m²	0.002	NA	
Temperature	°c	91	NA	IS 11255 (Part 1), RA July-2014: 1985
Velocity	m/s	6.35	NA	IS 11255 (Part 1), RA July-2014: 1985
Flue Gas Discharge	Nm³/hr	36.8	NA	IS 11255 (Part 1), RA July-2014: 1985
Total Particulate Matter (TPM)	mg/Nm³	28.4	-	IS 11255 (Part 1), RA July-2014: 1985
Total Particulate Matter (TPM)	g/kwh	0.087	≤ 0.3 g/kwh	IS 11255 (Part 1), RA July-2014: 1985
Carbon Monoxide (CO)	mg/Nm³	58		Instrumental
Carbon Monoxide (CO)	g/kwh	0.178	≤ 3.5 g/kwh	Instrumental
Nitrogen Oxide (NOx)	mg/Nm³	41.1		IS 11255, (Part 7):2005
Nitrogen Oxide (NOx)	g/kwh	0.126	.75-8-1	IS 11255, (Part 7):2005
Hydrocarbon (HC)	mg/Nm³	42	≤ 7.5 g/kwh	Instrumental
Hydrocarbon (HC)	g/kwh	0.129		Instrumental
	Dimensions of Stack Cross section area of Stack Temperature Velocity Flue Gas Discharge Total Particulate Matter (TPM) Total Particulate Matter (TPM) Carbon Monoxide (CO) Carbon Monoxide (CO) Nitrogen Oxide (NOx) Nitrogen Oxide (NOx) Hydrocarbon (HC)	Test Parameter Dimensions of Stack Cross section area of Stack Temperature Velocity Flue Gas Discharge Total Particulate Matter (TPM) Carbon Monoxide (CO) Nitrogen Oxide (NOx) Hydrocarbon (HC) Dimensions mg² mg² mg² mg² mg² mg² mg/s mg/shr mg/Nm³ Mg/kwh mg/Nm³ g/kwh mg/Nm³ Mitrogen Oxide (NOx) mg/Nm³	Test Parameter Unit Dimensions of Stack m 0.05 Cross section area of Stack Temperature Velocity Flue Gas Discharge Total Particulate Matter (TPM) Carbon Monoxide (CO) Carbon Monoxide (CO) Mitrogen Oxide (NOx) Hydrocarbon (HC) Dimensions m 0.05 m² 0.002 91 m² 0.35 Mm³/hr 36.8 Total Particulate Matter (TPM) mg/Nm³ 28.4 0.087 Carbon Monoxide (CO) mg/Nm³ 58 Carbon Monoxide (CO) g/kwh 0.178 Nitrogen Oxide (NOx) mg/Nm³ 41.1	Test Parameter Unit Result Limit* Dimensions of Stack m 0.05 NA Cross section area of Stack m² 0.002 NA Temperature °C 91 NA Velocity m/s 6.35 NA Flue Gas Discharge Nm³/hr 36.8 NA Total Particulate Matter (TPM) mg/Nm³ 28.4 — Total Particulate Matter (TPM) g/kwh 0.087 ≤ 0.3 g/kwh Carbon Monoxide (CO) mg/Nm³ 58 — Carbon Monoxide (CO) g/kwh 0.178 ≤ 3.5 g/kwh Nitrogen Oxide (NOx) mg/Nm³ 41.1 Nitrogen Oxide (NOx) g/kwh 0.126 < 7.5 g/kwh

NS: Not Specified. NA: Not Applicable. *: As per CPCB Guidelines.

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per CPCB guideline.

Verified by

Mr. Atul Shahane Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

:SAL/FM/58/ L&TU/ DGSM (22-23-0189) REPORT NO

REPORT DATE :01/07/2022

CUSTOMER REF: EH383WOD1000025

REF DATE :23/03/2021

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

: DGSM (22-23-0189)

LOCATION

DG STACK EMISSION MONITORING :DG Stack-6,(62.5 KVA)

(Zero point-Jasai)

SAMPLING PLAN & METHOD NO. : As per Reference Method **SAMPLING DATE**

SAMPLE COLLECTED BY STACK HEIGHT

: SKYLAB

SAMPLING TIME

:27/06/2022 :03:20 PM

: 2 Meters : Round

ANALYSIS START DATE

ANALYSIS COMPLETE DATE

:29/06/2022 :01/07/2022 SHAPE OF STACK **MATERIAL OF STACK**

:MS

FUEL USED (CONSUMPTION) : Diesel

Sr. No.	Test Parameter	Unit	Result	Limit"	Reference Method
1.	Dimensions of Stack	m	0.1	NA	*
2.	Cross section area of Stack	m²	0.008	NA NA	
3.	Temperature	°C	115	NA .	IS 11255 (Part 1), RA July-2014: 1985
₫.	Velocity	m/s	7.1	NA	IS 11255 (Part 1), RA July-2014: 1985
5.	Flue Gas Discharge	Nm³/hr	154.3	NA	IS 11255 (Part 1), RA July-2014: 1985
6.	Total Particulate Matter (TPM)	mg/Nm ³	40.2		IS 11255 (Part 1), RA July-2014: 1985
ο,	Total Particulate Matter (TPM)	g/kwh	0.124	≤ 0.3 g/kwh	IS 11255 (Part 1), RA July-2014: 1985
7.	Carbon Monoxide (CO)	mg/Nm ³	81	- !	Instrumental
7.	Carbon Monoxide (CO)	g/kwh	0.25	≤ 3.5 g/kwh	Instrumental
	Nitrogen Oxide (NOx)	mg/Nm ³	57.2		IS 11255, (Part 7):2005
8.	Nitrogen Oxide (NOx)	g/kwh	0.177		IS 11255, (Part 7):2005
9.	Hydrocarbon (HC)	mg/Nm³	57	≤ 4.7 g/kwh —	Instrumental
Э.	Hydrocarbon (HC)	g/kwh	0.176		Instrumental

NS: Not Specified. NA: Not Applicable. ": As per CPCB Guidelines.

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per CPCB guideline.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002198F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L& T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO REPORT DATE :SAL/FM/110/L&TU/NM(22-23-488)

:01/07/2022

CUSTOMER REF

:EH383WOD1000025

REF DATE

:23/03/2021

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

:NM(22-23-488) SAMPLING PLAN& METHOD NO. : IS 9989: 1981

SAMPLE LOCATION

: Jasai (Near Site office container)

SAMPLING DATE

:28/06/2022 to 29/06/2022

SAMPLING DURATION : 24 HRS

Day Time	Noise Level dB(A)
(Hrs.)	Hourly Leg
06.00 to 07.00	50.2
07.00 to 08.00	63.7
08.00 to 09.00	64.4
09.00 to 10.00	52.3
10.00 to 11.00	56.2
11.00 to 12.00	61.8
12.00 to 13.00	62.2
13.00 to 14.00	59.3
14.00 to 15.00	60.1
15.00 to 16.00	49.2
16.00 to 17.00	51.6
17.00 to 18.00	50.7
18.00 to 19.00	58.3
19.00 to 20.00	50.1
20.00 to 21.00	57.5
21.00 to 22.00	59.3

Night Time	Noise Level dB(A)
(Hrs.)	Hourly Leg
22.00 to 23.00	54.7
23.00 to 00.00	53.3
00.00 to 01.00	52.9
01.00 to 02.00	50.2
02.00 to 03.00	55.7
03.00 to 04.00	48.4
04.00 to 05.00	44.3
05.00 to 06.00	43.8

AMBIENT NOISE MONITORING

Noise Level Monitoring Report Summary

į	-			_	-	,
	Lmin.	Lmax.	L _{eq} Day	L _{eq} Night	Lon	
	44.9	63.8	59.6	52.1	60.5	

Note: All Values in dB(A)

Verified by

For SKYLAB ANALYTICAL LABORATORY

Mr. AtulShahane

Chemist

Mr. S. B. Pansare **Authorized Signatory**

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ULR NO: TC0515022000002199F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L& T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/110/L&TU/NM(22-23-489)

REPORT DATE :01/07/2022

CUSTOMER REF :EH383WOD1000025

REF DATE :23/03/2021

SAMPLE TYPE:

SAMPLE REGISTRATION NO. SAMPLING PLAN& METHOD NO. : IS 9989: 1981

:NM(22-23-489)

AMBIENT NOISE MONITORING SAMPLE LOCATION

: Gavan (Near Site Office)

SAMPLING DATE

Day Time	Noise Level dB(A)
(Hrs.)	Hourly L _{eq}
06.00 to 07.00	60.8
07.00 to 08.00	65.2
08.00 to 09.00	56.3
09.00 to 10.00	55.2
10.00 to 11.00	59.5
11.00 to 12.00	63.6
12.00 to 13.00	66.3
13.00 to 14.00	67.7
14.00 to 15.00	60.5
15.00 to 16.00	58.4
16.00 to 17.00	73.3
17.00 to 18.00	58.9
18.00 to 19.00	54.1
19.00 to 20.00	56.6
20.00 to 21.00	60.4
21.00 to 22.00	62.3
	6.4.

Night Time	Noise Level dB(A)
(Hrs.)	Hourly L _{eq}
22.00 to 23.00	59.6
23.00 to 00.00	62.3
00.00 to 01.00	58.4
01.00 to 02.00	48.7
02.00 to 03.00	47.6
03.00 to 04.00	49.5
04.00 to 05.00	54.3
05.00 to 06.00	60.7

Noise Level Monitoring Report Summary

Lmin.	Lmax.	L _{eq} Day	L _{eq} Night	L _{DN}	
44.8	68.6	62.3	57.6	65.5	ĺ

Note: All Values in dB(A)

Verified by

Mr. AtulShahane Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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ULR NO: TC0515022000002200F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/110/L&TU/NM(22-23-490)

REPORT DATE :01/07/2022

CUSTOMER REF :EH383WOD1000025

REF DATE

:23/03/2021

SAMPLE TYPE:

:NM(22-23-490) **SAMPLE LOCATION**

AMBIENT NOISE MONITORING :Chirle (Near Site office container)

SAMPLE REGISTRATION NO. SAMPLING PLAN& METHOD NO. : IS 9989: 1981

SAMPLING DATE

IB(A)
ישורה)
Ng.

Night Time	Noise Level dB(A)
(Hrs.)	Hourly Leg
22.00 to 23.00	45.7
23.00 to 00.00	50.6
00.00 to 01.00	54.4
01.00 to 02.00	48.2
02.00 to 03.00	57.7
03.00 to 04.00	56.3
04.00 to 05.00	50.5
05.00 to 06.00	58.1

Noise Level Monitoring Report Summary

Lmin.	Lmax.	L _{eq} Day	L _{eq} Night	Lon
47,4	65.8	63.5	54.3	64.6

Note: All Values in dB(A)

Verified by

Chemist

Mr. AtulShahane

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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ULR NO: TC0515022000002201F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S. L & T Construction.

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO :SAL/FM/61/I &TU/WW(22-23-0406)

:27/06/2022 REPORT DA

CUSTOMER REF: EH383WOD1000025

REF DATE :23/03/2021

SAMPLE TYPE:

SAMPLING DATE

SAMPLE RECEIPT DATE

ANALYSIS START DATE

ANALYSIS COMPLETE DATE

SAMPLE REGISTRATION NO.

:WW(22-23-0406)

SAMPLING PLAN& METHOD NO. : IS 3025 Part 1:1987 RA 2019

:20/06/2022

:20/06/2022

: 21/06/2022

EFFLUENT WATER ANALYSIS

LOCATION

: Sedimentation tank. Gavan

SAMPLE SPECIFICATION: Treated Effluent Water

SAMPLE COLLECTED BY : SKYLAB **SAMPLE QUANTITY**

:1 Ltrs

: 27/06/2022

Sr. No.	Test Parameter	Unit	Result	Limit* Inland surface water	Reference Method
1.	pH	*	8.03	5.5 - 9.0	IS 3025 (Part 11), RA Aug 2017: 1983
2.	Total suspended solids	mg/L	14	100	IS 3025 (Part 17), RA Aug 2017: 1984
3.	Ammonical Nitrogen	mg/L	<0.5	50	IS 3025 (Part 34), RA 2014: 1988
4,	Total Nitrogen	mg/L	<0.5	100	IS 3025 (Part 34), RA 2014: 1988
5.	Chemical Oxygen Demand (COD)	mg/L	36	250	IS 3025 (Part 46), RA 2014: 1994
6.	Biochemical Oxygen Demand (BOD)	mg/L	7	30	IS 3025 (Part 44), RA 2014: 1993

NS: Not Specified. *: As per CPCB Guidelines.

Opinion/Observation: Analyzed parameters in above tested sample are within limit as per specified standard.

Verified by

Mr. Atpl Shahane

Chemist

NiCal.

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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UIR NO: TC05150220000021888

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0112)

REPORT DATE :07/06/2022 **CUSTOMER REF: VERBAL**

SAMPLE COLLECTED BY: SKYLAR

REF DATE

:04/04/2022

SAMPLE TYPE:

AMBIEN' AIR QUALITY MONITORING

SAMPLE REGISTRATION NO.

SAMPLING PLAN& METHOD NO.

: AAM (22-23-0112)

LOCATION :As per Reference Method

SAMPLING DATE

:01/06/2022 to 02/06/2022

: Gavan, Batching Plant- Near to Casting Yard

SAMPLING TIME **ANALYSIS START DATE** :12:45 PM TO 12:45 PM :04/06/2022

ANALYSIS COMPLETE DATE :07/06/2022

Sr.No.	lest Parameter	Duration	Unit	Result	Limit"	Reference Method
1.	Particulate Matter as PM10	24 HRS	μg/m³	78.4	100	' IS:5182, (Part 23) RA July-2017: 2006
2.	Particulate Matter as PM2. 5	24 HRS	μg/m³	34.2	60	LAB SOP NO - 02 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012
3.	Sulphur Dioxide (SO2)	24 HRS	μg/m³	10.6	80	IS:5182, (Part 2) RA July-2017: 2001
4.	Nitrogen Oxide (NOx)	24 HRS	μg/m³	26.3	80	IS: 5182, (Part 6), RA July - 2017: 2006
5.	Ozone (O3)	8 HRS	μg/m³	<20	100	Method 411, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
6.	Ammonia (NH3)	24 HRS	μg/m³	15.1	400	Method 401, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
7.	Benzene (C6H6)	24 HR5	μg/m³	<0.10	5	IS 5182 (Part 11) RAJULY-2017: 2006
8.	Benzo(a)pyrene	24 HRS	ng/m³	<0.5	1	LAB 5OP NO – 018 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012
9.	Metal-Lead	24 HRS	μg/m³	<0.1	1	::thod 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
10.	Metal-Arsenic	24 HRS	ng/m³	<1	6	I.Gethod 302, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
11.	Metal-Nickel	24 HRS	ng/m³	1.38	20	I 'ethod 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane Chemist



For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

LOCATION

:SAL/FM/58/ L&TU/ AAM (22-23-0112)

: Gavan, Batching Plant- Near to Casting Yard

REPORT DATE :07/06/2022 **CUSTOMER REF: VERBAL**

REF DATE

:04/04/2022 AMBIENT AIR QUALITY MONITORING

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

: AAM (22-23-0112)

SAMPLING PLAN& METHOD NO. :As per Reference Method

:01/06/2022 to 02/06/2022

SAMPLING DATE **SAMPLING TIME**

:12:45 PM TO 12:45 PM

:04/06/2022

:07/06/2022

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS START DATE ANALYSIS COMPLETE DATE

Sr.No. **Test Parameter Duration** Limit" Unit Result Reference Method **24 HRS** 12. Methane (CH4) 2.1 ppm IS 5182 (Part 17):1979 ue/m³ 13. VOC (BTX) **24 HRS** 1.3 IS 5182 (Part 11) RAJULY-2017: 2006 Carbon Monoxide 14. 8 HRS mg/m³ 0.74 2 IS 5182 (Part 10): 1999 (CO)

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

alytical

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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ULR NO: TC0515022000002189F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0113)

REPORT DATE :07/06/2022

SAMPLE COLLECTED BY: SKYLAR

CUSTOMER REF: VERBAL

REF DATE

:04/04/2022 **AMBIENT AIR QUALITY MONITORING**

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

: AAM (22-23-0113)

LOCATION

SAMPLING PLAN& METHOD NO. SAMPLING DATE

:As per Reference Method

:02/06/2022 to 03/06/2022 :11:50 AM TO 11:50 AM

: Gavan, Batching Plant- Near to Casting Yard

SAMPLING TIME **ANALYSIS START DATE**

ANALYSIS COMPLETE DATE

:04/06/2022

:07/06/2022

Sr.No. **Test Parameter Duration** Unit Limit" Requit Reference Method **Particulate Matter 24 HRS** 1. μκ/m³ 75.2 100 IS:5182, (Part 23) RA July-2017: 2006 as PM10 **Particulate Matter** LAB SOP NO - 02 based on CPCB Guidelines **24 HRS** 2. ug/m³ 32.5 60 NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012 as PM2.5 Sulphur Dioxide 3. **24 HRS** ug/m³ 8.3 80 IS:5182, (Part 2) RA July-2017: 2001 (SO₂) Nitrogen Oxide Δ **24 HRS** µg/m³ 27.1 80 IS: 5182, (Part 6), RA July - 2017: 2006 (NOx) Method 411, Methods of Air Sampling and Analysis, 3rd 5. Ozone (O3) 8 HRS μg/m³ <20 100 Edition, 1988: 1988 Method 401, Methods of Air Sampling and Analysis, 3rd 6. Ammonia (NH3) **24 HRS** μg/m³ 13.8 400 Edition, 1988: 1988 7. Benzene (C6H6) **24 HRS** μg/m³ IS 5182 (Part 11) RAJULY-2017: 2006 < 0.10 LAB SOP NO - 018 based on CPCB Guidelines 8. Benzola)pyrene **24 HRS** ng/m³ < 0.5 1 NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012 Method 822, Methods of Air Sampling and Analysis, 3rd 9. Metal-Lead **24 HRS** µg/m³ < 0.1 1 Edition, 1988: 1988 Method 302, Methods of Air Sampling and Analysis, 3rd 10. Metal-Arsenic **24 HRS** ng/m³ <1 6 Edition, 1988: 1988 Method 822, Methods of Air Sampling and Analysis, 3rd Metal-Nickel 11. **24 HRS** ng/m³ 1.30 20 Edition, 1988: 1988

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

SAMPLE REGISTRATION NO.

REPORT NO REPORT DATE :SAL/FM/58/ L&TU/ AAM (22-23-0113)

: Gavan, Batching Plant- Near to Casting Yard

:07/06/2022 **CUSTOMER REF: VERBAL**

REF DATE

LOCATION

:04/04/2022 **AMBIENT AIR QUALITY MONITORING**

SAMPLE TYPE:

: AAM (22-23-0113)

SAMPLING PLAN& METHOD NO.

:As per Reference Method :02/06/2022 to 03/06/2022

SAMPLING DATE SAMPLING TIME

:11:50 AM TO 11:50 AM

:04/06/2022

ANALYSIS START DATE ANALYSIS COMPLETE DATE

:07/06/2022

SAMPLE COLLECTED BY: SKYLAB

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.8	-	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	0.9	10	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/m³	0.68	2	IS 5182 (Part 10): 1999

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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- . TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0114)

REPORT DATE :13/06/2022

CUSTOMER REF: VERBAL

REF DATE

:04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

SAMPLE REGISTRATION NO.

: AAM (22-23-0114)

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

SAMPLING DATE SAMPLING TIME

SAMPLING PLAN& METHOD NO. : As per Reference Method :06/06/2022 to 07/06/2022

:11:15 AM TO 11:15 AM

:09/06/2022

SAMPLE COLLECTED BY: SKYLAR

ANALYSIS START DATE ANALYSIS COMPLETE DATE

:13/06/2022

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.6		IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	1.0	-	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/ m³	0.64	2	IS 5182 (Part 10): 1999

^{*:} As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- . TEXTILE TESTING
- ELEMENTAL ANALYSIS
- · TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002190F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S .L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0114)

REPORT DATE :13/06/2022 **CUSTOMER REF: VERBAL**

REF DATE

:04/04/2022 AMBIENT AIR QUALITY MONITORING

SAMPLE TYPE:

SAMPLING DATE

SAMPLING TIME

SAMPLE REGISTRATION NO.

: AAM (22-23-0114)

SAMPLING PLAN& METHOD NO. : As per Reference Method

:06/06/2022 to 07/06/2022

:11:15 AM TO 11:15 AM :09/06/2022

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

ANALYSIS START DATE ANALYSIS COMPLETE DATE

13/06/2022

SAMPLE COLLECTED BY: SKYLAB

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
1.	Particulate Matter as PM10	24 HRS	μg/m³	73.2	100	15:5182, (Part 23) RA July-2017: 2006
2.	Particulate Matter as PM2. 5	24 HRS	μg/m³	30.5	60	LAB SOP NO - 02 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012
3.	Sulphur Dioxide (SO2)	24 HRS	µg/m³	8.1	80	IS:5182, (Part 2) RA July-2017: 2001
4.	Nitrogen Oxide (NOx)	24 HRS	μg/m³	21.7	80	iS: 5182, (Part 6), RA July - 2017: 2006
5.	Ozone (O3)	8 HRS	μg/m³	<20	100	Method 411, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
6.	Ammonia (NH3)	24 HRS	μg/m³	12.8	400	Method 401, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
7.	Benzene (C6H6)	24 HRS	μ g/ m³	<0.10	5	IS 5182 (Part 11) RAJULY-2017: 2006
8.	Benzo(a)pyrene	24 HRS	ng/m³	<0.5	1	LAB SOP NO - 018 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012
9.	Metal-Lead	24 HRS	μg/m³	<0.1	1	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
10.	Metal-Arsenic	24 HRS	ng/m³	<1	6	Method 302, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
11.	Metal-Nickel	24 HRS	ng/m³	1.35	20	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified-by

Mr. Atul Shahane

Chemist



For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- · ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002191F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

:SAL/FM/58/ L&TU/ AAM (22-23-0115)

REPORT DATE :13/06/2022

CUSTOMER REF: VERBAL

REF DATE

REPORT NO

:04/04/2022

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

: AAM (22-23-0115)

:As per Reference Method

SAMPLING PLAN& METHOD NO. SAMPLING DATE

:07/06/2022 to 08/06/2022

SAMPLING TIME **ANALYSIS START DATE** :11:20 AM TO 11:20 AM

:09/06/2022

ANALYSIS COMPLETE DATE

:13/06/2022

AMBIENT AIR QUALITY MONITORING

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

SAMPLE COLLECTED BY: SKYLAB

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
1.	Particulate Matter as PM10	24 HRS	µg/m³	74.6	100	IS:5182, (Part 23) RA July-2017: 2006
2.	Particulate Matter as PM2. 5	24 HRS	μg/m³	33.2	60	LAB SOP NO - 02 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012
3.	Sulphur Dioxide (SO2)	24 HRS	hB/W ₃	10.4	80	IS:5182, (Part 2) RA July-2017: 2001
4,	Nitrogen Oxide (NOx)	24 HRS	μg/m³	23.3	80	IS: 5182, (Part 6), RA July - 2017: 2006
5.	Ozone (O3)	8 HRS	μg/m³	<20	100	Method 411, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
6.	Ammonia (NH3)	24 HRS	hg/w ₃	13.1	400	Method 401, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
7.	Benzene (C6H6)	24 HRS	μg/m³	<0.10	5	IS 5182 (Part 11) RAJULY-2017: 2006
8.	Benzo(a)pyrene	24 HRS	ng/m³	<0.5	1	LAB SOP NO - 018 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012
9.	Metal-Lead	24 HRS	μg/m³	<0.1	1	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
10.	Metal-Arsenic	24 HRS	ng/m³	<1	6	Method 302, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
11.	Metal-Nickel	24 HRS	ng/m³	1.40	20	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988

*: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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- TEXTILE TESTING
- ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0115)

REPORT DATE :13/06/2022 **CUSTOMER REF: VERBAL**

REF DATE

:04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

SAMPLE REGISTRATION NO.

: AAM (22-23-0115)

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

SAMPLING PLAN& METHOD NO. **SAMPLING DATE**

:As per Reference Method :07/06/2022 to 08/06/2022

SAMPLING TIME

: 11:20 AM TO 11:20 AM

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS START DATE

:09/06/2022

ANALYSIS COMPLETE DATE

:13/06/2022

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.8	*	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	0.8	-	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/ m³	0.70	2	iS 5182 (Part 10): 1999

*: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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- . TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002192F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

:SAL/FM/58/ L&TU/ AAM (22-23-0125)

REPORT DATE :20/06/2022

CUSTOMER REF: VERBAL

REF DATE

REPORT NO

:04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

SAMPLE REGISTRATION NO. SAMPLING PLAN& METHOD NO. : As per Reference Method

: AAM (22-23-0125)

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

SAMPLING DATE

:13/06/2022 to 14/06/2022

SAMPLING TIME

:11:30 AM TO 11:30 AM

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS START DATE ANALYSIS COMBLETE DATE :16/06/2022 ·20/06/2022

WIRWEIS	IS COMPLETE DATE	.20/0	6/2022			A. 1011
Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
1.	Particulate Matter as PM10	24 HRS	μg/m³	64.8	100	IS:5182, (Part 23) RA July-2017: 2006
2.	Particulate Matter as PM2. 5	24 HRS	µg/m³	28.5	60	LAB SOP NO - 02 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012
3.	Sulphur Dioxide (SO2)	24 HRS	μg/m³	9.2	80	IS:5182, (Part 2) RA July-2017: 2001
4.	Nitrogen Oxide (NOx)	24 HRS	μg/m³	21.6	80	IS: 5182, (Part 6), RA July - 2017: 2006
5.	Ozone (O3)	8 HRS	µg/m³	<20	100	Method 411, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
6.	Ammonia (NH3)	24 HRS	μg/m³	12.3	400	Method 401, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
7.	Benzene (C6H6)	24 HRS	μg/m³	<0.10	5	IS 5182 (Part 11) RAJULY-2017: 2006
8.	Benzo(a)pyrene	24 HRS	ng/m³	<0.5	1	LAB SOP NO - 018 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012
9.	Metal-Lead	24 HRS	μg/m³	<0.1	1	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
10.	Metal-Arsenic	24 HRS	ng/m³	<1	6	Method 302, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
11.	Metal-Nickel	24 HRS	ng/m³	1.24	20	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988

*: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare Authorized Signatory

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- TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002193F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai – 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0126)

REPORT DATE :20/06/2022

CUSTOMER REF: VERBAL

REF DATE

:04/04/2022

AMBIENT AIR QUALITY MONITORING

SAMPLE TYPE:

SAMPLING DATE

SAMPLING TIME

SAMPLE REGISTRATION NO.

SAMPLING PLAN& METHOD NO. : As per Reference Method :14/06/2022 to 15/06/2022

:11:40 AM TO 11:40 AM

: AAM (22-23-0126)

:16/06/2022

LOCATION

: Gavan, Batching Plant- Near to Casting Yard

ANALYSIS START DATE ANALYSIS COMPLETE DATE

:20/06/2022

SAMPLE COLLECTED BY: SKYLAB

Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
1.	Particulate Matter as PM10	24 HRS	hB/w ₃	68.4	100	IS:5182, (Part 23) RA July-2017: 2006
2.	Particulate Matter as PM2. 5	24 HRS	μg/m³	30.1	60	LAB SOP NO - 02 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012
3.	Sulphur Dioxide (SO2)	24 HRS	μg/m³	7.3	80	IS:5182, (Part 2) RA July-2017: 2001
4.	Nitrogen Oxide (NOx)	24 HRS	μg/m³	19.5	80	IS: 5182, (Part 6), RA July - 2017: 2006
5.	Ozone (O3)	8 HRS	μg/m³	<20	100	Method 411, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
6.	Ammonia (NH3)	24 HRS	μg/m³	10.8	400	Method 401, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
7.	Benzene (C6H6)	24 HRS	μg/m³	<0.10	5	IS 5182 (Part 11) RAJULY-2017: 2006
8.	Benzo(a)pyrene	24 HRS	ng/m³	<0.5	1	LAB SOP NO - 018 based on CPCB Guidelines NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012
9.	Metal-Lead	24 HRS	μg/m³	<0.1	1	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
10.	Metal-Arsenic	24 HRS	ng/m³	<1	6	Method 302, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988
11.	Metal-Nickel	24 HRS	ng/m³	1.32	20	Method 822, Methods of Air Sampling and Analysis, 3rd Edition, 1988: 1988

[&]quot;: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Mr. Atul Shahane

Chemist



For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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- · ELEMENTAL ANALYSIS
- . TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S .L & T Construction

MTHL-3 Project, Near Kharkopar Railway Station,

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0126)

REPORT DATE :20/06/2022

CUSTOMER REF : VERBAL

REF DATE :04/04/2022

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

: AAM (22-23-0126)

SAMPLING PLAN& METHOD NO. :As per Reference Method

SAMPLING DATE
SAMPLING TIME
ANALYSIS START DATE

:14/06/2022 to 15/06/2022 :11:40 AM TO 11:40 AM

:16/06/2022

ANALYSIS COMPLETE DATE

:20/06/2022

AMBIENT AIR QUALITY MONITORING
LOCATION : Gavan, Batching Plant- Near to Casting Yard

SAMPLE COLLECTED BY: SKYLAB

Sr.No.	Test Parameter	Duration	Unit	Result	Limit [#]	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.7	-	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	0.7	-	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/ m³	0.66	2	IS 5182 (Part 10): 1999

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*: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare Authorized Signatory

END OF REPORT

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- . TEXTILE TESTING
- · ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

ULR NO: TC0515022000002194F

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0147)

: Gavan, Batching Plant- Near to Casting Yard

REPORT DATE :27/06/2022 **CUSTOMER REF: VERBAL**

SAMPLE COLLECTED BY: SKYLAB

REF DATE

LOCATION

:04/04/2022

SAMPLE TYPE:

AMBIENT AIR QUALITY MONITORING

SAMPLE REGISTRATION NO.

: AAM (22-23-0147)

SAMPLING PLAN& METHOD NO. : As per Reference Method

SAMPLING DATE

:20/06/2022 to 21/06/2022 :02:15 PM TO 02:15 PM

SAMPLING TIME **ANALYSIS START DATE**

:23/06/2022

ANALYSIS COMPLETE DATE

:27/06/2022

Sr.No. **Test Parameter Duration** Unit Result Limit" Reference Method Particulate Matter **24 HRS** ng/m3 58.4 1. 100 IS:5182, (Part 23) RA July-2017: 2006 as PM10 Particulate Matter LAB SOP NO - 02 based on CPCB Guidelines µg/m³ **24 HRS** 2. 26.8 60 as PM2. 5 NAAQMS/36/2012-13, Vol-1 (Page 15-30): 2012 Sulphur Dioxide 3. **24 HRS** ug/m³ 8.6 80 IS:5182, (Part 2) RA July-2017: 2001 (SO₂) Nitrogen Oxide **24 HRS** ug/m³ Δ 16.2 80 IS: 5182, (Part 6), RA July - 2017: 2006 (NOx) Method 411, Methods of Air Sampling and Analysis, 3rd 8 HRS μg/m³ 5. Ozone (O3) <20 100 Edition, 1988: 1988 Method 401, Methods of Air Sampling and Analysis, 3rd Ammonia (NH3) **24 HRS** це/m³ 9.5 400 6. Edition, 1988: 1988 7. Benzene (C6H6) **24 HRS** ug/m³ <0.10 5 IS 5182 (Part 11) RAJULY-2017: 2006 LAB SOP NO - 018 based on CPCB Guidelines 8. Benzo(a)pyrene **24 HRS** ng/m³ < 0.5 1 NAAQMS/36/2012-13, Vol-1 (Page 40-47): 2012 Method 822, Methods of Air Sampling and Analysis, 3rd **24 HRS** 9. Metal-Lead ug/m³ <0.1 1 Edition, 1988: 1988 Method 302, Methods of Air Sampling and Analysis, 3rd Metal-Arsenic **24 HRS** ng/m³ 10. 6 <1 Edition, 1988: 1988 Method 822, Methods of Air Sampling and Analysis, 3rd Metal-Nickel **24 HRS** ng/m³ 11. 1.15 20 Edition, 1988: 1988

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

Jica/ END OF REPORT For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

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Mob. No. - 9867577309 / 310 / 312 / 9930060058

Email - mails@skylabenviro.com Website - www.skylabenviro.com

[:] As per NAAQMS Guidelines 2009





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- FOOD & MICROBIOLOGICAL TESTING
- . TEXTILE TESTING
- · ELEMENTAL ANALYSIS
- . TURNKEY, ENVIRONMENT CONSULTANCY

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station, Ulwe, Navi Mumbai - 410206

SAMPLE TYPE:

SAMPLE REGISTRATION NO.

SAMPLING PLAN& METHOD NO. : As per Reference Method SAMPLING DATE

SAMPLING TIME **ANALYSIS START DATE**

ANALYSIS COMPLETE DATE

REF DATE :04/04/2022

REPORT DATE :27/05/2022

SAMPLE COLLECTED BY: SKYLAB

CUSTOMER REF: VERBAL

REPORT NO

: AAM (22-23-0147) LOCATION

:20/06/2022 to 21/06/2022 :02:15 PM TO 02:15 PM

:23/06/2022 :27/06/2022 AMBIENT AIR QUALITY MONITORING

: Gavan, Batching Plant- Near to Casting Yard

:SAL/FM/58/ L&TU/ AAM (22-23-0147)

70171410	NO COMM ELITE OFFICE	127/00/20	72.4			
Sr.No.	Test Parameter	Duration	Unit	Result	Limit"	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.1	-	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	µg/m³	0.6	-	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/m³	0.54	2	IS 5182 (Part 10): 1999

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane

Chemist

For SKYLAB ANALYT:CAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

1. This report reflects findings only for the above sample tested/monitored and only for time and place of monitoring/testing.

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- *** ENVIRONMENTAL MONITORING**
- . FOOD & MICROBIOLOGICAL TESTING
- TEXTILE TESTING
- ELEMENTAL ANALYSIS
- TURNKEY, ENVIRONMENT CONSULTANCY

TEST REPORT

NAME & ADDRESS OF CUSTOMER:

M/S.L&T Construction

MTHL-3 Project, Near Kharkopar Railway Station.

Ulwe, Navi Mumbai - 410206

SAMPLE REGISTRATION NO.

SAMPLING PLAN& METHOD NO.

REPORT NO

:SAL/FM/58/ L&TU/ AAM (22-23-0125)

: Gavan, Batching Plant- Near to Casting Yard

REPORT DATE :20/06/2022 **CUSTOMER REF: VERBAL**

REF DATE

LOCATION

:04/04/2022 AMBIENT AIR QUALITY MONITORING

SAMPLE TYPE:

: AAM (22-23-0125)

:As per Reference Method

SAMPLING DATE

:13/06/2022 to 14/06/2022

SAMPLING TIME

:11:30 AM TO 11:30 AM

SAMPLE COLLECTED BY: SKYLAB

ANALYSIS START DATE ANALYSIS COMPLETE DATE :16/06/2022 :20/06/2022

4						
Sr.No.	Test Parameter	Duration	Unit	Result	Limit*	Reference Method
12.	Methane (CH4)	24 HRS	ppm	1.6	**	IS 5182 (Part 17) :1979
13.	VOC (BTX)	24 HRS	μg/m³	0.8	- •	IS 5182 (Part 11) RAJULY-2017: 2006
14.	Carbon Monoxide (CO)	8 HRS	mg/m ³	0.59	2	IS 5182 (Part 10): 1999

: As per NAAQMS Guidelines 2009

Opinion/Observation: Analyzed parameters in above tested sample are within standard limit as per NAAQMS Guidelines.

Verified by

Mr. Atul Shahane Chemist

galylica

For SKYLAB ANALYTICAL LABORATORY

Mr. S. B. Pansare **Authorized Signatory**

END OF REPORT

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TEST REPORT

Name	Name of Organization : M/s.L & T Construction					
Addre	ss : Gate No. 1-S	ewri Timber Pond, N	lear Gadi Adda	, Sewri(Eas	st), Mumbai	
Custo	mer Reference : EH401WOD8	000155 Dated 21.0	14.2022			
MoEF	CC Validity : 16 October, 2024					
Discip	line/ Group : Chemical-Environ	ment & Pollution	Test Report	No. :	NIL/W/08/22/230	
Sampl	e Type : Waste Water		Sample Code	e :	NIL/W/08/22/230	
Sampl	ing Method : APHA 1060 (B & 0	C)	Ambient Ten	perature :	27°C	
Sampl	ing Date : 24.08.2022		Sample Receive Date : 24.08.2022			
Analys	is Start Date : 25.08.2022		Analysis Finish Date : 02.09.2022			
Report	ing Date : 02.09.2022		Sample Qty & Pkng. : 2 lit Plastic Can & Micro Bottle			
Sampli	ng Location : MP-36 Bio Toilet		Sampling Done By : Netel India Limited			
Sr. No	Parameter	Result	Limit	Unit	Method	
11	Dissolved Oxygen	6.4	•	mg/lit	APHA 2150(O)-B	
12	E Coli	Absent	Absent	-	IS 1622:181	
13	Total Bacterial Count Count	26 x 10 4	-	cfu	IS 1622:181	

Note:

- 1. This Test Report shall not be reproduced except in full, without written approval of the Laboratory.
- 2. This Test Report refers only to the sample tested.
- 3. The Complaint register is available with the laboratory as per Environment protection act 1986.

End of Report

Verified by:

Surekha Jamdar Technical Manager OU STEED

Issued by:

Shraddha Kere Quality Manager



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Annexure V: MTHL EMP Expenditure details

Sr. No	Environmental attribute	Provision	Total Cost till Dec 2022
1	Environmental Monitoring- Air Act, Water Act, Noise levels	8	2.25
2	Compensatory Restoration Plan (Mangroves)/Land area (Cut/ Transplant and compensatory plantation)	25	50.98
3	Implementation of the suggestions given by BNHS	25	41.98
4	Noise barriers	45	1.1426
5	Mitigation of marine water pollution caused due to the surrounding industries and Sewage from Urban Bodies, by providing Funding and Capacity Building for Enabling Effluent Treatment	40	5.8
6	Contribution to Mangroves Fund, an initiative by Govt. of Maharashtra for Conservation and Protection of Mangroves in Coastal areas by depositing Seed Money. This can be used for Survey & Demarcation of Notified areas. Purchase of vehicles and equipment for anti-Encroachment drives, etc.	25	25
7	Oil Spill Mitigation Plan	10	1.84
8	Habitat quality assessment and monitoring Surveillance management and monitoring team for migratory birds, marine flora, turbidity in sea floor, etc Corpus fund for mudflat restoration program	20	(included in Sr. No. 2 and 3)
9 1	Appointment of Bird Monitor and his assistant till Restoration of Baseline data	4	Included in Sr. No. 3
10	DMP, Fire fighting, Risk Analysis	15	2.76
11 1	Sustainable development including establishing Nature nterpretation Centre	10	10 (included in Sr. No. 2 and 3)
12	Safety and Security	15	19.37
13	Energy conservation	10	4.6
14 a	andscaping-Plantation of trees, flowering plants etc.	8	0.77
	Compensation and Capacity Building of Fisher folks due to Temporary and Permanent Loss of Fishing round.	75	190
	Total	335.00	346.49

0



Annexure VI



No. MMRDA/MTHL-PIU/JICA/QPR-21/1293/2022

To,
Chief Representative,
Mumbai Trans Harbour Link Project (I)
16th Floor, Hindustan Times House,
18-20, Kasturba Gandhi Marge, New Delhi-110-001

Kind Attn: Mr. Katsuo Matsumoto,

Sub: Mumbai Trans Harbour Link Project (I) (ID-P255)

- Quarterly Progress Report (QPR) No. 21 for April 2022 to June 2022.

Sir.

The loan agreement for the Official Development Assistance (ODA) loan for the Mumbai Trans Harbour Link Project (I) is signed between Mumbai Trans Harbour Link Project (I) and Mumbai Metropolitan Region Development Authority (MMRDA) on 31st March 2017 & 29th March 2020 with MMRDA as a direct borrower of the loan.

The Quarterly Progress Report (QPR) No. 21 for the Mumbai Trans Harbour Link Project (I) for the period of April 2022 to June 2022 is enclosed herewith for information please.

Thanking you.

Yours faithfully,

Encl.: OPR-21 (April 2022 to June 2022)

(S. A. Wandhekar) Engineer- In- Chief





एम एम आर डी ए MMRDA

Mumbai Metropolitan Region Development Authority

Mumbai Trans Harbour Link Project

Quarterly Progress Report - No. 21

(From 1st April 2022 to 30th June 2022)



Mumbai Trans Harbour Link Project Quarterly Progress Report No. 21 1st April 2022 to 30th June 2022 Loan Agreement No. ID-P255 (Tranche-I)

ORGANIZATION INFORMATION

	Mumbai Metropolitan Region Development Authority				
	Person in Charge	Metropolitan Commissioner, MMRDA			
Borrower	Contact	MMRDA New Office Building Bondar Karl O			
	Address	M.M.R.D.A. New Office Building, Bandra-Kurla Complex, Plot no. R-5, R-6 & R-12, E Block, Bandra (East), Mumbai - 400051			
		Phone: +91-22-26594000 Fax No:+91-22-2659 1264			
	Mumbai Trans Harbour Link Project Implementation Unit				
	Headed by:	Chief Engineer			
Executing		Mumbai Trans Harbour Link Project Implementation Unit			
Agency	Contact	M.M.R.D.A. New Office Building, Bandra-Kurla Complex.			
	Address	Plot no. R-5, R-6 & R-12, E Block Bandra (East).			
		Mumbai - 400 051			
		Phone: +91-22-2659 4034 Fax No: +91-22-2659 4179			

Details of JICA Loan

	JICA ODA Loan Portion:	238,572 million Japanese YEN (JPY)
Source of Finance	Tranche-I:	144,795 million Japanese YEN (JPY) (Loan Agreement signed on 31st March 2017)
	Tranche-II:	66,909 million Japanese YEN (JPY) (Loan Agreement signed on 27 th March 2020)
Terms and Conditions of JICA ODA Loan (Tranche-1)	Repayment Period:	30 years, including 10 years of the grace period.



DOCUMENT VERIFICATION AND REVISION RECORD

PRO	DJECT NAME	Mumbai Trans Harbour Link Project			
DO	C NO.	21 DA		ATE OF ISSUE	12/07/2022
DO	TITLE	Quarterly Progress Report No. 21			
REV No.	THE RESIDENCE OF THE PARTY OF T	DESCRIPTION	PREPARI BY	CHECKED BY	APPROVED BY
RO	05/07/2017	Quarterly Progress Report No. 1 (Apr-Jun 17)	J Senthi	i Dr T K Sundaran	Dr Robin Sham
RO	05/10/2017	Quarterly Progress Report No. 2 (Jul-Sep 17)	J Senthi	Dr T K Sundaran	Dr Robin Sham
RO	05/01/2018	Quarterly Progress Report No. 3 (Oct-Dec 17)	J Senthi	Dr T K Sundaram	Dr Robin Sham
RO	05/04/2018	Quarterly Progress Report No. 4 (Jan-Mar 18)	J Senthi	Dr T K Sundaram	Dr Robin Sham
RO	24/07/2018	Quarterly Progress Report No. 5 (Apr-Jun 18)	Prashant	B Dr T K Sundaram	Dr Robin Sham
RO	10/10/2018	Quarterly Progress Report No. 6 (Jul-Sep 18)	Prashant	B Dr T K Sundaram	Dr Robin Sham
R1	08/02/2019	Quarterly Progress Report No. 7 (Oct-Dec 18)	Prashant	B J Senthil/ Dr T K Sundaram	Dr Robin Sham
RO	05/04/2019	Quarterly Progress Report No. 8 (Jan-Mar 19)	Prashant I	B J Senthil	V. D. Sharma/ Dr Robin Sham
RO	18/09/2019	Quarterly Progress Report No. 9 (Apr-Jun 19)	Prashant I	Mr. Som Ghosh	Dr Robin Sham
RO	13/11/2019	Quarterly Progress Report No. 10 (Jul-Sep 19)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	11/02/2020	Quarterly Progress Report No.11 (Oct-Dec 19)	Prashant 8	Mr. Som Ghosh	Dr Robin Sham
RO	25/11/2020	Quarterly Progress Report No.12 (Jan-Mar 20)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	15/12/2020	Quarterly Progress Report No.13 (Apr-Jun 20)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	06/01/2021	Quarterly Progress Report No.14 (Jul-Sept 20)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	12/02/2021	Quarterly Progress Report No.15 (Oct-Dec 20)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	06/05/2021	Quarterly Progress Report No.16 (Jan-Mar 21)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	30/07/2021	Quarterly Progress Report No.17 (Apr-Jun 21)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	11/11/2021	Quarterly Progress Report No.18 (Jul - Sep 21)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	17/01/2022	Quarterly Progress Report No.19 (Oct-Dec 21)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	22/04/2022	Quarterly Progress Report No. 20 (Jan - Mar 22)	Prashant B	Mr. Som Ghosh	Dr Robin Sham
RO	12/07/2022	Quarterly Progress Report No.21 (Apr-Jun 22)	Prashant B	Mr. Som Ghosh	Dr Robin Sham



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O

1.0 PROJECT DESCRIPTION

1.1 Project Objective

Original:

To improve connectivity in Mumbai Metropolitan region by constructing the Mumbai Trans Harbour Link connecting Mumbai with Navi Mumbai, thereby contributing to mitigation of traffic congestion and promoting regional economic development.

Actual (P/R, PCR)

There is no change in the Project Objective.

1.2 Necessity of the Project

The Project is consistent with the development policy, sector plan, national/regional development plans and demand of target group of the recipient country.

Benefits from MTHL Project

- Saving in travel time for commuters from Mumbai to Navi Mumbai.
- Improved comfort and accessibility between the island and the mainland.
- Reduced operating costs of vehicles due to lesser congestion.
- Smooth traffic flow from Navi Mumbai airport to Mumbai Island.
- Accelerated economic development of Navi Mumbai and nearby regions.
- Greater economic integration of Mumbai Island with Navi Mumbai and extended regions of Pune, Goa, Panvel and Alibaug.
- Improvement in environment and reduced pollution levels.
- Improved safety due to reduction in accidents.
- Improvement in trade competitiveness through faster and improved logistics.
- Accelerated growth of Navi Mumbai.
- Decongestion of Mumbai Island and dispersal of population to Navi Mumbai region & beyond.

Necessity of the Project

- 1. Although the urbanization in India has been rapidly progressing, infrastructure development in the urban areas has not caught up its progress. Particularly, the traffic congestion in the urban areas due to a lack of road network hinders the economic development. Thus, Government of India (GOI) places transport and connectivity as one of the "Growth Enablers" and plans to enhance road network in the "Three Year Acton Agenda 2017-2018 to 2019-20 (NITI Aayog)".
- Mumbai Metropolitan Region, which includes Mumbai and Navi Mumbai, has about 18.4
 million people in population as of 2011 (Census 2011) and the population density reaches
 20,694 people per square km in the center of Mumbai, which is one of the most
 overpopulated and high-density cities in the world.
- 3. Mumbai, the narrow stretch of land that has traditionally been the epicentre of India's commerce, has seen a steady increase in population in the last three decades despite obvious spatial constraints. Thus, the development of Navi Mumbai has been identified as

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an urgent requirement for broad development in Mumbai Metropolitan Region.

- 4. The Government of Maharashtra (GoM), of which Mumbai Metropolitan Region is under jurisdiction, has been facilitating various development plans particularly in Navi Mumbai area, which stands at the opposite site of Mumbai across the Mumbai Bay and still has spacious area for development, such as a new international airport, Special Economic Zone (SEZ) and expansion of Jawaharlal Nehru Port in order to promote the sustainable economic development in Mumbai Metropolitan Region.
- 5. Furthermore, a lack of connectivity in Mumbai has stunted its growth. The GoM has given importance to construct the faster connection with Mumbai to Navi Mumbai International Airport, Jawaharlal Nehru Port, Mumbai-Pune expressway and main hinterland.
- 6. Accordingly, the Mumbai Trans Harbour Link (MTHL) has been identified as the important infrastructure to improve the connectivity between Mumbai and Navi Mumbai and continue economic development in Mumbai Metropolitan Region.
 - The MTHL is proposed to be developed as an expressway link comprising of a dual three-lane main carriageway bridge connecting Sewri in Mumbai to Chirle in Navi Mumbai. When completed, MTHL will reduce the distance between Mumbai and Navi Mumbai and will help save approximately an hour in travel time. Also, development of Navi Mumbai along with the imminent construction of the Navi Mumbai airport will lead to increased traffic between Mumbai and Navi Mumbai. Consequently, the project is envisaged to; improving accessibility between Mumbai and Navi Mumbai, accelerating growth of Navi Mumbai, smooth traffic flow from Navi Mumbai airport to Mumbai, accelerating economic development of Navi Mumbai and surrounding regions, greater economic integration of Mumbai with Navi Mumbai and extended regions of Pune, Goa, Panvel and Alibaug, and decongestion of Mumbai and dispersal of population to Navi Mumbai region and beyond.
- 7. The Comprehensive Transportation Study (CTS) for Mumbai Metropolitan Region which was guided by Mumbai Metropolitan Region Development Authority (MMRDA) and supported by World Bank, was completed in July 2008, which was over 25 years after the issuance of the last comprehensive transport study. The report provided a vision for Mumbai's future transportation as seamless and integrated system, in which commuters can make their journeys safely and conveniently by various modes of transport, particularly by public transport, and recommended the development of Multi Modal Corridor to take care of the varied travel demands of the region for the period up to 2031. The CTS proposed to develop the highway network in the region. The MTHL has been regarded as the priority road for Mumbai, considering its function and importance connecting between Mumbai and Navi Mumbai.
- 8. Necessity of the Project: To promote economic development in Mumbai Metropolitan Region it is essential to improve the connectivity between Mumbai and Navi Mumbai, by constructing MTHL.

Actual (P/R, PCR)

There is no change in the Necessity of the Project preamble.

1.3 Rationale of the Project Design

- Timing, Scale, Technology of the Project: 1st April to 30th June 2022

Page 6 of 63 ONS

Demand Analysis

1. At the opening year 2022, the daily traffic on the main bridge is expected to be 39,300 PCU. The traffic is projected to increase up to 103,900 by 2032 and up to 145,500 by the year 2042. The daily breakdown by vehicle class on the main bridge link is presented in the Table 1.3.1 below:

Table 1.3.1 Demand Projections Over the Period

Vehicle Type	Between Sewri Interchange and Shivaji Nagar Interchange			Between Shivaji Nagar Interchange an Chirle Interchange		
	2022	2032	2042	2022	2032	2042
Car	24,100	66,400	94,100	4,900	21,300	43,300
Taxi	2700	14,100	20,200	100	400	2,300
Bus	2,700	3,700	3,700	2,700	3,700	3,700
LCV	2,200	4,100	5,600	700	1,300	1,800
HCV	3,000	6,500	8,100	1,000	2,000	2,200
MAV	4,600	9,100	13,800	400	900	1,700
Total	39,300	103,900	145,500	9,800	29,600	55,000

LCV: Light Commercial Vehicle; HCV: Heavy Commercial Vehicle; MAV: Multi Axle Vehicle

- 2. At the opening year in 2022, the traffic flow on MTHL represents a diversion of 10% on the traffic across Thane creek which will increase up to 16% in 2032. If only Thane Creek Bridge is considered, then the diverted traffic from the bridge will be 21% in 2022 which will rise up to 35% in 2032.
- 3. 6-lane of main carriageway was decided by GoM. It was reviewed based on the forecasted result of future traffic volume by Manual of Specification and Standards for Expressways (IRC: SP:99-2013). The result of the review shows that 6-lane will be required in 2032 (10 years later after traffic open). Although, 8-lane will be required in 2042, it is assumed that the level of service of MTHL would be maintained as additionally metro might be constructed in parallel with MTHL.

Design Parameters / Overall Design

- 4. The MTHL which is 21.8 km long road bridge partly on the land and partly over the creek across the Mumbai Bay between Sewri in Mumbai and Chirle in Navi Mumbai, is to be constructed with the approach sections and interchanges. ITS (Intelligence Transport System) and the other necessary facilities will be provided for full access-controlled bridges.
- 5. As per the provisions of IRC (Indian Road Congress) SP:99-2013, the Width of each lane of the Main Carriageway is 3.5 meters.
- 6. When the design speed is 100 km/h according to the traffic demand forecast the large vehicle, ratio will be as low as 9.4% (2022).
- 7. The shoulder width of bridge towards outside of each carriageway is 2.5 meters and towards median side of each carriageway is 0.75 meters.
- 8. The major portion of MTHL structure is on sea and partly towards ends is on land with different type and with different span, viz., PC box girder with 50 m spans which is typically applied on marine viaduct since, it is economical, easy to construct and maintain.

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- 9. On the land portion, the PC box girder having span of generally 30m is used.
- 10. As far as the location in which long span (150-180 m) is required to cross significant obstacles, such as navigation channels, pipelines and creeks, the steel box girder bridge with steel deck is proposed with large block erection method to shorten the construction period.
- 11. The project is coded with three lanes of traffic in each direction. The reference toll is presented in the Table 1.3.2 below for each vehicle class in Year 2022 (based on 2015 monetary value reflecting price escalation).

Table 1.3.2: Base Toll Rates (Rs) for different class of vehicles between Interchanges

Vehicle Type	Sewri to Shivaji Nagar	Shivaji Nagar to Chirle	Total
Car	180	60	240
Bus	420	130	550
LCV	240	70	310
HCV	420	130	550
MAV	600	180	780

Intelligent Transport Systems (ITS) and Toll Management System (TMS)

- 12. The Toll Management System will be implemented in MTHL to collect tolls from all road users of MTHL. Two types of toll collection method will be adopted: Electronic Toll Collection (ETC) and Manual (paying by cash).
- 13. The lanes corresponding to these toll collection methods are dedicated ETC lanes and Manual lanes, and Manual system shall be installed to ETC lanes for backup to be able to cope at the time of the trouble of ETC equipment failure.

Traffic management System

- 14. Traffic Management System is a support system to Manage the traffic on MTHL safely and efficiently. The System consists of the information collection system including Closed-Circuit Television (CCTV), Emergency Call Box (ECB), Automatic Traffic Counter-Cum-Classifier (ATCC) and Meteorological Data System (MDS), and Information Dissemination System including Variable message Sign (VMS).
- 15. CCTV Cameras shall be installed at around three places per 1 km, on Both side of main route and the monitoring of the traffic condition of the whole stretch of MTHL will be almost enabled in the Traffic Control Centre and VMS displays the appropriate information for road users on the collated information.
- 16. The Information collected by these devices shall be transmitted to the Command Contro! Centre through the medium of an Optical Fiber Cable laid in MTHL.

Actual (P/R, PCR)

There is no change in the Rationale of the Project Design.



2.0 PROJECT IMPLEMENTATION

2.1 Project Scope

Refer Table 2.1.1 and 2.1.2 for details on Scope of the Project.

Table 2.1.1 Comparison of Original and Actual location

	Original: (P/M)	
Location	Mumbai Metropolitan Region Development Authority, Mumbai, State of Maharashtra	Actual: (P/R and PCR)

Table 2.1.2 Comparison of Original and Actual Scope

Items	Original	Actual
Construction	n work: 6-lane Marine Bridge Road (21.8 km)	
Package-1 Ch 0+000- 10+380 (10.380 km)	 1 Interchange (Sewri) Viaduct superstructure (Marine Portion: PC Box Girder & Steel Box Girder with Steel Slab Land Portion: PC Box Girder & PC-I Girder) Viaduct Substructure (RC Concrete Structure) Viaduct Foundation (Bored piles) Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers) 	(P/R and PCR)
Package-2 Ch 10+380- 18+187 (7.80 km)	 1 Interchange (Shivaji Nagar) Viaduct superstructure (Marine Portion: PC Box Girder & Steel Box Girder with Steel Slab Land Portion: PC Box Girder & PC-I Girder) Viaduct Substructure (RC Concrete Structure) Viaduct Foundation (Bored piles) Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers) 	(P/R and PCR) Actual: No View Barriers
Package-3 Ch 18+187- 21+800 (3.61 km)	 2 Interchanges (State Highway-54, National Highway-4B) Viaduct superstructure (Marine Portion: PC Box Girder & Steel Box Girder with Steel Slab Land Portion: PC Box Girder & PC-I Girder & Steel Truss Girder for Rail-over-Bridges (ROB) Viaduct Substructure (RC Concrete Structure) Viaduct Foundation (Bored piles) Cutting Section (6-lane with Slope Protection) Road Furniture and roadside facilities (Traffic Signs and Pavement Marking, Traffic Safety Devices, Crash Barrier, Drainage Structures, Noise Barriers, View Barriers) 	(P/R and PCR) Actual: No Noise Barriers & View Barriers

Items	Original	Actual
Package-4 ITS (Intelligent Transport System)	 Administrative Buildings Toll Booths (1 for main alignment and each on and off rumps for 3 interchanges) Traffic Management System (Traffic Control Centre, Closed Circuit Television (CCTV), Meteorological Observation System (MET), Emergency Call Box (ECB), Automatic traffic Counter-cum-Classifier (ATCC), Variable Message Sign (VMS)) Highway Lighting (Whole sections Low-positioned lighting for some sections) Electrical Powering System including HV/ LV Ring Network across the Bridge. 	(P/R and PCR)
Consulting Services	 Tender Assistance Construction Supervision Facilitation of Implementation of Environmental Management Plan (EMP), Environmental Monitoring plan (EMoP). 	(P/R and PCR)



2.2 Implementation Schedule

2.2.1 The Original Implementation Schedule

Table 2-2-1 Comparison of Original and Actual Schedule

	Items	Original	Status (P/R and PCR) as on 30th June 2022
1)	Completion of Land Acquisition and Resettlement	March 2019	Sept 2022
2)	Consulting Services		
	a) Selection of Consultant	May - December 2016	May - December 2016
	b) Consultancy Works	December 2016 – September 2024	December 2016 – September 2024
3)	Selection of Contractor		RECORSE LESSES . LE
Pa	ickage-1, Package-2 & Package		
	a) Pre-Qualification Process	May – December 2016	May - December 2016
	b) Main Bidding	January – December 2017	January - December 2017
	 c) JICA's Concurrence of Contract 	February-2018	February-2018
Pa	ckage-4 (ITS)		
	a) Pre-Qualification Process	Single Stage Bidding a	s concurred by JICA
	b) Main Bidding	June 2019 - September 2020	Jan 2021 - Dec 2021
4)	Civil Construction		
Pac	ckage-1 and Package-2	March 2018 - September 2022	March 2018–September 2023 (Extended)
Pac	kage-3	March 2018 - September 2021	March 2018 – March 2023 (Extended)
Pac	kage-4	October 2020 – September 2022	June 2022 – August 2023
5)	Defect Liability Period		
Pac	kage-1 and Package-2	October 2022 – September 2024	October 2023 – September 2025
Pack	kage-3	October 2021 – September 2023	April 2023 – March 2025
Pack	age-4	October 2022 – September 2024	Sept 2023 – August 2025
	Commencement of Toll Collection	September 2022	October 2023
,	election of O&M organization	October 2020 – September 2021	October 2022 – September 2023

Attachment 6, 7 & 8: Package wise construction schedules (progress) updated at the end of 1st Quarter (April – May - June 2022).

2.2.2 Reasons for changes of the schedule and their effects to the Project

(P/R and PCR)

No change in the Implementation Schedule except the selection of O&M Organization timeline

2.3 Project Cost

2.3.1.a Comparison of Originally Planned and Actually Incurred Cost BY ITEM

Table 2.3.1.a.(i) Originally Planned Cost BY ITEM

	Foreig	n Current	y Portion	Loca	l Currency	Portion		Total	
Cost Breakdown	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mlf)	Total (Rs. mil)	JICA Portion (Rs. mil	1/De mail		JICA Portion (JPY mil	
Package-1	34,398	34,398	0	45,376	45,376	0	105,713	105,713	0
Package-2	26,513	26,513	0	32,617	32,617	0	77,774	77,774	0
Package-3	759	759	0	8,276	8,276	0	13,766	13,766	0
Package-4 (ITS)	0	0	0	1,444	1,444	0	2,269	2,269	0
Package-5 (Geotechnical Investigation)	0	0	0	166	0	166	260	0	260
Dispute Boards (Package-1, 2, 3 & 4)	63	63	0	45	45	0	134	134	0
Price Escalation	2,251	2,251	0	7,133	7,133	0	13,460	13,460	0
Physical Contingency	6,398	6,398	0	9,506	9,489	17	21,338	21,312	26
Consulting Services	1,650	1,650	0	1,587	1,587	0	4,145	4,145	0
Land Acquisition*	0	0	0	11,293	0	11,293	17,748	0	17,748
Administration Cost	0	0	0	4,898	0	4,898	7,698	0	7,698
GST	0	0	0	18,238	0	18,238	28,663	0	28,663
mport Tax	0	0	0	13,435	0	13,435	21,114	0	21,114
nterest during construction	2,942	0	2,942	0	0	0	2,942	0	2,942
ront End Fee	477	0	477	0	0	0	477	0	477
otal	75,451	72,032	3,419	154,013	105,967	48,046	317,501	238,572	78,929

(Note) 1. Exchange Rate: US\$1=Rs. 71.9, US\$1=JPY 113.0, Rs.1 = JPY 1.57

2. Price Escalation (a) Foreign Currency Portion: 1.83% p.a.(b) Local Currency Portion: 4.13% p.a.

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696. The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.



Table 2.3.1.a.(ii) Actually Incurred Cost BY ITEM

	Foreig	n Currenc	y Portion	Loca	Currency	Portion		Total	NE DE
Cost Breakdown	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mll)	JICA Portion (Rs. mil		Total (JPY mil	JICA Portion (JPY mil	
Package-1	21,828	21,828	-	33,680	33,680		73,196	73,196	
Package-2	22,472	22,472	-	22,759	22,759		56,847	56,847	
Package-3	633	633	-	6,721	6,721		10,664	10,664	
Package-4 (ITS)	-		-	-			-		
Package-5 (Geotechnical Investigation)	-			196		196	308		308
Dispute Boards (Package-1, 2, 3 & 4)	_			-			00		-
Price Escalation	-			4	4		6	6	-
Physical Contingency	-			-			-		-
Consulting Services	253	253		362	362		1,108	1,108	
Land Acquisition*	-			7,601		7,601	11,933		11,933
Administration Cost	-			4,936		4,936	7,749		7,749
GST	944			14,014		14,014	22,002		22,002
Import Tax	-			-			-		- 1
nterest during construction	-			-			-		-
Front End Fee	-			-			-		-
Total .	45,186	45,186	-	90,273	63,524	26,747	183,813	141,821	41,992

(Note) 1. Exchange Rate: Rs.1 = JPY 1.57 for MMRDA Portion only

2. Price Escalation (a) Foreign Currency Portion: 1.83% p.a. (b) Local Currency Portion: 4.13% p.a.

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: December 2018

* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696. The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.



2.3.1.bComparison of Originally Planned and Actually Incurred Cost BY YEAR Table 2.3.1.b.(i) Originally Planned Cost BY YEAR

(All Figures are in JPY mil)

Cost	Total		JICA Portion					
Breakdown	rotar	Tranche I	Tranche II	Tranche III	Sub Total	(MMRDA Portion)		
FY 2017	12,679	10,134	0	0	10,134	2,545		
FY 2018	30,771	22,707	0	0	22,707	8,064		
FY 2019	72,379	56,816	0	0	56,816	15,563		
FY 2020	92,944	55,138	16,040	0	71,178	21,765		
FY 2021	66,397	0	50,869	0	50,869	15,527		
FY 2022	27,683	0	0	20,113	20,113	7,570		
FY 2023	3,723	0	0	565	565	3,158		
FY 2024	10,925	0	0	6,189	6,189	4,735		
Total	317,501	144,795	66,909	26,868	238,571	78,929		

Table 2.3.1.b.(ii) Actually Incurred Cost BY YEAR

(All Figures are in JPY mil)

Cost	Total		JICA Portion					
Breakdown	TOTAL	Tranche I	Tranche II	Tranche III	Sub Total	(MMRDA Portion)		
FY 2017	13,738	9,232	-	-	9,232	4,506		
FY 2018	26,813	21,695	_	-	21,695	5,118		
FY 2019	40,410	31,014	-	-	31,014	9,396		
FY 2020	31,859	23,922	-	-	23,922	7,937		
FY 2021	54,021	43,248	-	-	43,248	10,773		
FY 2022	16972	12,710	-	-	12,710	4,262		
FY 2023						-,		
FY 2024								
Total	183,813	141,821	-	par .	141,821	41,992		

(Note) 1. Exchange Rate used: Rs.1 = JPY 1.57 for MMRDA Portion only

- 2. Fiscal Year starting from 1st April and ending on 31st March.
- **2.3.2** Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(P/R and PCR)

There is no major gap between the original and actual cost.



2.4 Organization for Implementation

2.4.1 Executing Agency

Original:

Executing Agency

Mumbai Metropolitan Region Development Authority (MMRDA) was established on 26thJanuary 1975 in accordance with the Mumbai Metropolitan Development Act, 1974 to make Mumbai Metropolitan Region (MMR) a destination for economic activity by promoting infrastructure and regional planning. MMRDA takes all the necessary measures, required from time to time, in an effective manner and be fully responsible for the Project implementation. After completion of the Project, MMRDA continues to be responsible for the efficient operation and maintenance of the Project.

The GoM appointed MMRDA as the implementing/ executing agency of MTHL vide Government Resolution dated 4th February 2009 and further the ownership of MTHL would be with MMRDA vide Government Resolution dated 8th June 2011.

Organization's Role

To construct, execute, carryout, improve, work, develop, administer, manage, control or maintain in MMR all types of roads, highways, express routes, paths, streets, bridges, sideways, tunnels and other infrastructure, works and conveniences, approach road, etc. Under the Project, MMRDA is responsible for all the tendering process including employment of consultants, as well as for the construction process.

Project Implementation Unit (PIU)

The PIU is in charge of the Projects. The PIU is headed by Chief Engineer, comprising of 6 Divisions/Cells (Finance Division, Social Development Cell, Engineering Division, Land Cell, Administrative Division and Environmental Cell), Supervision/ ITS Consultant and supporting staff.

Procurement

MMRDA shall have to adopt the JICA's Standard Biding Documents of the latest version, as stipulated in Section 4.01 (2) of "Guidelines for Procurement under Japanese ODA Loans.

Procurement of goods and services, except for consulting services, converted by the Japanese ODA Loan should be implemented in accordance with "Guidelines for Procurement under Japanese ODA Loans", dated in April 2012. Employment of consultants should be implemented in accordance with "Guidelines of Employment of Consultant under Japanese ODA Loans", dated in April 2012. "Principles of Procurement under the Project" is attached for brief explanation of the above Guidelines.

Actual, if changed: (P/R and PCR)

There is no change made in the original Organisation Set-up & Implementation methods. Refer Annexure III Organisation Chart.



2.4.2 Contractor(s)/ Supplier(s), and Consultant(s) and their Performance:

2.4.2.1 Procurement & Consultant

Table 2.4.2 Procurement of Contractor(s)/ Supplier(s) and Consultant(s)

Contract			
Package	Original: (P/M)		Actual: (P/R and PCR)
Construc	tion Works		
1	Package-1: From CH 0+000 - To CH 10+380 (10.38 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
2	Package-2: From CH 10+380 - To CH 18+187 (7.80 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
3	<u>Package-3:</u> From CH 18+187 - To CH 21+800 (3.61 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
4	Package-4: To install ITS (Toll Management System and Highway Traffic Management System)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	International Competitive Direct Bidding Process without Pre-Qualification
5	Package-5: To conduct the geotechnical investigation	Local Competitive Bidding Process	No Change
nsulting	Services		
1	Consulting Service for Supervision	Short List Method (QCBS)	No Change



2.4.2.2 Performance

Consultant's Progress:

April 2022:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
 - i) Package-1: IPC-49 20% Detailed Verification and IPC-51 80% Ad-hoc.
 - ii) Package-2: IPC-47 20% Detailed Verification and IPC-48 80% Ad-hoc.
 - iii) Package-3: IPC-43 20% Detailed Verification and IPC-44 80% Ad-hoc.
- 2 GC has prepared and submitted a total reimbursement claim of 10387.79 million JPY to MMRDA / JICA in April 2022.

May 2022:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
 - i) Package-1: IPC-50 20% Detailed Verification and IPC-52 80% Ad-hoc.
 - ii) Package-2: IPC-48 20% Detailed Verification and IPC-49 80% Ad-hoc.
 - iii) Package-3: IPC-44 20% Detailed Verification and IPC-45 80% Ad-hoc.
- 2 GC has prepared and submitted a total reimbursement claim of 991.05 million JPY to MMRDA / JICA in May 2022.

June 2022:

- 1 GC scrutinized & certified the following invoices claimed by the Contractors:
 - i) Package-1: IPC-51 20% Detailed Verification and IPC-53 80% Ad-hoc.
 - ii) Package-2: IPC-49 20% Detailed Verification and IPC-50 80% Ad-hoc.
 - iii) Package-3: IPC-45 20% Detailed Verification and IPC-46 80% Ad-hoc.
- 2 GC has prepared and submitted a total reimbursement claim of 1412.15 million JPY to MMRDA / JICA in June 2022.
- 3 100% of the Technical Design Modules across all the 3 Packages have been given "NONO" by the GC.
- 4 Approximately 99% of the Construction (GFC Good For Construction) Design Modules across all the 3 Packages have been given "NONO" by the GC.

Package-1 - 100%, Package-2 - 99%, Package-3 -100%

5 Package-4 (ITS) - Letter of Acceptance (LOA) was issued to Strabag GmbH and Strabag AG JV on 5th May 2022.

Contractor's Progress:

Package-1 Physical Progress till 30th June 2022

	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
	Permanent Bridge Works	- Land/ Inte	rchange	Zone		
1.	1 Piles	523	No.	523	100%	
1.	2 Pile Caps	158	No.	125	79.11%	
1.	3 Piers	228	No.	187	82.02%	
1.4	4 Pier Caps	228	No.	178	78.07%	
2	Permanent Bridge Works -	Intertidal Z	one			
2.1	Piles :	312	No.	312	100%	
2.2	Pile Caps	75	No.	75	100%	
2.3	Piers	146	No.	146	100%	
2.4	Pier Caps	146	No.	146	100%	
3	Permanent Bridge Works -	Marine Zon	10			
3.1	Piles	403	No.	403	100%	
3.2	Pile Caps	80	No.	80	100%	
3.3	Piers	162	No.	128	79.01%	
3.4	Pier Caps	162	No.	125	77.16%	
4	Permanent Bridge Works - 1	Total				
4.1	Piles	1238	No.	1238	100%	
4.2	Pile Caps	313	No.	280	89.46%	
4.3	Piers	536	No.	461	86.01%	
4.4	Pier Caps	536	No.	449	83.77%	
5	Precast Segments					
5.1	Segment Casting	6713	No.	4972	74.07%	
5.2	Segment (Span) Erection+ Cast-in-Situ Slab	478	No.	268	56.07%	
6	OSD Structural Steel					
6.1	Fabrication	52726	МТ	53703	100%	
6.2	Assembly (Large Blocks)	52726	МТ	19957	37.16%	
6.3	OSD Span Erection	38	No.	9	23.68%	

	Pac	ckage-2 Physical Progres	ss till 30°	h June 20	22		
	S. No		Tot Sco	11011	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
	21	Permanent Bridge Work	s - Land/	Interchan	ge Zone	1200	Samo H
	1.1	Open Foundation	113	No.	113	100%	
	1.2	Piers	119	No.	119	100%	
	1.3	Pier Caps	105	No.	99	94%	
	1.4	Portal Beams- Land	6	No.	6	100%	
	1.5	3		No.	42	100%	
	2 ,	Permanent Bridge Works	s - Intertio	dal & CRZ	Zone 🦠 🖟 🥶	(T) 数为扩展器	
1 2	2.1	Piles	280		280	100%	
2	2.2	Pile Caps	72	No.	72	100%	
2	2.3	Piers	72	No.	72	100%	
2	2.4	Pier Caps	18	No.	18	100%	
2	2.5	Pier Head Segments	54	No.	54	100%	_
	3	Permanent Bridge Works	- Marine	Zone			
3	.1	Piles	504	No.	504	100%	
3.	.2	Pile Caps	120	No.	117	98%	
3.	.3	Piers	120	No.	110.6	92%	
3.	4	Pier Caps	48	No.	33	69%	
3.	5	Pier Head Segments	74	No.	37	50%	
4		Permanent Bridge Works	- Total		a refrae.vis		
4.	1	Open Foundation	113	No.	113	100%	
4.2	2	Piles	784	No.	784	100%	
4.3	3	Pile Caps	192	No.	189	98%	
4.4	1	Piers	311	No.	301.6	97%	
4.5	5	Pier Caps/ Portal Beams	177	No.	156	88%	
4.6	3	Pier Head Segments	170	No.	133	78%	
5		Precast Segments					
5.1		Segment Casting	3142	No.	2227	71%	
5.2	4	Segment (Span) Erection + Cast-in-Situ Slabs	272	No.	152	56%	The state of the s
6	(OSD Structural Steel					# # The
6.1	F	Fabrication	34726	МТ	34,726	100%	
6.2		Assembly (for Large Block)	34726	мт	9863	28.40%	And the latest the lat
6.3	C	OSD Span Erection	32	No.	6	18.75%	

Package-3 Physical Progress till 30th June 2022

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Permanent Bridge Works					
1.1	Open Foundations	221	No.	221	100%	
1.2	Piles	24	No.	2	100%	
1.3	Pile Caps	4	No.	4	100%	
1.4	Piers	242	No.	231	95.45%	
1.5	Pier Caps	189	No.	178	94.18%	
1.6	Segment Casting	834	No.	834	100%	
1.7	Segment (Span) Erection	59	No.	44	74.58%	
1.8	Cast in-situ Slab	108	No.	82	75.93%	
1.9	ROB Span	20	No.	4	20%	

Package-4 (ITS) Progress till 30th June 2022

- As recommended by the GC, JICA accorded concurrence for Single Stage Bidding (without Pre-Qualification) on 9th October 2020 and asked to submit draft Bid Document for review and approval.
- The GC submitted first draft Bid Document to the Employer on 2nd November 2020 for review.
- 3. After reviewing the draft, MMRDA issued the observations on 29th December 2020 for further correction & amendments, etc. The GC is in the process of preparing the revised draft Bid Document.
- 4. The GC submitted the revised draft Bid Document to the Employer on 14th June 2021 for a review and further concurrence with JICA.
- 5. The Employer received JICA concurrence for the revised Bid Documents on 24th August 2021.
- 6. The Tender has been floated (published) on 3rd September 2021. A Pre-bid Meeting was arranged on 27th September 2021.
- 7. JICA concurrence for the Technical Evaluation Report received on 15th Feb 2022. The Financial Bid opened on 16th Feb 2022.
- 8. GC evaluated the Financial Bid, and the report was sent to the Employer on 28th March 2022 which they further sent to JICA. JICA concurrence for the Financial Evaluation Report is awaited.
- 9. JICA concurrence for the Financial Evaluation Report received on 21st April 2022.
- 10. Letter of Acceptance (LOA) was issued to Strabag GmbH and Strabag AG JV on Str. May 2022.

Health & Safety and Environment (HSE)

The HSE Plans have been submitted by the respective construction agencies for the Packages which are being monitored by the GC on a regular basis.

Package-1 Safety Report

Sr. No	Description	From April to June 2022	Cumulative
1	Total Man Hours Since Inception	4,456,369	51,475,264
2	Number of Man-Hours (Accident-Free Man-Hours)	2,999,916	11,560,260
3	Number of Man-Days	557,046	6,434,407
4	Number of Reportable Fatal Accidents	0	6
5	Number of Non-Fatal Accidents	4	12
6	Number of Near Miss Incidents	9	126
7	Number of First Aid Cases	32	324
8	Number of Dangerous Occurrences	1	4
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	3,240	297,544
11	Number of Man-Days Lost	433	37,221
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	3	3
13	Number of Inspections done for Offices & Sites	90	4,003
14	Number of Training/ Induction done for Offices & Sites	410	3,059
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	12,823	16,042
16	Details of Safety Committee meetings	3	46
17	No. of toolbox talks	13,460	138,407
18	No. of critical excavations.	3	81
19	Pre-employment Medical check-up	3,227	43,544
20	No. of Safety Walk down	22	284
21	No. of Safety Inductions completed	3,227	43,544



Package-2 Safety Report

Sr. No	Description	From April to June 2022	Cumulative
1	Total Man Hours Since Inception	2,857,910	27,569,190
2	Number of Man-Hours (Accident-Free Man-Hours)	2,597,848	3,288,725
3	Number of Man-Days	259,810	2,507,637
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	1	10
6	Number of Near Miss Incidents	41	323
7	Number of First Aid Cases	11	179
8	Number of Dangerous Occurrences	3	18
9	Number of Reportable Sick Cases	0	2
10	Number of Man-Hours Lost	1,056	5,716
11	Number of Man-Days Lost	132	696
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	1	1
13	Number of Inspections done for Offices & Sites	7,255	8,455
14	Number of Training/ Induction done for Offices & Sites	124	1,122
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	10,278	12,650
16	Details of Safety Committee meetings	3	50
17	No. of toolbox talks	1,166	11,878
18	No. of critical excavations.	0	0
19	Pre-employment Medical check-up	851	16,599
20	No. of Safety Walk down	12	173
21	No. of Safety Inductions completed	960	17,007



Package-3 Safety Report

Sr. No	Description	From April to June 2022	Cumulative
1	Total Man Hours Since Inception	581,262	6,200,401
2	Number of Man-Hours (Accident-Free Man-Hours)	581,262	4,100,052
3	Number of Man-Days	72,658	775,051
4	Number of Reportable Fatal Accidents	0	0
5	Number of Non-Fatal Accidents	0	2
6	Number of Near Miss Incidents	4	28
7	Number of First Aid Cases	6	120
8	Number of Dangerous Occurrences	0	1
9	Number of Reportable Sick Cases	0	0
10	Number of Man-Hours Lost	0	2,312
11	Number of Man-Days Lost	0	289
12	Number of Reportable Accidents per 100,000 Man-Hours Worked	0	0
13	Number of Inspections done for Offices & Sites	59	897
14	Number of Training/ Induction done for Offices & Sites	32	298
15	Daily Average Manpower (Including all Workmen & Staff) for the Month	1,739	2,214
16	Details of Safety Committee meetings	4	47
17	No. of toolbox talks	598	7,942
18	No. of critical excavations.	3	12
19	Pre-employment Medical check-up	631	10,254
20	No. of Safety Walk down	12	177
21	No. of Safety Inductions completed	631	10,254



3.0 BENEFITS DERIVED FROM THE PROJECT (EFFECTIVENESS)

Operational and Physical Condition 3.1

(This section will be developed when the operational plan is available)

Facilities	Description of condition	Problems, its Background and Remedial Action Plan
(P/R and PCR)	(P/R and PCR)	(P/R and PCR)

3.2 Precautions (Measures To Be Adopted/ Points Which Require Special Attention)

Original Issues and Countermeasure(s) Actual Issues and Countermeasure(s) 3.2.1 General Issues (P/R and PCR) 1. Toll Arrangement/ Toll Rate Fixed toll rate as per the type of vehicle Appropriate Tolling Policy/ Rates will be finalized will be levied for the road users after the by December 2021, completion of the Project. An appropriate tolling policy/ rates will be finalized in consultation with the state government prior to the completion of Civil works. 2. Operation and Maintenance MMRDA proposes to appoint separate agencies for Operation & Maintenance of A single Operation and Maintenance Contractor the bridge and for Toll Management will be appointed by December 2021. System. Both the agencies for O & M and Toll Management System may be appointed through open tendering process. Overall monitoring of the two agencies would be done by MMRDA inhouse through a separate cell which could be constituted for the purpose. MMRDA has confirmed to allocate an adequate budget for engaging the Contractors. 3.2.2 Environmental and Social (P/R and PCR) • MMRDA has disclosed Supplemental EIA &

Consideration

CRZ Clearance

- i. Supplemental EIA has been approved by MMRDA and disclosed on the website of JICA. A supplemental EIA report has been disclosed also on the website of MMRDA.
- ii. Furthermore, renewed CRZ Clearance has been obtained in January 2016.
- iii. In accordance with the conditions for

- SIA on MMRDA website.
- The renewed CRZ clearance was granted on 25/1/2016 from MoEF&CC and the approval conditions have been imposed on the Contractors as the Employer's requirements. MMRDA has actively monitored the compliances of the approval conditions and maintained them throughout the construction phase.

CRZ Clearance, appropriate measures shall be taken, and necessary budget shall be secured by MMRDA.

- MMRDA appointed Mangroves & Marine Biodiversity Foundation for bird monitoring and implementation of Flamingos and bird monitoring program for the MTHL project during the construction as well as the longterm monitoring after the construction.
- Rs 91.42 Crore has been transferred to Mangroves & Marine Biodiversity Foundation, Mumbai for the development & conservation of mangrove area and its afforestation. Such funds will be managed by the Mangrove Foundation of Maharashtra State.
- As per the renewed CRZ clearance condition, IIT Mumbai has been appointed for the DPR study to develop a Mahul creek Effluent Treatment Plant (ETP). Rs 4.98 Crore was secured for IIT services. The Draft DPR has been reviewed and approved.

b. Required Permits

The Permits to be obtained by MMRDA/ Contractors and the present status is given in the following Table.

Table 3.2.2 Present Status of some Important Permits

Clearance Required	Approving Authority	Responsible Organization	Obtained by when	Remark /Status
Mangrove Cutting	Hon. Bombay High Court	MMRDA/ Contractor	Approval received from Hon. Bombay High Court on 28 th November 2016	was completed with full
Tree Cutting /Transplantati on	Respective Tree Authorities	Contractor for respective Packages	-	Pkg-1: Tree Cutting/ Transplantation permission from the Garden Dept., MCGM obtained on 24th December 2020. Pkg-2: Tree Cutting/ Transplantation permission obtained & completed. Pkg-3: Forest Department issued a concurrence on 19/05/2019. CIDCO's permission for Tree Cutting/ Transplantation obtained on 25th November 2019.
Consent to Establish	Maharashtra Pollution Control Board	Contractor for respective Packages	Pkg-1-18.07.2018 Pkg-2-16.08.2018 Pkg-3-29.05.2019	G WAR AND THE PROPERTY OF THE

3.3 Environmental and Social Impacts

Major environmental and social impacts have occurred during project implementation (e.g. involuntary resettlement, poverty reduction, impacts on the natural environment).

Issue(s) Action or countermeasure(s) taken and		
issue(s)	Action or countermeasure(s) taken and remaining problem(s)	
1. Establishment of Effective	Cell is established by MMRDA	
Environmental and Social Cell in PIU	(Annexure III, Organization chart)	
MMRDA confirmed that Social Development Cell (2 Officers), Land Cell (3 Officers), and Environmental Cell (2 Officers) had been set up.	t l	
2. Rehabilitation and Land Acquisition	Sewri: Involuntary resettlement in Sewri section	
a. Affected Area and Population Due to the Project, 1282 non-		
titleholders will be involuntary resettled, and 108.09 ha of land will be handed	1 164 PAHS Kanjurmara for regidential	
over by CIDCO.	25 PAHs Kanjurmarg for commercial	
	7 PAHs (Satsangi Plot) Kanjurmarg for Commercial	
	1 PAHs (commercial to residential) for Bhakti Park	
	100 PAHs HDIL Kurla for residential	
	Navi Mumbai: CIDCO has been finalizing the land acquisition closely monitored by Land Cell of MMRDA. Except private land and forest, CIDCO has possessed all required land of 108.09 ha. Out of the 108.09 ha, 106.345 ha has been handed over by CIDCO to MMRDA. CIDCO is going to acquire the balance 1.745 ha with the help of Collector, Raigad.	
. Entitlement Policy		
matrix for resettlement of non-title holders in Sewri, which meets the Resettlement and Rehabilitation Policy for Mumbai Urban Transportation	There have been no changes during the enforcement. As per the Attachment 2-5 of JICA MoD, MMRDA has committed to enforce the agreed/ approved policy.	
Project (1997, amended in 2000) and JICA guidelines for Environmental and	A Vigilian	

considerations

(2010)

social

Issue(s)	Action or countermeasure(s) taken and
	remaining problem(s)
("Guidelines") (Attachment 2-5).	
c. Compensation to Project affected	
Fishermen	Updated Attachments 2-8 and 2-10 are enclosed
Detailed baseline survey will be	in the report.
undertaken by MMRDA in order to	
identify fishermen who are affected by	
the Project. Based on the result of the	
baseline survey, MMRDA will	. 1
compensate them in accordance with	
compensation policy prior to the	
construction. Monitoring will be	
conducted by MMRDA with assistance	
of the Consultant to gasp the exact	•
impact during construction and	
operation phase.	
d. Implementation Schedule	
The Implementation schedule for land	Updated Attachment 2-10 is enclosed in the
acquisition, resettlement and	report.
rehabilitation is attached as per	
Attachment 2-10.	
e. Grievance Redressal Mechanism	
	Sewri: FLGRC (Field Level Grievance Redressal
Grievance Redressal Committee	Committee) and SLGRC (Senior Level Grievance
("GRC") set under MMRDA will deal	Redressal Committee) were set as per the RAP
with grievances raised by PAPs in	and in operation.
Sewri and fishermen to be affected by	Compensation Committee has been constituted to
the Project. Any grievances raised by	address the issues of Compensation to Lease
PAPs whose land is acquired by CIDCO shall be resolved by CIDCO.	Holders at Sewri.
Shall be resolved by CiDCO.	Fishermen: GRC for resolving grievances of the
	fisherfolk was set up as per the compensation
	policy and is in operation.
Internal Monitoring	
	Internal Monitoring updates are mentioned in
Action Plan (RAP) implementation will	Attachment 2-8.
be conducted by MMRDA in	
accordance with the RAP with	
necessary assistance of the consultant.	
RAP Internal Monitoring Form	
(Attachment 2-8) will be submitted to	TRANS HARE
JICA on a quarterly basis as a part of	The Third Control of the Control of
PSR during the RAP implementation.	
	12/ 18/
	ERAL CONCULTE

issue(s)	Action or countermeasure(s) taken and
	remaining problem(s)
g. Qualitative Independent Evaluation An Independent Evaluation Agency will be hired by MMRDA for evaluation of RAP implementation. An externate evaluation report will be submitted to MMRDA at mid-term and end-term MMRDA would submit the evaluation report to JICA in a timely manner. h. RAP Implementation Budget The amount of estimated resettlement and compensation budget is Rs.906.26 Cr MMRDA informed to the JICA Mission that RAP implementation cost would be borne by MMRDA and ensured sufficient and timely allocation of funds for smooth implementation. i. Environmental Management Plan ("EMP") The mitigation measures against air	Updated Attachment 2-10 is enclosed in the report. As updated in MOD dated 03/09/2019 for MTHL- II, the base cost Budget towards RAP Implementation is updated as Rs 1129.3 Cr.
The mitigation measures against air pollution, waste, noise, and water pollution etc. shall be taken during construction and operation phase. Mitigation measures such as installation of noise barrier, appropriate waste management, etc. have been prepared by MMRDA. The mitigation measures are listed in the EMP matrix. (Attachment 2-1). During the detailed design stage, MMRDA, with assistance of the Consultant, will update the EMP, as necessary. Environmental Monitoring Plan ("EMoP") MMRDA takes overall responsibility for implementation of EMoP. During construction, environmental monitoring will be carried out by contractors under	Environmental Monitoring Plan with the package wise budgeted cost is reported in Attachment 2-3. Environmental Monitoring Results during the construction phase are reported in Attachment 2-1.
supervision by Construction Supervision consultant. The result shall be reported to the JICA India Office on a quarterly basis as a part of Progress	TRANS HAGEOUNK *

Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
Status Report (PSR) by filling in the Reporting Form of Environmental Monitoring Result. (Attachment 2-4). After completion of the construction, EMoP shall be implemented by MMRDA, and the results shall be submitted to the JICA India Office semi-annually until two years after complementation of construction. The required amount of estimated environmental monitoring budget is borne by MMRDA.	
k. Long Term Bird Monitoring MMRDA committed to conduct the long-term monitoring of birds and its habitat in Sewri mudflats with the assistance of hired bird expert. During the long-term monitoring, MMRDA will share information and receive advice from external experts including the one from NGOs and civil society.	 MMRDA has entrusted the work of bird monitoring and implementation of Flamingos and birds related mitigation measures & bird monitoring program to Mangrove and Marine Biodiversity Foundation. Rs. 31.92 Crore deposited to Mangrove foundation, Mumbai for periodical disbursement to BNHS.

3.4 Qualitative and Quantitative Data of Monitoring Indicators

Operation and Effect Indicator EIRR and/ or FIRR

Supporting data for Computing EIRR and/ or FIRR

indicators	Original (Year 2015)	Target (Year 2024) 2 Years After Commercial Operation
Average Annual Daily Traffic (PCU/ day)	-	47,400
Daily Average Travel Time (min) * 1	61 min	15.8 min
Number of Users (Persons/ year) * 2	-	46,077,504
Cargo Volume (tons/ year) * 3	-	13,511,759

^{*1} Section on Sewri - Chirle

^{*2} Assumptions: average passengers of car and taxi (2.6 persons), bus (37.2 persons) based on JICA study. Number of passengers of LCV, HCV and MAV is assumed as 1 person each. *3 Assumptions: the maximum capacity of respective vehicle (LCV: 1 ton, HCV and MAV: 15 May tons) is used for estimation.

EIRR	Original: 15.4% Cost: Project cost (excluding Price Escalation, Tax and Duties and Administration cost) O&M cost, Land Acquisition Benefit: Travel Time cost and Vehicle Operation cost Project Life: 32 Years	Actual: (PCR) % Cost: Benefit: Project Life: Attachment(s): Supporting data for computing EIRR
FIRR	Original: 1.5% Cost: Project Cost, O&M cost, Land Acquisition cost Benefit: Toll Revenue Project Life: 32 Years	Actual: (PCR)

3.5 Monitoring Plan for the indicators

Monitoring Methods, Section(s)/ department(s) in charge of monitoring, frequency, the term and so forth are given below:

Original: (P/M and PCR)

Monitoring Organization

PIU shall be In-Charge of Monitoring activities for the Project.

Submission of QPR and PCR

The timely submission of the following documents is required by MMRDA.

- a. Quarterly Progress Report (QPR): The progress report for the Project should be submitted by MMRDA to JICA on quarterly basis, not later than 30 days after the concerned quarter, in the form of Project Status Report (PSR) attached hereto as per Annex i; Updated status land Acquisition, milestone achieved with respect to Action Plan with Timetable, the monitoring form for environmental and social consideration should also be appended to the PSR. In addition, MMRDA shall also forward the Monthly & Quarterly Progress Reports (including S-Curve Chart) prepared by the Consultant to JICA India Office on regular basis till project completion.
- b. Project Completion Report (PCR): A project completion report should be submitted by MMRDA to JICA promptly, but in any event not later than six months after completion of the Project, in the form of Project Status Report (PSR) attached hereto as per Annex I.

Actual: (P/R and PCR)

Monitoring Organization

PIU for MTHL has been established for monitoring the Project.

Submission of QPR and PCR

This QPR No. 21 is submitted for the period of 1st April to 30th June 2022.

3.6 Achievement of the Project Objective

(PCR)

4.0 OPERATION AND MAINTENANCE (O&M) (SUSTAINABILITY)

4.1 O&M and Management

- Organization Chart of O&M

- Operational and maintenance system (structure and the number, qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc.)

Original: (P/M)

Operation & Maintenance, Toll Management and ITS

MMRDA proposes to engage two separate agencies for O&M and Toll Management System. Though MMRDA will not directly carry out O&M, the overall monitoring over the O&M agency will be the responsibility of MMRDA. O&M Budget will be allocated by MMRDA. O&M and increase in toll rate will be done in accordance with the NHAI's manuals such as "NHAI Works manuals".

Actual: (PCR)

4.2 O&M Cost and Budget

- The actual annual O&M cost for the duration of the project, as well as the annual O&M budget.

(PCR) This will be reported when the outcome of the above work-study is available.



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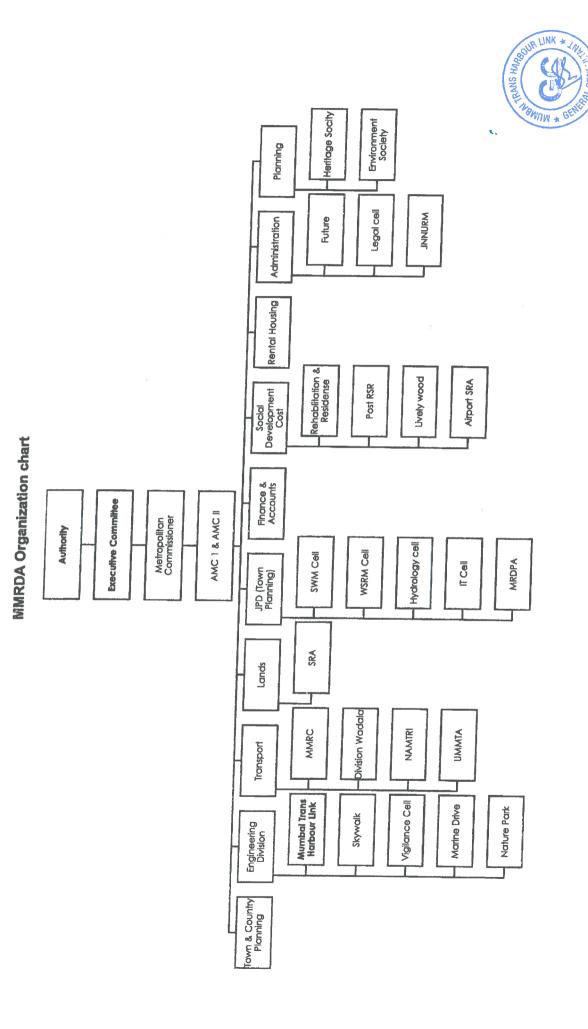
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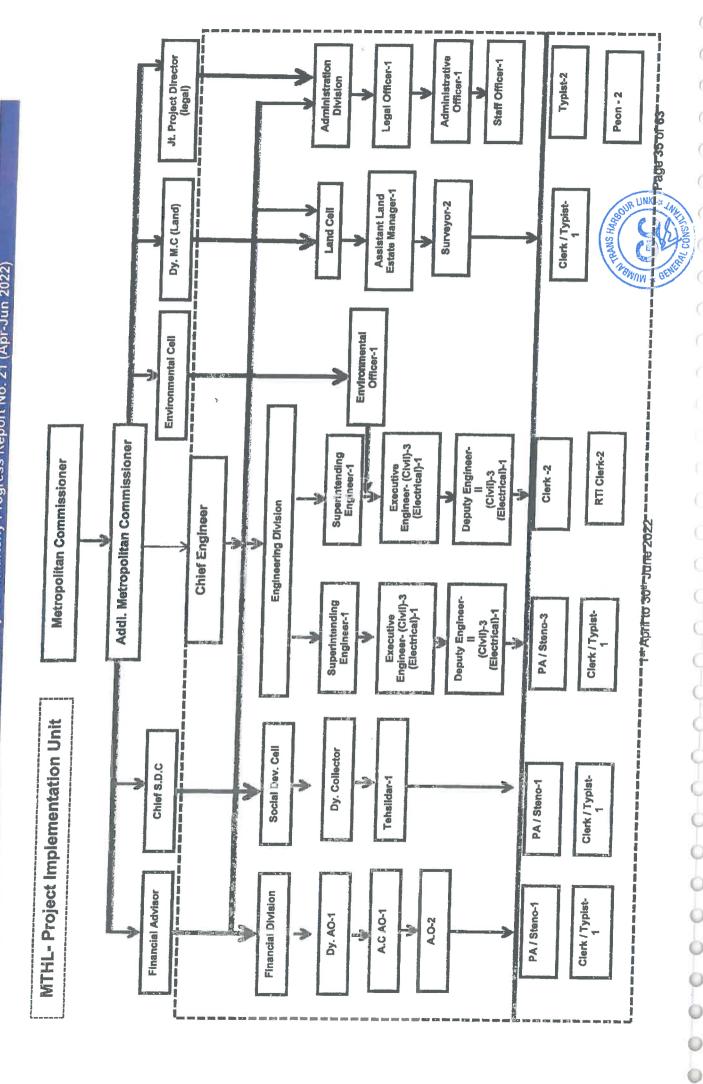
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1st April to 30th June 2022



Attachment 2- Environmental & Social Impacts Attachments

Attachment 2-3 – Envi. Monitoring Plan with Package-wise Estimated Cost
Attachment 2-4 – Environmental Monitoring Result Reporting Form
Attachment 2-6 – MTHL Land Acquisition Status
Attachment 2-8 – RAP Internal Monitoring Form
Attachment 2-10 – Schedule of the RAP Implementation



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in package in package	1. Sewri & Sewri hay area for package 1 2. Mawa temporary bridge & catting yard in Gerhan for package 11 3. Gevhan & Chirle for package 111	1. Sevri & Sewri bay area for package (
Methods Arribert Arri	IS / AWWA	Volumetric
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		as Domestic spect to sartes are sates will be							or Pkg. 1		or Phg. 3		_	
		P2 contractor has considered only Domestic garbage with respect to CDCD. Other warses are not considered.							Not applicable for PRg. 1		Not applicable for Phg. 3			
	Marry (Britman & Prof. (Sep.)	Municipal Sofid Warte Management Rules, 2813 Generated waste shall be reused or disposed at the State Rules and the State Rules of the State Rule State Ru		Soff Politotion Semedard in India (MORF) - Cal Outings/	Leads 6.0 Imag/l Chromium (VI) 6.05mg/l Arrents 6.0 Imag/l T-Mercery 5.0005cmg/l Coppen 125mg/l/sg	-Construction Notes; 854B(A)	-Ambitent Noise Standards in India (dB (A) _{Leg.})	Lindustral Area Day Time: 75 (e-28n-) Might Time: 70 (e-28n-) 2.Commercial Area: Day Time: 65 (e-22n-) Might Time: 55 (22-64n-) 2.Readential Area: Bay Time: 65 (e-22n-) Bay Time: 65 (e-22n-) Bay Time: 65 (e-22n-) Bay Time: 65 (e-22n-)	Night Times 45 (22-6kr) Askinoce Zone Day Times 50 (6-22kr) Night Times 40 (22-6kr) - Cametruction wheneige 7548	Whereten Standards roadside Locamoral (Nodersial Area Bry Timer 70 (7-20by) Wight Timer 56 (70-2by) 2 Restloatial Area 2 Restloatial Area Side Timer 56 (70-2by)	(II and) and a state of the s	Significant impacts are not caused by the project		Note)
				1,750,000		573,000			475,900		13,700,000			
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Com Plez Chin				150,000		156,000			75,000		6,500,000			
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Cone (DOS)			100.000			150,000			75,060		6,500,000	7	- 1	
Prequendy's year		4 Thmes / Your	of work start,	2. Section 1. Year	"I farty spillage/ leakage take place from chestical, fael storage area. "One time grab sample to be collected during Bridge Construction "Pre & Port Monsoon	Fortnightly	2 Times / Year	Fornightly	Half yearly		Quarterly during the construction Period	f Times / Year		
Location		2. Mhava tumporary bridge 4 & custing yard in Gavhan for package II 3. Gavhan & Chirle for package III.	1. Sewri & Sewri hay area	or package I Nhava temporary bridge casting yard in Gavhan for		1. Sewri & Sewri bay area for package !	2. Nhava temporary bridge & casting yard in Gawhan for package If	3. Gerban & Cabrle for prockage III	1 Location Gavan area for package III		Along Wiff, alignment and Q mangrove replant area for d Package 1	44	Not appileable for Package III	
Method			IS / Methods	Manual Soil Teating is in India by Department of 2 Agriculture and 8 Cooperation, p January 2011		· 1S Standard					and quantitative is survey			and record number and appeared species
nest Publishethe			Heavy Motals & Oil &	Gresse (5-10 lams shall be selected from Soil pollution standards)		Ambient and road side noise (dB(A)L _{Meq})			Vibration (dB 1,10 or nm/sec)	A Manual Property of the Control of	#		3-Monitoring of Lin	Mangrove Plantation and area appointed by MoEF
Imparted their	Gutdellan			Contamination,		Vibration				Pritering Aven				
Ltal	lage y		4 and 8			n				9 and 10				

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	Plant I				Not applicable for Pkg, 1 & 3		Not applicable for Pkg, 18.3							
•	Standard Courted Political Courted Busies (CECS) - Mindray of Bariconsound & Forest (Nebb)	Destried anothering plan will be setup during bane- destign seage	Standard for Soil: Supplemental EIA Table 6.1.15 Standard for Ecological Purtureter: Netprimary Productivity 41,500 mgC/m3/days starrings Chirrephyli-4	connigna 3 Prosphare 0.1-80.pg/l Nitrate 0.1-80.pg/l Nitrate -0.50.pg/l Nitrate -0.50.pg/l Particulate Digmate Carbon: 16-100mg/m²	· SIO2: 10-5,000pg/l. Project activities and structures does not cause flooding and impacts on tidal conditions		Embankment shall be stabilized without any fandslide	שונן כנוקט:		Employment appartunity shall be provided fairly	infection disease rate shall not be caused by the project	"Building And Other Construction Workers (Regulation of Emiliah Building And Other Construction of Service) Act, 1996", "The building and other enterpretion subservice welfare cass Act, 1996", and internetoant at and workers catch as "The Performance Standard 2 Labor and Working Condition."	hay accidents are not caused by construction	
	Tool Core (INST)				350,000		115,000			125,060	\$25,000	500,000	400,000	339,565,500
					o		0			0	0	0	0	2,211,500
Case that 5 cents					350,000		115,000			125,000	525,000	500,000	400,000	12,000,000
Control			v		a		0			0	0	0	o	325,354,000
Cost (DUR)					350,000		115,000		As per Actuals	125,000	525,000	000,002	480,000	8140500
Frequency a year						4 Times / Year		4 Times / Year		2 Times / Year	4 times / year z 4.5 years	comes / year	4 Times / Year	
Location					Not applicable for Package I	2 Locations (CRZ at Sewri and Shivaji Nagar) for Packagu Ji Not applicable for Package	Not applicable for Package I	interchange in Shivaji Nagar for Package II Not applicable for Package	Affected area	2 Locations (camp site in Sewri and Shivaji Nagar) for Package II	Locations	Sewri and Shivaji Nagar) for	2 Locations (camp site in Sewri and Shivaji Nagar) for Package II	
Mathod		4-2; Mengovee Contractly and Contractly areary	2-1: Cutting trees confirmation confirmation arrive in the survey in the replanted area		Flood level measurement during high precipitation periods		Visual survey about Stability of	Vin Death Report		Confirmation of Workers list from S	health check list from contractor Confirmation of 2	- I	Confirmation of 2 accidents list from 5s local government Pu and State Traffic Police Department	Total
m Parameter		** A foundoring of a definentiation and a designation and a designation and a designation and a factor of the designation and a flaten and a libritationary productivity, a libritationary productivity, a libritationary productivity, a libritationary productivity, a libritationary productivity, a libritationary libritationary and libritationary librit	a de la companya de l		Flooding slauzton		Conditions in embankment area			Construction Worker's township			cumber of accidents C	
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The Project for Construction of Mumbai Trans Harbour Link

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Reporting Form of Environmental Monitoring during Construction

Attachment 2-4

1. Environmental Monitoring during Construction for 4.5 years

Monitoring Period - April 2022 to June 2022

This form is prepared for reporting the monitoring results to IICA india Office Only minimum required parameters are included in this form, and not all perameters in EMoP are covered.

Attachment 2-4

frea.	No. Item	Parameter	Location	1						
+	-			Frequency a year	Nem and Stanadard		Monitoring Result	g Result		Remark
						Location 1- Pkg 1	Location 2- Pleg 2	Location 3- Ping 3	Location 4	- reasons why the data is exceeding standard
			1. Sewri & Sewri bay area for package l	Quarterly monitoring is conducted at all locations.	A National Ambient Air Quality Sundards ns. (NAAQS)					- counter measures when the data is exceeding
	1 Air polhrtion	SO ₂ NO ₂ PM ₁₀	2. Niava temporary bridge & casting yard in Gavhan for package II	ge 4 Times / Year	(Standard for 24hrs: Industrial and Residential)	Sewri	Shivaji Nagar	Chirle		
				From march -2019	1. 50 ₂ : 80µg/m³	10.94	BDL	6		
					2. NO ₂ : 80µg/m³	30.42	21	24		
		· <u>.</u>	3. Gavhan & Chirle for package III	Conducced quarterly as per MOEF and CPCB norms	3. ${ m PM}_{10}$: $100 { m \mu g/m}^3$	246.33	76	88		Avetage is above permissble limit with OCP / Water sprinklina 3 times a day.
- 1					4. PM _{2.5} : 60µg/m³	51.50	27	92		Average is above permissble limit with OCP / Water
- 1	+				S.CO:02/m3					drivers & cance & day.
T					6,0003	1.42	1.3	0.55		
			L. Sewri & Sewri bay area for package I	Quarterly	Marine water quality Standards - Class SW-IV Harbour Waters (MPCB)	Zone I	4.2 Zone II	O.3		Benzene is analysed in ambient air
	Water	pH, BOD, DO, Turbidity and	2. Nhava temporary bridge & casting yard in Gavhan for package	4 Times / Year	1. pH: 65-9	m.	8.3	Not applicable		
	pollution	086	3. Gavhan & Chirle for package III	Not applicable	2. DO: 3 mg/l	52	9	Not applicable		
					3. Turbidity: 30 NTU	32				
					4. BOD: 5 mg/l	WIND THE	7.0	Not applicable		
					5.0 & G: 10 mg/l	BNI Wi-21	BDL	Not applicable		
					6,000	16	16	Not applicable		
			1. Sewri & Sewri bay area for		Municipal Solid Waste Management Rules, 2016	Sewrl Camp Site	Shivaji Nagar Camp Site	Chirle Camp Site		Comprehensive waste management plan is implemented with prior approvate of MCGM, PCB and Phievice of the constant of the constant of the constant of the constant of the constant of the constant of the constant of the cons
				Daily	Generated Concrete and Debris from Construction		App. 2000 Cum collected in jumbo bags and Disposed off in FRB Location			T-TILLE I I I I I I I I I I I I I I I I I I
	Waste	Volume of waste soll, cutting tree and domestic garbage	2. Nhava temporary bridge & casting yard in Gavhau for package il	4 Times / Year	Generated wasts soll (8) total	Tree cutting proposal has been submitted and approval from MGGM is awaited. Tree cutting far VII.		NA		
			3. Gavhan & Chirle for package III y	Once site clearing Work/execution part of work start.	Generated cutting tree (ha) total			Tree cutting work completed and Half yearly report submitted to Client (April, 2022)		
					Generated domestic waste (t/month) total	10.5 Tonnes for 3 months.	3.5/quarter. It is disposed through CIDCO daily.	2.5 T for the quarter		OUT HAND
			1. Sewri & Sewri hav area for		survey)	Schedule Audited by EMS				
				1. Muck: 1 Time / Year	Soil Pollution Standard in India (MOEF)	Sediment sample at Sewri	Muck Testing Done on September 2021 and Reports	NA		W GE
							Submitted to LC		_	

Page 1 of 4

The Project for Construction of Mumbai Trans Harbour Link

Reporting Form of Environmental Monitoring during Construction

Attachment 2-4

1. Environmental Monitoring during Construction for 4.5 years

Monitoring Period - April 2022 to June 2022

This form is prepared for reporting the monitoring results to JICA india Office. Only minimum required parameters are included in this form, and not all perameters in EMOP are covered.

Attachment 2-4

	Standard	, caresoning			laying area at the ground in their water sample is yund the Oil & seed by GC	T																								T	T	T		- nu	R S	4	a		(
Remark	- reasons way us data is exceeding standard - counter measures when the data is extraoding				Hazardous Storeage is situated in low laying area at Garan area. Due to this reason complete ground area is covered by boulders to avoid further water logging in rainy season. Therefore soil sample is impossible to taken out from in and around the Oil & chemical storage area. Same has witnessed by GC chemical storage area. Same has witnessed by GC churing Febrar-2020 monitoring.				Regarding soil contemination/sedimentation, some items shall be selected from the rotal	25 standards items during the Detailed Design. Gnly the selected Items shall be reported to	s form.																						10000	100 m	A STATE OF THE STA		Manual (pr.)	TOMOS 7.	
	Location 4								sation/sedimentation, some	ng the Detailed Design. Only	JICA, and the rest of items shall be deleted from this form																												(
Result	Location 3- Plog 3				Not applicable for Pkg 3				Regarding soil contamin	25 standards items duri	JICA, and the rest of rter															Shivaji Nagar (Commercial area)	63,35	52.69											
Monitoring Result	Location 2- Phg 2	BDL	<0.005	8.5	0.17	BDL	BDL	BDL	ida	BUL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	801	BDL	BDL	But	709	RDI	BDI.		Sea Section (STS000-5500) Migratory Bird Area (no standard on sea section)					68.2	929							
	Location 1- Pkg 1	BDL[DL=2]		6.9	15		BDL[DL=1]	BDL[DL=2]	Not detected	147	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected	Nocdetected	Not detected	Not detected	Not detected	Not detected	Not detected		Sewri (ST 200-500) (Industrial area)	73.3	67.46											Page 44
Hem and Stanadard		1. Cedmium: 0.01mg/l	2. total cyanide : not detected		4. iead: QOʻlmg/l	5. chromium (VI): 0.05mg/l	6. arsenic: 0.01mg/l or 15mg/kg (agri-land soil)	7. total mercury: 0.005mg/l	9. PCBs: not detected		11. dichloromethane: 0.02mg/l	12. carbon tetrachloride: 0.002mg/l	13. 1,4-dichoroethane: 0.004mg/i	15 rie 12 dichlorocked 0.04	16. 1.1 1-trichlomethane: 1mg/l	17 1 1 2-trichlomathans, 0.005 mm.	18 Highbonethulene 0.00mm.	19. tetrachlomethylene: 0.01me./	20.13-dirhloronomene: 0.005mm/	21. thiuram: 0.006ms/l	22. simazine: 0.003mg/l	23. thiobencarb: 0.02mg/l	24. benzene: 0.01mg/l	25. selenium: 0.01mg/l	Construction area Standard 85 dB(A) daytime	(Japan standard) Not constuction area : Amblent Noise Standard In Indta (dB(A) Laeq) 75 Max.	Day time : 6-22 hr (continious) dB(A) - 75 DB	Night time: 22-6 hr (continious) dB(A) - 55 DB		(only sea section)	Day time: 6-22 hr (10 min during 9-17 hrs)	Night time: 22-6 hr (10 min 22-24 hr)		Note (standard values in Not construction area)	1.Industrial Area	Day Time: 75 (6-22hr) Night Time: 70 (22-6hr)	2.Commercial Area:	Day Time: 65 (6-22hr)	
Prequency a year		Year					*If any spillage / leakage	take place from chemical,	fuel storage area. "One time grab sample to	be collected during Bridge	Construction	Storage area only														Professional Medical Security		Noise levels - Night time	2 Times / Year		<u> </u>	<u>~L</u>		Formightly	-115	∌IS]		의	
Location	2. Nhava temporary bridge &	casting yard in Gavhan for package								3. Gavhan & Chirle for package III																1. Sewri & Sewri bay area for packare i			2. Nhava temporary bridge & casting yard in Gavhan for package 11				61	3. Gavhan & Chirle for package III Fo	-				0
Parameter		····					Contamination Heavy Metals &	mentatio 08 & Grease	<u> </u>																				Ambient and road side noise (dB(A)LAeq)			7						- (
No. Item	_			u	Pollutio	5-6	Contar		=							-	_													 			5 Noise and	41014				- (D

MTHL Land Acquisition Status (Attachment 2-6):

The total land required on Navi Mumbai side- 108.09 ha Land in possession in MMRDA – 106.345 ha Balance land acquisition- 1.745 ha

Note: The acquisition of 1.745 ha is in progress by CIDCO. The balance acquisition would be likely completed by the end of September 2022.

	Required n ha		Acquired n ha	Balance Land to be acquired in ha	Anticipated date for Land Acquisition	Payment status (Payment made to Land Owners by CIDCO)	Remarks
98.75	9.34	98.75	7.595	1.745	30-09-2022		The payment status to the land owners is awaited from CIDCO. The same would be communicated to JICA on receipt of the same.
	otal 3.09	98.75	7.595	1.745			

*Portions of Private Land

Sr. No.	Name of Village	Area (Hectare)	Acquired	Non-acquired
1	Gavhan	0.15	0.15	0.00
2	Jasai	8.72	7.306	1.414
3	Chirle	0.47	0.139	0.331
	Total Area	9.34	7.595	1.745



Attachment 2-8

RAP Implementation Monitoring Form For Mumbai Trans Harbour Link Project (MTHL)

1. General Information

a. RAP Implementation Monitoring Results:

Progress Status Report (PSR) for the 2st quarter of 2022

30-06-2022

b. Date of Preparing This formc. Person Preparing This form

Name: Robin Sham

Position: Engineer and Team Leader

Department/Organizations: General Consultants

2. Scale of Impact

2.1 Project Affected Households (PAHs) and Project Affected Persons (PAPs) for Sewri side

Total Project Affected Households (PAHs)	231 Hhs	Titleholders: 0 Hhs
No. 1985 CARLES CO. 1		Non-titleholders: 231 Hhs
Total PAPs	1,282 persons*	Titleholders: 0 persons
		Non-titleholders: 1,282 persons*
PAHs who need relocation (as residents)	231 Hhs	Titleholders: 0 persons
with the said of the said .		Non-titleholders: 231 (1,088 persons) *
PAPs who do not need relocation (as residents)	0 persons	Titleholders: 0 persons
		Non-titleholders: 0 persons
Commercial PAPs who need relocation	66	Titleholders: 0 persons
Commiscial 1 At 5 with fleet (Flocation	(194 persons) *	Non-titleholders: 66 (194 persons) *
Commercial PAPs who do not need relocation	0 persons	Titleholders: 0 persons
the transfer of the second		Non-titleholders: 0 persons

^{* -} Figures for number of persons do not include no. of family members of few additional PAPs.

2.2 Structures

Structures	Residential: 231
19	Commercial: 65
36 1	Residential + Commercial: 1 (counted in Commercial)
	Community: 9 (Religious Properties 6, Public Toilets 3)
M (M)	Government: 16 (MbPT Structures 9, Occupants of Leased Plots 6 & Police Chowki 1)
All Contractions	Total: 322

2.3 Fishery

Categories of Fisher-folks	· Identif	ied Number	Total	Remarks
	Mumbai side	Navi Mumbai side		
C1: Fishing stakes and nets in RoW (250 m.)	178	54	232	Funds for 230 nos C1 category fishermen are transferred to the Commissioner of Fisheries on 17.03.2020 for payment to the beneficiaries. 2. The list of balance 2 Nos. of C1 category fishermen are in process of fund transfer to the

				Commissioner of Fisheries.
C2: Fishing Stakes and Ne within 500 m. of RoW (Souther side)	1	567	863	1. Funds for 496 nos Category fishermen are transferred to the Commissioner of Fisheries in 2017-18. 2. The list of balance 367 Nos. of C2 category fishermen are under verification of validity.
C3: Hand Pickers	1498	4051	5549	Funds for 4141 nos of C3 category fishermen are already transferred to the Commissioner of Fisheries and the balance of 1408 Nos. of C3 category fishermen are in process of fund transfer to the Commissioner of Fisheries.
C4: Commercial and Artisanal Fisher-folks Loss of Time and Increased Operating Costs)	Will be observed during the construction period	Will be observed during the construction period		Nil
C5: Fisher-folks with Loss due to urbidity	Will be observed during the construction period	Will be observed during the construction period	embaray ya	Nil
6: Fisher-folks with Damages ne to Accidents	Will be observed during the construction period	Will be observed during the construction period	Elizabeth ng	Nil

2.4 Land Acquisition / Transfer

Location	Land Re		Land Acq	uired in Ha.	Balance Land to be acquired in Ha	Remarks
	Govt.	Private	Govt.	Private		
Sewri	10.089	0	10.089	0	0	
Navi Mumbai	98.75	9.34	98.75	7.595	1.745	
Total	118.	179	108.839	7.595	1.745	



3. Monitoring Results

3.1 Sewri Section

Activity	Indicator	Total Target	Progress till Last Quarter	Progress during reporting Quarter	Cumulative Progress till Current Quarter	Cumulative Achievement of Total Target (%)	Remarks, If Any
Resettlement	No. of Residential PAHs provided with Allotment Letters of Alternate Tenements	231	226	0	226	97%	
	No. of Residential PAHs given possession of Alternate Tenements	231	226	0	226	97%	
	No. of Commercial/R+C PAPs provided with Allotment Letters of Alternate Shops/Tenements	66	62	0	62	92%	
	No. of Commercial R+C PAPs given possession of Alternate Shops/Tenements	66	62	0	62	92%	
	No. of Occupants of MbPT Leased Plots provided Compensation	6	6	0	6	100%	
	No. of Religious properties Relocated / Removed	6	6	0	6	100%	
	No. of Other Community properties Relocated / Removed	4	4	0	4	100%	
	No. of Structures in possession of MbPT Dismantled / Cleared	9	9	0	9	100%	
	No. of PAHs/PAPs provided Shifting Charges / Arrangement	297	0	0	0	0%	
Rehabilitation	No. of PAHs / PAPs identified for Livelihood Support in Post Resettlement Assessment						
	No. of PAHs / PAPs provided Livelihood Support under Program-I (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-II (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-III (to be identified)						
	No. of new enterprises started					f	

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Implementation Schedule for Fisher-folks Compensation & Land Acquisition in Navi Mumbai

A. Implementation Schedule for Fisher-folks Compensation: -

	Approving authority Start Date Completion Date	Compensation 08-10-2015 23-12-2016			10-12-2015 23-12-2015	04-01-2016	1. Detailed list of Fisher-folk PAP 23-12-2015 Lines as as asset		- (vi c	2. From 2018, FEVC committee	approval authority of PAF	085	481 Nos		Compensation 23-12-2016	-	Department for Fisherfolk from Sewri, Mahul & Trombay	(Mumbai side) ~ 12th September 2017 and 20th November	2018 for C-2 & C3 Category carly
Sr. No. Task Designation		r Prova of Ilsherfolk's compensation Policy Fisher-folks	Committee (FCC)	Approval by MMRDA	Submission to JICA	A detailed list of DAP	1. Detail	up to list	Nos)	Fisheries Department.	2. From	is the ag	and approved C1- 232 Nos.	C2 - 368 Nos and C3- 3481 Nos	are approved.	Validation of compensation plan Fisher-folks	Committee (FCC)			



QPR No. 21 (April to June 2022) Attachment 2-10

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٠٠٠٥٥٠	7	Appro							Sr. No.
Sprice of MINISTER	NO PARAGON	Approval of compensation plan						HODBIRISE VER	Took Decimanding
MMRDA		FCC						Approving authority	
23-11-2015		23-11-2015					23-12-2015	Start Date	
09-03-2021		28-12-2017	completed in phases.	Validation of compensation is in progress and would be	25th April 2018.	Department for Fisherfolk of Navi Mumbai of C2 & C3 on	2. Approval to the Fisher-folk PAP list obtained from Fisheries	Completion Date	

B. Implementation Schedule for Land Acquisition in Navi Mumbai: -

Total				98.75			GOVI.		Ha	Land Required in
108.09				9.34			Private			uired in
100			0.10	98 75			Govt.		Land Acq	
106.345			7.000	7 505			Private		Land Acquired in Ha.	
1.745			1./45	4 745			Private	. 111 174	to be acquired	Balance Land
			30-09-2022					Acquisition	date for Land	The anticipated
			t					CIDCO)	Landowners by	Payment status
	receipt of the same.	The payment status to the landowners is awaited from CIDCO. The same would be communicated to JICA on	as per their demand.	2. MMRDA has paid an amount of INR 59.16 Cr to CIDCO	acquisition for Navi Mumbai	1. CIDCO is the land acquisition authority for land			Remarks	



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Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 21 (Apr-Jun 2022)

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Status of JICA'S Concurrence

1			Bid Cont	7000						
S		Procurement		180			JICA's Con	JICA's Concurrence on		
Š	description	procedure	Currency (Cr Rs.)	Total (Cr Rs)	Po	PQ Evaluation	6	Technical	Financial	
	Package-1						STIPLING TO	Evaluation	Evaluation	Contract
4	1. (CH 0+000 km to CH10+380 km)	ICB with PQ (2P)	7637.30	7637.30	7637.30 7637.30 Concurrence - 9th May 2016	JICA's Concurrence - 22 rd Dec 2016	JICA's Concurrence - 4 th Jan 2017	JICA's Concurrence - 12th Sep 2017	JICA's Concurrence -	
	Package-2								_	13" reb 2018
7	(CH 10+380 km to CH18+187 km)	ICB with PQ (2P)	5612.61 5612.61	5612.61	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 22 rd Dec 2016	JICA's Concurrence - 4th Jan 2017	JICA's Concurrence - 12th Sep 2017	JICA's Concurrence -	JICA's Concurrence –
	-								15 OCI 2017	15" Feb 2018
က်	3. (CH18+187 to CH21+800)	ICB with PQ (2P)	1013.79 1013.79	1013.79	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 4 th Jan 2017	JICA's Concurrence - 4th Jan 2017	JICA's Concurrence - 15th Sep 2017	JICA's Concurrence -	JICA's JICA's Concurrence –
	Package-4								102 00	12 Leb 2018
4	Intelligent Transport System	ICB with PQ (2P)	427.00	427.00	JICA's Concurrence - 23 rd Aug 2019	N A	JICA's Concurrence - 24th Aug 2021	JICA's Concurrence - 15th Feb 2022	JICA's Concurrence -	3
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Attachment 4- Project Procurement and Financial Status till 30th June 2022



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PROJECT PROCUREMENT AND FINANCIAL STATUS TILL 30th JUNE 2022

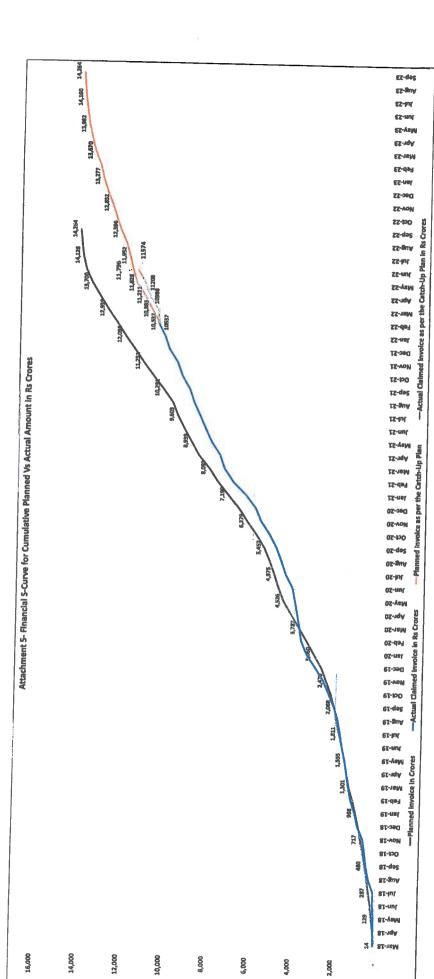
		1		Т		1		
% Of Financial Progress till 30th June 2022 (GC Certified) (Excluding Mobilization Advance, Price Adjustment and	vork variation)	76.49%		77.56%		85.68%		NA
% Of Overall Works Progress (Design, Material Procurement and Construction) as per the Primavera Baseline Schedule Ubdated as of	25th June 2022	82.07%		81.86%		90.35%		Ą
Revised Project Completion Date After granting the Extension of Time (EOT)		30-Sept- 2023		27-Sept- 2023		03-Mar- 2023		Ą
Stipulated Project Completion Date		21-Sep- 2022		21-Sep- 2022		21-Sep- 2021		Aug 2023
Contractors Commencement Date		March 2018		March 2018		March 2018		June 2022
Contractors		L&T-IHI Consortium		DAEWOO- TPL JV		L&T		Strabag GmbH JV
Current		Awarded		Awarded		Awarded		Awarded
Awarded or Estimated Value (in Rs. Crore)		7637.30		5612.61		1013.79		427.00
Contract	Package-1	(CH 0+000 km to CH 10+380 km)	Package-2	(CH 10+380 km to CH18+187 km)	Package-3	to CH21+800)	Package-4	Transport System (ITS)
Туре				CIVIL		=		TS.



1st April to 30th June 2022

Attachment 5- Financial S-Curve for Cumulative Planned Vs Actual Amount in Rs Crores





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Attachment 6- Package-1's Construction Programme Updated as of 25th June 2022



AECOM : PRDECO TEST ESTATE TORAN Performence San Date Complete San Date 8 % 6 6 6 6 6 6 0.022-March A. 11-March 2. 15 (2013) 11-Marc 10-10-12 14-10-12 13-101-13 MUMBAI TRANS HARBOUR LINK PACKAGE 1, UPDATED REVISED WORK PROGRAMME FOR JUNE 2022 1225-25-44a-18.a 756-05-09-19.A 1259-11-tm-18.a 6 25-May 28 16-May 22 16-M Page 1 of 2 1457 23-Mar 18 834 01-0e-18 1221 11-tan-18 Durition Actual Loval of Effort Collection Remarking Work + Milestone Collection Remarking Work - Actual Work (4) - THI Commencement Date APPRAST 1.12 Utility Diversion APPRAST 1.13 Construction

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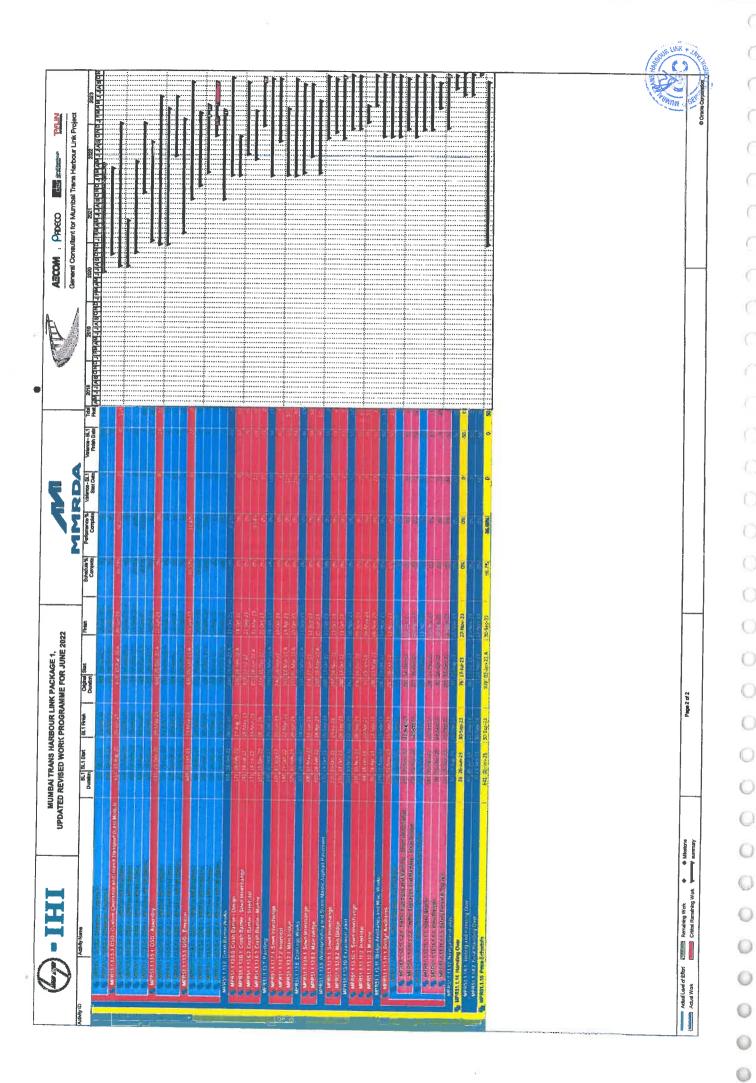
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Attachment 7- Package-2's Construction Programme Updated as of 25th June 2022



	Camples Cample			Committee Committee Continues Committee Continues Committee Continues Committee Continues Committee Continues Committee Continues Committee Continues Committee Continues Contin			6 6 6			6 8	STATE OF THE PARTY	and and	180%		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	ON.	design and designation of the same	Committee of the angle of the decision		CO. CO. CO. CO. CO. CO. CO. CO. CO. CO.						action of the control		Control of the Contro									(E) A COLUMN (COLUMN CO	
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Adhy D Adhy Isma	PROGRAMME 25062022 APPROVED MPR 51	PROJECT WALL COMMENCENCENACTIVITY	WE GOMMEN THE STATE OF THE STAT	1980 SECT EVERY MILESTONE	PROJECT KEY MILESTONE X	CE DATE ADD2-ATTACHBIENT 28	M KEY MALESTONES	STEOPONISHON	The state of the s	T & APPROVAL.	POR INCOMMATION COLLECTION	CONCRETE MIX DESIGN	PACTIFILICANPILICATION		TEMPORARY WORK	enementale enemente enemen enemente enemente de la companio de la companio de la companio de la companio de la	SYSTEM FORM	en en en en en en en en en en en en en e			STELL PLAT FOR RESSTEE, MOLE E AMPTITURES STELL PLAT FOR RESSTEE, MOLE E. MPIN, 197-166	STEEL PARTICIONAL CONTROL MODIFICATION	WANT OF SOUD O	TEMPORARYWOON		ESINGEDINELIA OF EMPLY WERE CONTRACTOR OF PUT ESINGEDINELIA OF LAGOLIN GRAN	ESTABLISH UNIT OF COLUMN THE CAST THAT AND THE CAST THAT THE CAST	ESTABLISHMENT DESTITEL SPANJASSENBENYARD. TENEROPATY DELICA	PERMANEH WORK	FEDERAL STREET	STEELS SPORT TRANSPORTED AND THE SUPPLIEDS SOURCE STATISTICS CELLIFORNIES AND THE STATISTICS OF STAT	ATTACHER STORY AND A SECOND STORY	IN THE TRANSPORT OF THE STATE O	SCHOOL CONTROLS SHOULD SERVICE STATEMENT STATE		KARON HP102 MP177 ILVSS		

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2 of 9 80 25-lun-22 ANNEXURE-S CONSTRUCTION UPDATED PROGRAMME_ABSTRACT (PACKAGE-2) Automoto S. Complete CONTRACTOR: DAEWOO-TPL JV EMPLOYER: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORIT Complex X Ğ 1 6 MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7,807KM LONG BRIDGE SECTION Oddra B.Proper B.Proper Actor Start Actor From Duming State (CH 10 380 - CH 18 187) ACCROSS THE MUMBAI BAY INCL SHIVAINAGAR INTERCHANGE 39.40.21 15.0c.19 668 S.U-10 STALE IS BEB MAKENTS 204 10.JAZ UNDER IDENTIFICATION NO MMRDA/ENG/000753 (MMRDA) Critical Remaining Work THE MODULE OF MP IN SPECIALS STEEL MODULE OF MPTN. MPTT/(LAS) STEEL MODILE OF MPTR-MPTH (1853) STEEL MODIALE OF MP INC. MP 177 (LJS) STEEL MOCINE OF MP182 - MP177 (FINE) STEEL MOUDULE-LO MPTON - MPTO (1945) M % Complete ◆ Milestone ALENA Herrie Primary Baseline Remaining Work Actual Work Achiel D

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4 of 9 25-Jun-22 ANNEXURE-S CONSTRUCTION UPDATED PROGRAMME_ABSTRACT (PACKAGE-2) DAEWOO-TPL JV CONTRACTOR: EMPLOYER: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORIT (MMRDA) MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7,807KM LONG BRIDGE SECTION DALT DESCRIPTION OF STATES TO STATES (CH 10 380 - CH 18 187) ACCROSS THE MUMBAI BAY INCL SHIVAINAGAR INTERCHANGE 20 Delete 10 Chesters 27 25 Chester 10 Chest 48 Zhinib 375 28Feb: 8 UNDER IDENTIFICATION NO MARDA/ENG/000753 AARY BREIGE PILE CAP LAND TT-414-TH-158 FROM AIP 251 TO MP 255 Critical Remaining Work BRINGE PILE CAP MARVE GIEFE ■ % Complete ◆ Milestone MODIALE OF MPSH - MPSH MODIALE OF MPSH - MPSH MODIALE OF SECTION - MPSH MODULE STANDER-APPER Primary Baseline Remaining Work Actual Work

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6 of 9 Date 25-Jun-22 ANNEXURE-S CONSTRUCTION UPDATED PROGRAMME_ABSTRACT (PACKAGE-2) DAEWOO-TPL JV CONTRACTOR: EMPLOYER: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORIT (MARDA) MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7,807KM LONG BRIDGE SECTION (CH 10 380 - CH 18 187) ACCROSS THE MUMBAI BAY INCL SHIVAJNAGAR INTERCHANGE 20: 10-langs 20: 00-langs 20: 00-langs 158 17-Jan-20 209 05-Jan-20 UNDER IDENTIFICATION NO MARDA/ENG/000753 Critical Remaining Work ONIGA TOX Assembly of larreing Gerby 1
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Attachment 8- Package-3's Construction Programme Updated as of 25th June 2022



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Attachment 9- Project Progress Photos for June 2022



Package 1- Site Progress Photos



Photo No. 1: LG- 3 Span Erection at Marine Location looking towards Navi Mumbai



Photo No. 2: OSD 2 Span Erection looking towards Navi Mumbai

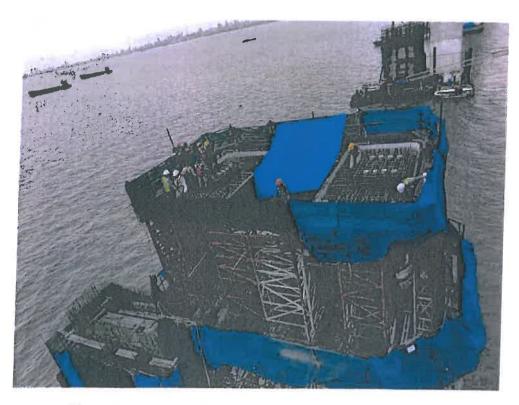


Photo No. 3: MP 72 Pier Head Shutter Checking in progress



Photo No. 4: MP 71 OSD -2 Span towards Navi Mumbai



Photo No. 9: EP 15-16 Span Erection using Under Slung in progress



Photo No. 10: LG 1 Pier Head Lifting in progress



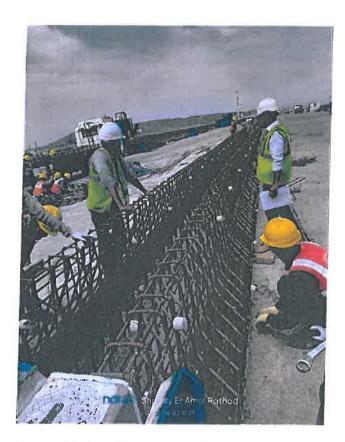


Photo No. 11: Median Crash Barrier Reinforcement in progress



Photo No. 12: LG-06 AP 08-09 Span Erection in progress



Package 2 - Site Progress Photos



Photo No. 1: LG-3 Wet joint formwork fixing at Span MP 253-255 RHS in progress



Photo No. 2: Pier cap concrete at MP 173ARHS in progress



Photo No. 3: Integral pier head segment scaffolding at MP 188 RHS and LHS in progress



Photo No. 4: Pier reinforcement tying at MP 184 RHS in progress





Photo No. 5: Pier final lift concreting at MP 184 RHS in progress



Photo No. 6: Pier cap concreting at MP 175 RHS in progress





Photo No. 7: Cast in situ slab concreting at Interchange Area in progress



Photo No. 8: Retaining wall backfilling works at ramp Area in progress



Photo No. 9: Segment concrete at Bay-1 in progress



Photo No. 10: Cast in situ slab works at Interchange Area in progress





Photo No. 11: OSD works at Karanja Port in progress

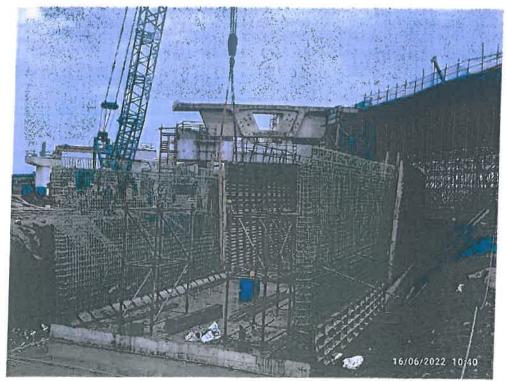


Photo No. 12: Retaining wall formwork fixing at Ramp CA in progress



Package 3 - Site Progress Photos



Photo No. 1: Gavan Span RMP 275-276 ROB structural steel Girder erection completed



Photo No. 2: Chirle span RP33-34 Deck slab concrete casting completed



Photo No. 3: Chirle interchange ramp MJP1-2 voided slab concrete casting completed



Photo No. 4: Jasai span JMP 04-05 reinforcement and profile work





Photo No. 5: Pier LMP 273 Bearing Installation survey Inspection work



Photo No. 6: Jasai span LA01-LP01 deck slab concrete pouring work



Photo No. 7: Gavan Span RMP 272-273, Soffit concrete casting completed



Photo No. 8: Chirle RP-35 Bearing installation survey work



Photo No. 9: Chirle span LP32-33 segment erection work



Photo No. 10: Gavan CIS span RMP 271-272 prestressing work





Photo No. 11: Jasai LP-20, Pier 3rd lift concrete work



Photo No. 12: Chirle MJP Loop 2nd layer Geogrid work at CH 0+370 - CH 0+400





No. MMRDA/MTHL-PIU/JICA/QPR-22/1589/2022

Date: 7th November 2022

To,
Mr. SAITO Mitsunori
Chief Representative,
Japan International Cooperation Agency (JICA)
Mumbai Trans Harbour Link Project (I)
16th Floor, Hindustan Times House,
18-20, Kasturba Gandhi Marge, New Delhi-110-001

Sub: Mumbai Trans Harbour Link Project (I) (ID-P255) & (ID-P283)

- Quarterly Progress Report (QPR) No. 22 for July 2022 to September 2022.

Sir,

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The loan agreement for the Official Development Assistance (ODA) loan for the Mumbai Trans Harbour Link Project (I) is signed between Mumbai Trans Harbour Link Project (I) and Mumbai Metropolitan Region Development Authority (MMRDA) on 31st March 2017 & 29th March 2020 with MMRDA as a direct borrower of the loan.

The Quarterly Progress Report (QPR) No. 22 for the Mumbai Trans Harbour Link Project (I) for the period of July 2022 to September 2022 is enclosed herewith for information please.

Thanking you.

Yours faithfully,

Encl.: QPR-22 (July 2022 to September 2022)

(S. A. Wandhekar) Engineer- In- Chief



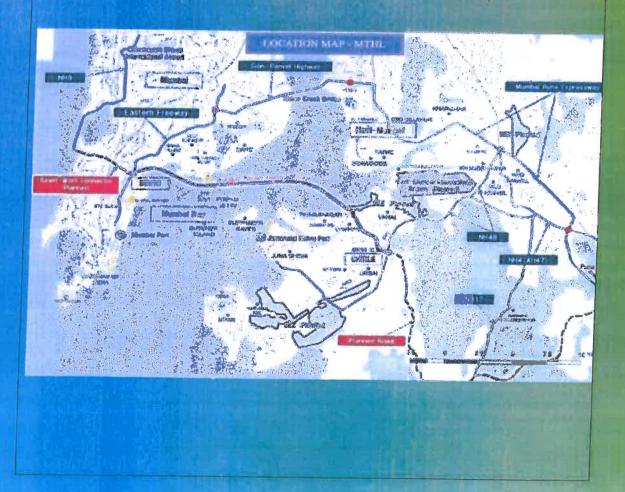
एम एम आर डी ए MMRDA

Mumbai Metropolitan Region Development Authority

Mumbai Trans Harbour Link Project

Quarterly Progress Report - No. 22

(From 1st July 2022 to 30th Sep 2022)



Mumbai Trans Harbour Link Project Quarterly Progress Report No. 22 1st July 2022 to 30th Sep 2022

Loan Agreement No. ID-P255 (Tranche-I) & ID-P283 (Tranche-II)

ORGANIZATION INFORMATION

	Mumbai Me	tropolitan Region Development Authority
	Person in	Metropolitan Commissioner, MMRDA
	Charge	
Borrower	Contact	M.M.R.D.A. New Office Building, Bandra-Kurla Complex,
	Address	Plot no. R-5, R-6 & R-12, E Block, Bandra (East),
		Mumbai - 400051
		Phone: +91-22-26594000 Fax No:+91-22-2659 1264
	Mumbai Trai	ns Harbour Link Project Implementation Unit
	Headed by:	Engineer-In-Chief
F		Mumbai Trans Harbour Link Project Implementation Unit
Executing Agency	Contact	M.M.R.D.A. New Office Building, Bandra-Kurla Complex,
	Address	Plot no. R-5, R-6 & R-12, E Block Bandra (East),
		Mumbai - 400 051
		Phone: +91-22-2659 4034 Fax No: +91-22-2659 4179

Details of JICA Loan

	JICA ODA Loan Portion:	238,572 million Japanese YEN (JPY)
Source of Finance	Tranche-I:	144,795 million Japanese YEN (JPY) (Loan Agreement signed on 31st Mar 2017)
	Tranche-II:	66,909 million Japanese YEN (JPY) (Loan Agreement signed on 27 th Mar 2020)
Terms and Conditions of JICA ODA Loan (Tranche-1)	Repayment Period:	30 years, including 10 years of the grace period.

DOCUMENT VERIFICATION AND REVISION RECORD

P	ROJECT NAM	E Mumbai Trans Harbour Link Project					
D	OC NO.	22		DAT	E OF ISSUE	18/10/2022	
D	OC TITLE	Quarterly Progress Report No. 22				<u></u>	
RE No		DESCRIPTION	A STATE OF	ARED Y	CHECKED BY	APPROVED BY	
R	05/07/2017	Quarterly Progress Report No. 1 (Apr-Jun 17) J Se	nthii	Dr T K Sundara	m Dr Robin Sham	
RO	05/10/2017	Quarterly Progress Report No. 2 (Jul-Sep 17) J Se	nthil	Dr T K Sundara	m Dr Robin Sham	
RO	05/01/2018	Quarterly Progress Report No. 3 (Oct-Dec 17) J Se	nthil	Dr T K Sundaraı	n Dr Robin Sham	
R0	05/04/2018	Quarterly Progress Report No. 4 (Jan-Mar 18) J Ser	nthil	Dr T K Sundarar	m Dr Robin Sham	
RO	24/07/2018	Quarterly Progress Report No. 5 (Apr-Jun 18)	Prasha	ent B	Dr T K Sundaran	n Dr Robin Sham	
R0	10/10/2018	Quarterly Progress Report No. 6 (Jul-Sep 18)	Prasha	int B	Dr T K Sundaran	Dr Robin Sham	
R1	08/02/2019	Quarterly Progress Report No. 7 (Oct-Dec 18)	Prasha	int B	J Senthil/ Dr T K Sundaram	Dr Robin Sham	
R0	05/04/2019	Quarterly Progress Report No. 8 (Jan-Mar 19)	Prasha	nt B	J Senthil	V. D. Sharma/ Dr Robin Sham	
R0	18/09/2019	Quarterly Progress Report No. 9 (Apr-Jun 19)	Prasha	nt B	Mr. Som Ghosh	Dr Robin Sham	
R0	13/11/2019	Quarterly Progress Report No. 10 (Jul-Sep 19)	Prasha	nt B	Mr. Som Ghosh	Dr Robin Sham	
RO	11/02/2020	Quarterly Progress Report No.11 (Oct-Dec 19)	Prashar	nt B	Mr. Som Ghosh	Dr Robin Sham	
R0	25/11/2020	Quarterly Progress Report No.12 (Jan-Mar 20)	Prashar	nt B	Mr. Som Ghosh	Dr Robin Sham	
R0	15/12/2020	Quarterly Progress Report No.13 (Apr-Jun 20)	Prashan	t B	Mr. Som Ghosh	Dr Robin Sham	
R0	06/01/2021	Quarterly Progress Report No.14 (Jul-Sept 20)	Prashan	t B	Mr. Som Ghosh	Dr Robin Sham	
R0	12/02/2021	Quarterly Progress Report No.15 (Oct-Dec 20)	Prashan	t B	Mr. Som Ghosh	Dr Robin Sham	
R0	06/05/2021	Quarterly Progress Report No.16 (Jan-Mar 21)	Prashan	В	Mr. Som Ghosh	Dr Robin Sham	
R0	30/07/2021	Quarterly Progress Report No.17 (AprJun 21)	Prashant	В	Mr. Som Ghosh	Dr Robin Sham	
R0	11/11/2021	Quarterly Progress Report No.18 (Jul - Sep 21)	Prashant	В	Mr. Som Ghosh	Dr Robin Sham	
R0	17/01/2022	Quarterly Progress Report No.19 (Oct-Dec 21)	Prashant	В	Mr. Som Ghosh	Dr Robin Sham	
R0		Quarterly Progress Report No.20 (Jan - Mar 22)	Prashant	В	Mr. Som Ghosh	Dr Robin Sham	
R0	12/07/2022	Quarterly Progress Report No.21 (Apr-Jun 22)	Prashant	В	Mr. Som Ghosh	Dr Robin Sham	
R0	18/10/2022	Quarterly Progress Report No.22 (Jul-Sep 22)	Prashant I	В	Mrs. Mayil. K	Dr Robin Sham	



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1.0 PROJECT DESCRIPTION

1.1 Project Objective

Original:

To improve connectivity in Mumbai Metropolitan region by constructing the Mumbai Trans Harbour Link connecting Mumbai with Navi Mumbai, thereby contributing to mitigation of traffic congestion and promoting regional economic development.

Actual (P/R, PCR)

There is no change in the Project Objective.

1.2 Necessity of the Project

The Project is consistent with the development policy, sector plan, national/regional development plans and demand of target group of the recipient country.

Benefits from MTHL Project

- Saving in travel time for commuters from Mumbai to Navi Mumbai.
- Improved comfort and accessibility between the island and the mainland.
- Reduced operating costs of vehicles due to lesser congestion.
- Smooth traffic flow from Navi Mumbai airport to Mumbai Island.
- Accelerated economic development of Navi Mumbai and nearby regions.
- Greater economic integration of Mumbai Island with Navi Mumbai and extended regions of Pune, Goa, Panvel and Alibaug.
- Improvement in environment and reduced pollution levels.
- Improved safety due to reduction in accidents.
- Improvement in trade competitiveness through faster and improved logistics.
- · Accelerated growth of Navi Mumbai.
- Decongestion of Mumbai Island and dispersal of population to Navi Mumbai region & beyond.

Necessity of the Project

- Although the urbanization in India has been rapidly progressing, infrastructure development in the urban areas has not caught up its progress. Particularly, the traffic congestion in the urban areas due to a lack of road network hinders the economic development. Thus, Government of India (GOI) places transport and connectivity as one of the "Growth Enablers" and plans to enhance road network in the "Three Year Acton Agenda 2017-2018 to 2019-20 (NITI Aayog)".
- 2. Mumbai Metropolitan Region, which includes Mumbai and Navi Mumbai, has about 18.4 million people in population as of 2011 (Census 2011) and the population density reaches 20,694 people per square km in the center of Mumbai, which is one of the most overpopulated and high-density cities in the world.
- Mumbai, the narrow stretch of land that has traditionally been the epicentre of India's commerce, has seen a steady increase in population in the last three decades despite obvious spatial constraints. Thus, the development of Navi Mumbai has been identified as



- different type and with different span, viz., PC box girder with 50 m spans which is typically applied on marine viaduct since, it is economical, easy to construct and maintain.
- 9. On the land portion, the PC box girder having span of generally 30m is used.
- 10. As far as the location in which long span (150-180 m) is required to cross significant obstacles, such as navigation channels, pipelines and creeks, the steel box girder bridge with steel deck is proposed with large block erection method to shorten the construction period.
- 11. The project is coded with three lanes of traffic in each direction. The reference toll is presented in the Table 1.3.2 below for each vehicle class in Year 2022 (based on 2015 monetary value reflecting price escalation).

Table 1.3.2: Base Toll Rates (Rs) for different class of vehicles between Interchanges

Vehicle Type	Sewri to Shivaji Nagar	Shivaji Nagar to Chirle	Total
Car	180	60	240
Bus	420	130	550
LCV	240	70	310
HCV	420	130	550
MAV	600	180	780

Intelligent Transport Systems (ITS) and Toll Management System (TMS)

- 12. The Toll Management System will be implemented in MTHL to collect tolls from all road users of MTHL. Two types of toll collection method will be adopted: Electronic Toll Collection (ETC) and Manual (paying by cash).
- 13. The lanes corresponding to these toll collection methods are dedicated ETC lanes and Manual lanes, and Manual system shall be installed to ETC lanes for backup to be able to cope at the time of the trouble of ETC equipment failure.

Traffic management System

- 14. Traffic Management System is a support system to Manage the traffic on MTHL safely and efficiently. The System consists of the information collection system including Closed-Circuit Television (CCTV), Emergency Call Box (ECB), Automatic Traffic Counter-Cum-Classifier (ATCC) and Meteorological Data System (MDS), and Information Dissemination System including Variable message Sign (VMS).
- 15. CCTV Cameras shall be installed at around three places per 1 km, on Both side of main route and the monitoring of the traffic condition of the whole stretch of MTHL will be almost enabled in the Traffic Control Centre and VMS displays the appropriate information for road users on the collated information.
- 16. The Information collected by these devices shall be transmitted to the Command Control Centre through the medium of an Optical Fiber Cable laid in MTHL.

Actual (P/R, PCR)

There is no change in the Rationale of the Project Design.



2.0 PROJECT IMPLEMENTATION

2.1 Project Scope

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Refer Table 2.1.1 and 2.1.2 for details on Scope of the Project.

Table 2.1.1 Comparison of Original and Actual location

	Original: (P/M)	
Location	Mumbai Metropolitan Region Development Authority, Mumbai, State of Maharashtra	Actual: (P/R and PCR)

Table 2.1.2 Comparison of Original and Actual Scope

Items	Original	Actual
Constructio	n work: 6-lane Marine Bridge Road (21.8 km)	
Package-1	1 Interchange (Sewri)	
	Viaduct superstructure (Marine Portion: PC Box Girder &	
	Steel Box Girder with Steel Slab Land Portion: PC Box Girder	
	& PC-I Girder)	(P/R and
Ch 0+000-	Viaduct Substructure (RC Concrete Structure)	PCR)
10 +380 (10.380 km)	Viaduct Foundation (Bored piles)	
	Road Furniture and roadside facilities (Traffic Signs and	
	Pavement Marking, Traffic Safety Devices, Crash Barrier,	
•	Drainage Structures, Noise Barriers, View Barriers)	
	1 Interchange (Shivaji Nagar)	
	Viaduct superstructure (Marine Portion: PC Box Girder &	
	Steel Box Girder with Steel Slab Land Portion: PC Box Girder	i
Package-2	& PC-I Girder)	(P/R and
Ch 10+380-	Viaduct Substructure (RC Concrete Structure)	PCR)
18+187 (7.80 km)	Viaduct Foundation (Bored piles)	Actual: No
(7.80 Kill)	Road Furniture and roadside facilities (Traffic Signs and	View Barriers
	Pavement Marking, Traffic Safety Devices, Crash Barrier,	
	Drainage Structures, Noise Barriers, View Barriers)	
	2 Interchanges (State Highway-54, National Highway-4B)	/D/D 1
Package-3	Viaduct superstructure (Marine Portion: PC Box Girder &	(P/R and
Ch 18+187- 21+800	Steel Box Girder with Steel Slab Land Portion: PC Box Girder	PCR)
(3.61 km)	& PC-I Girder & Steel Truss Girder for Rail-over-Bridges	Actual: No
	(ROB)	Noise

Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 22 (Jul-Sep 2022)

Items	Original	Actual
	Viaduct Substructure (RC Concrete Structure)	Barriers &
	Viaduct Foundation (Bored piles)	View Barriers
	Cutting Section (6-lane with Slope Protection)	
	Road Furniture and roadside facilities (Traffic Signs and	\$**
	Pavement Marking, Traffic Safety Devices, Crash Barrier,	
	Drainage Structures, Noise Barriers, View Barriers)	
	Administrative Buildings	
	Toll Booths (1 for main alignment and each on and off	
	rumps for 3 interchanges)	
	Traffic Management System (Traffic Control Centre, Closed	
Package-4	Circuit Television (CCTV), Meteorological Observation	/D/D and
ITS (Intelligent	System (MET), Emergency Call Box (ECB), Automatic	(P/R and PCR)
Transport	traffic Counter-cum-Classifier (ATCC), Variable Message	PUN)
System)	Sign (VMS))	
	Highway Lighting (Whole sections Low-positioned lighting	
	for some sections)	
	Electrical Powering System including HV/ LV Ring Network	
	across the Bridge.	
	Tender Assistance	
Consulting	Construction Supervision	(P/R and
Services	Facilitation of Implementation of Environmental Management	PCR)
	Plan (EMP), Environmental Monitoring plan (EMoP).	



2.2 Implementation Schedule

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2.2.1 The Original Implementation Schedule

Table 2-2-1 Comparison of Original and Actual Schedule

	İtems	Original	Status (P/R and PCR) as on 30th Sep 2022
	Completion of Land Acquisition and Resettlement	Mar 2019	Dec 2022
2) (Consulting Services		
	a) Selection of Consultant	May - Dec 2016	May - Dec 2016
	b) Consultancy Works	Dec 2016 – Sep 2024	Dec 2016 – Sep 2024
3) S	Selection of Contractor		
	age-1, Package-2 & Package-	-3 (Civil)	
8	a) Pre-Qualification Process	May - Dec 2016	May - Dec 2016
t) Main Bidding	Jan- Dec 2017	Jan - Dec 2017
c	 JICA's Concurrence of Contract 	Feb-2018	Feb-2018
Pack	age-4 (ITS)		
а) Pre-Qualification Process	Single Stage Bidding as concu	irred by JICA
b) Main Bidding	June 2019 - Sep 2020	Jan 2021 - Dec 2021
4) C	vil Construction		
Packa	age-1 and Package-2	Mar 2018 – Sep 2022	Mar 2018–Sep 2023 (Extended)
Packa	nge-3	Mar 2018 - Sep 2021	Mar 2018 – Mar 2023 (Extended)
Packa	ge-4	Oct 2020 - Sep 2022	June 2022 – Aug 2023
5) De	fect Liability Period		
Packa	ge-1 and Package-2	Oct 2022 – Sep 2024	Oct 2023 – Sep 2025
Packa	ge-3	Oct 2021 - Sep 2023	Apr 2023 Mar 2025
Packaç	ge-4	Oct 2022 - Sep 2024	Sep 2023 - Aug 2025
	mmencement of Toll lection	Sep 2022	Oct 2023
,	ection of O&M anization	Oct 2020 - Sep 2021	Oct 2022 – Sep 2023

Attachment 6, 7 & 8: Package wise construction schedules (progress) updated at the end of 2nd Quarter (July – Aug - Sep 2022).

2.2.2 Reasons for changes of the schedule and their effects to the Project

(P/R and PCR)

No change in the Implementation Schedule except the selection of O&M Organization timeline.



2.3 Project Cost

2.3.1.a Comparison of Originally Planned and Actually Incurred Cost by ITEM

Table 2.3.1.a.(i) Originally Planned Cost by ITEM

1 8 6	Foreig	n Curren	cy Portion	Loca	l Currency	Portion		Total		
Cost Breakdown	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mil	JICA Portion (Rs. mil	/ D C 1001		JICA Portion (JPY mi		
Package-1	34,398	34,398	0	45,376	45,376	0	105,713	105,713	0	
Package-2	26,513	26,513	0	32,617	32,617	0	77,774	77,774	0	
Package-3	759	759	0	8,276	8,276	0	13,766	13,766	0	
Package-4 (ITS)	0	0	0	1,444	1,444	0	2,269	2,269	0	
Package-5 (Geotechnical Investigation)	0	0	0	166	0	166	260	0	260	
Dispute Boards (Package-1, 2, 3 & 4)	63	63	0	45	45	0	134	134	0	
Price Escalation	2,251	2,251	0	7,133	7,133	0	13,460	13,460	0	
Physical Contingency	6,398	6,398	0	9,506	9,489	17	21,338	21,312	26	
Consulting Services	1,650	1,650	0	1,587	1,587	0	4,145	4,145	0	
Land Acquisition*	0	0	0	11,293	0	11,293	17,748	0	17,748	
Administration Cost	0	0	0	4,898	0	4,898	7,698	0	7,698	
GST	0	0	0	18,238	0	18,238	28,663	0	28,663	
Import Tax	0	0	0	13,435	0	13,435	21,114	0	21,114	
Interest during construction	2,942	0	2,942	0	0	0	2,942	0	2,942	
Front End Fee	477	0	477	0	0	0	477	0	477	
Total	75,451	72,032	3,419	154,013	105,967	48,046	317,501	238,572	78,929	

Note - 1. Exchange Rate: US\$1=Rs. 71.9, US\$1=JPY 113.0, Rs.1 = JPY 1.57

2. Price Escalation (a) Foreign Currency Portion: 1.83% p.a.

(b) Local Currency Portion: 4.13% p.a.

3. Physical Contingency: 10%

4. Base Year for Cost Estimation: Dec 2018

* Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696.

The base cost has been revised to INR 11,293 million considering Price Escalation and 10% Physical Contingency.



Table 2.3.1.a.(ii) Actually Incurred Cost by ITEM

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	Foreig	n Currency	/ Portion	Loca	l Currenc	y Portion		Total		
Cost Breakdown	Total (JPY mil)	JICA Portion (JPY mil)	Others (JPY mil)	Total (Rs. mil)	JICA Portion (Rs. mi	/ Da		JICA Portion (JPY mil		
Package-1	30,848	30,848	-	37,634	37,634	·	89,000	89,000		
Package-2	23,624	23,624	-	23,422	23,422	:	59,801	59,801		
Package-3	633	633	140	6,601	6,601		10,664	10,664		
Package-4 (ITS)	-		-	-			-			
Package-5 (Geotechnical Investigation)	· <u>-</u>			196		196	308		308	
Dispute Boards (Package-1, 2, 3 & 4)	-			-			•		-	
Price Escalation	-		'	4	4		6	6	-	
Physical Contingency	-			-			-		-	
Consulting Services	253	253		362	362		1,262	1,262		
Land Acquisition*	-			7,601		7,601	11,933		11,933	
Administration Cost	-			3,112		3,112	4,886		4,886	
GST	-			15,495		15,495	24,328		24,328	
Import Tax	-			-			-		-	
Interest during construction	-			154		155	242		242	
Front End Fee	-			1,869		1,869	2,935		2,935	
Total	55,358	55,358	-	96,451	68,022	28,428	205,365	160,733	44,632	

- Note 1. Exchange Rate: Rs.1 = JPY 1.57 for MMRDA Portion only
 - 2. Price Escalation (a) Foreign Currency Portion: 1.83% p.a.
 - (b) Local Currency Portion: 4.13% p.a.
 - 3. Physical Contingency: 10%
 - 4. Base Year for Cost Estimation: Dec 2018
 - * Base Cost for Land Acquisition considered in the year 2016 was INR 9,062,669,696. The base cost has been revised to INR 11,293 million considering Price Escalation

and 10% Physical Contingency.



2.3.1.bComparison of Originally Planned and Actually Incurred Cost by YEAR Table 2.3.1.b.(i) Originally Planned Cost by YEAR (All Figures are in JPY mil)

Cost Breakdown	Total		Others			
		Tranche I	Tranche II	Tranche III	Sub Total	(MMRDA Portion)
FY 2017	12,679	10,134	0	0	10,134	2,545
FY 2018	30,771	22,707	0	0	22,707	8,064
FY 2019	72,379	56,816	0	0	56,816	15,563
FY 2020	92,944	55,138	16,040	0	71,178	21,765
FY 2021	66,397	0	50,869	0	50,869	15,527
FY 2022	27,683	0	0	20,113	20,113	7,570
FY 2023	3,723	0	0	565	565	3,158
FY 2024	10,925	0	0	6,189	6,189	4,735
Total	317,501	144,795	66,909	26,868	238,571	78,929

Table 2.3.1.b.(ii) Actually Incurred Cost by YEAR (All Figures are in JPY mil)

Cost Breakdown	Total		Others			
		Tranche I	Tranche II	Tranche III	Sub Total	(MMRDA Portion)
FY 2017	13,738	9,232	_	-	9,232	4,506
FY 2018	26,813	21,695	-	-	21,695	5,118
FY 2019	40,410	31,014	-	-	31,014	9,396
FY 2020	31,822	23,885	-	-	23,885	7,937
FY 2021	54,057	43,284	Ma	_	43,284	10,773
FY 2022	38524	12,864	18758		31,622	6,902
FY 2023						
FY 2024						
Total	205,364	141,974	18,758		160,732	44,632

- (Note) 1. Exchange Rate used: Rs.1 = JPY 1.57 for MMRDA Portion only
 - 2. Fiscal Year starting from 1st April and ending on 31st Mar.
- 2.3.2 Reason(s) for the wide gap between the original and actual, if there have been any, the remedies you have taken, and their results.

(P/R and PCR)

There is no major gap between the original and actual cost.



2.4 Organization for Implementation

2.4.1 Executing Agency

Original:

Executing Agency

Mumbai Metropolitan Region Development Authority (MMRDA) was established on 26th Jan1975 in accordance with the Mumbai Metropolitan Development Act, 1974 to make Mumbai Metropolitan Region (MMR) a destination for economic activity by promoting infrastructure and regional planning. MMRDA takes all the necessary measures, required from time to time, in an effective manner and be fully responsible for the Project implementation. After completion of the Project, MMRDA continues to be responsible for the efficient operation and maintenance of the Project.

The GoM appointed MMRDA as the implementing/ executing agency of MTHL vide Government Resolution dated 4th Feb 2009 and further the ownership of MTHL would be with MMRDA vide Government Resolution dated 8th June 2011.

Organization's Role

To construct, execute, carryout, improve, work, develop, administer, manage, control or maintain in MMR all types of roads, highways, express routes, paths, streets, bridges, sideways, tunnels and other infrastructure, works and conveniences, approach road, etc.

Under the Project, MMRDA is responsible for all the tendering process including employment of consultants, as well as for the construction process.

Project Implementation Unit (PIU)

The PIU is in charge of the Projects. The PIU is headed by Chief Engineer, comprising of 6 Divisions/Cells (Finance Division, Social Development Cell, Engineering Division, Land Cell, Administrative Division and Environmental Cell), Supervision/ ITS Consultant and supporting staff.

Procurement

MMRDA shall have to adopt the JICA's Standard Bidding Documents of the latest version, as stipulated in Section 4.01 (2) of "Guidelines for Procurement under Japanese ODA Loans."

Procurement of goods and services, except for consulting services, converted by the Japanese ODA Loan should be implemented in accordance with "Guidelines for Procurement under Japanese ODA Loans", dated in Apr 2012. Employment of consultants should be implemented in accordance with "Guidelines of Employment of Consultant under Japanese ODA Loans", dated in Apr 2012. "Principles of Procurement under the Project" is attached for a brief explanation of the above Guidelines.

Actual, if changed: (P/R and PCR)

There is no change made in the original Organisation Set-up & Implementation methods. Refer Annexure III Organisation Chart.



2.4.2 Contractor(s)/ Supplier(s), and Consultant(s) and their Performance:

2.4.2.1 Procurement & Consultant

Table 2.4.2 Procurement of Contractor(s)/ Supplier(s) and Consultant(s)

Contract			
Package	Original: (P/M)		Actual: (P/R and PCR)
Construc	tion Works		
1	Package-1: From CH 0+000 - To CH 10+380 (10.38 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
2	<u>Package-2:</u> From CH 10+380 - To CH 18+187 (7.80 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
3	<u>Package-3:</u> From CH 18+187 - To CH 21+800 (3.61 km)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	No Change
4	Package-4: To install ITS (Toll Management System and Highway Traffic Management System)	International Competitive Bidding Process (With PQ, Single stage with two envelopes)	International Competitive Direct Bidding Process without Pre-Qualification
5	Package-5: To conduct the geotechnical investigation	Local Competitive Bidding Process	No Change
onsulting	Services		
	Consulting Service for Supervision	Short List Method (QCBS)	No Change



2.4.2.2 Performance

Consultant's Progress:

July 2022:

1

- 1) GC scrutinized & certified the following invoices claimed by the Contractors:
- i) Package-1: IPC-52 and 53 20% Detailed Verification and IPC-55 80% Ad-hoc.
- ii) Package-2: IPC-50 20% Detailed Verification and IPC-51 80% Ad-hoc.
- iii) Package-3: IPC-46 20% Detailed Verification and IPC-47 80% Ad-hoc.
- iv) Package-4: The Contractor started the Geotechnical Survey Works at the Gavhan location, and the design/ drawings phase has been begun since June 2022.
- 2) GC/Employer didn't submit any reimbursement claim in July 2022.

August 2022:

- GC scrutinized & certified the following invoices claimed by the Contractors:
 - i) Package-1: IPC-54 & 55 20% Detailed Verification and IPC-56 & 57 80% Ad-hoc.
 - ii) Package-2: IPC-51 20% Detailed Verification and IPC-52 80% Ad-hoc.
 - iii) Package-3: IPC-47 20% Detailed Verification and IPC-48 80% Ad-hoc.
 - iv) Package-4: Contract was signed on 4th Aug 2022.
- 2) GC has prepared and submitted a total reimbursement claim of 10717.45 million JPY to MMRDA / JICA in Aug 2022.(Please refer Annexure-1)

September 2022:

- 1) GC scrutinized & certified the following invoices claimed by the Contractors:
- i) Package-1: IPC-56 & 57 20% Detailed Verification and IPC-58 80% Ad-hoc.
- ii) Package-2: IPC-52 & 53 20% Detailed Verification and IPC-53 80% Ad-hoc.
- iii) Package-3: IPC-48 20% Detailed Verification.
- 2) GC has prepared and submitted a total reimbursement claim of 8194.45 million JPY to MMRDA / JICA in Sep 2022. (Please refer Annexure-2)
- 3) 100% of the Technical Design Modules across all the 3 Packages have been given "NONO" by the GC.
- 4) Approximately 99.95% of the Construction (GFC Good For Construction) Design Modules across all the 3 Packages have been given "NONO" by the GC.

Package-1 - 100%, Package-2 - 99.95%, Package-3 -100%

Contractor's Progress:

Package-1 Physical Progress till 30th Sep 2022

N	S. Activity	Total Scope		Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
	Permanent Bridge Works	- Land/ Inte	rchange	Zone		
1.	1 Piles	523	No.	523	100.00%	
1.	2 Pile Caps	158	No.	142	89.87%	
1.	3 Piers	228	No.	207	90.79%	
1.4	4 Pier Caps	228	No.	199	87.28%	
- 2	Permanent Bridge Works	Intertidal	Zone			
2.1	Piles	312	No.	312	100%	
2.2	Pile Caps	75	No.	75	100.00%	
2.3	Piers	146	No.	146	100.00%	
2.4	Pier Caps	146	No.	146	100.00%	
3	Permanent Bridge Works -	Marine Zor	e A L			
3.1	Piles	403	No.	403	100%	
3.2	Pile Caps	80	No.	80	100.00%	
3.3	Piers	162	No.	140	86.42%	
3.4	Pier Caps	162	No.	144	88.89%	
4	Permanent Bridge Works -	Total				
4.1	Piles	1238	No.	1238	100%	
4.2	Pile Caps	313	No.	297	94.89%	
4.3	Piers	536	No.	493	91.98%	
1.4	Pier Caps	536	No.	489	91.23%	
5 t	Precast Segments					
.1	Segment Casting	6713	No.	5536	82.47%	
.2	Segment (Span) Erection+ Cast-in-Situ Slab	478	No.	321	67.15%	
6	OSD Structural Steel					x 1 2 x 11
.1	Fabrication	53703	МТ	53703	100%	
2	Assembly (Large Blocks)	53703	МТ	23330	43.44%	
3	OSD Span Erection	38	No.	10	26.32%	
2	Crash Barrier					
1	Crash Barrier - Median	20405	Rmt	2340	11.47%	
2	Crash Barrier - Outer	31077	Rmt	501	1.61%	

Package-2 Physical Progress till 30th Sep 2022

V	S. Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
3			-			
H	1 Open Foundation	113	No.	113	100%	
$I \vdash$	2 Piers	119	No.	119	100%	
1.		105	No.	105	100%	
1.		6	No.	6	100%	
1.			No.	42	100%	
12		- Intertida	a CRZ	Zone		
2.		280	No.	280	100%	
2.2	Pile Caps	72	No.	72	100%	
2.3		72	No.	72	100%	
2.4	Pier Caps	18	No.	18	100%	
2.5	Pier Head Segments	54	No.	54	100%	
13	Permanent Bridge Works	- Marine 2	one			对设计。
3.1	Piles	504	No.	504	100%	
3.2	Pile Caps	120	No.	118	98%	
3.3	Piers	120	No.	112.62	94%	
3.4	Pier Caps	48	No.	34	71%	
3.5	Pier Head Segments	74	No.	39	53%	
4	Permanent Bridge Works	- Total				
4.1	Open Foundation	113	No.	113	100%	
4.2	Piles	784	No.	784	100%	
4.3	Pile Caps	192	No.	190	99%	
4.4	Piers	311	No.	303.62	98%	
4.5	Pier Caps/ Portal Beams	177	No.	163	92%	
4.6	Pier Head Segments	170	No.	135	79%	
× 5 -	Precast Segments					
5.1	Segment Casting	3142	No.	2576	82%	
5.2	Segment (Span) Erection + Cast-in-Situ Slabs	272	No.	171	63%	
# 6 t	OSD Structural Steel					
6.1	Fabrication	34726	МТ	34,726	100%	
6.2	Assembly (for Large Block)	34726	MT	9863	28.40%	
6.3	OSD Span Erection	32	No.	7	22%	
7	Crash Barrier					
7.1	Crash Barrier - Median	15614	Rmt	720	4.61%	
7.2	Crash Barrier - Outer	20945	Rmt	30	0.14%	

TRAL CONSULT

Package-3 Physical Progress till 30th Sep 2022

S. No	Activity	Total Scope	Unit	Cumulative Achieved Works	% of Work done Against the Total Scope	Remarks
1	Permanent Bridge Works					
1.1	Open Foundations	221	No.	221	100.00%	
1.2	Piles	24	No.	24	100.00%	
1.3	Pile Caps	4	No.	4	100.00%	
1.4	Piers	242	No.	237	97.93%	
1.5	Pier Caps	189	No.	181	95.77%	
1.6	Segment Casting	834	No.	834	100.00%	
1.7	Segment (Span) Erection	59	No.	48	81.36%	
1.8	Cast in-situ Slab	108	No.	88	81.48%	
1.9	Rail Overbridge (ROB) Span	20	No.	7	35.00%	
1.10	Crash Barrier - Median	5500	Rmt	596	10.84%	
1.11	Crash Barrier - Outer	9000	Rmt	0	0%	

Package-4 (ITS) Progress till 30th Sep 2022

- 1. Letter of Acceptance (LOA) was issued to Strabag GmbH and Strabag AG JV on 5th May 2022. The Package-4 Contract was signed on 4th Aug 2022.
- 2. Preliminary design and drawings are submitted for Civil works, ITS & Electrical works for review and approval.
- 3. Safety, Quality, and Detailed works programme submitted for review and approval.
- 4. Request for Mobilization advance submitted.
- 5. The Contractor has commenced the Geotechnical Survey Works at Gavhan location.

Please refer Attachment 9 - Site Progress Photos showing the development of the project.



Health & Safety and Environment (HSE)

The HSE Plans have been submitted by the respective construction agencies for the Packages which are being monitored by the GC on a regular basis.

Package-1 Safety Report

Average Daily Manpower (all Workmen & Staff)		S o. Description	Unit	Jul-Aug Sep 202	
Man-Hours Worked					
3 Man-Hours Worked	2	Man-Days Worked	Davs	4.82.45	61 24 635
Accident-Free Man Hours	3	Man-Hours Worked			
5 Fatal Accidents (Reportable) Incidents (Nos.) 0 5 6 Fatality Cases. Fatalities (FAT) 0 6 7 Lost Time Injury Incidents (Reportable) Incidents (Nos.) 1 8 8 Lost Time Injury Cases (Persons Injured) # Injured Persons 1 10 9 Restricted Work Medical Case RWMC (#Incidents) 0 0 10 Medical Treatment Cases MTC (#Incidents) 0 0 11 First Aid Cases. FAC (#Cases) 22 301 12 Near Miss Incidents. NMI (#Incidents) 7 123 13 Dangerous Occurrences. DO (#Numbers) 1 5 14 Covid) Sick (#Persons) 0 2 15 Man-Hours Lost Hours 1,048 2,96,576 16 Man-Hours Lost Hours 1,048 2,96,576 16 Man-Hours Autility Incident Frequency Rate / Million Man Hours Time (FAT+ Injuries)/MMH 0.74 0.31	4	Accident-Free Man Hours			
6 Fatality Cases. Fatalities (FAT) 0 6 7 Lost Time Injury Incidents (Reportable) Incidents (Nos.) 1 8 8 Lost Time Injury Cases (Persons Injured) # Injured Persons 1 10 9 Restricted Work Medical Case RWMC (#Incidents) 0 0 10 Medical Treatment Cases MTC (#Incidents) 0 1 11 First Aid Cases. FAC (#Cases) 22 301 12 Near Miss Incidents. NMI (#Incidents) 7 123 13 Dangerous Occurrences. DO (#Numbers) 1 5 14 Reportable Sick Cases (Succumbed due Covid) Sick (#Persons) 0 2 15 Man-Hours Lost Hours 1,048 2,96,576 16 Man-Days Lost Days 131 37,081 17 Million Man Hours # (FAT+ Injuries)/MMH 0.74 0.31 18 Reportable Incident Frequency Rate / Million Man Hours Tife 0.74 0.32 19 <td>5</td> <td>Fatal Accidents (Reportable)</td> <td>Incidents (Nos.)</td> <td></td> <td></td>	5	Fatal Accidents (Reportable)	Incidents (Nos.)		
8 Lost Time Injury Cases (Persons Injured) # Injured Persons 1 10 9 Restricted Work Medical Case RVMC (#Incidents) 0 0 10 Medical Treatment Cases MTC (#Incidents) 0 1 11 First Aid Cases. FAC (#Cases) 22 301 12 Near Miss Incidents. NMI (#Incidents) 7 123 13 Dangerous Occurrences. DO (#Numbers) 1 5 14 Reportable Sick Cases (Succumbed due Covid) Sick (#Persons) 0 2 15 Man-Hours Lost Hours 1,048 2,96,576 16 Man-Days Lost Days 131 37,081 17 Million Man Hours # (FAT+ Injuries)/MMH 0.74 0.31 18 Reportable Incident Severity Rate / Million Man Hours Days Lost/MMHr 106.91 706.95 19 Total Injury Incident Frequency Rate / Million Man Hours TIFR 0.74 0.32 20 Toolbox Talks Sessions 14,173 1,37,573	6	Fatality Cases.	Fatalities (FAT)	0	6
Injured #Injured Persons 1 10	7	Lost Time Injury Incidents (Reportable)	Incidents (Nos.)	1	8
10 Medical Treatment Cases MTC (#Incidents) 0 1 11 First Aid Cases. FAC (#Cases) 22 301 12 Near Miss Incidents. NMI (#Incidents) 7 123 13 Dangerous Occurrences. DO (#Numbers) 1 5 14 Reportable Sick Cases (Succumbed due Covid) Sick (#Persons) 0 2 15 Man-Hours Lost Hours 1,048 2,96,576 16 Man-Days Lost Days 131 37,081 17 Million Man Hours Million Man Hours Million Man Hours Days Lost/MMHr 0.74 0.31 18 Reportable Incident Severity Rate / Million Man Hours Days Lost/MMHr 106.91 706.95 19 Total Injury Incident Frequency Rate / Million Man Hours TIFR 0.74 0.32 20 Toolbox Talks Sessions 14,173 1,37,573 21 CFT Numbers 20 227 22 Routine Safety Inspections (Safety Team with Reports) Numbers 96 4,034 23 Total Observations Raised (Safety) Numbers 96 4,034 24 Health & Hyglene Inspections Numbers 12 52 25 Total Observations Raised (Health & Numbers 12 52 26 Training Sessions done for Offices & Sessions 451 3,077 27 Personnel Attended Training Sessions Numbers 3 36 28 Contractor Safety Committee Meetings Numbers 3 36 29 Crifical Excavations Numbers 6 86 30 Pre-employment Medical check-ups Persons 2,716 40,370 31 Safety Internal Audits Conducted Persons 2,716 42,257 Numbers 20 32 20 20 Contractor's Internal Audits Conducted Persons 2,716 42,257 Numbers 20 32 20	8	Injured)	# Injured Persons	1	10
First Aid Cases. FAC (#Cases) 22 301	<u> </u>		RWMC (#Incidents)	0	0
12 Near Miss Incidents. NMI (#Incidents) 7 123 13 Dangerous Occurrences. DO (#Numbers) 1 5 14 Reportable Sick Cases (Succumbed due Covid) Sick (#Persons) 0 2 15 Man-Hours Lost Hours 1,048 2,96,576 16 Man-Days Lost Days 131 37,081 17 Reportable incident Frequency Rate / Million Man Hours Million Man Hours 1,048 2,96,576 18 Reportable Incident Severity Rate / Million Man Hours Days Lost/MMHr 106,91 706,95 19 Total Injury Incident Frequency Rate / Information Man Hours TIFR 0,74 0,32 20 Toolbox Talks Sessions 14,173 1,37,573 21 Safety Walk down Inspections (Joint & CFT) Numbers 20 227 22 Routine Safety Inspections (Safety Team with Reports) Numbers 96 4,034 23 Total Observations Raised (Safety) Numbers 8,060 83,423 24 Health & Hyglene Inspections Numbers 12 52 25 Hotal Observations Raised (Health & Numbers 73 520 26 Training Sessions done for Offices & Sites Sessions 451 3,077 27 Classroom & Site) Persons 6,415 37,793 28 Contractor Safety Committee Meetings Numbers 3 36 29 Criftcal Excavations Numbers 6 86 30 Pre-employment Medical check-ups Persons 2,716 40,370 31 Safety Inductions completed Persons 2,716 42,257 32 Mock drills Conducted Numbers 2 32	-		MTC (#Incidents)	0	1
13 Dangerous Occurrences. DO (#Numbers) 1 5			FAC (#Cases)	22	301
14					
15 Man-Hours Lost Hours 1,048 2,96,576 16 Man-Days Lost Days 131 37,081 17 Reportable incident Frequency Rate / Million Man Hours # (FAT+ Injuries)/MMH 0.74 0.31 18 Reportable Incident Severity Rate / Million Man Hours Days Lost/MMHr 106.91 706.95 19 Total Injury Incident Frequency Rate / 1M Man Hours TIFR 0.74 0.32 20 Toolbox Talks Sessions 14,173 1,37,573 21 Safety Walk down Inspections (Joint & Numbers 20 227 22 Routine Safety Inspections (Safety Team with Reports) Numbers 96 4,034 23 Total Observations Raised (Safety) Numbers 8,060 83,423 24 Health & Hyglene Inspections Numbers 12 52 25 Total Observations Raised (Health & Hyglene) Numbers 73 520 26 Sites Sessions 451 3,077 27 Personnel Attended Training Sessions Numbers 3 36 29 Critical Excavations Numbers 6 86 30 Pre-employment Medical check-ups Persons 2,716 42,257 31 Safety Internal Audits Conducted Numbers 2 32 32 Contractor's Internal Audits Conducted Numbers 2 32 32 Contractor's Internal Audits Conducted Numbers 3 36 30 Contractor's Internal Audits Conducted Numbers 2 32 31 Contractor's Internal Audits Conducted Numbers 2 32		Panartahla Ciak Casas (Curannahad dan	DO (#Numbers)	1	5
16		Covid)	<u> </u>	0	2
Reportable incident Frequency Rate / #(FAT+ Injuries)/MMH 0.74 0.31			Hours	1,048	2,96,576
17 Million Man Hours	16		Days	131	37,081
Million Man Hours Days Lost/MMHr 106.91 706.95	17	Million Man Hours	# (FAT+ Injuries)/MMH	0.74	0.31
TIFR 0.74 0.32 Toolbox Talks Sessions 14,173 1,37,573 Toolbox Talks Sessions 14,173 1,37,573 Toolbox Talks Sessions 14,173 1,37,573 Toolbox Talks Sessions 14,173 1,37,573 Numbers 20 227 Routine Safety Inspections (Safety Team with Reports) Numbers 96 4,034 Total Observations Raised (Safety) Numbers 8,060 83,423 Health & Hyglene Inspections Numbers 12 52 Total Observations Raised (Health & Hyglene) Numbers 73 520 Training Sessions done for Offices & Sessions 451 3,077 Training Sessions done for Offices & Sessions 6,415 37,793 Classroom & Site) Persons 6,415 37,793 Contractor Safety Committee Meetings Numbers 3 36 Contractor Safety Committee Meetings Numbers 6 86 Pre-employment Medical check-ups Persons 2,716 40,370 Safety Inductions completed Persons 2,716 42,257 Numbers 2 32 Contractor's Internal Audits Conducted Numbers 2 32	18	Reportable Incident Severity Rate / Million Man Hours	Days Lost/MMHr	106.91	706.95
Safety Walk down Inspections (Joint & Numbers 20 227 Routine Safety Inspections (Safety Team with Reports) Total Observations Raised (Safety) Health & Hygiene Inspections Total Observations Raised (Health & Hygiene) Total Observations Raised (Health & Hygiene) Total Observations Raised (Health & Numbers 73 520 Total Observations Raised (Health & Numbers 73 520 Training Sessions done for Offices & Sessions 451 3,077 Personnel Attended Training Sessions (Classroom & Site) Contractor Safety Committee Meetings Numbers 3 36 Contractor Safety Committee Meetings Numbers 6 86 Treemployment Medical check-ups Persons 2,716 40,370 Safety Inductions completed Persons 2,716 42,257 Mock drills Conducted Numbers 2 32 Contractor's Internal Audits Conducted Numbers 2 32	19	Total Injury Incident Frequency Rate / 1M Man Hours	TIFR	0.74	0.32
Safety Walk down Inspections (Joint & Numbers 20 227 Routine Safety Inspections (Safety Team with Reports) Total Observations Raised (Safety) Health & Hygiene Inspections Total Observations Raised (Health & Hygiene) Total Observations Raised (Health & Hygiene) Total Observations Raised (Health & Numbers 73 520 Total Observations Raised (Health & Hygiene) Training Sessions done for Offices & Sessions 451 3,077 Personnel Attended Training Sessions (Classroom & Site) Contractor Safety Committee Meetings Numbers 3 36 Contractor Safety Committee Meetings Numbers 6 86 Tre-employment Medical check-ups Persons 2,716 40,370 Safety Inductions completed Persons 2,716 42,257 Mock drills Conducted Numbers 2 32 Contractor's Internal Audits Conducted	20		Sessions	14,173	1,37,573
Team with Reports) Numbers 96 4,034 23 Total Observations Raised (Safety) Numbers 8,060 83,423 24 Health & Hyglene Inspections Numbers 12 52 25 Total Observations Raised (Health & Hyglene) Training Sessions done for Offices & Sessions Sites 73 520 26 Sites Personnel Attended Training Sessions (Classroom & Site) Contractor Safety Committee Meetings Numbers 96 4,034 Numbers 8,060 83,423 Numbers 73 520 Sessions 451 3,077 Personnel Attended Training Sessions (Classroom & Site) Persons 6,415 37,793 28 Contractor Safety Committee Meetings Numbers 3 36 29 Critical Excavations Numbers 6 86 30 Pre-employment Medical check-ups Persons 2,716 40,370 31 Safety Inductions completed Persons 2,716 42,257 32 Mock drills Conducted Numbers 2 32	21	CFT)	Numbers	20	
Health & Hygiene Inspections Total Observations Raised (Health & Hygiene) Training Sessions done for Offices & Sessions Training Sessions done for Offices & Sessions Personnel Attended Training Sessions (Classroom & Site) Contractor Safety Committee Meetings Critical Excavations Persons Numbers Rumber	22	Team with Reports)	Numbers	96	4,034
Total Observations Raised (Health & Numbers 73 520 26 Training Sessions done for Offices & Sessions 451 3,077 27 Personnel Attended Training Sessions (Classroom & Site) Persons 6,415 37,793 28 Contractor Safety Committee Meetings Numbers 3 36 29 Critical Excavations Numbers 6 86 30 Pre-employment Medical check-ups Persons 2,716 40,370 31 Safety Inductions completed Persons 2,716 42,257 32 Mock drills Conducted Numbers 2 32		<u> </u>	Numbers	8,060	83,423
Hygiene) Training Sessions done for Offices & Sessions Personnel Attended Training Sessions (Classroom & Site) Contractor Safety Committee Meetings Persons Rumbers Persons 6,415 37,793 Rumbers Rumbers 6,415 37,793 Rumbers R	24		Numbers	12	52
Sites Sessions 451 3,077 Personnel Attended Training Sessions (Classroom & Site) Persons 6,415 37,793 Contractor Safety Committee Meetings Numbers 3 36 Critical Excavations Numbers 6 86 Pre-employment Medical check-ups Persons 2,716 40,370 Safety Inductions completed Persons 2,716 42,257 Mock drills Conducted Numbers 2 32 Contractor's Internal Audits Conducted	25	Hygiene)	Numbers	73	520
Contractor Safety Committee Meetings Critical Excavations Numbers Critical Excavations Numbers Resons Re	26	Sites	Sessions	451	3,077
29 Critical Excavations Numbers 6 86 30 Pre-employment Medical check-ups Persons 2,716 40,370 31 Safety Inductions completed Persons 2,716 42,257 32 Mock drills Conducted Numbers 2 32 32 Contractor's Internal Audits Conducted	27	(Classroom & Site)	Persons	6,415	37,793
30 Pre-employment Medical check-ups Persons 2,716 40,370 31 Safety Inductions completed Persons 2,716 42,257 32 Mock drills Conducted Numbers 2 32 33 Contractor's Internal Audits Conducted	28		Numbers	3	36
31 Safety Inductions completed Persons 2,716 42,257 32 Mock drills Conducted Numbers 2 32 32 Contractor's Internal Audits Conducted			Numbers	6	86
32 Mock drills Conducted Numbers 2 32 32 Contractor's Internal Audits Conducted			Persons	2,716	40,370
22 Contractor's Internal Audits Conducted			Persons	2,716	42,257
33 Contractor's Internal Audits Conducted Numbers 49			Numbers	ž., 2	32
	33	Contractor's Internal Audits Conducted	Numbers	1 4	49

1st July to 30th Sep 2022

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Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 22 (Jul-Sep 2022)

Package-2 Safety Report

Average Daily Manpower (all Workmen & Staff) Numbers 2,792 Man-Days Worked Days 2,12,157 Accident-Free Man Hours Hours Fatal Accidents (Reportable) Fatality Cases. Lost Time Injury Incidents (Reportable) Lost Time Injury Cases (Persons Injured) Restricted Work Medical Case RWMC (#Incidents) MTC (#Incidents) MTC (#Incidents) Average Daily Manpower (all Workmen Numbers 2,792 22 24 25 27 27 27 28 27 29 Restricted Man-Hours Hours	2,075 47,113 509,625 9,005 0 11
1& Staff)Numbers2,79222Man-Days WorkedDays2,12,1572,53Man-Hours WorkedHours23,33,72728,54Accident-Free Man HoursHours16,04,405925Fatal Accidents (Reportable)Incidents (Nos.)06Fatality Cases.Fatalities (FAT)07Lost Time Injury Incidents (Reportable)Incidents (Nos.)28Lost Time Injury Cases (Persons Injured)# Injured Persons29Restricted Work Medical CaseRWMC (#Incidents)010Medical Treatment CasesMTC (#Incidents)011First Aid Cases.FAC (#Cases)41	647,113 509,625 9,005 0 0 11 11
3 Man-Hours Worked Hours 23,33,727 28,5 4 Accident-Free Man Hours Hours 16,04,405 92 5 Fatal Accidents (Reportable) Incidents (Nos.) 0 6 Fatality Cases. Fatalities (FAT) 0 7 Lost Time Injury Incidents (Reportable) Incidents (Nos.) 2 8 Lost Time Injury Cases (Persons Injured) # Injured Persons 2 9 Restricted Work Medical Case RWMC (#Incidents) 0 10 Medical Treatment Cases FAC (#Cases) 4 1	0 0 11 11 6
4 Accident-Free Man Hours Hours 16,04,405 92 5 Fatal Accidents (Reportable) Incidents (Nos.) 0 6 Fatality Cases. Fatalities (FAT) 0 7 Lost Time Injury Incidents (Reportable) Incidents (Nos.) 2 8 Lost Time Injury Cases (Persons Injured) # Injured Persons 2 9 Restricted Work Medical Case RWMC (#Incidents) 0 10 Medical Treatment Cases MTC (#Incidents) 0 11 First Aid Cases. FAC (#Cases) 4	0 0 11 11 6
4 Accident-Free Man Hours Hours 16,04,405 92 5 Fatal Accidents (Reportable) Incidents (Nos.) 0 6 Fatality Cases. Fatalities (FAT) 0 7 Lost Time Injury Incidents (Reportable) Incidents (Nos.) 2 8 Lost Time Injury Cases (Persons Injured) # Injured Persons 2 9 Restricted Work Medical Case RWMC (#Incidents) 0 10 Medical Treatment Cases MTC (#Incidents) 0 11 First Aid Cases. FAC (#Cases) 4	0 0 11 11 6
6 Fatality Cases. Fatalities (FAT) 0 7 Lost Time Injury Incidents (Reportable) Incidents (Nos.) 2 8 Lost Time Injury Cases (Persons Injured) # Injured Persons 2 9 Restricted Work Medical Case RWMC (#Incidents) 0 10 Medical Treatment Cases MTC (#Incidents) 0 11 First Aid Cases. FAC (#Cases) 4	0 11 11 6
7 Lost Time Injury Incidents (Reportable) Incidents (Nos.) 2 8 Lost Time Injury Cases (Persons Injured) # Injured Persons 2 9 Restricted Work Medical Case RWMC (#Incidents) 0 10 Medical Treatment Cases MTC (#Incidents) 0 11 First Aid Cases. FAC (#Cases) 4	11 11 6
8 Lost Time Injury Cases (Persons # Injured Persons 2 9 Restricted Work Medical Case RWMC (#Incidents) 0 10 Medical Treatment Cases MTC (#Incidents) 0 11 First Ald Cases. FAC (#Cases) 4	11 6
9 Restricted Work Medical Case RWMC (#Incidents) 0 10 Medical Treatment Cases MTC (#Incidents) 0 11 First Aid Cases. FAC (#Cases) 4	6
10 Medical Treatment Cases MTC (#Incidents) 0 11 First Aid Cases. FAC (#Cases) 4 1	
11 First Aid Cases. FAC (#Cases) 4 1	4.0
1 AO (modes) 4	12
	75
	350
Poportohio Siek Coses (Sussumbed dus	15
Odvidy	3
	648
	06
	386
	5
Total Injury Incident Frequency Rate / 1M Man Hours TIFR 2.51 1.0	17
20 Toolbox Talks Sessions 1,182 11,8	394
21 Safety Walk down Inspections (Joint & Numbers 11 17	2
Routine Safety Inspections (Safety Team with Reports) Numbers 324 1,58	96
23 Total Observations Raised (Safety) Numbers 1,800 22,1	09
24 Health & Hygiene Inspections Numbers 0 4	
Total Observations Raised (Health & Numbers 0 16	;
Training Sessions done for Offices & Sessions 145 1,18	37
Personnel Attended Training Sessions (Classroom & Site) Persons 3,023 22,84	46
28 Contractor Safety Committee Meetings Numbers 3 51	
29 Critical Excavations Numbers 0 0	
30 Pre-employment Medical check-ups Persons 886 16,91	7
31 Safety Inductions completed Persons 918 17,25	52
32 Mock drills Conducted Numbers 3 42	
33 Contractor's Internal Audits Conducted Numbers 0 0	



Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 22 (Jul-Sep 2022)

Package-3 Safety Report

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	S		Jul-Aug	
	lo. Description	Unit	Sep 202	
	Average Daily Manpower (all Workmer & Staff)	Numbers	529	428
	2 Man-Days Worked	Days	67,129	7,93,050
	Man-Hours Worked	Hours	5,37,03	
4	Accident-Free Man Hours	Hours	5,37,03	5,37,031
5	Fatal Accidents (Reportable)	Incidents (Nos.)	0	0
E		Fatalities (FAT)	0	0
7		Incidents (Nos.)	1	3
8	[Injured)	# Injured Persons	1	3
9		RWMC (#Incidents)	0	0
10		MTC (#Incidents)	0	0
11		FAC (#Cases)	9	124
12		NMI (#Incidents)	9	37
13		DO (#Numbers)	0	1
14	Covid)	Sick (#Persons)	0	0
15		Hours	24	2,216
16		Days	3	277
17	Reportable Incident Frequency Rate / Million Man Hours	# (FAT+ Injuries)/MMH	6	0.473
18	Reportable Incident Severity Rate / Million Man Hours	Days Lost/MMHr	19	44
19	Total Injury Incident Frequency Rate / 1M Man Hours	TIFR	6	0
20	Toolbox Talks	Sessions	552	8,190
21	Safety Walk down Inspections (Joint & CFT)	Numbers	12	181
22	Routine Safety Inspections (Safety Team with Reports)	Numbers	42	605
23	Total Observations Raised (Safety)	· Numbers	541	771
24	Health & Hygiene Inspections	Numbers	6	8
25	Total Observations Raised (Health & Hygiene)	Numbers	31	43
26	Training Sessions done for Offices & Sites	Sessions	49	317
27	Personnel Attended Training Sessions (Classroom & Site)	Persons	827	1,008
28	Contractor Safety Committee Meetings	Numbers	3	47
29	Critical Excavations	Numbers	0	9
30	Pre-employment Medical check-ups	Persons	951	10,528
31	Safety Inductions completed	Persons	951	10,585
32	Mock drills Conducted	Numbers	3	41
33	Contractor's Internal Audits Conducted	Numbers	3	12



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3.0 BENEFITS DERIVED FROM THE PROJECT (EFFECTIVENESS)

3.1 Operational and Physical Condition

(This section will be developed when the operational plan is available)

Facilities	Description of condition	Problems, its Background and Remedial Action Plan
(P/R and PCR)	(P/R and PCR)	(P/R and PCR)

3.2 Precautions (Measures to be adopted/ Points which require special attention)

Original Issues and Countermeasure(s) Actual Issues and Countermeasure(s) 3.2.1 General Issues (P/R and PCR) 1. Toll Arrangement/ Toll Rate Fixed toll rate as per the type of vehicle Appropriate Tolling Policy/ Rates finalization is in will be levied for the road users after the progress. completion of the Project, An appropriate tolling policy/ rates will be finalized in consultation with the state government prior to the completion of Civil works. 2. Operation and Maintenance MMRDA proposes to appoint separate agencies for Operation & Maintenance of A single Operation and Maintenance Contractor the bridge and for Toll Management! finalization is in progress. System. Both the agencies for O & M and Toll Management System may be appointed through open tendering process. Overall monitoring of the two agencies would be done by MMRDA inhouse through a separate cell which could be constituted for the purpose. MMRDA has confirmed to allocate an adequate budget for engaging the Contractors. Environmental and Social (P/R and PCR) MMRDA has disclosed Supplemental EIA & **CRZ Clearance** SIA on MMRDA website. i. Supplemental EIA has been approved • The renewed CRZ clearance was granted on

3.2.2 Consideration

- by MMRDA and disclosed on the website of JICA. A supplemental EIA report has been disclosed also on the website of MMRDA.
- ii. Furthermore, renewed CRZ Clearance has been obtained in January 2016.
- iii. In accordance with the conditions for CRZ Clearance, appropriate measures shall be taken, and necessary budget
- 25/1/2016 from MoEF&CC and the approval conditions have been imposed on the Contractors as the Employer's requirements. MMRDA has actively monitored compliances of the approval conditions and maintained them throughout the construction phase.
- MMRDA appointed Mangroves & Marine Biodiversity Foundation for bird monitoring



shall be secured by MMRDA.	and implementation of Flamingos and bird
	monitoring program for the MTHL project
8	during the construction as well as the long-
	term monitoring after the construction.
	• Rs 91.42 Crore has been transferred to
	Mangroves & Marine Biodiversity Foundation,
	Mumbai for the development & conservation
	of mangrove area and its afforestation. Such
	funds will be managed by the Mangrove
	Foundation of Maharashtra State.
	As per the renewed CRZ clearance condition,
	IIT Mumbai has been appointed for the DPR
	study to develop a Mahul creek Effluent
	Treatment Plant (ETP). Rs 4.98 Crore was
	secured for IIT services. The Draft DPR has
	been reviewed and approved.
	Proposal of extension for CRZ clearance
	submitted vide reference no MCZMA
	2022/08/CR-246/3719 dated 4th Aug-2022.
	(Please refer Annexure-3)
h Paguirad Parmita	(1 loado felel AffileAule-0)

b. Required Permits

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The Permits to be obtained by MMRDA/ Contractors and the present status is given in the following Table.

Table 3.2.2 Present Status of some important Permits

Clearance Required	Approving Authority	Responsible Organization	Obtained by when	Remark /Status
Mangrove Cutting	Hon. Bombay High Court	MMRDA/ Contractor	Approval received from Hon. Bombay High Court on 28 th Nov 2016	was completed with full
Tree Cutting /Transplantati on	Respective Tree Authorities	Contractor for respective Packages	-	Pkg-1: Tree Cutting/ Transplantation permission from the Garden Dept., MCGM obtained on 24th Dec 2020. Pkg-2: Tree Cutting/ Transplantation permission obtained & completed. Pkg-3: Forest Department issued a concurrence on 19/05/2019. CIDCO's permission for Tree Cutting/ Transplantation obtained on 25th Nov 2019.



Clearan ce Required	Approving Authority	Responsible Organization	Obtained by when	Remark /Status
Consent to Establish	Maharashtra Pollution Control Board	Contractor for respective Packages	Pkg-1-18.07.2018 Pkg-2-16.08.2018 Pkg-3-29.05.2019	

3.3 Environmental and Social Impacts

Major environmental and social impacts have occurred during project implementation (e.g. involuntary resettlement, poverty reduction, impacts on the natural environment).

Issue(s)	Action or countermeasure(s) taken and
1. Establishment of Effective Environmental and Social Cell in PIU MMRDA confirmed that Social Development Cell (2 Officers), Land Cell (3 Officers), and Environmental Cell (2 Officers) had been set up. 2. Rehabilitation and Land Acquisition Issues a. Affected Area and Population Due to the Project, 1282 non- titleholders will be involuntary resettled, and 108.4379 ha of land will be handed over by CIDCO.	Cell is established by MMRDA (Annexure III, Organization chart) Sewri: Involuntary resettlement in Sewri section has been further validated by Social Development Cell of MMRDA. Out of 297 Project Affected Households (PAHs) have given consents as follows: 164 PAHs Kanjurmarg for residential 25 PAHs Kanjurmarg for commercial 7 PAHs (Satsangi Plot) Kanjurmarg for
	Commercial 1 PAHs (commercial to residential) for Bhakti Park 100 PAHs HDIL Kurla for residential
	Navi Mumbai: CIDCO has been finalizing the land acquisition closely monitored by Land Cell of MMRDA.
	CIDCO has possessed 106.3542 ha of land and handed over to MMRDA, except private land of 2.0837 ha.
	0.3937 ha land is under acquisition out of balance 2.0837 ha land. CIDCO is planning to acquire the balance ROW land of with the help of Collector, Raigad.



lesua(c)	Acceptance
Issue(s)	Action or countermeasure(s) taken and remaining problem(s)
b. Entitlement Policy MMRDA prepared the entitlement matrix for resettlement of non-trice holders in Sewri, which meets the Resettlement and Rehabilitation Police for Mumbai Urban Transportation Project (1997, amended in 2000) are JICA guidelines for Environmental are social considerations (2016) ("Guidelines") (Attachment 2-5).	enforcement. As per the Attachment 2-5 of JICA MoD, MMRDA has committed to enforce the agreed/approved policy.
c. Compensation to Project affected Fishermen Detailed baseline survey will be undertaken by MMRDA in order to identify fishermen who are affected by the Project. Based on the result of the baseline survey, MMRDA with compensate them in accordance with compensation policy prior to the construction. Monitoring will be conducted by MMRDA with assistance of the Consultant to gasp the exact impact during construction and operation phase.	Updated Attachments 2-8 and 2-10 are enclosed in the report.
d. Implementation Schedule The Implementation schedule for land acquisition, resettlement and rehabilitation is attached as per Attachment 2-10.	report.
Grievance Redressal Mechanism Grievance Redressal Committee ("GRC") set under MMRDA will deal with grievances raised by PAPs in Sewri and fishermen to be affected by the Project. Any grievances raised by PAPs whose land is acquired by CIDCO shall be resolved by CIDCO.	Sewri: FLGRC (Field Level Grievance Redressal Committee) and SLGRC (Senior Level Grievance Redressal Committee) were set as per the RAP and in operation. Compensation Committee has been constituted to address the issues of Compensation to Lease Holders at Sewri. Fishermen: GRC for resolving grievances of the fisherfolk was set up as per the compensation policy and is in operation.
Internal Monitoring of the Resettlement	SHARO



Issue(s)	Action or countermeasure(s) taken and
Action Plan (RAP) implementation will	remaining problem(s)
be conducted by MMRDA ir accordance with the RAP with necessary assistance of the consultant RAP Internal Monitoring Form (Attachment 2-8) will be submitted to JICA on a quarterly basis as a part of PSR during the RAP implementation.	Internal Monitoring updates are mentioned in Attachment 2-8.
g. Qualitative Independent Evaluation An Independent Evaluation Agency will be hired by MMRDA for evaluation of RAP implementation. An external evaluation report will be submitted to MMRDA at mid-term and end-term. MMRDA would submit the evaluation report to JICA in a timely manner.	Updated Attachment 2-10 is enclosed in the report.
h. RAP Implementation Budget The amount of estimated resettlement and compensation budget is Rs.906.26 Cr MMRDA informed to the JICA Mission that RAP implementation cost would be borne by MMRDA and ensured sufficient and timely allocation of funds for smooth implementation. i. Environmental Management Plan	As updated in MOD dated 03/09/2019 for MTHL- II, the base cost Budget towards RAP Implementation is updated as Rs 1129.3 Cr.
("EMP") The mitigation measures against air pollution, waste, noise, and water pollution etc. shall be taken during construction and operation phase. Mitigation measures such as installation of noise barrier, appropriate waste management, etc. have been	EMP will be updated, if required, in due course of construction activities/progress.
("EMoP")	RAINS HA.

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Issue(s)

Action or countermeasure(s) taken and remaining problem(s)

MMRDA takes overall responsibility for implementation of EMoP. During construction, environmental monitoring will be carried out by contractors under supervision bv Construction Supervision consultant. The result shall be reported to the JICA India Office on a quarterly basis as a part of Progress Status Report (PSR) by filling in the Reporting Form of Environmental Monitoring Result. (Attachment 2-4). After completion of the construction, EMoP shall be implemented by MMRDA, and the results shall be submitted to the JICA India Office semiannually until two vears complementation of construction. The required amount of estimated environmental monitoring budget is borne by MMRDA.

Environmental Monitoring Plan with the package wise budgeted cost is reported in Attachment 2-3.

Environmental Monitoring Results during the construction phase are reported in **Attachment 2-**

k. Long Term Bird Monitoring

MMRDA committed to conduct the long-term monitoring of birds and its habitat in Sewri mudflats with the assistance of hired bird expert. During the long-term monitoring, MMRDA will share information and receive advice from external experts including the one from NGOs and civil society.

- MMRDA has entrusted the work of bird monitoring and implementation of Flamingos and birds related mitigation measures & bird monitoring program to Mangrove and Marine Biodiversity Foundation.
- Rs. 31.92 Crore deposited to Mangrove foundation, Mumbai for periodical disbursement to BNHS.

3.4 Qualitative and Quantitative Data of Monitoring Indicators

Operation and Effect Indicator EIRR and/ or FIRR

Supporting data for Computing EIRR and/ or FIRR

Indicators	Original (Year 2015)	Target (Year 2024) 2 Years After Commercial Operation
Average Annual Daily Traffic (PCU/ day)	-	47,400
Daily Average Travel Time (min) * 1	61 min	15.8 min



Indicators	Original (Year 2015)	Target (Year 2024) 2 Years After Commercial Operation
Number of Users (Persons/ year) * 2	-	46,077,504
Cargo Volume (tons/ year) * 3	-	13,511,759

^{*1} Section on Sewri - Chirle

^{*2} Assumptions: average passengers of car and taxi (2.6 persons), bus (37.2 persons) based on JICA study. Number of passengers of LCV, HCV and MAV is assumed as 1 person each. *3 Assumptions: the maximum capacity of respective vehicle (LCV: 1 ton, HCV and MAV: 15 tons) is used for estimation.

EIRR	Original: 15.4% Cost: Project cost (excluding Price Escalation, Tax and Duties and Administration cost) O&M cost, Land Acquisition Benefit: Travel Time cost and Vehicle Operation cost Project Life: 32 Years	Actual: (PCR) % Cost: Benefit: Project Life: Attachment(s): Supporting data for computing EIRR
FIRR	Original: 1.5% Cost: Project Cost, O&M cost, Land Acquisition cost Benefit: Toll Revenue Project Life: 32 Years	Actual: (PCR) %

3.5 Monitoring Plan for the indicators

Monitoring Methods, Section(s)/ department(s) in charge of monitoring, frequency, the term and so forth are given below:

Original: (P/M and PCR)

Monitoring Organization

PIU shall be In-Charge of Monitoring activities for the Project.

Submission of QPR and PCR

The timely submission of the following documents is required by MMRDA.

- a. Quarterly Progress Report (QPR): The progress report for the Project should be submitted by MMRDA to JICA on quarterly basis, not later than 30 days after the concerned quarter, in the form of Project Status Report (PSR) attached hereto as per Annex I; Updated status land Acquisition, milestone achieved with respect to Action Plan with Timetable, the monitoring form for environmental and social consideration should also be appended to the PSR. In addition, MMRDA shall also forward the Monthly & Quarterly Progress Reports (including S-Curve Chart) prepared by the Consultant to JICA India Office on regular basis till project completion.
- b. Project Completion Report (PCR): A project completion report should be submitted by MMRDA to JICA promptly, but in any event not later than six months after completion of the



Project, in the form of Project Status Report (PSR) attached hereto as per Annex I.

Actual: (P/R and PCR)

Monitoring Organization

PIU for MTHL has been established for monitoring the Project.

Submission of QPR and PCR

This QPR No. 22 is submitted for the period of 1st July to 30th Sep 2022.

3.6 Achievement of the Project Objective

(PCR)

4.0 OPERATION AND MAINTENANCE (O&M) (SUSTAINABILITY)

4.1 O&M and Management

- Organization Chart of O&M
- Operational and maintenance system (structure and the number, qualification and skill of staff or other conditions necessary to maintain the outputs and benefits of the project soundly, such as manuals, facilities and equipment for maintenance, and spare part stocks etc.)

Original: (P/M)

Operation & Maintenance, Toll Management and ITS

MMRDA proposes to engage two separate agencies for O&M and Toll Management System. Though MMRDA will not directly carry out O&M, the overall monitoring over the O&M agency will be the responsibility of MMRDA. O&M Budget will be allocated by MMRDA. O&M and increase in toll rate will be done in accordance with the NHAI's manuals such as "NHAI Works manuals".

Actual: (PCR)

4.2 O&M Cost and Budget

- The actual annual O&M cost for the duration of the project, as well as the annual O&M budget.

(PCR) This will be reported when the outcome of the above work-study is available.



5.0 EVALUATION	
5.1 JICA and Borrower / Executing	g Agency performance
JICA:	
(PCR)	
Borrower/ Executing Agency:	84
(PCR)	
5.2 Overall Evaluation	
Please describe your evaluation on the o	overall outcome of the project.
(PCR)	
5.3 Lessons Learnt and Recomme	ndations
he future JICA assistance or similar type	he project experience, which might be valuable for of projects, as well as any recommendations, which n of the project effect, impact and assura n ce of
(PCR)	



Attachment 1- MMRDA & PIU Organization Chart



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Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 22 (Jul-Sep 2022)

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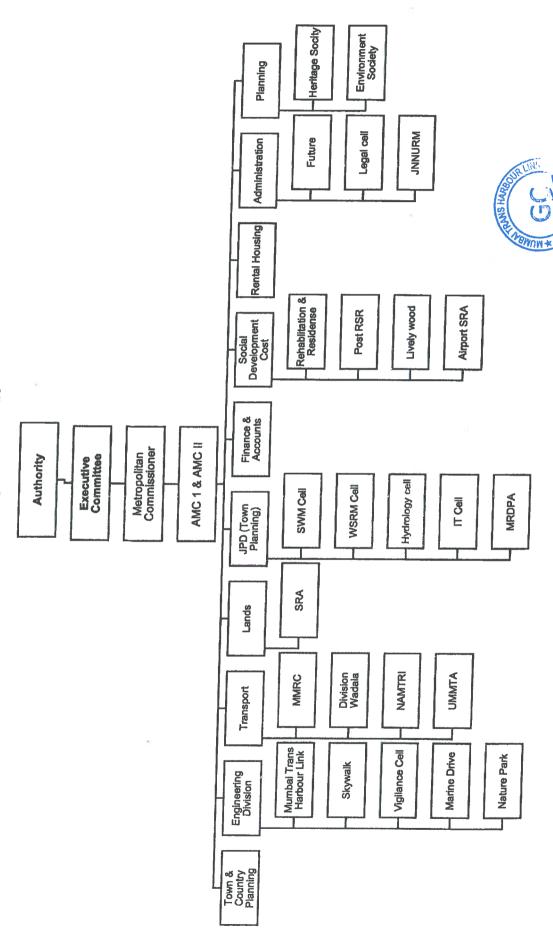
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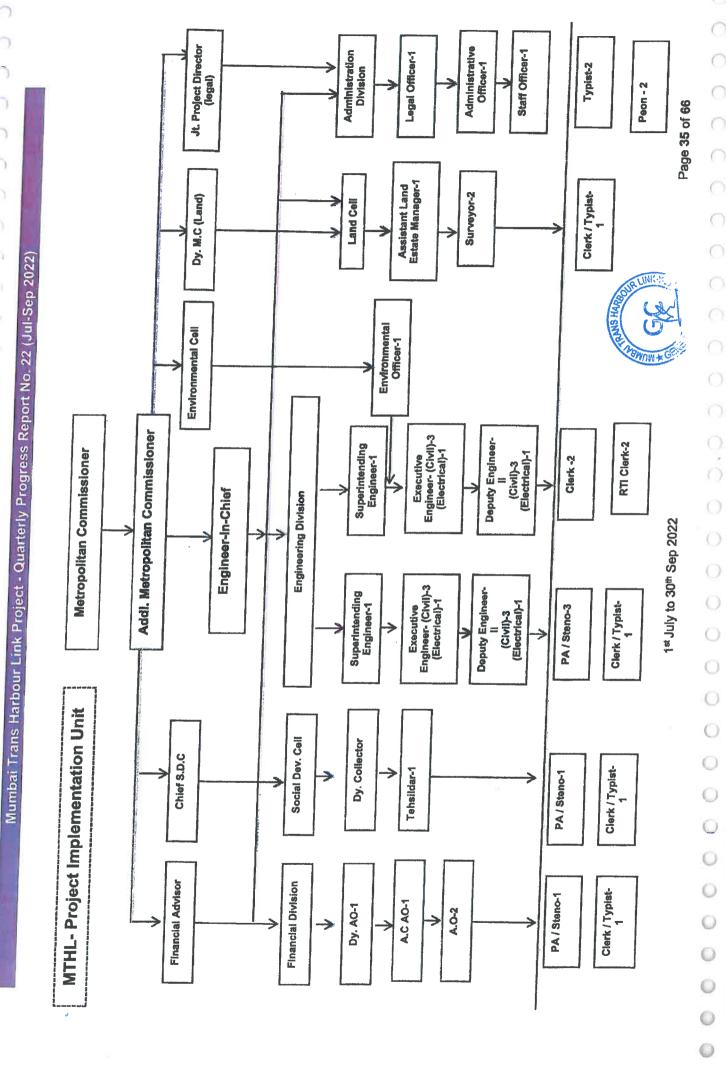
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1st July to 30th Sep 2022



Attachment 2- Environmental & Social Impacts

Attachment 2-3 - Envi. Monitoring Plan with Package-wise Estimated Cost

Attachment 2-4 - Environmental Monitoring Result Reporting Form

Attachment 2-6 - MTHL Land Acquisition Status

Attachment 2-8 - RAP Internal Monitoring Form

Attachment 2-10 - Schedule of the RAP Implementation



Environmental Monitoring Plan with Packagewise Estimated Cost

				SMAN + CO	<i>5</i>)			
	P1 contructor team is conducting Ambient air quality monitoring with reference to National Strodurds and clause 1.2 of Employer's requirement.	P 2 contractor Monitoring plan has been designed as per EIA of 2015	P3 costractor team is conducting Ambient air qualty monttering with reference to Neticonal Sandards and clause 1.2 of Employer's requirement.	P 1 received Consensor CTE ACTO from IMCES and thou frequency as a fight and frequency as the Burdenment Expert from Burdenment Expert from Burdenment Expert from Burdenment Expert from Burdenment Expert from Burdenment Expert from How Many Burdenment Frequency of The frequency of The frequency of The frequency of The frequency of The small procedure Solicitus by the sea their Solicitus by vegler wants of Solicitus by vegler wants of Solicitus by vegler wants of The small free are addition Homes of their Homes of their Solicitus and free The of their Solicitus and the or The of their Solicitus and then o The Guerra of competed by T I and The second point is T I are of their Guers and competed by T I are of their Solicitus and heme the difference Second point is T I are of their The Solicitus and heme the difference Second point is T I are solicitud The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and heme the difference Second point is The Solicitus and the Solicitus a		Water Pollution not applicable for Phg. 3		The cost of wants disposal for P I includes Call wests, Pile seate det. From all grees lite, iterrebangs, kerritcha and antivir. The disposal heeriton is at MCM.
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	locations except 2 locations each near Batching plants	4 Times / Year	months (lan-2019 to Mar-2019), then quarterly monitoring as per MOEF and CPCB norms		The second	4 Times / Year	Not applicable	Dality
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			Not applicable for Package i	2 Locations (CR2 at Sewri and Shivaji Nagar) for Package II Not applicable for Package	II for applicable for Package I norchange in Shivaji Nagar	for Package II Not applicable for Package		2 Locations (camp site in Sewri and Shivaji Nagar) for Package II	a morations	Parkage II	2 Locations (cmp site in 4 Sewrl and Shivaji Kagar) for Package II	
4-2: Anny year of density array density array	2-1. Cutting trees 2-1. Cutting trees 2-1. Cutting trees survey in the replanted area		Flood level measurement during high precipitation percoits		Visual survey about P Stability of embankment			Confirmation of workers list from contractor Confirmation of	health chack list from centractor Confirmation of	safety devices and conditions via interviews	Confirmation of accidents list from local government and State Traffic Police Department	Total
a. Parametter 4. Monttoring of 4. Monttoring of 4. Monttoring of and evolution on Supplemental En. 1) Hereprinary production of 1) Physical or 1) Physical or 1) Physical or 1) Physical or 1) Physical or 1) Physical or 1) Physical or 1) Physical or 1) Physical or 1) Physical or 1) Physical or 2) Physical or 2) Physical or 2) Physical or 3) Physical or 4) Nicron 5) Ritting 5) Physical or 6) Physical or 6) Physical or 6) Physical or 6) Physical or 6) Physical or 6) Physical or 7) Physical or			Fleoding stration		Conditions in embankment area			Construction worker's township Number of infected	Patient	5		
Properties from Properties Confederate Con			Hydrology		Topography and Geology		Local economy such as employment and fivelihood	Local conflict of interests infectious	diseases such as HIV/AIDS Labour	Environment		
e a			=		22		g '	‡ ‡	16	2	. [

Page 3 of 3

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Attachment 2-4

Monitoring Period July to Sept 2022

The Project for Construction of Mumbal Trans Harbour Link Reporting Form of Environmental Monitoring during Construction Attachment 2-4

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1. Environmental Monitoring during Construction for 4.5 years

Commission (1) in graph Commission (1) i		for package I 2. Sediments: 4 Times / Year	Soil Pollution Standard in India (MOEF)	Sediment sample at Sewri	Muck Testing Done on September 2021 and Reports submitted to GC	Not applicable	Kindly check the letter No.Ref No. Mith/
A contact A co			1. Cadmium: 0.01mg/l	801[01=2]	BDL		0.12.12.2000
A control of the co	1	*If any spillage/ leakage	2. total cyanide: not detected	AN	300 07		
State Commercial Accordanc		take place from chemical,	3. organic phosphorus: not detected	NA	5.86		
5. denomina (VI); 0.05mg/l 6. arraciac (Ol mag) for 15mg/ls (agr.land soil) BDI/Oc.1 BDI/Oc.1 BDI/Oc.1 7. John meeuzy, 0.05mg/l 1. sold meeuzy, 0.05mg/l Mod detected BDI/Oc.1 BDI/Oc.2 8. John meeuzy, 0.05mg/l 1. sold meeuzy, 0.05mg/l Mod detected BDI/Oc.2 10. S. Dept. 1.25mg/leg (only paddy field soil) Not detected BDI/Oc.2 11. dichlorontalmear (O.02mg/l Not detected BDI/Oc.2 12. exclud terrachioride, 0.02mg/l Not detected BDI/Oc.2 13. Li-dichlorochlame, 0.03mg/l Not detected BDI/Oc.2 14. Li-dichlorochlame, 0.03mg/l Not detected BDI/Oc.2 15. Li-Li-dichlorochlame, 0.03mg/l Not detected BDI/Oc.2 16. Li-Li-Lichlorochlame, 0.03mg/l Not detected BDI/Oc.2 17. Li-Li-Lichlorochlame, 0.03mg/l Not detected BDI/Oc.2 18. ticholorochlame, 0.03mg/l Not detected BDI/Oc.2 19. terrachlorochlame, 0.03mg/l Not detected BDI/Oc.2 20. Li-dichlorochlame, 0.03mg/l Not detected BDI/Oc.2 21. thiodecoutch, 0.02mg/l Not detected BDI/Oc.2<		incia solvage area. "One time grab sample to be collected during Bridge Construction "Pre & Post Monsoon at Storage area only	4. Jend: 0.01 mg/l	7	0.17		
Comparing the Control of Stangley (Garl-land Scal)			5. chromium (VI): 0.05mg/l		BIN		
3. also interactory of 0.005mg/f 3. also interactory of 0.005mg/f 3. also interactory of 0.005mg/f 3. also interactory of otdetected 3. Electron of a corporary and detected 3. also interaction of other of a corporary and detected 3. also interaction of other of a corporary and detected 3. also interaction of corporary and detected 3. also interaction of corporary and detected 3. also interaction of corporary 3. 1.2 dishlorocachame 0.005mg/f 3. also interaction of corporary 3.			6. arsenic: 0.01 mg/l or 15 mg/kg (agri-land soil)	BDL[DL=1]	BDL		
1. 2 200 2			7. total mercury: 0.005mg/l	8DL[DL=2]	BDL		
1.0 copper 12.000 1.000			8. alkyl mercury: not detected	Not detected			
10. copper 12mg/kg (only paddy field soil) 108			9. PCBs: not detected	Not detected	RDI		
11 dicholorouschange 0,002mg/f Not detected BDL			10. copper: 125mg/kg (only paddy field soil)	108	1	in Contamination fred in the	
12. cerbon terredboride; 0.000mg/l 13. 1.2 deficial conclaime; 0.004mg/l 14. 1.1.4 deficial conclaime; 0.004mg/l 15. 1.2. deficial conclaime; 0.004mg/l 16. 1.1.1.4 deficial conclaime; 0.004mg/l 17. 1.1.2 deficial conclaime; 0.004mg/l 18. 1.1.4 deficial conclaime; 0.004mg/l 18. 1.1.4 deficial conclaime; 0.004mg/l 19. 1.1.4 deficial conclaime; 0.004mg/l 19. 1.1.4 deficial conclaime; 0.005mg/l 19. 1.1.4 deficial conclaime; 0.005mg/l 19. 1.1.4 deficial conclaime; 0.005mg/l 19. 1.1.4 deficial conclaime; 0.005mg/l 19. 1.1.4 deficial conclaime; 0.005mg/l 19. 1.1.4 deficial conclaime; 0.005mg/l 22. sincarine; 0.005mg/l 23. deficial conclaime; 0.010mg/l 24. beracce; 0.010mg/l 25. deficial conclaime; 0.010mg/l 26. deficial conclaime; 0.010mg/l 27. deficial conclaime; 0.010mg/l 28. deficial conclaime; 0.010mg/l 29. deficial conclaime; 0.010mg/l 20. deficial conclaime; 0.010mg/l			11. dichloromethane: 0.02mg/l	Not detected	-T-	ds items during the Detailed De	our, some items shall be selected from the total
1.1. Li-dischooredaplesee, 0.00 tranger 1.1. Li-dischooredaplesee, 0			12. carbon tetrachloride: 0.002mg/l	Not detected		te rest of frems shall be deleted	sign. Only the selected items shall be reported to
15. dis. 1.2 dischonoral/pates to Oldragy Not detected BDL 16. 1.1.1.1 dischonoral/pates to Oldragy Not detected BDL 17. 1.1.2 dischonoral/pates to Oldragy Not detected BDL 18. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates (10.00 mg/l Not detected BDL 19. trial/arch/pates area Standard & Gale(A) day/ane Servi (ST 200-500) Sale Stellon (ST300-S300) Sale Stellon (ST300-S300) Not construction area Ambient Note Standard in (Industrial area) Industrial area Industrial Area Industrial area Industrial Area Indust			13. 1,2-dichloroethane: 0.004mg/l	Not detected	4		
15.5 i.i. 1, 1, 2 citical conceptions: Langer 15.5 i.i. 1, 1, 1, 2 citical conceptions: Langer 15.5 i.i. 1, 1, 1, 2 citical conceptions: Langer 15.5 i.i. 1, 1, 2 citical conceptions: Langer 15.5 i.i. 1, 1, 2 citical conceptions: Color and 15.5 i.i. 1, 1, 2 citical conceptions: Color and 15.5 i.i. 1, 2 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical conceptions: Color and 15.5 citical color and 15.5			14. 1,1-dichlorocthylene: 0.02mg/l	Not detected	BDL		
16.1.1.1.2.trichtonochame: Lings Not detected BDL			15. cis-1,2-dichlorocthylene: 0.04mg/l	Not detected	BDL		
18. Inichiorechips			16. 1,1,1-trichloroethane: 1mg/l	Not detected	BDL		
13. Intulative Control Contr			17. 1,1,2-trichlorocthane: 0.006 mg/l	Not detected	BDL		
13.1 childrane (0.01 mg/l Not detected BDL 21.1 childrane (0.01 mg/l Not detected BDL 22.1 childrane (0.01 mg/l Not detected BDL 23.2 childrane (0.01 mg/l Not detected BDL 24.2 childrane (0.01 mg/l Not detected BDL 25.3 chemium (0.01 mg/l Not detected BDL 26.3 chemium (0.01 mg/l Not detected BDL 27.3 childrane area Standard 85 dB(A) daytime Sewri (ST 200-500) Not detected BDL 28.4 chemium (0.01 mg/l Not detected BDL Not detected BDL 29.4 chemical (Japan standard) Not detected BDL Not detected BDL 24.5 stefanium (0.01 mg/l Not detected BDL Not detected BDL 25.4 chemical (Japan standard) Not detected BDL Not detected BDL 26.4 chemical (Japan standard) Not detected BDL Not detected BDL 26.4 chemical (Japan standard) Not detected BDL Not detected BDL 26.4 chemical (Japan standard) Not detected BDL Not applicable 26.4 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable 26.5 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable 27.5 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable 28.5 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable 28.5 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable Not applicable 29.5 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable Not applicable 20.5 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable 20.5 chemical Area Daytime (Japan standard) Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable			18. trichloroethylene; 0.03mg/l	Not detected	BDL		
2.1. thiuman 0.000mg/l			19. tetrachloroethylene: 0.01mg/l	Not detected	BDL		
2.1 stimuturine 0.0005 mag/1			20. 1,3-dichloropropene: 0.002mg/l	Not detected	BDL		
22. standarder, 0.033mg/ft Not detected BDL 24. bursome, 0.013mg/ft Not detected BDL 25. selenium; 0.01mg/ft Not detected BDL 26. bursome; 0.01mg/ft Not detected BDL 27. selenium; 0.01mg/ft Not detected BDL 28. selenium; 0.01mg/ft Not detected BDL 29. bursome; 0.01mg/ft Not detected BDL 20. standard size standard 85 dB(A) daytime 30. sevri (\$7. 206.500) Not detected BDL 30. sevri (\$7. 206.500) Not detected BDL 40. standard size br (cominious) dB(A) Not detected BDL 50. standard size br (cominious) dB(A) Not detected BDL 50. standard size br (cominious) dB(A) Not detected BDL 50. standard size br (cominious) dB(A) Not detected 50. standard size size standard size size standard size size standard (Japan Commercial area) 50. standard size size size size size size size size			21. thiuram; 0.006mg/l	Not detected	BDL		
24. beacenee, 0.01 mg/I 25. sedenium: 0.01 mg/I 26. sedenium: 0.01 mg/I 26. sedenium: 0.01 mg/I 27. sedenium: 0.01 mg/I 28. sedenium: 0.01 mg/I 29. sedenium: 0.01 mg/I 29. sedenium: 0.01 mg/I 29. sedenium: 0.01 mg/I 29. sedenium: 0.01 mg/I 29. sedenium: 0.01 mg/I 29. sedenium: 0.01 mg/I 29. sedenium: 0.01 mg/I 20. sedenium: 0.			22. simazine: 0.003mg/l	Not detected	BDL		
23. Section (9.1 pg/1)			23. thiobencarb: 0.02mg/l	Not detected	BDL		
Construction area Standard 85 dB(A) daytime Construction area Standard 87 dB(A) daytime Construction area Standard 87 dB(A) daytime Construction area Standard and standard) Construction area Standard and standard and			24. benzene: 0.01mg/l	Not detected	BDL		
Construction area Standard 85 dB(A) daytime Cappas standard 85 dB(A) daytime Cappas standard 35 dB(A) daytime Cappas standard 35 dB(A) daytime Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB(A) Cappas standard 3 dB daytime (Japan Cappa	if & Course have some	Contractor	25. sclenium: 0.01mg/l	Not detected	BDL		
Commercial area Commercial	skage I	ormgany	Construction area Standard 85 dB(A) daytime				
Not construction area : Amblent Noise Standard in (Industrial area) Migrationy Bird Area (Commercial area)			(Japan standard)	Sewri (ST 200-500)	Sea Section (ST5000-5500)	Shive ii Noger	
Day time : 6-22 hr (continious) dB(4)			Not constuction area : Ambient Noise Standard in India (dB(A) Lacq)	(Industrial area)	Migratory Bird Area (no standard on sea section)	(Commercial area)	
Fortrightly Night time; 22-6 br (cominious) dB(A) NA 63.9 Day time; 62-2 br (10 min 22-24 hr) Night time; 22-6 br (10 min 22-24 hr) Night time; 22-6 br (10 min 22-24 hr) Night time; 25-6 br (10 min 22-24 hr) Night time; 75 (-22.hr) Night time; 75 (-22.hr) Night Time; 75 (-22.hr) Night Time; 55 (-22.hr) Night Time; 55 (-22.hr) Night Time; 55 (-22.hr) Not construction area: Vibration Standard 15 dB daytime (Japan (Industrial area)) Sinitaria along the road) Day interest along the road Day interest along the road	ava temporary bridge 2	2 Times / Year	Day time: 6-22 hr (continious) dB(A)		71.3		
Conf. pea section) Day time: 6.2.2 for (10 min adming 9.17 has) Night time: 7.2.5 for (10 min adming 9.17 has) Note (standard values in Not construction area) Lindustrian values in Not construction area	avhan & Chirle for	Fortnightly	Night time: 22-6 hr (continious) dB(A)		63.9		
Day time: 5.25 hr (10 min 22-34 hr) Night time: 22-6 hr (10 min 22-34 hr) Note (standard values in Not construction area)	package III		(only sea section)	ĀN			N. C. C. C. C. C. C. C. C. C. C. C. C. C.
Note (standard values in Not construction area) Note (standard values in Not construction area)			Day time: 6-22 hr (10 min during 9-17 hrs)				Noise monitoring is not carried out in Monsoon.
Industrial Area Day Time: 75 (6-22hr) Day Time: 75 (2-2hr) Day Time: 55 (2-2hr) D			Night time: 22-6 hr (10 min 22-24 hr)				
Lindustrial Area Lindustrial Area Lindustrial Area Lindustrial Area Day Time: 75 (6-2hr) Night Time: 55 (22-6hr) Not construction area Standard (Japan Not applicable Not Applicable Not Applicable Not Applicable No	_		Note (etandard values in Met				
Department of Gazlary Night Time: 76 (22-8br) Night Time: 55 (22-8br) Night Time: 55 (22-8br) Not construction area Standard (Japan Standard (Japan Standard (Japan Standard Japan (Industrial area) (Commercial area) Shivaji Nagar Construction area : Vibration Standard (Japan Standard (Japan Standard Japan (Industrial area) (Commercial area) Shivaji Nagar Chirle Chirle Not Applicable Not Applicable Not Applicable Not Applicable Not Applicable			Note (standard values in Not construction area)				
Night Time: 55 (2.2-fbt) Night Time: 55 (2.2			Day Time: 75 (6.23hr)				AMI TEL
Commercial Area: Day Time: 65 (6-22hi) Wight Time: 55 (22-2hi) Wight Time: 55 (22-2hi) Wight Time: 55 (22-5hi)			Nich Time 70,73 Cha				A State of the sta
Day Time 65 (6-22hr) Night Time: 55 (9-2			14 gar 1 auc. 10 (22-011)				180
Night Times St (22-day) Night Times St (22-day) Night Times St (22-day) Night Times St (22-day) Night Times St (22-day) Shivaji Nagar Chirle			Z.Commercial Area:				W.
Half yearly Construction area Standard 75 dB daytime (Japan Sewri (ST 200-500) Shivaji Nagar Chirle Standard) Not construction area : Vibration Standard (Japan (Industrial area) (Commercial area) (Commercial area) Sistendard along the road) Daytime : 6-22 hr (continuous) Not applicable Not Applicable Not applicable			Might Times 65 (02 Ct.)				NA CALL
standard) Not construction area: Vibration Standard (Japan Standard) Standard along the road) Day time: 5.22 th (continuous) Not applicable Not Applicable Not Applicable Not Applicable Not Applicable	ation Gavan area for	Half vearly	Construction area Standard 75 dB Janet 17				
ton Standard (Japan (Industrial area) (Commercial area) Chirle (Commercial area) Not applicable Not applicable Not Applicable Not Applicable	package III	•	standard)	Sewrl (ST 200-500)	Shive ii Nemer		2
Not applicable Not Applicable Not Applicable Not applicable	-		Not constuction area: Vibration Standard (Japan	(Industrial area)	(Commercial area)	Chirle	io Jan
reforminisme)			Day time: 6-22 hr (continious)	Not amilania	New York Street		CONGO
			Night signal 22 C	Armond's acco	yor Applicante	Not applicable	
		2. Nhava temponary bridge & centing yard in Gavhan The package III Backage III The package III The cention Gavan area for package III Dackage III Dackage III Dackage III Dackage III Dackage III Dackage III Dackage III	are a temporary bridge for the principle of the place from chemical, find storage area. **One time ground a standard during Bridge Construction **Pro-R. Post Monteon at Storage area only storage area only bedge III **Remporary bridge 2 Times / Year was temporary bridge 2 Times / Year when & Chairfe for Fortnightly package III **Prediage III **	a. a. in the character of the character	1. Cadmium: 0.01 mg/l 1. Cadmium: 0.01 mg/l 2. total cyanide: not detected 3. organic phosphows: not detected 4. lead: 0.01 mg/l 5. chromium (VI): 0.05 mg/l 6. arsenic 0.01 mg/l or 15 mg/l/g (agri-land soil) 7. total mercury: not the texted 9. PCEs: not detected 10. copper: 125 mg/l/g (agri-land soil) 11. dishoromethane: 0.02 mg/l 12. carbon terralproide: 0.00 mg/l 13. 1.2 dishoromethane: 0.00 mg/l 14. 1.1-dishoromethane: 0.00 mg/l 15. tital-dishoromethane: 0.00 mg/l 16. 1.1, 1.1-dishoromethane: 0.00 mg/l 17. 1.1, 2-indishoromethane: 0.00 mg/l 18. tital-dishoromethane: 0.00 mg/l 19. translanenthane: 0.00 mg/l 19. translanenthane: 0.00 mg/l 19. translanenthyne: 0.01 mg/l 19. translanenthyne: 0.01 mg/l 19. translanenthyne: 0.01 mg/l 19. translanenthyne: 0.01 mg/l 19. translanenthyne: 0.01 mg/l 19. translanenthyne: 0.02 mg/l 19. translanenthyne: 0.00 mg/l 19.	Codmission Of length BOU[Dec2] BDD	Codmission Of length BOU[Dec2] BDD

The Project for Construction of Mumbal Trans Harbour Liok
Reporting Form of Environmental Monitoring during Construction
Attachment 2-4

1. Environmental Monitoring during Construction for 4.5 years

Monitoring Period July to Sept 2022

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Attachment 2-4

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																						A	rea
		Lu .								2								-					No.
		Waste								Water pollution								Air pollution				2000	lien
	Smonge	Volume of waste soil, cutting tree and domestic								pH, BOD, DO, Turbidity and O&G								SO ₂ , NO ₂ , PM ₁₀ , PM ₂₅				r ottallichter	Darmonadau
		3. Gavhan & Chirle for package III	& casting yard in Gavhan for package II	for package I	1 comp p				package III	& casting yard in Gavhan for nackage II 3. Gavhan & Chide for	for package I 2. Nhava temporary bridge 4 Times / Year	1. Sewri & Sewri bay area Quarterly				,	 Gavhan & Chirle for package III 	& casting yard in Gavhan for package II	2 Nihara tanana tanan	for package I	1. Sewri & Sewri bay area Quarterly monitoring is	Location	7
		Once site clearing work/execution part of work extent	+ 1 ms / rem	Daily					Trot approarre	Not son licable	4 Times / Year	Quarterly			MOEF and CPCB norms	conducted quarterly as per	From march -2019 onwards monitoring is	4 limes / Year		conducted at all locations.	Quarterly monitoring is	requency a year	,
Confirmation of planets discoult (in the latest to the lat	Generaled cutting treel (Ias) total		Generated waste soil (i) total	Municipal Soild Waste Management Rules, 2013	6.000	5. O & G: 10 mg/l	4. BOD: 5 mg/l	3. Turbidity: 30 NTU	2. DO: 3 mg/l	1. pH : 6.5-9	Marine water quality Standards - Class SW-IV Harbour Waters (MPCB)	0.1700	6 VOC	4. FM 24: SO(18) m	3. PM ₁₀ : 100μg/m ³	2. NO ₂ : 80μg/m³	1, SO ₂ : 80µg/m³	(Standard for 24hrs: Industrial and Residential)		National Ambient Air Quality Standards (NAAQS)		Item and Stanadard	_
			3103 m3 for 3 months	37.86 Tonnes for 3 months	21	BDL[D1=2]	2.8	11.3	4.8	7.5	Zone I	1.38	1.20	38.09	182.36	24.90	9.54		Sewri			Location 1- Pkg 1	
CIDCO daily.	3 < Thursday It is dimensal through		App. 2000 CuM Collected in jumbo bags and Disposed off in EBB Location.	Shivaji Nagar Camp Site	12		BDL	16,3	6	7.5	Zone II	2,4	1.4	34	79	24	BDL		Shivaji Nagar			Location 2	
2.5 T for the quarter	Tree cutting work completed and Half yearly report submitted to Client (April, 2022)		NA	Chirle Camp Site	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Zone III/ Package-03	1.05	0.71	40	74	35	14		Chirle		rocation 3- FRE 3	7	Monitoring Result
1.875 M3	Both of forest and CIDCO area (234+75)= 309																BDL- Below Detectable Limit			Remarks	- reasons why the data is exceeding standard - counter measures when the data is exceeding	Remark	



Attachment 2-4

Monitoring Period July to Sept 2022

The Project for Construction of Mumbai Trans Harbour Link Reporting Form of Environmental Monitoring during Construction Attachment 2-4

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Attachment 2-4

Attachment 2-4

I. Euvironmental Monitoring during Construction for 4.5 years

	18	shall be converted from			Note (standard volume in Not countraction				
_	_=	mm/s to dR			The second of the second secon				
	•				1. Commercial /Industrial Area				
					Day Time: 70 (7-20ln)				Kindly check the letter No.Ref.No. Mthl/ F3/L&T/GCLT/HSE-5226/2020 dated on 12.12.2020
					Night Time: 65 (20-7hr)				
			Along MTHL alignment Quarterly and mangrove replant area during the for Package I constructio	Quarterly during the construction Period	Standard is not existing, but quantity and quality should not be worsen	Sewri side (STS00-5500)	Sea Section (ST5500-16000)	Shivaji Nagar side (app. ST16000-19000)	
			Along MTHL alignment and mangrove replant area 4 Times / Year for package II	4 Times / Year	1-1. Fauna-Flora (number of species and quantity	Flora/Fauna list maintained for Referal		N/A	
	•				(1) Number of species of bird	78	Regarding p term monitoring monitoring	rotected area (CR2 and Important oring plan will be extablished duri form shall be updated based on ti	Regarding protected area (CRZ and Important Bird Area) and ecosystem, detailed long- term monitoring plan will be extablished during baseline survay of birds. This tentative monitoring form shall be updated based on the detailed long-term monitoring plan.
	- 2	L.Molation in or mudifier			(2) Number of species of fish	21			
	2 4	conditions including raung- flora			(3) Estimated number of Flamingo				
	OF E	2. Monitoring of Cutting Tree and Tree and Tree and			1-2: Mangrove density and community survey	Avicennia marina	not required		
	i w ji	3.Monitoring of Mangrove			(1) Number of species of mangorve	Dominant - Avicennia sp.	not required		
P.	Protected Area by	by MoEF			(2) Density of mangrove (xx trees/10m x 10m)	EIA - Not distrubed.	not required		
_	<u>4 % 8</u>	 Monitoring of sedimentation soil and ecological parameter (25 			1-3: Beathos Survey	Flora, fauna, phytopiankton,zoopiankton, Benthos			
	<u>.£</u>	items on EIA main text			(1) Number of species and quantity by species		not required		
	H# E.	Table 6.1.15 for soil and 7 items such as 1)Nct primary productivity, 2)Chlorophyll a 1)Phornhate 4)Nitrate			2-1: Cutting tree confirmation	1. Tree Cutting: 413 trees (Till September 2022) 2. Transplanting: 483 Trees (Till Contraction)	not required	Approved By Both CIDCO and Forest forest Dept (both Alibaug and Urantregional office)	
_	i. į	5)Nitrite, 6)Particulate			(1) Number of cutting tree and species	CRZ- Cost assigned to FD	parinted for		
	<u>.o_</u>	Organic Carbon, 7) SiO2)			3-1: Mangrove survey in the replant area	GC to integrate FD and	not required	Nil	
					(1) Number of species of mangorve	3	not required		
_					(2) Density of mangrove (xx trees/10m x 10m)		not required		
_	_				4. Ecologial Parameter		marri hav sour		
					(1) Nct primary Productivity: <1,500 mgC/m3/day at surface	200			
					(2) Chlorophyll-a: <4mg/m3	4.5			
					(3) Phosphate: 0.1-90µg/l	4			
_	_				(4) Nitrate: 1.0-500µg/1	9			
					(5) Nitrite: <125µg/l	1			
Honormiam	nio in				(6) Particulate Organic Carbon: 10-100mg/m3	1,38			
Ecosy	Stem				(7) SiO2: 10-5,000µg/l	30.02			



The Project for Construction of Mumbal Trans Harbour Link
Reporting Form of Environmental Monitoring during Construction
Attachment 2-4

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Environmental Monitoring during Construction for 4.5 years

Monitoring Period July to Sept 2022

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Attachment 2-4

Other = 9 12 10 Local conflict of interests Topography and Geology Hydrology Infectious diseases such as HIV/AIDS Labour Environment 2 Locations (major camp Construction worker's condi site in Sewri and Shivaji Nagar) Number of infected patient Conditions in embankment area Construction worker's township Number of accidents Flooding situation 2 Locations (major camp site in Sewri and Shivaji Nagar) 2 Locations (major camp site in Sewri and Shivaji Nagar) 2 Locations
(1. Embankment of Inter
Change in Shivaji Nagar
and 2 Cutting area at toll 2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II Not applicable for Package III Not applicable for Package I Nagar) 2 Locations (major camp site in Sewri and Shivaji gate in Chirle) 2 times / year x 4.5 years 4 times / year x 4.5 years 4 times / year x 4.5 years 4 times / year x 4.5 years 4 times / year x 4.5 years 4 Times / Year Criteria for evaluation
"Building And Other Construction Workers
(Regulation at Employment and Conditions of
Service) Act,1996", "The building and other
construction worker's welfare case Act, 1996" and
international standards such as "IFC Performance
Standard 2 Labor and Working Conditions" Criteria for evaluation

Employment opportunity shall be provided fairly

Number of hired workers by community Criteria for evaluation

Project activities and structures does not cause flooding and impacts on lidal conditions Any accidents are not caused by construction Site Visual Inspection Criteria for evaluation Criteria for evaluation
Embankment shall be stabilized without any
landslide and cracks Number of recorded accident Criteria for evaluation Confirmation of health check record and inspect project Infection disease rate shall not be caused by the Monitoring of embankment Monitoring of flooding situation Doctor on call checks site specific infections, minor and major incidents . 24x7 ambulance service , ERT team with trained first alders available 500 workers were consulted.
220 No. of Malaria tests carried out. Medical Camp organised; wherein > Workers Distrubution of Safety kits to 225 Weekly site inspection Sewri Camp Site 3 RLTI reported Sewri Camp Site 680 workmen Shivaji Nagar No Flooding Sewri NE Conforming with BOCW Act 1996 No flooding Health Checks carried out but HIV/AIDS parameter is not there. Shivaji Nagar Camp Site Shivaji Nagar Camp Site Shivaji Nagar Camp Site Shivaji Nagar Camp Site Shivaji Nagar Camp Site Shivaji Nagar 125-150 Regular Health check up is carried out by site Doctor. Rock filling activity is carried out as per aggrement. Conforming with BOCW Act
1996 Chirle/Other area Gavan Camp site Chirle Chirle Z 75



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Monitoring Period -July to Sept 2022

This form is prejared for reporting the monitoring results to JICA India Office. Only maintain required parameters are included in this form, and not all parameters in EMop are covered. IS

Approved By Both CEDCO and Forest forest Dept (both Alibang and Unra(regional office)) tock filing activity is carried out a por aggreement. togular Heafth check up is carried out by afte Doctor. Comforming with BOCW Act 1996 Claris/Other area Gavan Camp ofte 퉏 Cliris 昱 Health Checks carried out but HIV/AIDS parameter is not there. Conforming with BOCW Act 1996 Shivaji Nagar Camp Site Shivaji Nagar Camp She Shivaji Nagar Camp Site Shivall Negar Camp Site Shivaji Nagar Camp Site Shivaji Nagar not required not required not required No flooding Flora, fauna, phytoplanicon, zooplanicon, Benthos Thre Cuthing 413 trees [TIII]
 September 2022)
 Transplanting: 483 trees [TIII]
 September 2022)
 GRZ-Cost assigned to FD
 GC to integrate FD and
 environmentalist
 3 Doctor on call cheeks site specific Infections, minor and major incidents.

24x7 ambulance service, FRY team I with trained first alders available Dominant - Avicennia sp. Medical Camp organized; wherein > 500 workers were consulted. 220 No. of Melaria tests carried out. ElA - Not distrubed. Istrubution of Safety kits to 225 Weekly site inspection Sowri Camp Site Sewri Comp Site Shvaji Nagar No Flooding 3 ALTI reported 680 workmen 88 Sewel 1.38 (1) Numbers of species; of numgerse
(2) Domity of mangerse (as trees/lûm x 10m)
4. Ecologial Parameter
(1) Net primary Productivity: <1,500 mgChn3/day st Criteria for evaluation

*Ballidary And Orient Contravidon Workers

(Regulation of Employment and Conditions of
Service) Act, 1994", "The building and other
construction workers wedlers can Act, 1994" and
international employers with the case of the formational fundants such as "IPC Performance
Stendard 2 Labor and Working Conditions" without any banduitde Criteria for evaluation
Employment opportunity shall be provided fairly
Number of hired vectors by community
Criteria for evaluation
Infection disease rate shall not be caused by the
project. rmation of health check record and inspect project Critaria for evaluation Project activides and structures does not cause flooding and impacts on tital conditions uembos (2) Calcuraphile: «langina) (3) Puraphute, 0.1.-0.pg/d (4) Nimete, 1.6-00.pg/d (5) Nimete - 1.0.2.pg/d (5) Nimete - 1.0.2.pg/d (7) SIOL, 10.4.5.00.pg/d (2) Density of mangrove (xx trees/10m x 10m) 1) Number of species and quantity by species Critaria for evaluation
Any accidents are not caused by construction
Number of recorded accident 3-1: Mangrove survey in the replant area (1) Number of cutting tree and species (1) Number of species of mangorve Criteria for evaluation Embasiment shall be stabilised v and cracks onitoring of Booding situation 2-1: Cutting tree confirmation mitoring of embankment -3: Benthos Survey Site Vinual Inspection times / year x 4.5 years times / year x 4.5 years times / year x 4.5 years 4 times / year x 4.5 years times / year x 4.5 years Times / Year 2 Locations (CRZ at Sewri and Shivaji Nagar) for Package II 2 Locations
(1. Embankment of Inter-Change in Shivaji Nagar and 2 Cutting area at toll gate in Chirle) 2 Locations (major camp site in Sewri and Shivaji Nagar) 2 Locations (unjor camp site in Sewri and Stävaji Nagar) 2 Locations (major camp late in Sewri and Shivaji Nagar) 2 Locations (major camp site in Sewri and Shivaji Nagar) Not applicable for Package 1 Not applicable for Package III Machinicing of Mangrove Plannicing of Mangrove Plannicin array appointed by Motor A. Monthering of A. Monthering of A. Monthering of and endimentation ead and endimentation ead and endimentation ead and recollection parameter (72) interes on E.M. main text Table 64.115 for goal and 7 planes seals as 1)Net pariment productively, 2/Caltoropolyli, 43. 15Winthia, 69Tericialise Carbon, 79 Nichtin, 69Tericialise unities of infected patient Conditions in embanisment Construction worker's township coding situation Number of accidents Protected Area Topography and Geology Local conflict of interests Inflictions diseases such as HIV/AIDS Hydrology Accident 00 Ø, 2 11 13 Vatural Environment Other

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The Project for Construction of Mambal Truca Narbour Link Reporting Form of Environmental Monitoring during Construction

t. Environmental Monitoring during Construction for 4.5 years

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MTHL - ROW Land Acquisition Status (Attachment 2-6):

The total land required on the Navi Mumbai side is 108.4379 ha

Land acquired by MMRDA - 108.0442 ha

Land in possession of MMRDA - 106.3542 ha

Balance land acquisition - 0.3937 ha

Note: The acquisition of 0.3937 ha of ROW land is in progress and likely to complete by the end of December 2022.

ROW Land Required in ha (for Package- 2 & 3)	ROW land acquired by MMRDA In ha	ROW Land in possession of MMRDA in ha	Balance ROW to be handed over (Possession to be taken + Under acquisition)	Anticipated date for 100% ROW Land Acquisition	Remarks
108.4379	108.0442	106.3542	2.0837 (1.6900+0.3937)	31-12-2022	The payment status to the land owners is awaited from CIDCO. The same would be communicated to JICA on receipt of the same.



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Activity	Indicator	Total Target	Progress till Last Quarter	Progress during reporting Quarter	Cumulative Progress till Current Quarter	Cumulative Achievement of Total Target (%)	Remarks, If Any
	No. of Structures in possession of MbPT Dismantled / Cleared	9	9	0	9	100%	
	No. of PAHs/PAPs provided Shifting Charges / Arrangement	297	0	0	0	0%	
Rehabilitation	No. of PAHs / PAPs identified for Livelihood Support in Post Resettlement Assessment						
	No. of PAHs / PAPs provided Livelihood Support under Program-I (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-II (to be identified)						
	No. of PAHs / PAPs provided Livelihood Support under Program-III (to be dentified)						
(No. of new enterprises started						



Activity	Indicator	Total Target	Progress till Last Quarter	Progress during reporting Quarter	Cumulative Progress till Current Quarter	Cumulativo Achievement of Total Target (%)	Remarks, If Any
Grievance Redress	No. of Grievances Received by FLGRC	4					
	No. of Grievances Disposed by FLGRC	3	1	0	1	100%	
	No. of Grievances Received by SLGRC	1	0	0	0		5
	No. of Grievances Disposed by SLGRC	0				=	
Post Resettlement Assistance	No. of CHSs Registration helped						
	No. of CHSs provided Tenements for Social Amenities						
	No. of CHSs' Maintenance Fund Invested						
	No. of CHSs' Office Bearers provided training						



SUMMARY OF FISHER FOLKS OF MTHL PROJECT (Influence Zone of 24 villages) Up to 30-09-2022

		op to 50-03-2	UZZ			
Sr No.	. Village Name	Total number	Tota		ed eligi units	ble family
0,,,,	. Village Name	of forms Received	C1	C2	C3	Tota
1	Bamandongri	273	1	1	28	30
2	Belapur	110	0	5	15	20
3	Belpada	1185	0	7	478	485
4	Diwale	455	12	201	52	265
5	Ganeshpuri	276	0	37	35	72
6	Gavhan	2162	0	14	1317	
7	Jasai	926	0	0	18	18
8	Jawale	51	0	1	0	1
9	Kombadbhuja	413	1	23	134	158
10	Kopar	994	2	5	228	235
11	Karave	178	0	44	67	111
12	Mahul	1062	129	77	604	809
13	Moha	475	22	25	134	181
14	Mora	818	0	102	375	477
15	Morave	539	14	21	88	123
16	Nhava	1646	0	32	307	339
17	Sarsole	266	0	30	83	113
18	Sewri	305	0	1	72	73
	Shelghar	241	0	0	15	15
	Shivajinagar	202	1	4	61	66
21	Trombay	1208	49	219	823	1091
	Ulwe	218	1	3	14	18
	Uran & Hanuman Koliwada	683	0	11	600	611
24	Vahal	411	0	2	1	3
	Total	15097	232	865	5548	6645
Γ-	Total applications					45007
	Duplicate/Repeated Applications	on				15097
	Net Applications	011				2428
	Approved applications					12669
- 1	applications					6645

Grievance Redressal Committee (GRC) for Fisher-folk Compensation

No. of Cases referred to GRC		of Cases	No. of Cases Rejected	No. of Cases under Consideration
	Allowed	Compensation Paid		
Nil	Nil	Nil	Nil	Nil



QPR No. 22 (July to Sep 2022) Attachment 2-10

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Implementation Schedule for Fisher-folks Compensation & Land Acquisition in Navi Mumbai

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23-11-2015
•••
23-12-2015
Compile (ECC)
3
Fisher-folks 23-12-2015
Approving authority Start Date



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B. Implementation Schedule for Land Acquisition in Navi Mumbai: -

Remarks	nt land waited . The be ed to	JICA on receipt of the same.
Re	The payment status to the land owners is awaited from CIDCO. The same would be communicated to	JICA on rece
Anticipated date for 100% ROW Land Acquisition	31-12-2022	
Balance ROW to be handed over (Possession to be taken+	2.0837 (1.6900+0.3937)	
ROW Land in possession of MMRDA in ha	106.3542	
ROW Land Acquired by MMRDA in ha	108.0442	
ROW Land Required in ha (for Package-2 & 3)	108.4379	



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Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 22 (Jul-Sep 2022)

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Status of JICA'S Concurrence

		The state of the s	The second second							
S	Brief	Procurement	Bid Cost	Cost			JICA's Con	JICA's Concurrence on		
	No. description		Local Currency (Cr Rs.)	Total (Cr Rs)	PQ Documents	PQ Evaluation	٥	Technical	Financial	3000
	Package-1 (CH 0+000 km	8	00 4037			JICA's	JICA's	Lyaiuailon	Evaluation	138
	km)	- 1	7837.30	7637.30	Concurrence - 9th May 2016	Concurrence - 22 nd Dec 2016	Concurrence - 4th Jan 2017	Concurrence - 12th Sep 2017	Concurrence - 12th Oct 2017	JICA's Concurrence – 15th Feb 2018
	Package-2 (CH 10+380 2. km to CH18+187 km)	ICB with PQ (2P)	5612.61 5612.61	5612.61	JICA's Concurrence - 9th May 2016	JICA's Concurrence - 22rd Dec 2016	JICA's Concurrence - 4th Jan 2017	JICA's Concurrence - 12th Sep 2017	JICA's Concurrence - 12th Oct 2017	JICA's JICA's Concurrence – 12th Oct 2017 15th Eeb 2018
	0.00000									22.22
	3. (CH18+187 to CH21+800)	ICB with PQ (2P)	1013.79 1013.78		JICA's Concurrence - 9th May 2016	JICA's Concurrence - 4 th Jan 2017	JICA's Concurrence - 4 th Jan 2017	JICA's Concurrence - 15th Sep 2017	JICA's Concurrence - 12th Oct 2017	JICA's Concurrence - Concurrence - 12th Oct 2017 15th Each 2018
	Package-4									010700
- 1 02	Intelligent Transport System	ICB with PQ (2P)	427.00	427.00	JICA's Concurrence - 23 rd Aug 2019	Ą	JICA's Concurrence - 24th Aug 2021	JICA's Concurrence - 15th Feb 2022	JICA's JICA's Concurrence	JICA's Concurrence
									2202 idv	13" OCT 2022



1st July to 30th Sep 2022

Attachment 4- Project Procurement and Financial Status till 30th Sep 2022



Page 40 of 66

Mumbai Trans Harbour Link Project - Quarterly Progress Report No. 22 (Jul-Sep 2022)

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PROJECT PROCUREMENT AND FINANCIAL STATUS TILL 30th SEP 2022

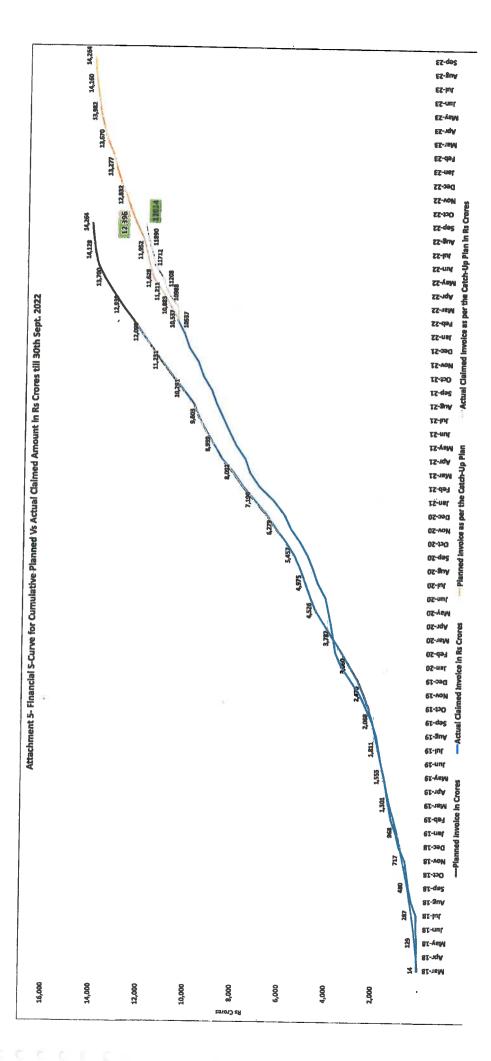
% of Financial Progress till 30th Sep 2022 (GC Certified) (Excluding Mobilization Advance, Price Adjustment and	84.12%	82.51%	87.74%	¥
% of Overall Works Progress (Design, Material Procurement and Construction) as per the Primavera Baseline Schedule	25" Sep 2022 85.87%	84.48%	84.35%	NA
Revised Project Completion Date After granting the Extension of Time (EOT)	30-Sep- 2023	27-Sep- 2023	03-Mar- 2023	¥
Stipulated Project Completion Date	21-Sep- 2022	21-Sep- 2022	21-Sep- 2021	Aug 2023
Project Contractors Commencement Date	Mar 2018	Mar 2018	Mar 2018	June 2022
Contractors	L&T-IHI Consortium	DAEWOO- TPL JV	L&T	Strabag GmbH JV
Current Status	Awarded	Awarded	Awarded	Awarded
Awarded or Estimated Value (in Rs. Crore)	7637.30	5612.61	1013.79	427.00
Contract	Package-1 (CH 0+000 km to CH 10+380 km)	Package-2 (CH 10+380 km to CH18+187 km)	Package-3 (CH18+187 to CH21+800)	Package-4 Intelligent Transport System (ITS)
Туре		8		Z

1st July to 30th Sep 2022

Attachment 5- Financial S-Curve for Cumulative Planned Vs Actual Amount in Rs Crores



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Attachment 6- Package-1's Construction Programme Updated as of 25th Sep 2022



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Attachment 7- Package-2's Construction Programme Updated as of 25th Sep 2022





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					PROGRAMME_ABSTRACT (PACKAGE-2)				
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4 019 Date 25-Sep-22 CONTRACTOR: DAEWOO - TPL JV ANNEXURE-S CONSTRUCTION UPDATED PROGRAMME_ABSTRACT (PACKAGE-2) EMPLOYER: MUMBA! METROPOLITAN REGION DEVELOPMENT AUTHORITY (MARDA) MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE2) CONSTRUCTION OF 7,807 KM LONG BRIDGE SECTION (CH 10+380 - CH 18+187) ACROSS THE MUMBAI BAY INCL SHIVAJI NAGAR INTERCHANDE UNDER IDENTIFICATION NO MARIDA/ENG/000753 MAN GRECOR PLA POLICIATION, MANCHE, (STUELLY VINDE 1745 NO PROTEINFILM TO MPHAY MAN SHOOT PILE POLICIACION, INTERTEAL VANSA-15 HOS INCURSORS TO SPEZIE THE CT AND THE PERSON OF THE PERSON IN THE P MAN GREDGE PLE POLICIATION, IMPRIES 13 (416-14-400 PROBLEM-147 10 (47)06 MODULE IN PERSONAL IN 200 BANDER PLE POLADODE CREATER - 1 NA 18 PERSONAL TO BETTE MODULE OF MOTES HAR 15.

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7 of 9 25-Sep-22 CONTRACTOR: DAEWOO - TPL JV ANNEXURE-5 CONSTRUCTION UPDATED FROGRAMME_ABSTRACT (PACKAGE-2) 01-Jan-22 EMPLOYER: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (AMRDA) 75 Ob-4ug-19 MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7,807 KM LONG BRIDGE SECTION (CH 10+380 - CH 18+187) AGROSS THE MUMBAI BAY INCL SHIVALINAGAR INTERCHANGE UNDER IDENTIFICATION NO MARDAFENGO00753 Critical Remaining Work STEEL MIXILEAN MP116 MP171 MP171 MP171 MP174 MP174 STEEL WOLLD AL OF METER HOTT PER TALLATION MODULE OF JETTER - MP162 MODULE OF APP161 - MP167 MOCULE-05 MP171 - MP167 MODULE 47 MP 764 - NO 752 MOCALE 02 MP155 - MP152 MOCALE 03 MP161 - MP167 MOCULE OF MP186 - AP182 MOCULE OF MP171 - AP187 Project Baseline Bar Remaining Work **Actual Work**

8 of 9 25-Sep-22 CONTRACTOR: DAEWOO - TPL JV ANNEXURES CONSTRUCTION UPDATED PROGRAMME_ABSTRACT (PACKAGE2) 13-Cap-20 03-5ap-20 EMPLOYER: MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY (MMRDA) N-Adding ! MUMBAI TRANS HARBOUR LINK PROJECT (PACKAGE 2) CONSTRUCTION OF 7.807 KM LONG BRIDGE SECTION (CH 10+380 - CH 18+187) ACROSS THE MUMBAI BAY INCL SHIVALINAGAR INTERCHANGE UNDER IDENTIFICATION NO MAREDA/ENGO00733 Critical Remaining Work % Complete INTERCHANGO HAMP PALE CAP NISTALL KIRTH ♦ Milestone NIERO-IAME ROX GROSER NO TOLLA RIM, NO MEDILE SE MERCHANISTICAL MARIENTAL WTERCHARDE RAME OFF ASTALLATION MOCULE, 27, MPH-1962 PRESCHARES BASEP PLE POPURE PETALLE SA MANAMENTAL MEDIANCE AMPPLE MY CA ATTENDAME AND PLE FOR AS STERES GARGE RAME PLE CAP CO. MOCULE 31 MARZANPA NTENCHACIE NAME PLECAF AN TRACE PARTY PARTY PARTY CONTRACTOR MINISTER WHICH METERS ST. SONES SONE METERS ST. SONES SES. METERS ST. ST. SONES SES. METERS ST. SONES ASSESSED THE PARTY SAME AND PRES, AM MODELE 28 MP248-CAP4
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9 07 9 25-Sep-22 Schedule % Complete 100% 100% 100% 6.32% CONTRACTOR: DAEWOO - TPL JV ANNEXURE-S CONSTRUCTION UPDATED PROGRAMME_ABSTRACT (PACKAGE-2) Actual Philiph Organia B. Project Start Bl. Project Finish Actual Start
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Attachment 8- Package-3's Construction Programme Updated as of 25th Sep 2022



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Attachment 9- Project Progress Photos for Sep 2022



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Package 1- Site Progress Photos

Photo No. 1: LG-07 AP 40-41 installation in progress



Photo No. 2: OSD 2 SPAN 1SOUTH MP 69-70 loading out in progress



Photo No. 3: A view of erected OSD -4 Span



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Photo No. 4: MP 113 S Pier Head Shuttering



Photo No. 5: BP 33 Cast in situ Shutter Checking





Photo No. 6: BP 33 Portal Pier Cap in progress



Photo No. 7: AP 35 Pier cap casting in progress



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Photo No.8: EP 08-09 Top slab Cast in situ reinforcement in progress

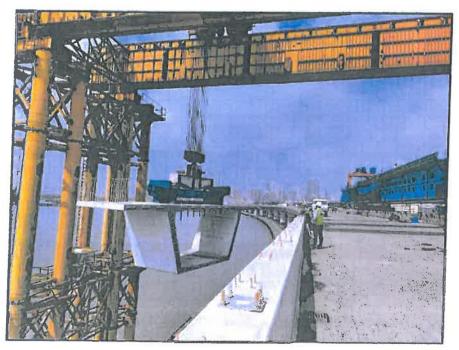


Photo No. 9: MP 13 gantry lifting segment in progress





Photo No. 10: SE, MMRDA factory visit to Vada for composite girder



Photo No. 11: BP 33 portal pier cap casting in progress



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Photo No. 12: A view of Sewri I/C from LPN 01 looking towards to the sea



Package 2 - Site Progress Photos



Photo No. 1: LG-1 Load Testing at MP 148A- MP 148B LHS in progress



Photo No. 2: Segment concreting at Bay-3 in progress



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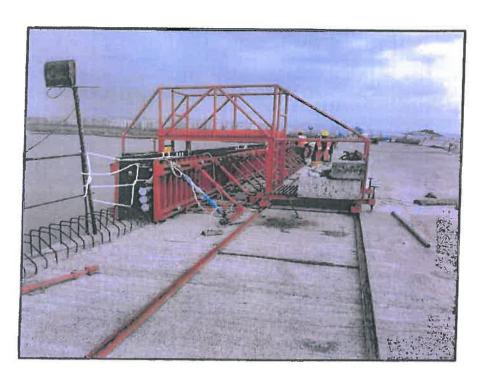


Photo No. 3: Outer Crash barrier formwork alignment at Span MP 222-223 LHS in progress



Photo No. 4: Pier cap concrete at MP 185 RHS in progress





Photo No. 5: Pile reinforcement cage inspection at MP 240 R Substation in progress



Photo No. 6: Median side crash barrier formwork fixing at Span MP 234-235 LHS in progress



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Photo No. 7: Pier 1st lift concrete at MP 174 RHS in progress



Photo No. 8: Pile cap concrete at MP 171 LHS in progress



1st July to 30th Sep 2022



Photo No. 9: Integral pier head segment concrete at MP 190 LHS in progress

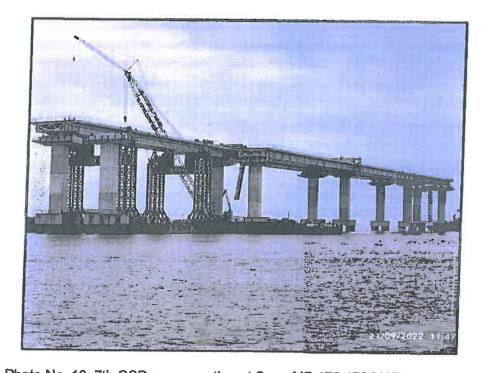


Photo No. 10: 7th OSD span erection at Span MP 178-179 LHS in progress



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Photo No. 11: Segment concreting at Bay-1 in progress



Photo No. 12: Web concrete at Ramp JM in progress

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1st July to 30th Sep 2022

Package 3 - Site Progress Photos



Photo No. 1: Gavan ROB structural works in progress



Photo No. 2: Gavan superstructure works in progress



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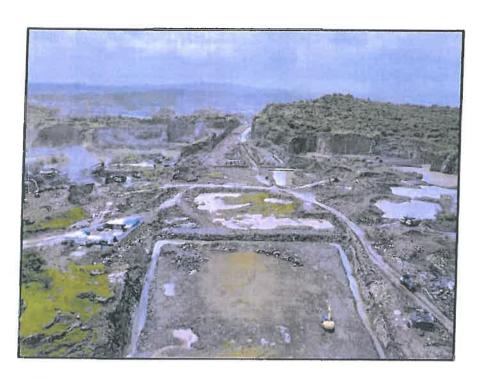


Photo No. 3: Toll-plaza area ground clearance works in progress

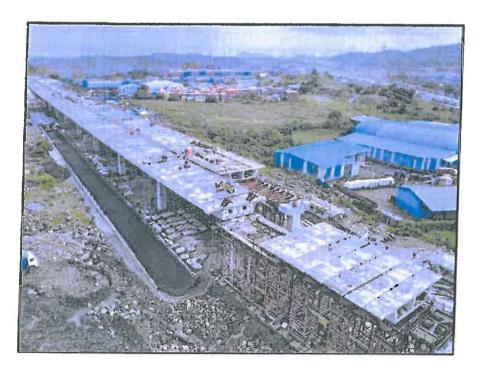


Photo No. 4: Jasai viaduct works in progress





Photo No. 5: Chirle Interchange works in progress



Photo No. 6: Gavan ROB span RMP 274-275 deck concrete completed



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Photo No. 7: Chirle Pier RP 28 L final lift shuttering works in progress



Photo No. 8: Chirle Pier cap LP 30 pedestal & seismic arrester pre-pour inspection works in progress



Photo No. 9: Chirle MJP Loop FDD inspection works in progress

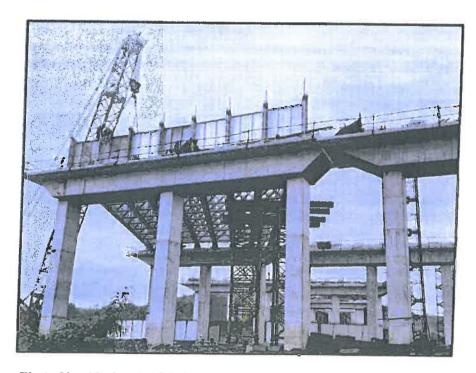


Photo No. 10: Jasai ROB Span RP26-27 Girder's Erection completed



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Photo No. 11: Jasai ROB Span LP25-26 Girder's Erection works in progress



Annexure-1 JICA Reimbursement backup-Aug-22



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Reimbursement details for the month of Aug-2022 (Annexure-1)

Date of Disbursemen	t Amount of Disbursement in JPY
12-Aug-22	JPY 88,65,96,523
12-Aug-22	JPY 72,89,55,950
12-Aug-22	JPY 34,33,99,348
12-Aug-22	JPY 22,97,22,845
12-Aug-22	JPY 1,24,56,66,862
12-Aug-22	JPY 1,38,42,41,854
12-Aug-22	JPY 89,02,76,572
12-Aug-22	JPY 8,02,15,015
12-Aug-22	JPY 30,83,77,793
12-Aug-22	JPY 16,82,91,883
12-Aug-22	JPY 10,72,16,192
12-Aug-22	JPY 1,32,69,881
12-Aug-22	JPY 68,54,60,567
16-Aug-22	JPY 1,51,22,72,162
16-Aug-22	JPY 87,45,60,133
16-Aug-22	JPY 40,42,12,162
16-Aug-22	JPY 1,36,45,436
16-Aug-22	JPY 36,39,65,964
16-Aug-22	JPY 21,86,39,966
16-Aug-22	JPY 10,10,53,041
16-Aug-22	JPY 34,11,254
19-Aug-22	JPY 3,43,89,227
19-Aug-22	JPY 2,26,56,982
19-Aug-22	JPY 5,38,57,469
19-Aug-22	JPY 4,30,99,888
Total Amount	10717.45 Million JPY



Annexure-2 JICA Reimbursement backup-Sept-22



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Reimbursement details for the month of Sep-2022

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Date of disbursement	Amount of Disbursement in JPY
06-Sep-22	JPY 32,24,88,971
06-Sep-22	JPY 8,70,89,495
06-Sep-22	JPY 3,71,56,813
06-Sep-22	JPY 10,58,102
06-Sep-22	JPY 30,58,21,682
06-Sep-22	JPY 1,24,27,36,098
06-Sep-22	JPY 21,85,06,012
06-Sep-22	JPY 98,91,031
06-Sep-22	JPY 52,08,53,904
06-Sep-22	JPY 1,75,89,24,445
06-Sep-22	JPY 67,71,38,065
06-Sep-22	JPY 2,00,77,169
06-Sep-22	JPY 1,00,85,86,340
06-Sep-22	JPY 35,81,51,885
6-Sep-22	JPY 1,19,57,92,464
6-Sep-22	JPY 43,01,82,140
otal Amount	8194,45 Million JPY



Annexure-3 Extension of Validity for CRZ Clearance



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Maharashtra Coastal Zone Management Authority Environment Department, 15th floor New Administrative Building Mantralaya, Mumbai 400032 The Member Secretary,

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MMRDA/MTHL-PIU/CRZ Extension/1338/2022 dated 04/08/2022. Mumbai Trans Harbour Link (MTHL) Project Extension of validity of CRZ Clearance letter 1. MMRDA 2. MMRDA Name of work: Sub: Ref

MMRDA/MTHL-PIU/CRZ

Extension/1360/2022 dated 11/08/2022.

Sir.

Extension of CRZ Clearance vide letter dated 04/08/2022 & online submission having file Mumbai Metropolitan Region Development Authority has submitted application for no. MCZMA 2022/08/CR-246/3719 on Maharashtra Coastal Zone Management Authority official website.

In view of above, it is requested to take this project on agenda during the next scheduled meeting of MC2MA to consider the proposal of extension of CR2 clearance at the earliest please.

Thanking you,

Yours faithfully,

Mandheda (S. A. Wandhekar) Engineer in Chief

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Mumbai Metropolitan Region Development Authority

Annexure VII

C - 14 / 15, MMRDA Office Bulding Bandra Kurla Complex, Bandra (E). Mumbai - 400051

PAN: AAATM7106R

EXPENSES ON MTHL

Group Summary 1-Apr-2022 to 31-Dec-2022 gren for
hority Budger

22-23
31/1/23

	1-Apr-2022 to 31-Dec-20	J22		
				Page 1 Figures in Crores
Particulars	Opening	Transact	ons	Closing
	Balance	Debit	Credit	Вајалсе
Administrative Charges (MTHL)	1.15 Dr			1.15 Dr
Advertisement & Publicity (MTHL)	0.35 Dr			0.35 Dr
Civil Work (MTHL) - Package-I	5,739.24 Dr	1,962.29	294.97	7,406.56 Dr
Civil Work (MTHL) - Package-II	4,828.02 Dr	995.50	123.21	5,700.31 Dr
Civil Work (MTHL) - Package-III	908.63 Dr	150.57	25.42	1,033.78 Dr
Civil Work (MTHL) - Package-IV		21.35		21.35 Dr
Compensation to Fisheries (MTHL)	118.91 Dr	74.32	2.54	190.70 Dr
Compensation to Leaseholders-MTHL	13.25 Dr			13.25 Dr
Counter Guarantee Fees (MTHL) (MOF)	135.81 Dr	23.88		159.69 Dr
Deposit with CIDCO for MTHL	11.21 Dr			11.21 Dr
Forex Loss/ Gain Against JICA Loan No IDP-255	487.97 Cr			487.97 Cr
Forex Loss/ Gain on Mobilisation Advance (MTHL)	29.44 Cr			29.44 Cr
Front End Fees for JICA Loan (MTHL)	27.23 Dr			27.23 Dr
General Consultants Fees (MTHL)	130.59 Dr	34.79	0.02	165.36 Dr
General Consultants Fees (MTHL) - Taxable	4.69 Dr	16.67		21.36 Dr
Geotechnical Investigation (MTHL)	19.60 Dr			19.60 Dr
Interest & Bank charges on JICA Loan (MTHL)	15.44 Dr	9.75	3.74	21.45 Dr
Land Acquisition Cost (MTHL)	857.43 Dr	4.83	4.83	857.43 Dr
Land Acquisition Cost (MTHL) Taxable	60.21 Cr	84.01	0.61	23.19 Dr
Legal Charges (MTHL)	0.09 Dr			0.09 Dr
Other Miscellaneous (MTHL)	80.55 Dr	1.14		81.69 Dr
Professional Charges (MTHL)	0.12 Dr			0.12 Dr
Repairs & Maintainance (MTHL)	0.08 Dr			0.08 Dr
Security Deposits - Land (MTHL)	ൗൾ 11.10 Dr			11.10 Dr
Service Tax on Mobilisation Adv. on MTHL	3.07 Dr			3.07 Dr
Stamp Duty Reimbursement (MTHL)	0.10 Dr			0.10 Dr
Surveys & Studies (MTHL)	47.47 Dr	0.10		47.57 Dr
Grand Total	12,376.50 Dr	3,379.21	455.33	15,300.38 Dr

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Office of the Additional Principal Chief Conservator of Forests, Mangrove Cell, Mumbai

And Executive Director, Mangrove and Marine Biodiversity Conservation Foundation of Maharashtra





MFN/DDR&CB/ 462 /2021-22

Date: - 03.02.2022

To, The Engineer in Chief MTHL-PIU **MMRDA**

> Sub: Report regarding the mangrove plantation carried out as a part of the MMRDA-MTHL Project

Ref: Minutes of the third PIC meeting with respect to the Bird Monitoring Programme of the MTHL Project

With reference to the above subject, during the third PIC meeting of the Bird Monitoring Programme of the MTHL Project, it was decided that a report regarding the 200 hectare mangrove plantation carried out by the Maharashtra Forest Dept. through the funds provided by MMRDA (as compensatory afforestation) should be submitted to the MMRDA.

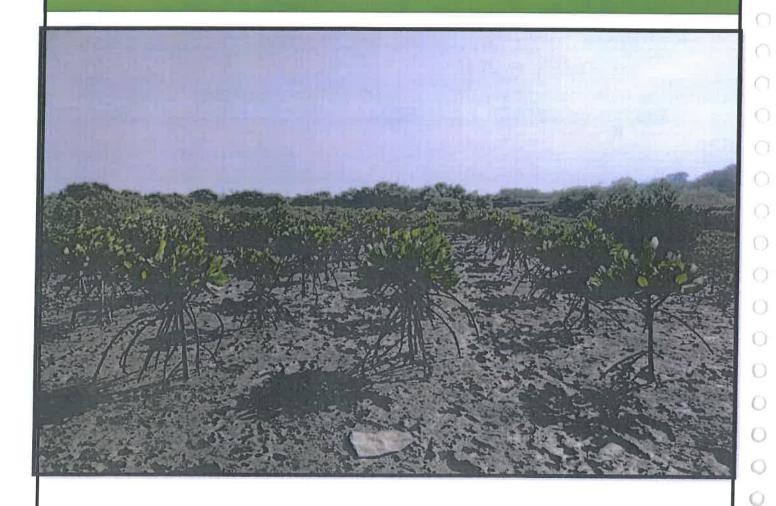
In this regard, kindly find attached the said report with this letter.

(Virendra Tiwari)2 Addl. Principal Chief Conservator of Forests, Mangrove Cell, Mumbai & Executive Director, Mangrove Foundation



Annexure VIII

MMRDA – MTHL Mangrove Restoration Report





Mangrove Cell

Forest Department of Maharashtra

About Project

Mangrove plantation in lieu of the mangrove area likely to be affected during the construction of Mumbai Trans Harbour Link (MTHL) project.

AS per the CRZ clearance for MTHL Project MMRDA was instructed to restore 5 times the mangroves cut/ disturbed by the project. As per the mandate, 200 hectares of plantation was carried out as compensatory Afforestation. All the plantations done under the project are maintained for the period of five years as per approved estimate and amount received.

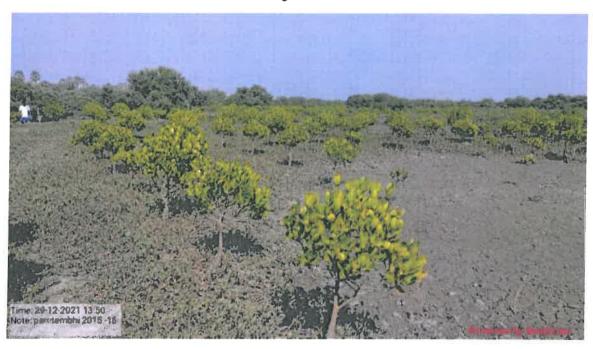
For this MMRDA had requested mangrove Cell to prepare a mangrove plantation program 200 hectares. Mangrove Cell had identified 200 hectares area for mangrove plantation and total amount of Rs 49,59,822 was paid vide T O dated 9.05.2016 for 30 hectares. Further amount of Rs. 4,56,29,600 was paid vide cheque no 216609 dated 13.10.2016 for 170 hectares. The mangrove planation involves plantations of 4444 sapling per hectare and therefore total of 888800 saplings and additional 20 percent causality was replaced for the period of three years as per the estimate.



Details of Restoration work

Sr No	Division	Year	Range	Place	S. No	На	Survival percentage	GPS Locations
1	Dahanu	2016- 17	Boisar	Mouje Pamtembi	161	15	71.02	19.571982; 72.821682
2			Saphale	Mouje Karwela	47	15	72.00	19.553711; 72.845790
3		2017- 18	Boisar	Chandigaon	729	10	64.05	19.936829; 72.730574
4			Boisar	Pamtembi	161	10	75.20	19.805105; 72.705118
5			Boisar	Salwad	107	10	68.0	19.810528; 72.715928
6			Saphale	Makunsar	283/A	20	63.50	19.604865; 72.763378
7	MMCU		TCFS	Kanjur	275 C.S.N 657A	10	20	19.065557; 72.565564
8			TCFS	Mulund/ Bhandup	157 C.S.N 1318	15	57	19.084174; 72.580663
9	Dahanu	2018- 19	Palghar	Shirgaon	1287	10	54.09	19.688655; 72.711506
10			Palghar	Dhansar I	64	20	46	19.708259; 72.732071
11			Palghar	Dhansar 2	64	25	51.1	19.709843; 72.727397
12			Boisar	Navapur	161	10	71.87	19.800481; 72.692326
13			Boisar	Salwad	107	10	69.79```	19.810528; 72.715928
14			Saphale	Karwela	47	20	82	19.552433; 72.841222

Mouje Pamtemhi (2016-17) Survey No. 161







Mouje Karwela (2017-18) Survey No.47







Chandigaon (2017-18) Survey No.729







Pamtembhi (2017-18) Survey No.161







Salvad (2017-18) Survey No.107





Makunsar (2017-18) Survey No.283/A





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Kanjurmarg(2018-19) Survey No.275







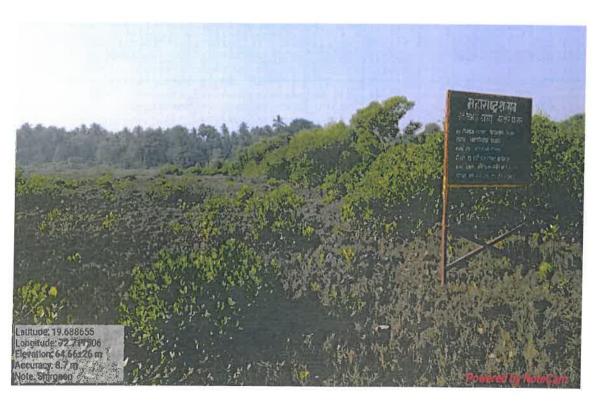
Mulund/ Bhandup(2018-19) Survey No.275





Shirgaon (2018-19) Survey no-1287







Dhansar 1 (2018-19) Survey No-64





Dhansar 2 (2018-19) Survey No-64







Navapur (2018-19) Survey No-161







Salvad (2018-19) Survey No-107







Monitoring and Mitigating the Impacts of Mumbai Trans-Harbour Link on Flamingos and other Avifauna and Formulating a Conservation Blueprint for the Sewri-Nhava Seascape

Fifth Annual Report 2021–2022

Submitted to

Mangrove and Marine Biodiversity Conservation Foundation of Maharashtra



Submitted by



"Conservation of nature, primarily biological diversity, through action based on research, education and public awareness."

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Disclaimer

The observations represented in this report are based on study duration mentioned in the report. The observations may change or vary depending upon on further surveys and thus it should not be used as a stand alone report.

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Abbreviations	
BPS	Bhandup Pumping Station
DPS	Delhi Public School
FCS	Flamingo Count Survey
IBA	Important Bird Area
IBCN	Indian Bird Conservation Network
IUCN	International Union for Conservation of Nature
LC	Least Concerned
MMRDA	Mumbai Metropolitan Region Development Authority
MTHL	Mumbai Trans-Harbour Link
NRI	Non-residential Indian Complex
NT	Near Threatened
PoM	Post-Monsoon
PrM	Pre-Monsoon
TCS	Transact Count Survey
TSC	Training Ship Chanakya
VU	Vulnerable
WCS	Wetland Count Survey



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Summary

The migratory bird population in wetlands was increased from the winter till spring afterwards their numbers were relatively low during summer migration season. On the other hand, the resident bird populations showed variations across seasons ranged from 316 to 1701 individuals. A large congregation of the Lesser flamingo was recorded inhabiting at DPS (11800) and TSC wetlands (7500) whereas Greater flamingo congregation was observed mainly at BPS wetland (800). Previously they were seen inhabiting nearby Non-Residential Indian complex (NRI) wetland for roosting (Apte et. al 2018 and 2019).

A gradual change in the abundance of migratory birds was observed at Thane creek from November (123468) to April (40930). Abundance of migratory shorebirds reached its peak in January (137237) whilst the lowest number of individuals were recorded in May (3789). On the other hand, resident bird population was more or less stable throughout season ranging from 798 to 1967 individuals. We found that the migratory shorebirds showed preference towards certain areas of the creek such as mudflats near Ghansoli and Vashi.

The lesser flamingo population was lowest in October and November 2021 while later on population increased remarkably until April. Overall, average 55166 (SD = ± 21836) Lesser flamingos were recorded in creek, ranged from 16422 to 81917, excluding October and November counts. On the other hand, Greater flamingo abundance in 2021-22 was highest in past four years, ranged from 6015 to 49755, average 10009 (SD = \pm 13597). At both the construction sites Lesser flamingos were predominantly higher in number than Greater flamingos. Overall, both the species of the flamingos were observed to prefer Sewri mudflats over Nhava throughout the season. Maximum Lesser flamingos were recorded at Sewri (24200) and Nhava (14385) and Greater flamingos at Sewri (2817) and Nhava (227).

In total, 97 behaviour recording sessions were carried out (35 at creek/feeding site, 41 at wetlands/ roosting sites and 21 at construction site) along with data on different disturbance regimes. During these sessions, 7675 behaviour videos of 10 migratory shorebird species were recorded. Out of that 2181 videos were recorded at construction site, 2812 at feeding site and 2682 at roosting site.



Introduction

Mumbai is located in the Konkan Plains of the northern Western Ghats. Due to its key geographic position and abundant natural resources, Mumbai has always been a centre of development since the colonial period. It is the financial capital of the nation, and the ninth most populous city in the world, with a current population of 26.6 million (UN 2012). The Mumbai Metropolitan Region Development Authority (MMRDA), the planning authority for Mumbai Metropolitan Region (MIMR), has predicted in its 40-year concept plan that the city would have 44 million inhabitants spread over 1050 sq. km by 2052, which is almost double the present area 603 sq. km (Kamdar 2014). This means there will be tremendous pressure on the already shrunken natural habitats, especially mangroves, coastal mudflats and remnant patches of the natural forests, which will eventually impact the biodiversity (Nagendra et al. 2012). Given the coastal features of the city, the disappearance of the mangroves

and mudflats may leave the city not only vulnerable to local environmental issues such as floods, toxic runoffs, siltation and reduction in the groundwater, but also to global disasters such as cyclones, tsunamis and sea-level rise due to global climate change (Kleppel et al. 2006). Alongside the environmental concerns, Mumbai also faces the inevitable need for development.

The Mumbai Trans Harbour Link (MTHL), the 22-km bridge connecting Southern Mumbai (at Sewri) with Southern Navi Mumbai (at Nhava Sheva), is one such developmental project that is set to bring Mumbai closer to its satellite city. The alignment passes over Sewri Mudflat, which is key wintering ground for migratory shorebirds, and is identified as an Important Bird Area (IBA) by the Indian Bird Conservation Network IBCN, (Rahmani et al. 2016). In addition, part of Thane Creek is declared as the Thane Creek Flamingo Sanctuary. The intertidal mudflats in this creek harbour a large congregation of waterbirds including ducks, waders and large proportion of the South Asian population of Lesser Flamingo *Pheonicopterus minor*, a Near Threatened species (Vijayan et al. 2008).

Habitats along this Indian coasts such as creeks, mangroves, mudflats, salt marshes and wetlands harbour rich coastal and marine biodiversity. This western coast is also considered as the main wintering grounds for the waders migrating from Central or South Asia (Balachandran 2006). The MTHL project is likely to affect waterbirds of Sewri Mudfat, Thane Creek and wetlands of Navi Mumbai. Hence, MMRDA has approached BNHS to monitor the impacts of the bridge on flamingos, other avifauna and marine fauna, and suggest a mitigation plan for the conservation of waterbirds and their habitats. The study duration is of 10 years (2017-2027) and is focusing on long-term examination of the ecology of shorebirds and marine benthic fauna with respect to human disturbances, particularly the MTHL bridge construction.



Objectives

- 1. Estimate the occupancy and abundance of avifauna during pre-construction, construction and post-construction period.
- 2. Understand the migration pattern and population demographic of the migratory avifauna.
- 3. Understanding the biological and physicochemical parameters of the foraging grounds of flamingos and waders
- 4. Study the heavy metal concentration and accumulation in the birds and their food chain
- 5. Conduct bird conservation training programme for staff involved in construction work of MTHL
- 6. Study the impact of construction on the foraging habitat (post project monitoring) for suggesting and implementing the restoration measures.



Methodology

Study site

This study was carried out in six inland wetlands (high tide roosting sites)— Training Ship Chanakya (TSC), Bhandup Pumping Station (BPS), Non-Residential Indian (NRI) complex, Mankhurd saltpans, Kharghar wetland, and Belpada mangrove and three mudflats (low tide feeding sites) — the east and west banks of Thane Creek, mudflats of Sewri and Nhava-Sheva.

Bird sampling

We counted shorebirds during high tide at high tide roosting sites following WCS protocol and during low tide at foraging sites following TCS protocol. In addition, flamingos were counted separately during low tide at feeding sites using FCS protocol. We also recorded shorebirds behaviour at roosting, feeding and construction sites. Bird ringing was carried out at high tide roosting sites during high tide (for details of the sampling protocol, please refer to Apte et al. 2018 and 2019 —unpublished reports).

All these surveys were conducted between October 2021 to May 2022. We did not complete some of the surveys in September 2021 and January 2022 due to heavy rain and COVID-19 pandemic respectively.

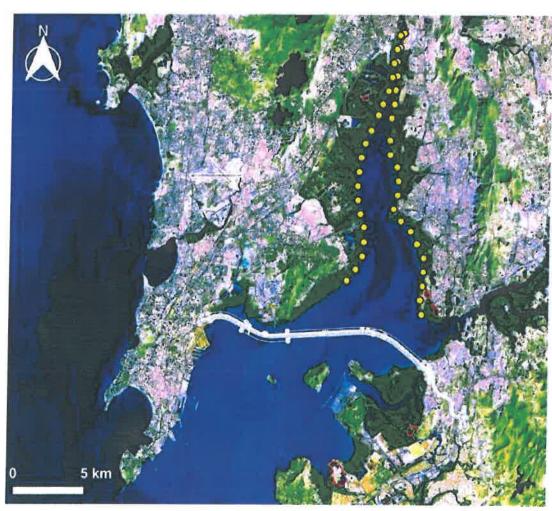


Fig. 1. Land use and land cover map of study area with study sites: Land use and land cover map of the study area was developed using Landsat 8 satellite imagery (January 2018; band combinations = 7, 5 and 3). Wetlands are highlighted with red polygons and the transects with yellow circles. Forest and mangroves appear in shades of green, the darker colour indicates healthy and dense vegetation; urban areas are marked with cyan or purple; and soil colours vary from dark to light brown; moist soils are darker



Results

Wetland Count Survey (WCS)

In all, a total of 79 species (51 migrants and 28 residents) of shorebirds were recorded from the wetlands/ high tide roosting sites. Migratory shorebird abundance increased gradually till March followed by a sharp decrease in April and May during return migration (Fig. 2). Overall, maximum number of migratory shorebirds were recorded in March (34014) and only 528 individuals were observed in October (Fig. 2). A considerable amount of variation was observed in the number of resident shorebirds throughout the seasons in which most abundance was recorded in the month of January 2022 (1701) and least in October 2021 (316) (Fig. 3).

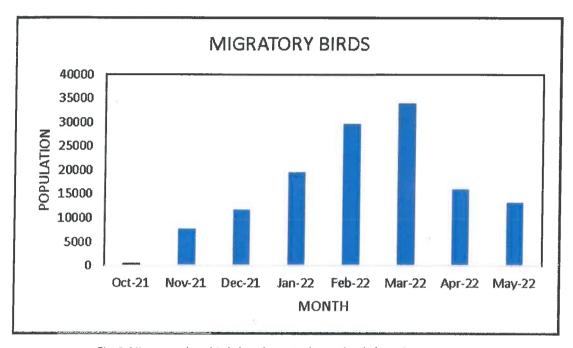


Fig. 2: Migratory shorebird abundance in the wetlands from Oct 21-May 22

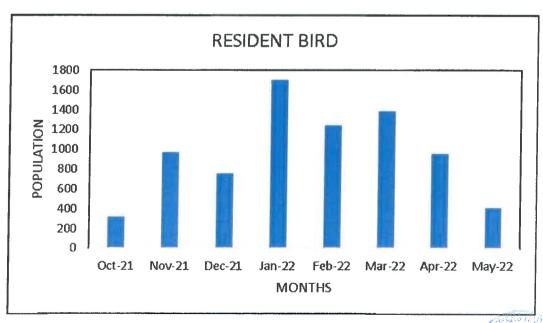


Fig. 3: Resident shorebird abundance in the wetlands Oct 21-May 22



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Among all the wetlands, DPS (12075 in March) and Mankhurd (15785 in February) supported a substantially high number of migratory shorebirds, followed by BPS (8234) and TSC (7404) in January 2022. We observed that the overall abundance of shorebirds increased sharply from December till late March and started decreasing steadily (Fig. 4).

As observed in 2020-21, DPS and TSC were the most preferred hightide roosting sites for Flamingos in 2022 as well. In contrast, BPS and NRI favoured higher number of Greater flamingos than Lesser flamingos

(Table 1). These observations highlight the importance of the network of wetland/high-tide roosting sites in the long run for the conservation of migratory shorebirds.

Table 1: Maximum count of Flamingos observed at each wetland from Oct 2021-May 2022.

Site	Lesser flamingo	Greater flamingo	
Belpada	0 (November)	1 (November)	
BPS	335 (January)	800 (January)	
TSC	7500 (May)	135 (February)	
NRI	2 (April)	172 (February)	
DPS	11800 (March)	120 (March)	
Khargar	0 (May)	0 (May)	
Mankhurd	0 (May)	0 (May)	

We observed temporal variation in species richness across all wetlands from November 2021 to April 2022. The highest species richness was observed in BPS and TSC (29 species at both the wetlands) in January 2022.

We recorded nine Near-threatened and one Endangered (IUCN 2022). species during this study (Table 2).

Table 2: Threatened species recorded during wetland survey.

Sr. No.	Threatened species	IUCN status
1	Painted Stork (Mycteria leucocephala)	NT
2	Lesser Flamingo (Phoeniconaias minor)	NT
3	Black-headed Ibis (Threskiornis melanocephalus)	NT
4	Black-tailed Godwit (<i>Limosa limosa</i>)	NT
5	Eurasian Curlew (Numenius arquata)	NT
6	Great Knot (Calidris tenuirostris)	EN
7	Curlew Sandpiper (Calidris ferruginea)	NT
8	River tern (Sterna aurantia)	NT
9	Bar-tailed Godwit (Limosa lapponica)	NT



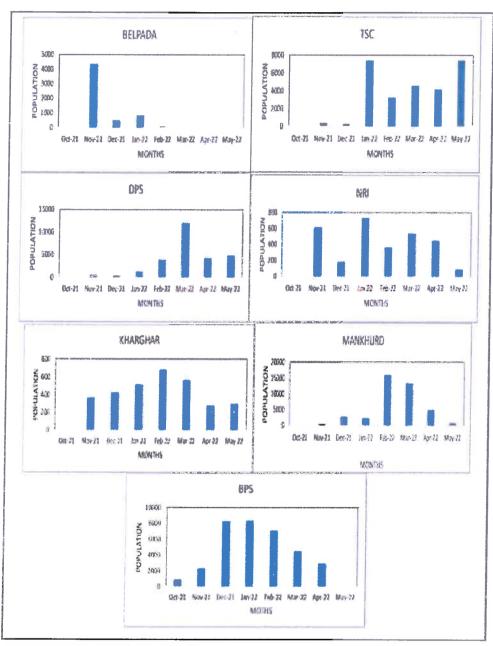


Fig. 4: Site-specific abundance of the shorebirds in the wetlands Oct 21-May 22

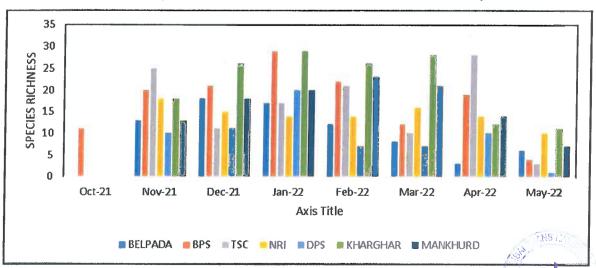
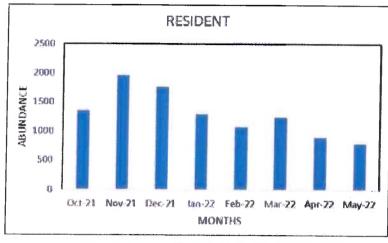


Fig. 5: Species richness of migratory shorebirds in the wetlands Oct 21-May 22

Transect Count Survey (TCS)

Thane Creek

We recorded a total of 65 species of waterbirds and raptors in the creek between October 2021 and May 2022. Among these, 47 species were migratory (43 shorebirds species and 4 raptor species), and 18 were resident birds. Resident bird abundance was relatively lower than that of migratory birds.



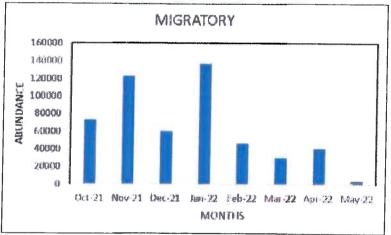


Fig. 6: Abundance of migratory shorebirds and resident birds in the creek Oct 21-May 22

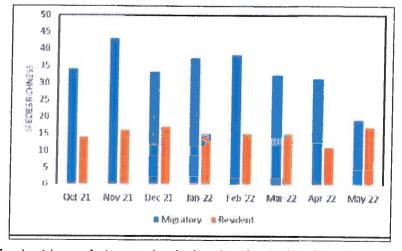


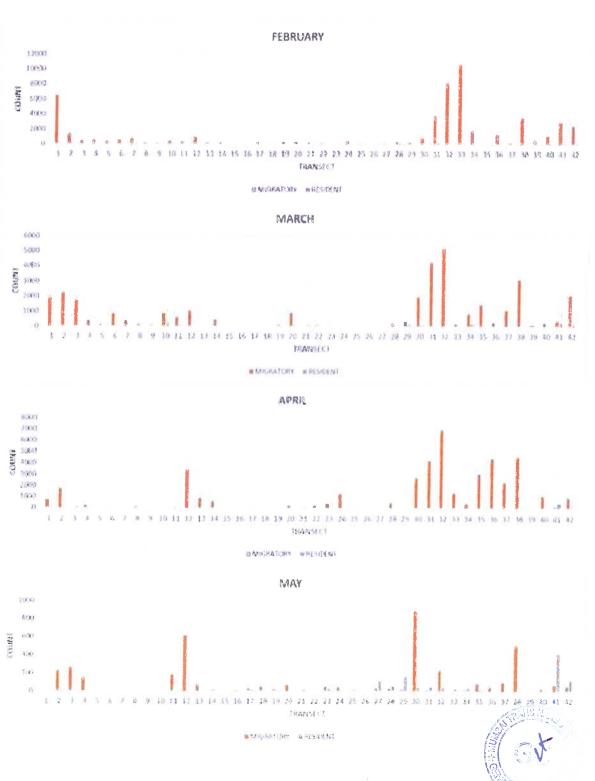
Fig. 7: Species richness of migratory shorebirds and resident birds in the creek Oct 21–May 22



Migratory shorebird population in the creek attained a peak in January (1,37,237 individuals) with a substantial contribution of waders. Most notable was Little Stint (*Calidris minuta*) — a total of 57,201 individuals were observed in November 2021.

Overall, species richness of migratory shorebirds was greater throughout the surveys (mean= 33.38, SD= 6.99) than resident birds (mean= 15, SD= 1.93) (Fig. 7).

A similar spatial distribution pattern was observed in the creek as seen in 2020-21. The largest congregations were found at Ghansoli (T1 and T40) and Vashi (T31–T33 and T36-T39) (Fig. 8). It indicates that the shorebirds have predominantly preferred the east bank of the creek over the years.



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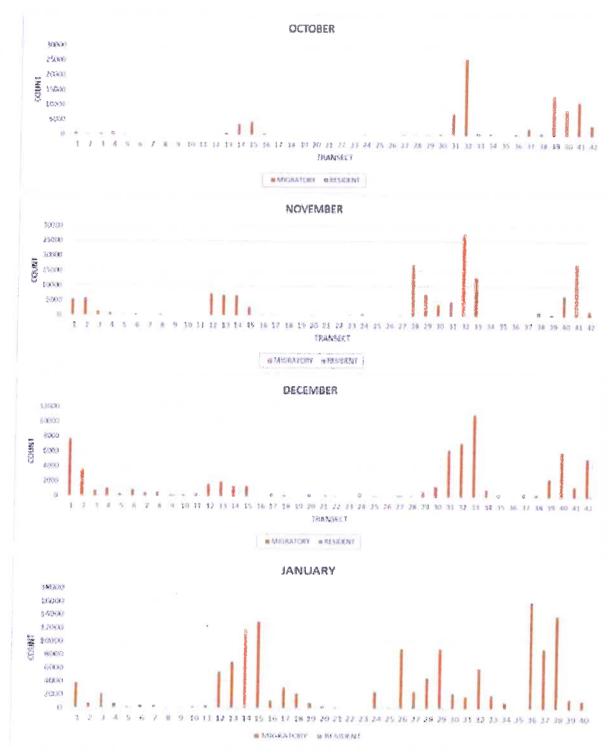


Fig. 8: Abundance of migratory and resident birds in Thane Creek, and Sewri and Nhava-Sheva mudflats Oct 21–May 22

Migratory shorebird counts were highest in November 2021 at Sewri (17456) and December 2021 at Nhava-Sheva (5171) mudflats, and thereafter the numbers declined gradually (Fig. 9).

The number of species at Sewri was highest in December (18), whereas only 14 species were recorded at Nhava-Sheva. The species richness of resident birds remained rather steady throughout the seasons (Fig. 10). We could not conduct bird surveys at construction sites during January month as these sites were prohibited due to Covid - 19 pandemic norms.

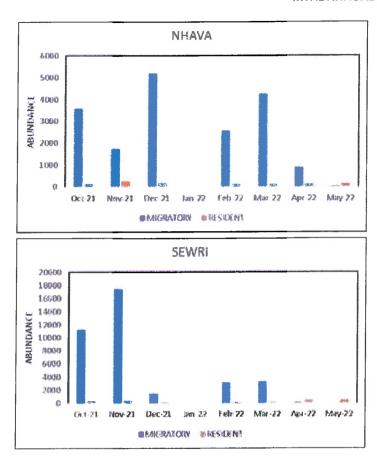


Fig. 9: Abundance of migratory and resident birds at Sewri and Nhava-Sheva mudflats Oct 21-May 22

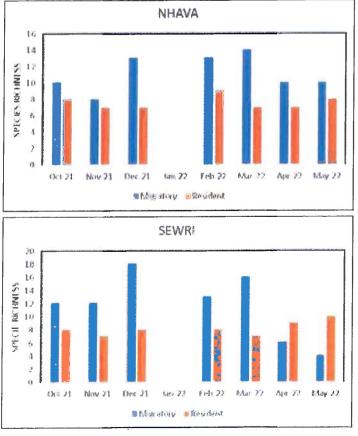


Fig. 10: Species richness at Sewri and Nhava-Sheva mudflats Oct 21-May 22



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Flamingo Count Survey (FCS)

Abundance of flamingos in the Creek

The highest number of Lesser flamingos were estimated in April 2022 (81970) and the lowest in October (25) and November (44) 2021. The lesser flamingo population increased gradually from December 2021 (16422) to April 2022, but the number reduced to almost half in May 2022 (48360) (Fig.11). In April 2022, the number of adult lesser flamingos (73.6%) were substantially higher than that of juvenile (11.8%) and subadult (14.6%) population.

In contrast to previous years, Greater flamingos returned in superior numbers in 2022. The lowest number of individuals were recorded in the month of October 2021 (6015) which was still higher than the numbers estimated in the previous year. Maximum population of Greater flamingos occupied the creek in January 2022 (49755) (Fig. 12).

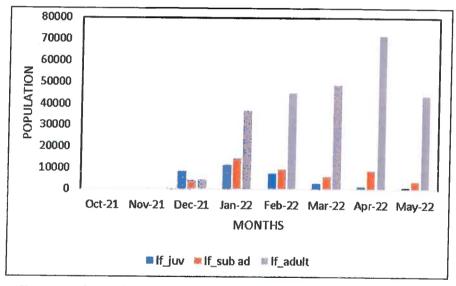


Fig. 11: Population of Lesser Flamingos recorded from Thane Creek Oct. 21-May 22

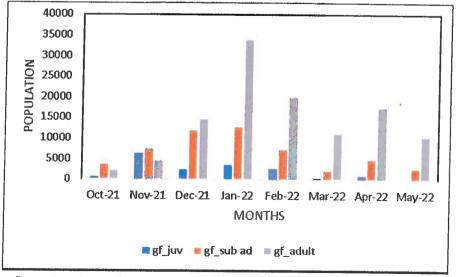


Fig. 12: Population of Greater Flamingos recorded from Thane Creek Oct. 21-May 22



16

The behavioural study of Lesser flamingo *Phoeniconaias minor* for season (September 2022 to May 2022) was analysed (Fig. 16) separately for three sites respectively i.e., construction site, feeding site, and roosting sites. Feeding activity was recorded highest in the construction site (88.91%). Movement activity was highest in construction site (89.76%) followed by that in feeding site (88.98%) whereas resting activity was markedly higher in the roosting site (23.40%). Maintenance and vigilance aspects were highest in the roosting site respectively (22.84%, 7.98%).) followed by that in feeding site (5.072%). Frequency of vehicles were prominently higher in Construction sites (9.07%) followed by that in roosting sites (0.40%). Construction activity was only found in the construction sites (1.64%). Other peoples were recorded more frequently in the construction sites (11.24%). Aggression behaviour was higher at construction site (0.08%) followed by that in feeding site (0.01%). Birdwatchers were major disturbances at all the roosting sites (7.01%).

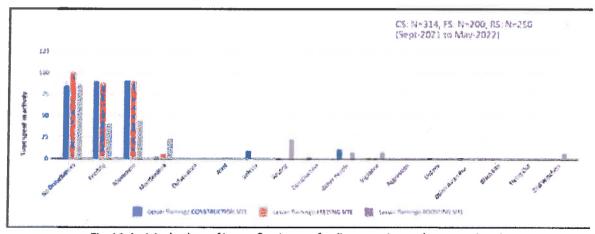


Fig. 16: Activity budget of Lesser flamingo at feeding, roosting and construction site

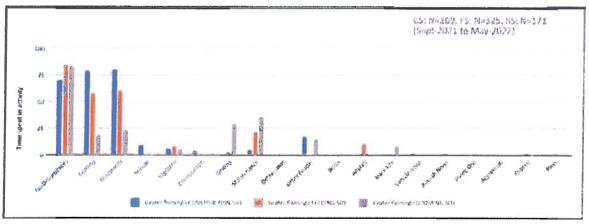


Fig. 17: Activity budget of Greater flamingo at feeding, roosting and construction site

The behavioural study of Greater flamingo *Phoenicopterus roseus* for season (September 2022 to May 2022) analysed (Fig. 17) separately for all the sites. Frequency of no disturbance was higher in feeding site (85.25%) followed by that in roosting site (83.88%). Movement was highest in construction site (80.09%) followed by feeding site (60.61%). Vehicles were highest in construction site (9.52%) followed by that in feeding site (0.46%). Vigilance was highest in feeding site (8.62%) followed construction site (5.88%). Resting activity was prominently higher in roosting site (29.38%) followed by feeding site (2.56%). Maintenance was highest in the roosting site (36.58%) followed by that in feeding site (21.06%).

Bird ringing

We ringed and flagged migratory shorebirds in 82 trapping sessions conducted from October 2021 to September 2022 at high tide roosting sites, viz, TSC, BPS saltpan, BPS mangrove, Ghatkopar Pumping Station and Mankhurd. In total, 8296 shorebirds (waders) were ringed and flagged. (Table 4 and 5).

Table 4: Species wise ringing details Oct 21-May 22

_	Table in Species wise iniging declars occ 21 May 22									
SI. No	Scientific Names	Common Names	Oct- 21	Nov-	- Dec-	Jan 22	- Feb			Total
1	Himantopus himantopus	Black winged stilt	0	0	0	0	0	3	1	4
2	Limosa limosa	Black-tailed godwit	5	0	0	6	5	5	0	21
3	Calidris falcinellus	Broad-billed sandpiper	17	75	19	47	14	36	16	224
4	Gallinago gallinago	Common snipe	0	0	1	1	0	0	0	2
5	Anas crecca	Common teal	2	0	0	2	0	0	0	4
6	Tringa nebularia	Common greenshank	9	0	1	7	2	19	4	42
7	Tringa totanus	Common redshank	179	43	96	209	147	149	17	840
8	Actitis hypoleucus	Common sandpiper	31	26	12	10	6	12	15	112
9	Calidris ferruginea	Curlew sandpiper	161	246	205	237	241	298	277	1665
10	Calidris alpina	Dunlin	26	107	65	63	70	23	2	356
11	Numenius arquata	Eurasian curlew	1	0	0	1	0	3	0	5
12	Calidris Tenuirostris	Great knot	0	2	3	3	0	0	0	8
13	Phoneicopterus roseus	Greater flamingo	0	0	0	2	1	1	1	5
14	Rostratula benghalensis	Greater painted snipe	0	0	0	0	0	0	1	1
15	Charadrius leschenaultii	Greater sand plover	1	1	0	2	3	1	0	8
16	Tringa ochropus	Green sandpiper	1	0	0	0	0	1	0	2
17	Pluvialis squatarola	Grey plover	0	2	4	1	3	1	3	14
18	Phalacrocorax fuscicollis	Indian cormorant	1	0	0	0	2	0	0	3
19	Charadrius alexandrinus	Kentish plover	0	3	2	1	3	0	0	9
20	Phoeniconaias minor	Lesser flamingo	0	0	0	0	12	18	1	31
21	Charadrius mongolus	Lesser sand plover	236	509	537	271	413	220	191	2377
22	Charadrius dubius	Little ringed plover	1	1	2	0	0	0	0	4
23	Calidris minuta	Little stint	375	232	154	153	272	182	311	1679
24	Sternula albifrons	Little tern	0	0	60	18	26	25	36	165
25	Tringa stagnatilis	Marsh sandpiper	5	1	7	11	14	36	6	80
26	Spatula clypeata	Northern shoveler	0	2	1	0	0	0	0	3
27	Pluvialis fulva	Pacific golden plover	0	0	0	5	1	1	2	9
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Table 4: Species wise ringing details Oct 21–May 22 (contd.)

Si. No.	Scientific Names	Common Names	Oct- 21	Nov-	Dec- 21	Jan- 22	Feb- 22	Mar- 22	Apr-	Total
28	Calidris canutus	Red knot	0	0	0	1	0	0	0	1
29	Vanellus indicus	Red-wattled lapwing	2	0	0	0	0	0	0	2
30	Areneria interpress	Ruddy turnstone	2	1	0	0	1	4	3	11
31	Calidris pugnax	Ruff	1	0	0	0	0	0	0	1
32	Sternula saundersi	Saunders's tern	0	14	53	54	3	11	10	145
33	larus genei	Slender billed gull	0	0	0	0	1	0	0	1
34	Tringa erythropus	Spotted redshank	0	0	0	0	0	0	1	1
35	Calidris temminckii	Temminck's stint	13	12	0	0	0	3	0	28
36	Xenus cinereus	Terek sandpiper	26	37	63	28	17	18	61	250
37	Numenius phaeopus	Whimbrel	0	1	0	0	0	2	0	3
38	Chlidonias hybrida	Whiskered tern	0	44	0	0	0	0	0	44
39	Tringa glareola	Wood sandpiper	10	3	14	11	7	34	57	136
	Total		1105	1362	1299	1144	1264	1106	1016	8296

Table 5: Species wise recapture detail

SI. No.	Scientific Names	Common Names	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
1	Calidris falcinellus	Broad-billed sandpiper	0	2	0	3	1	1	4	11
2	Tringa nebularia	Common greenshank	0	0	0	0	0	1	0	1
3	Tringa totanus	Common redshank	47	1	10	57	45	79	14	253
4	Actitis hypoleucus	Common sandpiper	0	4	0	2	5	0	3	14
5	Calidris ferruginea	Curlew sandpiper	11	10	10	26	23	36	43	159
6	Calidris alpina	Dunlin	0	1	4	6	2	3	1	17
7	Calidris Tenuirostris	Great knot	0	0	1	0	0	0	0	1
8	Charadrius leschenaultii	Greater sand plover	0	0	0	0	0	1	0	1
9	Pluvialis squatarola	Grey plover	0	0	0	1	0	0	0	1
10	Charadrius mongolus	Lesser sand plover	10	10	21	15	37	19	25	137
11	Calidris minuta	Little stint	16	2	3	3	7	3	10	44
12	Sternula albifrons	Little tern	0	0	0	0	1	1	1	3
13	Tringa stagnatilis	Marsh sandpiper	0	1	1	0	0	1	0	3
14	Pluvialis fulva	Pacific golden plover	0	0	0	0	0	0	1	SNISA
15	Areneria interpress	Ruddy turnstone	0	0	1	0	0	0	0.3	1 ^
16	Sternula saundersi	Saunders's tern	0	0	3	2		2	2	9

Table 5: Species wise recapture detail (contd.)

SI. No.	Scientific Names	Common Names	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
17	Xenus cinereus	Terek sandpiper	2	7	5	4	8	6	24	56
18	Tringa glareola	Wood sandpiper	0	0	1	0	0	1	3	5
	Total		86	38	60	119	129	154	131	717

Table 6: Species wise resighting details from Oct 2021–Apr 2022

SI. No.	Scientific Names	Common Names	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
1	Himantopus himantopus	Black winged stilt	0	0	0	0	0	1	0	1
2	Limosa limosa	Black-tailed godwit	0	1	1	0	7	24	10	43
3	Calidris falcinellus	Broad-billed sandpiper	0	1	4	.0	0	3	0	8
4	Tringa nebularia	Common greenshank	0	9	5	1	1	1	1	18
5	Tringa totanus	Common redshank	30	38	40	6	35	58	8	215
6	Actitis hypoleucus	Common sandpiper	0	0	0	1	0	1	0	2
7	Calidris ferruginea	Curlew sandpiper	22	35	81	2	23	52	36	251
8	Calidris alpina	Dunlin	0	0	13	2	2	9	1	27
9	Phoneicopterus roseus	Greater flamingo	0	0	0	0	0	1	0	1
10	Charadrius leschenaultii	Greater sand plover	0	0	0	0	1	3	0	4
11	Pluvialis squatarola	Grey plover	1	1	1	0	3	10	9	25
12	Phoeniconaias minor	Lesser flamingo	0	0	0	0	3	0	0	3
13	Charadrius mongolus	Lesser sand plover	17	28	39	2	25	212	45	368
14	Charadrius dubius	Little ringed plover	0	0	0	2	0	0	0	2
15	Calidris minuta	Little stint	15	13	37	2	6	21	12	106
16	Tringa stagnatilis	Marsh sandpiper	0	1	5	1	16	26	0	49
17	Pluvialis fulva	Pacific golden plover	0	0	0	0	0	0	1	1
18	Areneria interpress	Ruddy turnstone	4	0	3	0	0	0	0	7
19	Xenus cinereus	Terek sandpiper	0	1	2	1	4	3	1	12
20	Tringa glareola	Wood sandpiper	0	0	2	2	1	0	0	5
	Total			128	233	22	127	425	124	1148

A total of 1148 birds were resighted throughout the seasons and maximum number of birds were resighted in March 2022 (425). We also received a few international resighting of birds tagged in our study area again in 2021-22. A Curlew sandpiper (2CF) and a Common redshank (1U9) were resighted in Central Mongolia and Altai regions of Russia, respectively.

Satellite telemetry

We tagged three Lesser flamingo and three greater flamingos with GSM GPS tags and one Black-tailed Godwit with GSM nano radio tag during the year 2021-22. Black-tailed Godwit named as BALA was the first wader species to be satellite tracked from India for its migratory path. The bird gave us crucial data on its stopover sites along its migratory path.

Bala travelled about 5000 km in 47 days (24th March to 11th June) to reach the breeding site(s) in Southwestern Siberia, Russia. It used several staging and stopover sites during northward migration and crossed six countries: Pakistan, Afghanistan, Turkmenistan, Uzbekistan, Kazakhstan and Tajikistan. In contrast, southward migration was quick — Bala took just five days (17th to 21st July) to cover a distance of 4200 km to reach Thane Creek through a few brief stops. (Fig. 18).

Five out of six tagged Flamingos moved to Gujrat in the month of July 2022 and since then they are not in network area and hence have not yet responded, we hope they will give us more data on their breeding sites once they are back in network. (Figs 19 and 20)

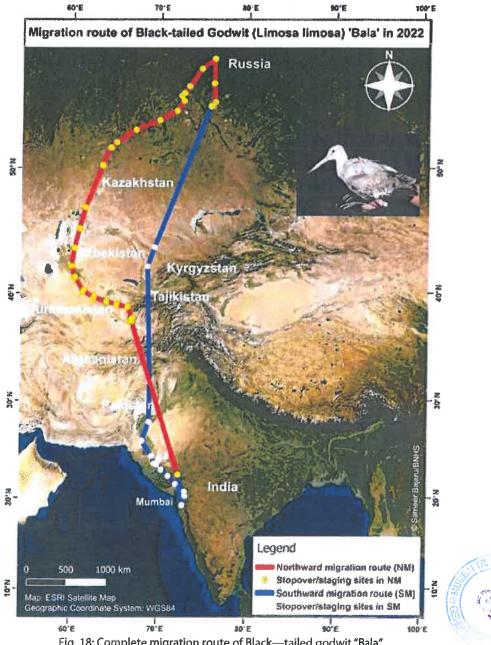
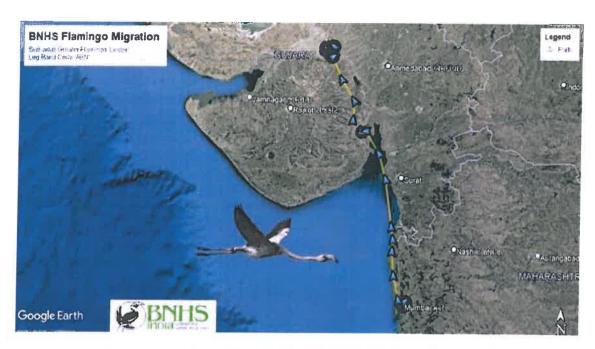


Fig. 18: Complete migration route of Black—tailed godwit "Bala"





Figs 19A and B: Sub-adult "Lester" and juvenile "McCann" Greater flamingo's migration route to Gujarat



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For better representation in the report, Creek was divided into two banks- East and West Bank. Sampled transects are combined into eight clusters (E I, E II, E III, E IV, E V, EW I, W II, W III and W IV) to study the macrobenthic distribution pattern. (Table 7).

Table 7: Grouping of transects into clusters for data representation

Bank	Transects
East Bank: E I	1,2,3,4
EII	38, 39, 40
EIII	35, 36, 37
EIV	31, 32, 33, 34
EV	27,28,29,30
East West Bank: EW I	5,8,9,10
West Bank: W I	11.12,13
WII	14, 15, 16, 17
WIII	18, 19, 20, 21
WIV	22, 23, 24, 25

Observations:

Thane Creek

Overall macrobenthic density and biomass recorded from Thane creek in present studies was (104171.67/m³,1508.78g/m³). During the entire study period, it was observed that the total macrobenthic density and biomass of East bank was (58030.38/m³,961.78g/m³), East-West bank was (1602.46/m³,0.389g/m³) and West bank exhibited (44541.82/m³, 546.52g/m³). 20 benthic groups were observed along the Thane Creek, Sewri, Nhava and wetlands. Polychaete, Oligochaete, Bivalve, Gastropod, Phoronida and Anthozoa were the major contributors to the macrobenthic composition.

East Bank

In the entire study period, the Post-monsoon season exhibited maximum macrobenthic density and biomass along the clusters El (5715.01/m³,117.71g/m³), Ell (13748.75/m³, 203.41g/m³), Elll (8607.09/m³, 527.0g/m³) ElV (6404.06/m³, 136.56g/m³) and EV (1928.45/m³, 4.31g/m³). The Pre-monsoon season exhibited the least density and biomass at all the clusters: El (2423.14/m³, 0.97g/m³), Ell (5197.00/m³, 12.07g/m³), Elll (8168.00/m³, 12.46g/m³) ElV (4405.00/m³, 42.98g/m³) and EV (1433.57/m³, 5.84g/m³). The highest values of density were observed during Post-monsoon season for cluster Ell (13748.75/m³), whereas least values were observed during Pre-monsoon season for cluster EV (1433.57/m³). The highest biomass was observed in cluster E Ill during Post-monsoon season (527.00g/m³) Lowest biomass was noted in E I during Pre-monsoon season (0.97g/m³). Polychaete was the most dominating group both density and biomass wise along all the clusters followed by Bivalve, Gastropod Nematode, Phoronida and Brachyura during Post-monsoon.

EI (Fig.21.1-21.4)

There has been a significant decrease in macrobenthic density and biomass from Post-monsoon season (5715.01/m³,117.71g/m³) to Pre-monsoon season (2423.14/m³,0.97g/m³). Along the cluster, 5 invertebrate phyla were recorded. It was observed that the overall biomass of macrobenthos was higher in the Post-monsoon season (9.23g/m³) than that of the Pre-monsoon season (0.32g/m³).

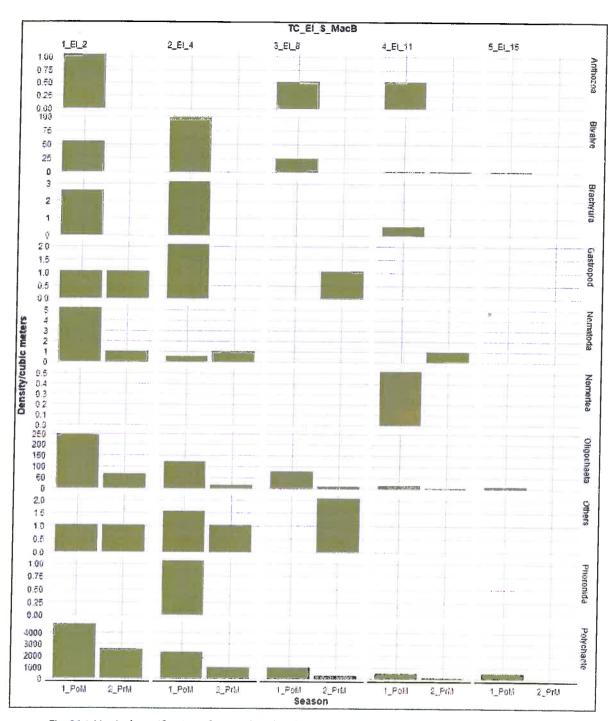


Fig. 21.1: Vertical stratification of macro-benthic density /m³ in the intertidal mudflats of El cluster of Thane creek during the study period 2021–22

Vertical stratification

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The upper stratum 0-2cm depicts the maximum Polychaete density (4592.7/m³) followed by Oligochaetes (880.20/m³) during the Post-monsoon season.

Brachyura was seen only during Post-monsoon season occupying the upper 0-2 cm stratum. During Post-monsoon season, the highest group diversity was noted within the upper stratum 0-2cm (8 No). Anthozoans were observed during Post-monsoon season up to the upper 8cm. Polychaetes were present within the entire vertical column of 15 cm. Phoronida, Brachyura, Anthozoa, Nemertea were completely absent during the Pre-monsoon months.

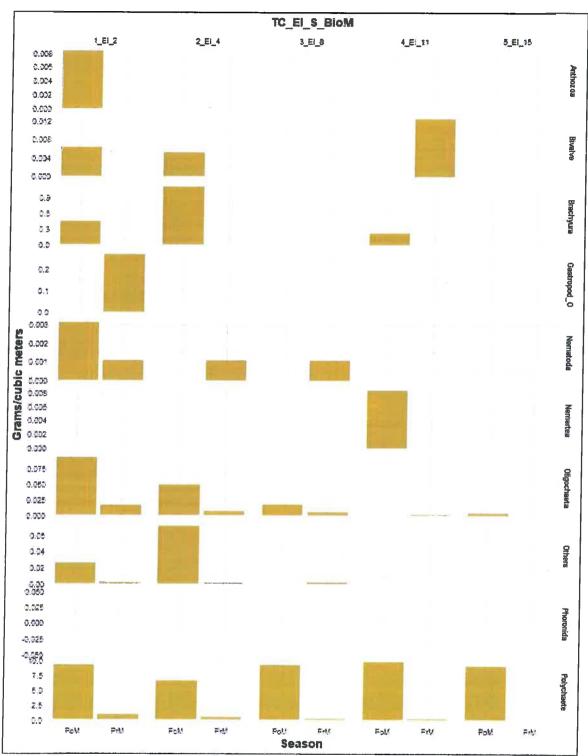


Fig. 21.2: Vertical stratification of macro-benthic biomass g/m³ in the intertidal mudflats of El cluster of Thane creek during the study period 2021-22

In the Pre-monsoon season, Crustacean larvae contribute the least to overall biomass (0.02g/m³), followed by Oligochaetes (0.03g/m³), while in the Post-monsoon season, Polychaete contributes the most (26.27g/m³), followed by Brachyura (1.06g/m³).

Polychaete (0.26g/m³) shows the highest biomass followed by Gastropoda (0.05g/m³) and Oligochaete (0.01g/m³). It has been observed that Post-monsoon shows significantly higher biomass (9.17/m³) than that of the Pre-monsoon season across all the strata (0.32/m³).

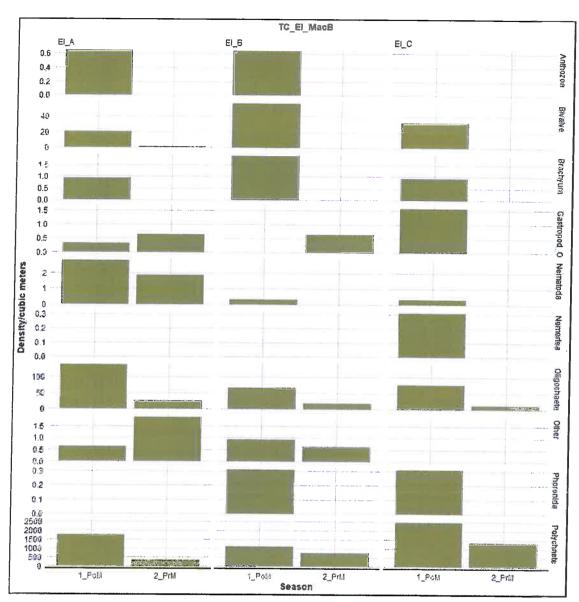


Fig. 21.3: Zonal variation of macrobenthic density/ m³ in the intertidal mudflats of El cluster of Thane creek during 2021–22

Intertidal zonation:

During the Post-monsoon season, Zone C had exhibited the highest macrobenthic density (2574.06/m³) followed by Zone A (1899.07/m³) and Zone B (1241.88/m³). During the Pre-monsoon season, Zone C had exhibited the highest macrobenthic density (1306.88/m³) followed by Zone B (762.51/m³) and Zone A (353.76/m³). 10 macrobenthic groups were observed during Post-monsoon season while 6 macrobenthic groups were observed in Pre-monsoon season. Polychaete and Oligochaete were observed across all the Zones during both seasons. The maximum contribution to the overall biomass was from Zone A (16.02g/m³) followed by Zone C (8.72 g/m³) and Zone B (2.97 g/m³) during the Post-Monsoon season. Zone C (0.39g/m³) showed the highest biomass followed by Zone A(8.72g/m³) and Zone B (2.97g/m³). during the Pre-monsoon season.

EII (Fig.22.1-22.4)

Macrobenthic density and biomass have shown a significant decrease from Post-monsoon season (2869.03/m³, 67.80g/m³) to Pre-monsoon season (2722.03/m³,4.02g/m³) season. There was a decline in the macrobenthic diversity from Post-monsoon season (10 No) to Pre-monsoon season (5 No).

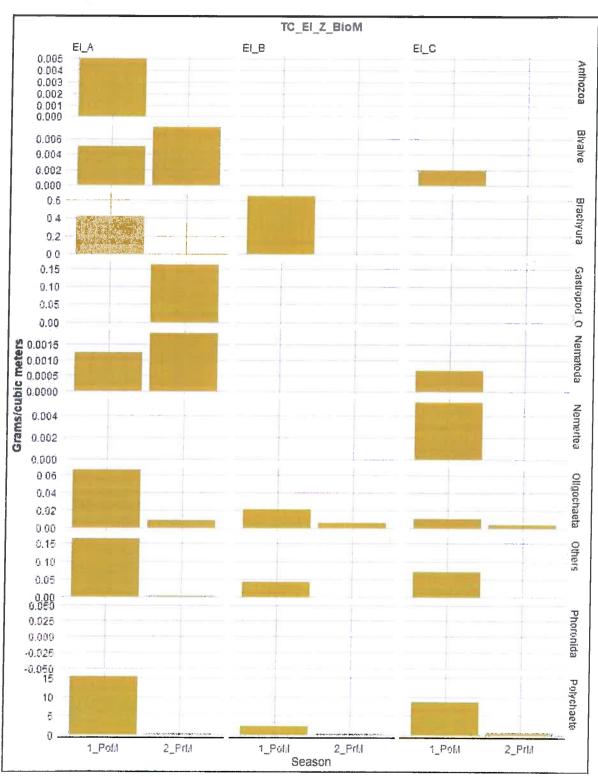


Fig. 21.4: Zonal variation of macrobenthic Biomass g/m³ in the intertidal mudflats of El cluster of Thane creek during the study period 2021–22

Vertical stratification:

Macrobenthic density has declined vertically from upper stratum 0-2cm to lower stratum 11-15 cm in both the seasons. Polychaete (17039.16/ m³, 164.56g/ m³) has contributed maximum to the overall macrobenthic density and biomass. Polychaeta, Oligochaete, Bivalve and Gastropod were observed in all strata during both seasons.

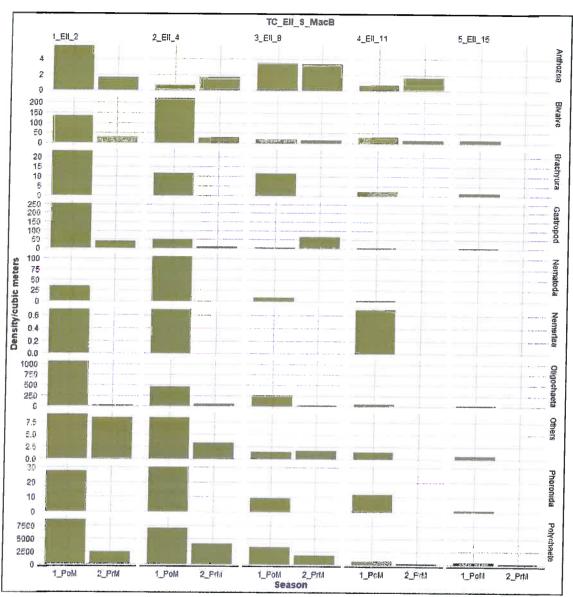


Fig. 22.1: Vertical stratification of macrobenthic density/m³ in the intertidal mudflats of Ell cluster of Thane creek during the study period 2021–22

Polychaete (51.99g/m³) shows higher biomass followed by Bivalve (9.62g/m³), Gastropod (3.74g/m³), Brachyura (1.10g/m³), Phoronida (0.42g/m³) during the Post-monsoon season. During Premonsoon season, the higher biomass was shown by Polychaete (2.86g/m³) followed by Bivalve (.46g/m³), Gastropod (0.44g/m³), Anthozoa (0.26 g/m³).

Intertidal zonation:

Maximum contributiontowards overall macrobenthic density was observed from Zone B (6897.41/m³) and the least density was observed from Zone C (5676.74/m³) during both seasons. Polychaete density have increased from Zone B (4568.33/m³) to Zone A (3938.33/m³) in Post-monsoon season. During Pre-monsoon season, Zone C (1788/m³) exhibited highest density of Polychaete followed by Zone B (1675/m³) and Zone A (1547/m³). During Post-monsoon season, Polychaete (155.98 g/m³) had maximum contribution to overall biomass followed by Bivalves (28.76 g/m³), Gastropoda(11.13 g/m³), During the Pre-monsoon season, Polychaete biomass (8.58 g/m³) was highest followed by Bivalves (1.37 g/m³) and Gastropoda, (1.31 g/m³).

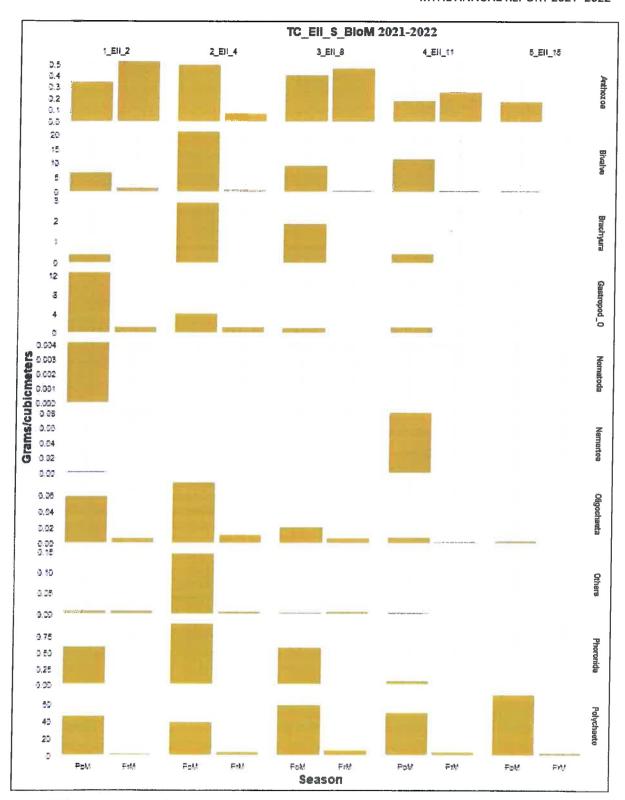


Fig. 22.2: Vertical stratification of macro-benthic biomass g/m³ in the intertidal mudflats of Ell cluster of Thane creek during the study period 2021–22

Zone A (109.69g/m³) exhibits the highest biomass followed by Zone B (66.80 g/m³) and Zone C (26.91 g/m³) in Post-monsoon season while in Pre-monsoon season, Zone C (5.86g/m³) shows higher biomass followed by Zone A (3.84g/m³) and Zone B (2.37g/m³). During the Pre-monsoon season, Phoronid, Brachyura, Nemertea and Nematode were totally absent across all zones.

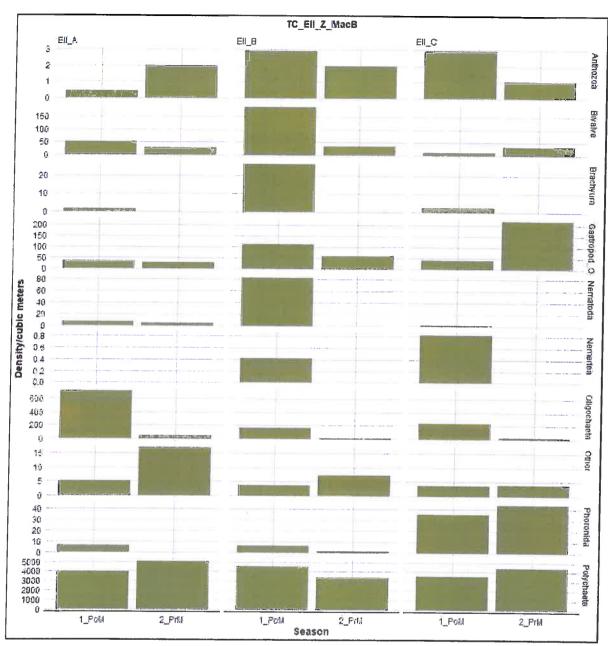


Fig. 22.3: Zonal variation of macrobenthic density/m³ in the intertidal mudflats of E II cluster of Thane creek during 2021–22

E III (Fig.23.1-23.4)

Macrobenthic density had shown a slight decline from Post-monsoon season (8607.08/ m³) to Premonsoon season (8168.35/ m³). Overall, 10 macrobenthic groups were observed along this cluster. Polychaete, Gastropod, Bivalve, Oligochaete and Phoronida were found in both seasons.

Vertical Stratification

Uppermost stratum 0-2 cm shows the highest density (10236.11/m³) than that of other strata. Macrobenthic density declined vertically from the upper stratum to lower stratum in both seasons. Polychaete shows a declining trend from upper most stratum 0-2 cm to lower most stratum 11-15 cm in both seasons. Nematodes were observed only in the upper stratum 0-2 cm during Pre-monsoon season. Polychaete, Phoronida, Oligochaete, Gastropod were observed in all strata during both seasons. Brachyura, Anthozoa, Nemertea was completely absent in Pre-monsoon season.

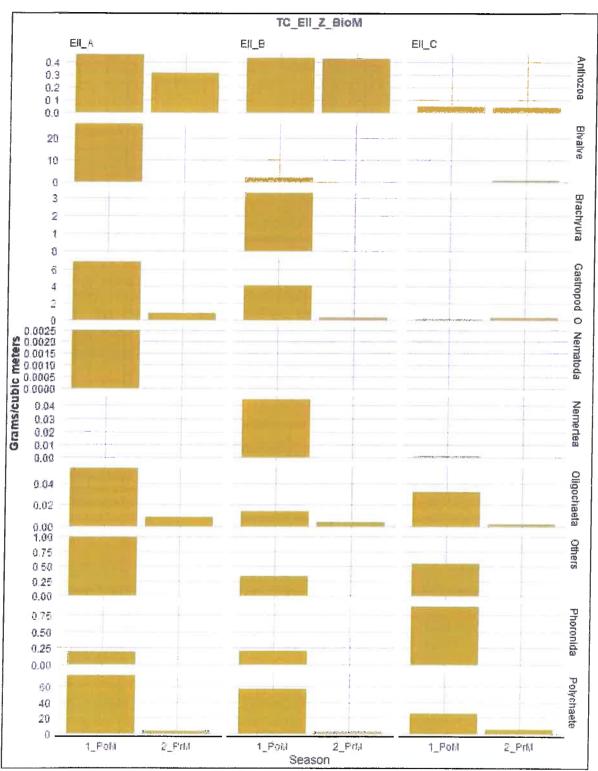


Fig. 22.4: Zonal variation of macrobenthic biomass g/m³ in the intertidal mudflats of EII cluster of Thane creek during the study period 2021–22

Maximum biomass was noted from the upper stratum 0-2cm during both the seasons (573.89g/m³) and the least biomass was observed in the stratum 8-11 cm (14.66g/m³).

Intertidal zonation

Maximum macrobenthic density was observed along Zone A during Pre-monsoon season (3551.25/m³) and Zone B in Post-monsoon season (3133.75/m³). The least density was recorded along Zone B

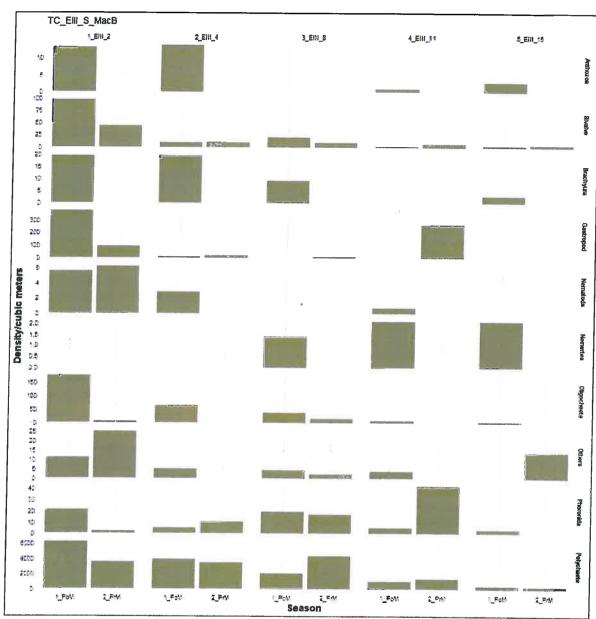


Fig. 23.1: Vertical stratification of macrobenthic density/m³ in the intertidal mudflats of EllI cluster of Thane creek during the study period 2021–22

during Pre-monsoon season (1750/m³) followed by Zone C in Post-monsoon season (2544.59/m³). The maximum contribution to the overall biomass was shown by Zone C (377.42g/m³) followed by Zone A (91.79g/m³) and Zone B (57.79g/m³) during the Post-monsoon season. Polychaete (15832.94/ m³) has contributed maximum to the overall macrobenthic density across all zones during both seasons, followed by Gastropod (464.88/ m³), Oligochaete (186.85/ m³).

E IV (Fig.24.1-24.4)

Macrobenthic density and biomass has decreased from Post-monsoon season (2134.69/m³, 45.52g/m³) to Pre-monsoon season (1468.33/m³, (14.33g/m³). During the study period, 10 macrobenthic groups were recorded from the cluster. During both the seasons, the faunal diversity was more in Zone B as compared to the other zones. Brachyura, Oligochaete, and Sipuncula were observed in Post-monsoon season while they were completely absent in Pre-monsoon season. Gastropods exhibit a higher contribution to overall biomass followed by Bivalve and Polychaete during the Post-monsoon season.

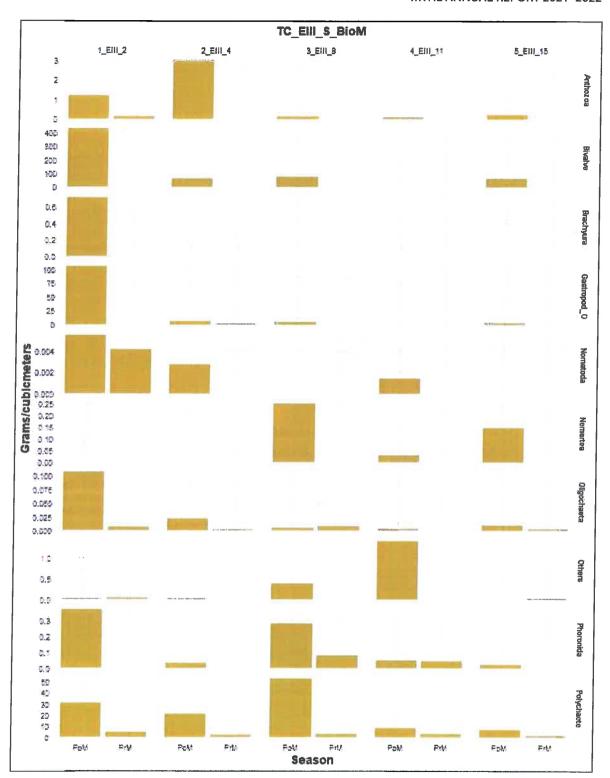


Fig. 23.2: Vertical stratification of macro-benthic biomass g/m³ in the intertidal mudflats of EIII cluster of Thane creek during the study period 2021–22

Vertical stratification

Macrobenthic density showed a decline from upper stratum 0-2cm to lower 11-15cm stratum during both the seasons. Nematode was observed only in upper stratum 0-2 cm during both the seasons. Oligochaete was observed in all strata of Post-monsoon season while in Pre-monsoon season, it was present in all strata except lower strata 8-15 cm. Maximum biomass was noted from stratum 8-11cm (102.53/m³) followed by upper stratum 0-2 cm (53.11g/m³), lower stratum 11-15 cm (46.07g/m³), 2-4

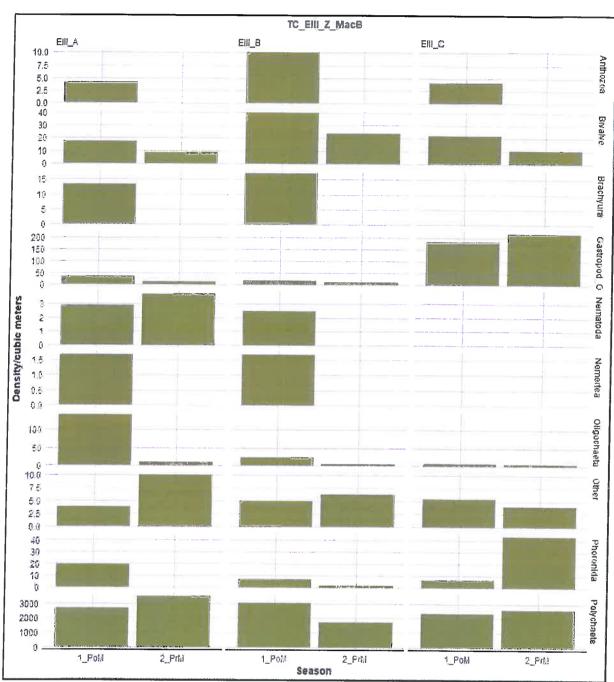


Fig. 23.3: Zonal variation of macrobenthic density/m³ in the intertidal mudflats of EllI cluster of Thane creek during 2021–22

cm(24.26g/m³) and 4-8 cm(16.01g/m³) in Post-monsoon season while in Pre-monsoon season upper stratum 0-2cm exhibited highest biomass.

Polychaete showed maximum contribution to overall density in upper stratum 0-2 cm (7680.56/ m³) followed by strata 2-4 cm (4276.57/m³) and stratum 4-8 cm (2727.25/ m³). Brachyura (10.93/ m³) showed the least contribution to the overall density followed by Nematoda (11.97/ m³).

Intertidal Zonation

Polychaete had contributed maximum to the overall macrobenthic density (9926.13/ m³). Macrobenthic density has declined from Zone B (2248.44/m³) during Post-monsoon season followed by Zone C (2141.25/m³) and Zone A (2014.37/m³). During Pre-monsoon season, Zone B (2106.6/ m³) exhibited

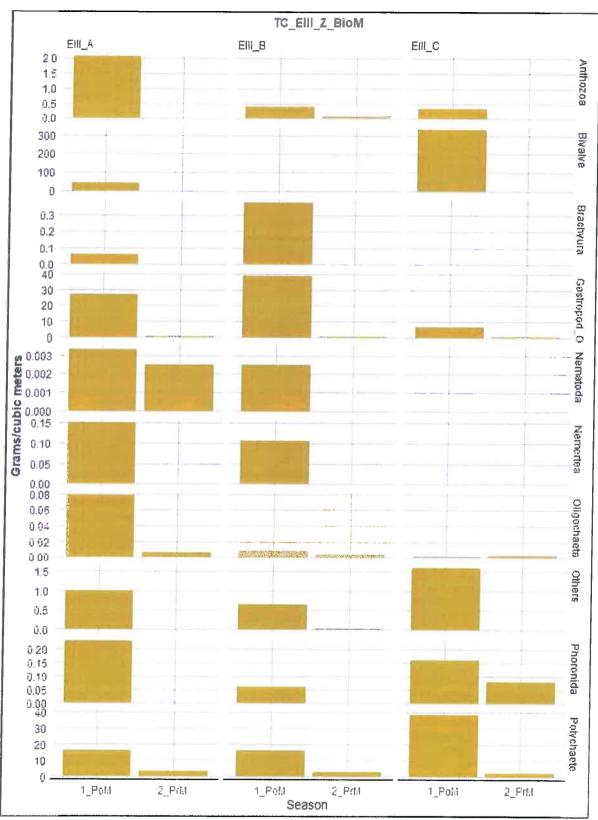


Fig. 23.4: Zonal variation of macrobenthic biomass g/m³ in the intertidal mudflats of EIII cluster of Thane creek during the study period 2021–22

maximum density followed by Zone A (1329.17/m³) and Zone C (969.17/m³). Polychaete, Gastropoda, Bivalve, Nemertea, Oligochaete and Phoronida were observed in all the zones during both the seasons. Zone A (116.58g/ m³) showed maximum contribution to the overall biomass during both the seasons, followed by Zone B (41.6 g/m³) and Zone C (21.33g/m³).

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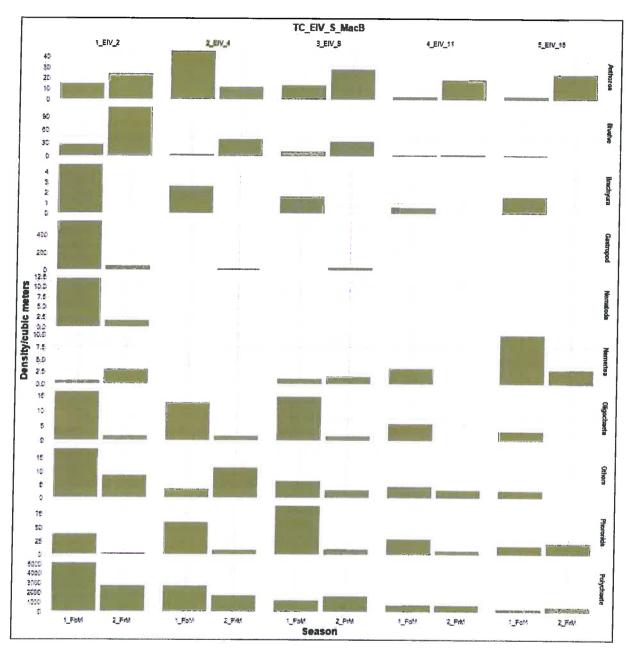


Fig. 24.1: Vertical stratification of macrobenthic density/m³ in the intertidal mudflats of EIV cluster of Thane creek during the study period 2021–22

EV (Fig.25.1-25.4)

Macrobenthic density has shown a decrease in biomass from Post-monsoon season (642.82/m³) to Pre-monsoon (477.86/m³). During the study period, 10 faunal groups were recorded from the cluster. Faunal diversity has decreased from Post-monsoon (10 No.) to Pre-monsoon (9 No.). Nematode was completely absent during Pre-monsoon.

Vertical stratification

Macrobenthic density has declined from upper 0-2cm stratum to lower 11-15cm stratum during Postmonsoon season. Stratum 8-11 cm exhibited maximum macrobenthic density (805.95/m³) followed by stratum 2-4 cm (582.15/m³) and 11-15 cm (405.95/m³) in Pre-monsoon season. It was observed that lower stratum 11-15 cm showed the least contribution to the biomass whereas the upper stratum 0-2 cm showed highest biomass during Post-monsoon. The upper stratum 2-4 cm contributed the

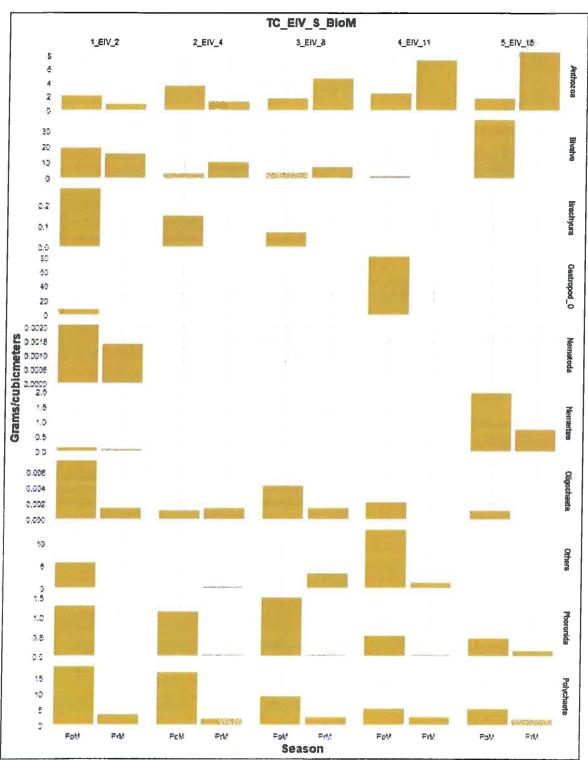


Fig. 24.2: Vertical stratification of macrobenthic biomass g/m³ in the intertidal mudflats of EIV cluster of Thane creek during the study period 2021–22

least to the overall biomass, whereas the lower stratum 11-15 cm contributed the most during Pre-monsoon.

Intertidal Zonation

Macrobenthic density has declined from Zone A (816,26/m³) followed by Zone C (608.75/m³) and Zone B (503.44/m³) in Post-monsoon season. Macrobenthic density has declined from Zone A (595.00/

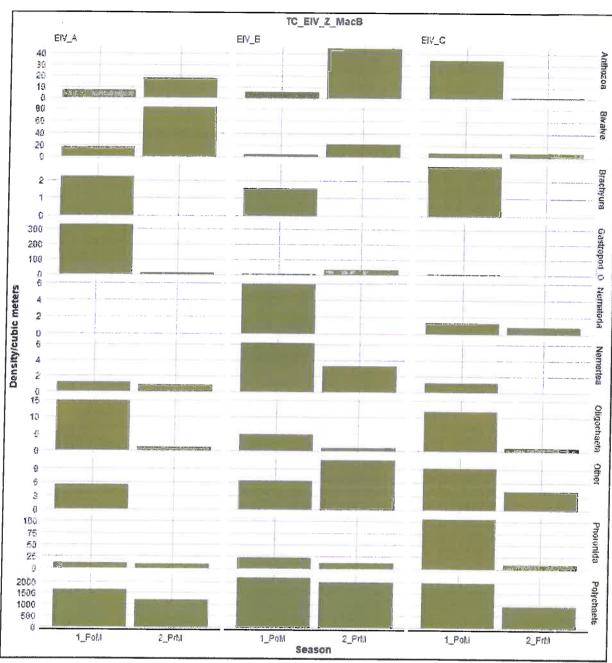


Fig. 24.3: Zonal variation of macrobenthic density/m³ in the intertidal mudflats of E IV cluster of Thane creek during 2021–22

m³) followed by Zone B (565.71/m³) and Zone C (272.86/m³) in Pre-monsoon season. Zone A (1.59g/m³) had exhibited highest biomass during Post-monsoon and Zone B (3.40g/m³) during Pre-monsoon. Zone A had exhibited maximum group diversity throughout the season. Polychaete, Gastropod, Bivalve, Brachyura, Anthozoa, Oligochaete and Phoronida were observed in all the seasons, while Nematode was completely absent during the Pre-monsoon. Bivalve was observed only in Zone A during Pre-monsoon season.

East-West Bank (EW I - Fig.26.1-26.4)

Over the course of the study period, the maximum macrobenthic density and biomass along EW I (1562.27/m³, avg. 0.129g/m³), was noted during the Post-monsoon season, whereas Pre-monsoon season showed comparatively less macrobenthic density and biomass (40.23/m³; 0.003g/m³).

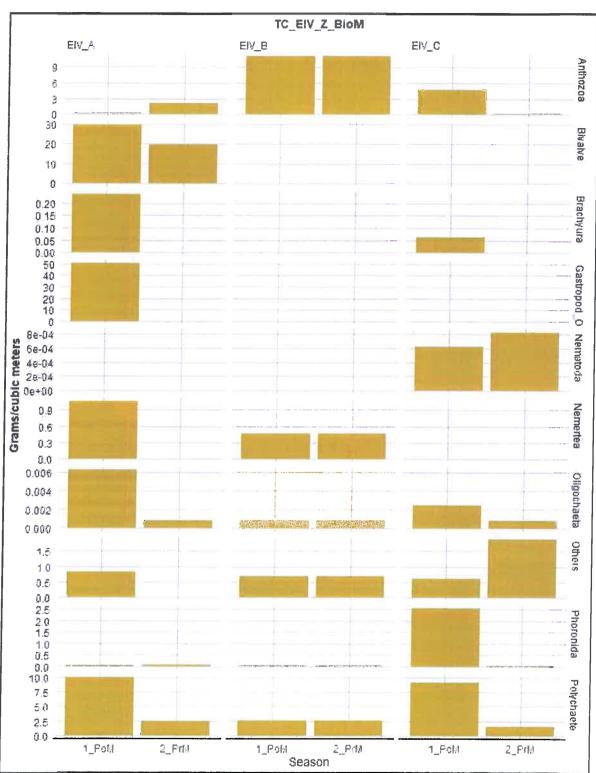


Fig. 24.4: Zonal variation of macrobenthic biomass g/m³ in the intertidal mudflats of E IV cluster of Thane creek during the study period 2021–22

Vertical stratification

Polychaetes were present within all the stratum, with higher density in the upper 0-2 cm stratum during Post-monsoon season (1654.3/ m³). Bivalve showed a higher density in the lower stratum 8-11 cm during Post-monsoon season (10.62/ m³). Phoronida was present in the upper 0-2 cm stratum. Brachyura was only present in stratum upper 2cm and 4 - 8 cm during Post-monsoon season. Oligochaetes

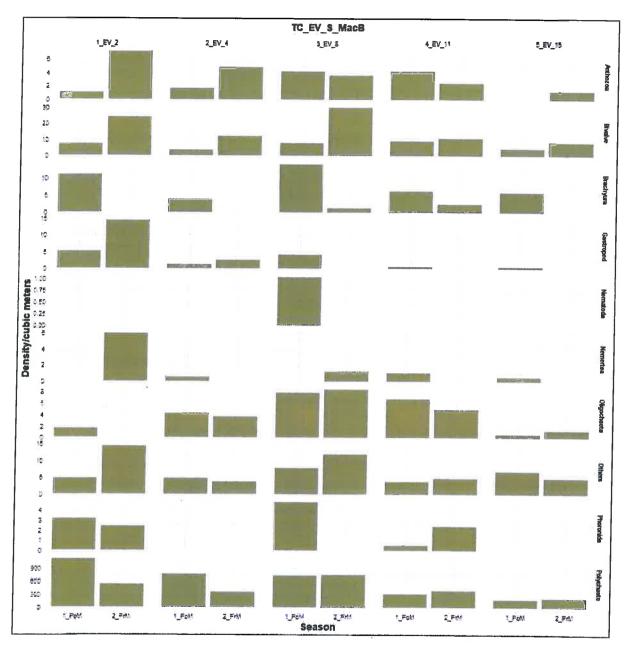


Fig. 25.1: Zonal variation of macrobenthic density /m³ in the intertidal mudflats of EV cluster of Thane creek during 2021–22

showed a gradual decrease from upper stratum up to 11 cm and completely absent in the lowest 11-15 cm in Post-monsoon season. Stratum 0-2 cm (1821.8/ m³) showed higher group diversity (6 no) and abundance followed by stratum 4-8 cm (583.69/ m³) and stratum 2-4 cm (508.09/ m³). Lower Stratum 11-15 cm showed no group diversity and density except for Polychaete which was present in smaller amount. Anthozoa and Nemertea were completely absent within the entire 15cm column during both seasons.

The biomass of Polychaete was observed to be the highest during Post-monsoon season in stratum 15 cm (0.454545g/ m³). Biomass of Oligochaete shows a decreasing trend from the upper stratum (0.02g/ m³) to lower (up to 15 cm (0.001g/ m³), across both the seasons.

Intertidal zonation

There was a high density of Polychaete, during Post-monsoon season in Zone C (1148.25/ m³). Zone C during Post-monsoon season showed a higher group diversity (9 no) compared to other zones across

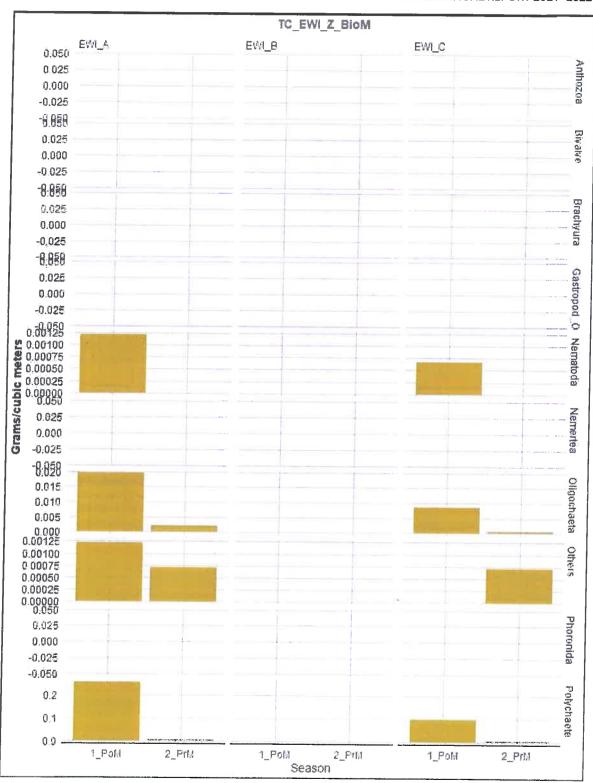


Fig. 26.4: Zonal variation of macrobenthic biomass g/m³ in the intertidal mudflats of EWI cluster of Thane creek during the study period 2021–22

(52.5 /m³). It was also observed that there was a gradual increase in the density of polychaetes from Zone A (447.5/ m³) to Zone C (627.5/ m³) in both the seasons. Phoronida and Bivalves were only found during Post-monsoon season in Zone C. Anthozoa, Brachyura and Nemertea were completely absent across all observed seasons. Nematoda showed a higher density (44.16 /m³) during Pre-monsoon season across all zones, whereas Oligochaete showed higher density (324.5/ m³) during Post-monsoon season across all zones. The highest polychaete biomass was observed in Zone C during Post Monsoon

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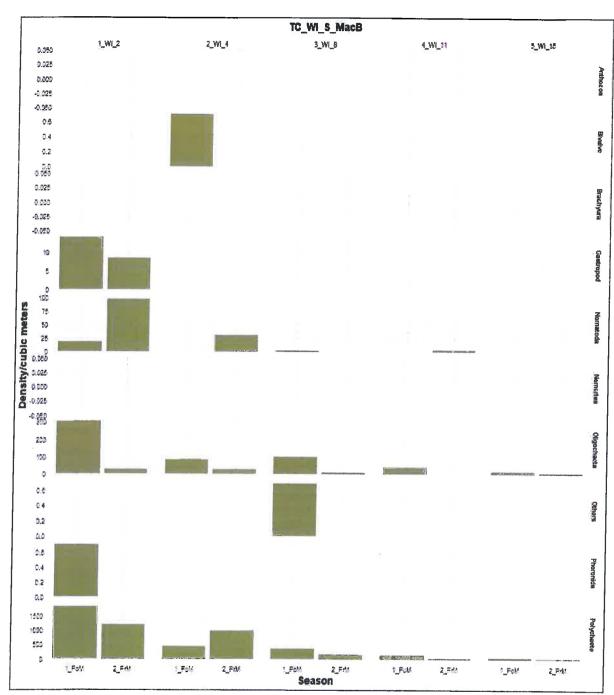


Fig. 27.1: Vertical stratification of macrobenthic density /m³ in the intertidal mudflats of WI cluster of Thane creek during the study period 2021–22

season (4.76g/ m^3). The lowest polychaete biomass was observed during Pre-monsoon in the Zone A (0.026g/ m^3). The biomass of Nematoda was almost same during both the seasons in Zone B and Zone C.

W II (Fig.28.1-28.4)

Polychaete was the most dominating group along all the clusters and only faunal group recorded in all seasons. Macrobenthic density and biomass have shown a significant decrease from Post-monsoon season (5272.5/m³, avg. 14.78g/m³) to Pre-monsoon season (2496/m³, 0.782 g/m³). Along the clusters, invertebrate phyla were recorded.

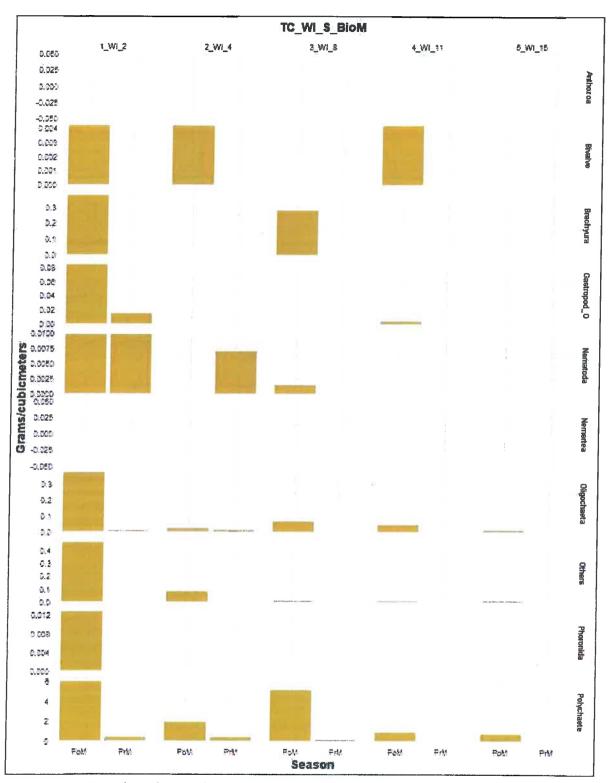


Fig. 27.2: Vertical stratification of macrobenthic biomass g/m³ in the intertidal mudflats of WI cluster of Thane creek during the study period 2021–22

Vertical stratification

The maximum density was observed for polychaetes during Post-monsoon season in upper stratum 2 cm (4592.7/ m³), followed by Oligochaete (880.20/ m³) during Post-monsoon season of upper stratum 2 cm. A decreasing trend was observed stratum wise, from upper 0-2 cm to lowered areas of 11-15 cm Brachyura was only found in Post-monsoon season of stratum 2 cm. Highest group diversity was found in upper stratum 0-2 cm during Post-monsoon season (8 no). Anthozoa was only present during Post-

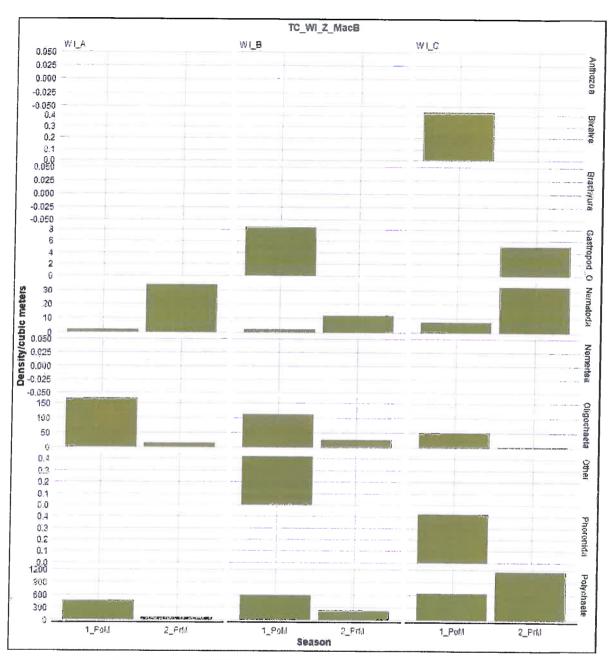


Fig. 27.3: Zonal variation of macrobenthic density /m³ in the intertidal mudflats of WI cluster of Thane creek during 2021–22

monsoon season from stratum 2 cm to 8 cm and was completely absent in 8cm -15 cm. Polychaete was present in all the stratum followed by Phoronida, Gastrpoda and Bivalves.

Polychaete contributes the highest to overall biomass (41.72g/ m³) followed by gastropods (27.7g/ m³), whereas, Nematoda (0.003g/ m³) contributes least to the overall biomass followed by oligochaetes. Upper stratum 0-2cm shows the highest biomass than that of the other stratums followed by upper stratum 2-4 cm. It has been observed that Post-monsoon shows significantly higher biomass (72.28g/ m³) than Pre-monsoon across all the stratums (3.91g/ m³).

Intertidal zonation

In the present study, it was observed that highest density of polychaetes was found during Post-monsoon season in Zone B (1680.31/ m³). The lowest density was present in Zone C of Pre-monsoon

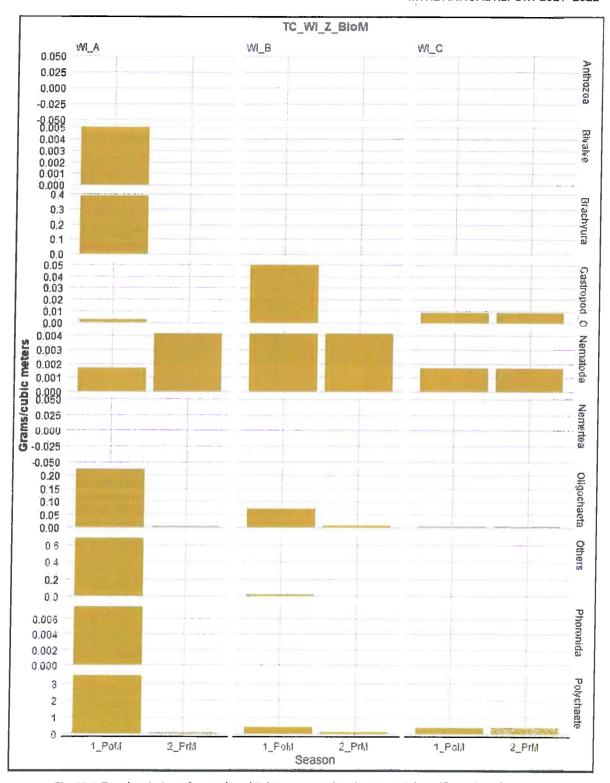


Fig. 27.4: Zonal variation of macrobenthic biomass g/m³ in the intertidal mudflats of WI cluster of Thane creek during the study period 2021–22

season (679/ m³). Brachyura was only observed during Post-monsoon season in Zone B. Anthozoa was found to be only present during Post-monsoon season across all the zones. Nemertea was only present during Post-monsoon season in Zone C. Density of Anthozoa showed a decreasing trend from Zone A (1.25/ m³) to Zone C (0.31/ m³). Phoronida was absent during Pre-monsoon season of Zone A and Zone B, however it showed a slight increase in density during Pre-monsoon season of Zone C (1/ m³). Gastropod was not found in Pre-monsoon season of Zone B. Overall, Zone B had maximum faunal diversity during

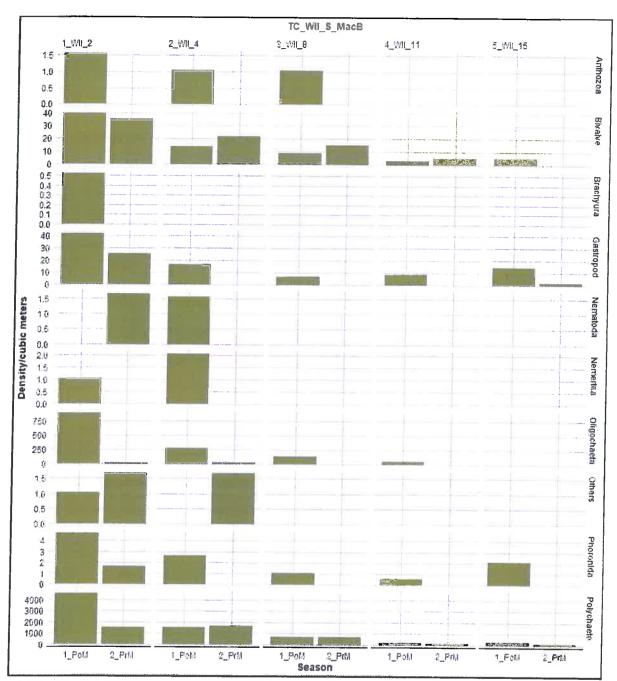


Fig. 28.1: Vertical stratification of macrobenthic density/m³ in the intertidal mudflats of WII cluster of Thane creek during the study period 2021–22

both the seasons. Polychaete has the maximum contribution to overall macrobenthic density during the entire sampling period $(6749/ \text{ m}^3)$.

The highest biomass was observed to be of Gastropoda during Post-monsoon season of Zone A (14.33/ m³), followed by Polychaete during Post-monsoon season of Zone B (9.28g/ m³), while the lowest biomass was of Phoronida during Post-monsoon season of Zone B (0.0025g/ m³) followed by Anthozoa during Post-monsoon season of Zone C (0.0025g/ m³).

W III (Fig.29.1-29.4)

Polychaete was the most dominating group along all the clusters and only faunal group recorded in all seasons. There was a substantial decline in macrobenthic density and biomass from Post-monsoon

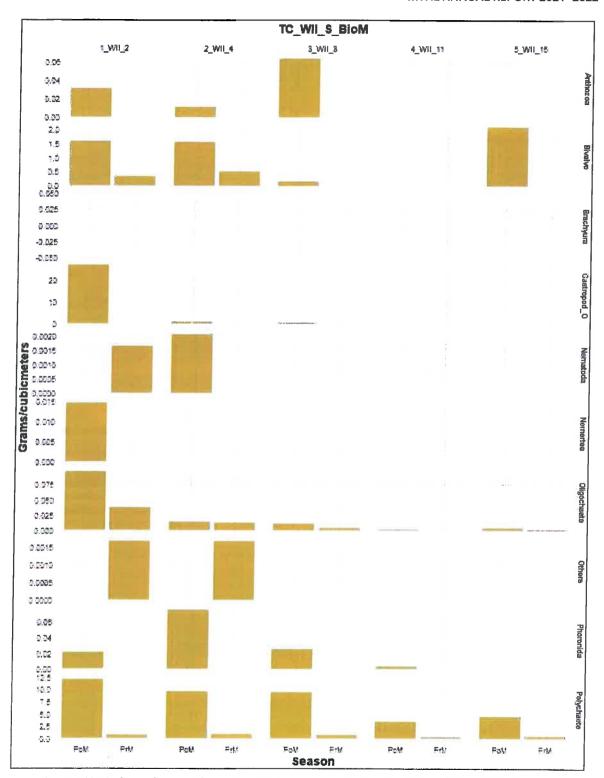


Fig. 28.2: Vertical stratification of macrobenthic biomass g/m³ in the intertidal mudflats of WII cluster of Thane creek during the study period 2021–22

season (11894.69/m³, avg. 127.98g/m³) to Pre-monsoon season (3142.8/m³, 2.184g/m³). Along the cluster, 5 invertebrate phyla were recorded.

Vertical stratification

Uppermost Stratum from 0-2 cm shows the highest abundance (9855.7/ m³) as well as the highest group diversity amongst all the strata. Polychaete shows a declining trend from upper most stratum

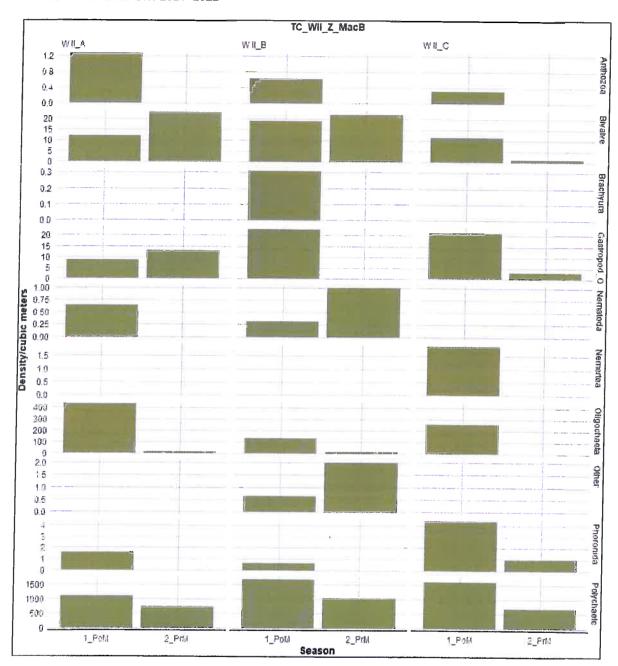


Fig. 28.3: Zonal variation of macrobenthic density /m³ in the intertidal mudflats of WII cluster of Thane creek during 2021–22

0-2 cm to lowermost stratum 11-15 cm in both the seasons. Nemertea shows a sudden spike in abundance during Pre-monsoon season in lowermost sediment up to 15 cm. Nematoda was completely absent in stratum 4 cm and 8 cm. Anthozoa was present across all the stratums and all the seasons except stratum 11-15 cm of Pre-monsoon season. Apart from Nematoda, other groups such as Anthozoa, Brachyura, Bivalve, Gastropoda, Nemertea, Oligochaete, Polychaete and Phoronida were present across all the stratums. Polychaete shows the maximum biomass in stratum uppermost 0-2 cm (50.33g/ m³) during Post monsoon season. The maximum biomass was contributed by Bivalves (258.8g/ m³) followed by Gastropods (170.1g/ m³) and Polychaetes (136.4g/ m³) respectively. The least biomass was observed in Nematoda (0.003g/ m³) followed by oligochaetes (0.0362g/ m³). Stratum 4-8 cm has maximum biomass in Post-monsoon season (175.10g/ m³). The maximum biomass concentration was seen in Post-monsoon season across all the stratum.

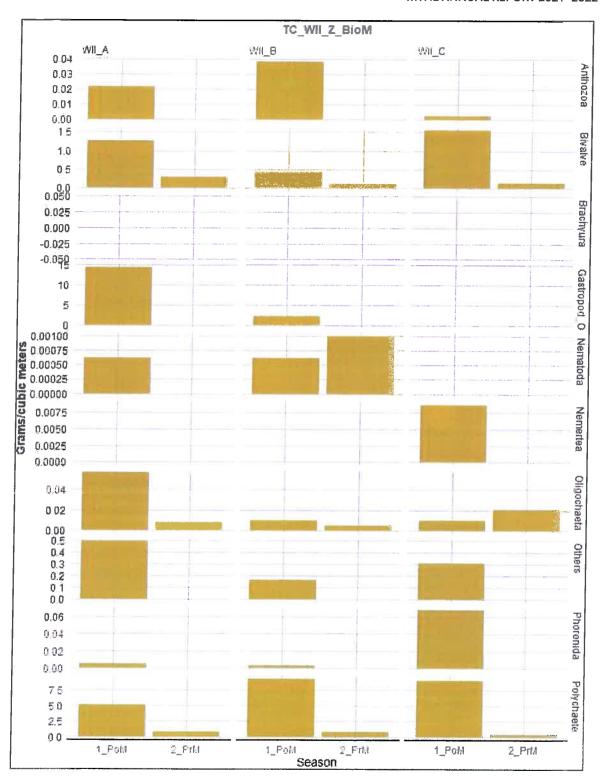


Fig. 28.4: Zonal variation of macrobenthic biomass g/m³ in the intertidal mudflats of WII cluster of Thane creek during the study period 2021–22

Intertidal zonation

The highest density was observed to be in Polychaetes during Post-monsoon season in Zone A (4241.2/ m³). Bivalve was found to be in high density during Post-monsoon season in Zone-B (280.93/ m³). Oligochaete showed a gradual decrease in density from Zone-A to Zone C across both the seasons. Nematoda was only found in the Post-monsoon season of Zone A and Zone B. Nemertea was completely absent in Zone B during both the seasons. Post-monsoon season has highest density of Polychaetes

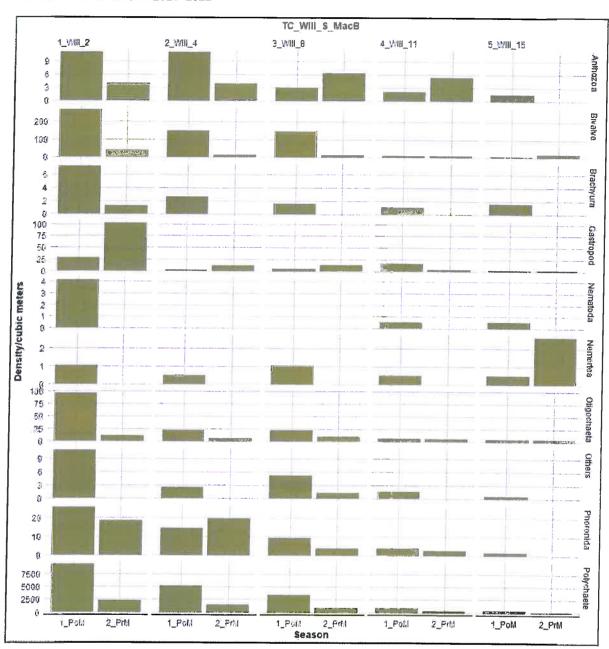


Fig. 29.1: Vertical stratification of macrobenthic density/m³ in the intertidal mudflats of WIII cluster of Thane creek during the study period 2021–22

(113552.18/ m³) than Pre-monsoon season in all Zones (3268.29/ m³). Phoronida showed a sudden increase in density in the Pre-monsoon season of Zone C (21.21/ m³). Maximum contribution to the overall biomass, is by Bivalves (155.3g/ m³) followed by Gastropoda (102.04g/ m³) and Polychaetes (81.82g/ m³) respectively. Decreasing trend in Biomass of Bivalves was observed across all the Zones in Post-Monsoon season. Biomass of Polychaetes during Post-monsoon (78.20g/ m³) season was significantly higher than Biomass during Pre-monsoon season (3.62g/ m³).

SHAS W IV (Fig.30.1-30.4)

In terms of Density and Biomass, Polychaete (17950.7/ m³, 58.9g/ m³) was the most dominating group along the cluster and was recorded in all seasons. The density and biomass for the macrobenthic community had significantly decreased from Post-monsoon season (14306.25/m³, 29.92g/m³) to Premonsoon season (3890.05/m³, 4.56g/m³). Along the clusters, 5 invertebrate phyla were recorded.

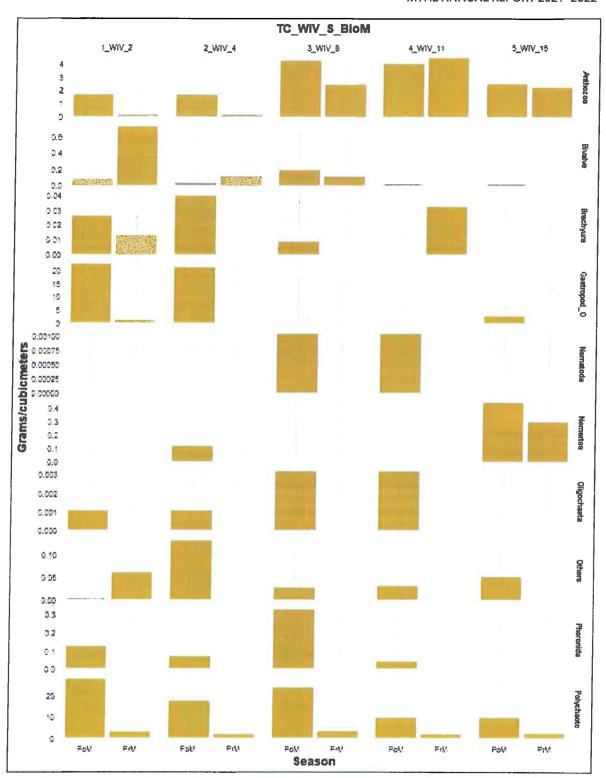


Fig. 30.2: Vertical stratification of macrobenthic biomass g/m³ in the intertidal mudflats of WIV cluster of Thane creek during the study period 2021–22

Brachyura (0.006g/ m³). Shrimp exhibits the lowest contribution towards biomass (0.000067g/ m³), followed by Nematoda (0.00026/ m³).

Nhava (Fig.32.1-32.2)

According to the findings of the current study, it was observed that Polychaete shows the most abundance across all the zones during both the seasons. (251.6/ m³). Unlike, the rest of the results, Pre-

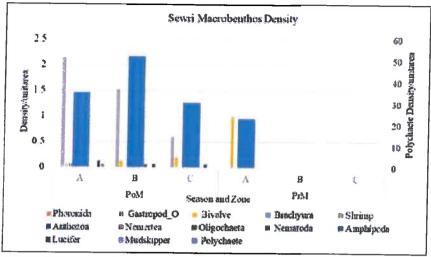


Fig. 31.1: Seasonal variation of macrobenthic density /m³ of Sewri during the study period 2021–22

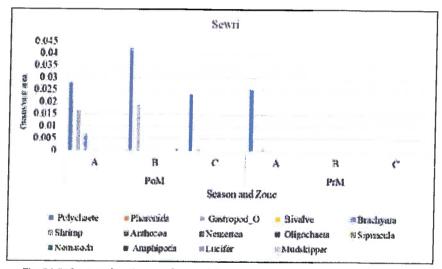


Fig. 31.2: Seasonal variation of macrobenthic biomass g/m³ of Sewri during the study period 2021–22

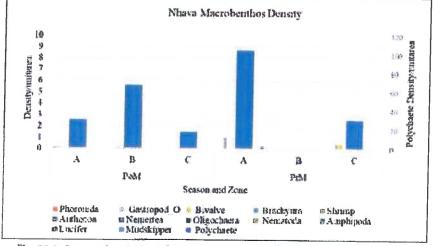


Fig. 32.1: Seasonal variation of macrobenthic density/m³ of Nhava during the study period- 2021–22



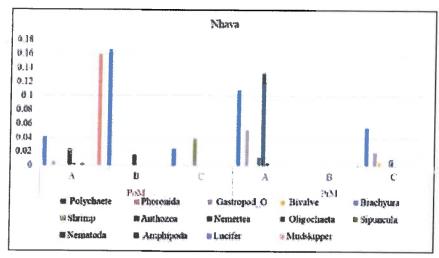


Fig. 32.2: Seasonal variation of macrobenthic biomass g/m³ of Nhava during the study period 2021–22

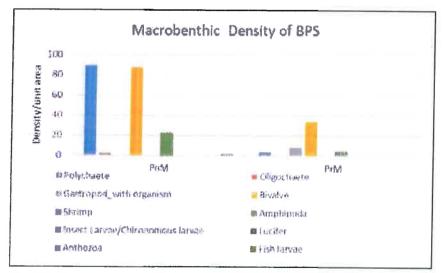


Fig. 33.1: Seasonal variation of macrobenthic density/m³ in BPS wetland during the study period-2021–22

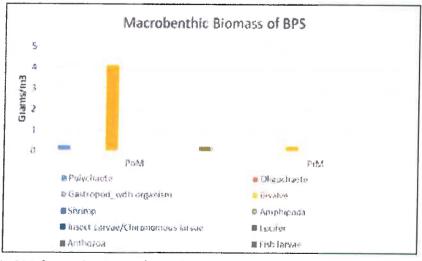


Fig. 33.2: Seasonal variation of macrobenthic biomass g/m³ in BPS wetland during the study period-2021–22



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monsoon season shows more Polychaete density in Zone A. (104.8/ m³), However, no Polychaetes or any other groups were observed in Zone-B. Zone-C showed a slight increase in the density of Polychaetes during Pre-monsoon season (30.8/ m³), followed by Anthozoa (0.8/ m³), Gastropoda (0.4/ m³) and Bivalves (0.4/ m³). Lucifer was only present in the Zone-A of Pre-monsoon season. Polychaetes dominate the Post-monsoon season across all the zones (116/ m³), however it shows an increase in density in Zone-B (67.6/ m³) and then decreases rapidly in Zone-C (17.6/ m³). Post-monsoon shows higher group diversity (8 No) than that of Pre-monsoon season (7 No).

Polychaetes contribute highest towards the overall biomass (0.390g/ m^3), followed by Anthozoa (0.17g/ m^3), Mudskipper (0.158g/ m^3) Gastropoda (0.07g/ m^3) and Shrimp (0.05g/ m^3). Phoronida exhibits the lowest contribution towards the total biomass (0.0001g/ m^3) followed by Lucifer (0.0003g/ m^3).

Wetlands

Among all studied wetlands, BPS exhibited maximum density (203.17/m³) during the Post-monsoon season whereas NRI exhibited the highest values for density (63.83/m³) during the Pre-monsoon season.

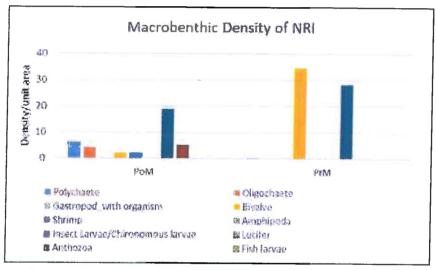


Fig. 34.1: Seasonal variation of macrobenthic density/m³ in NRI wetland during the study period 2021–22

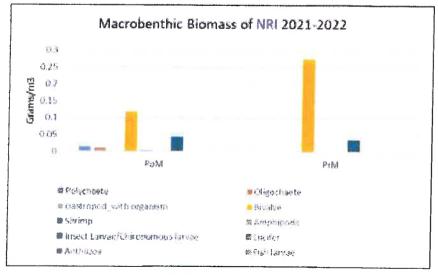


Fig. 34.2: Seasonal variation of macrobenthic blomass g/m³ in NRI wetland during the study period-2021–22



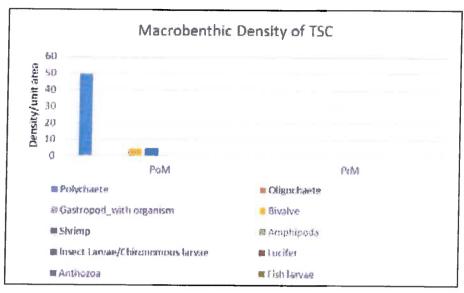


Fig. 35.1: Seasonal variation of macrobenthic density /m³ TSC wetland during the study period- 2021–22

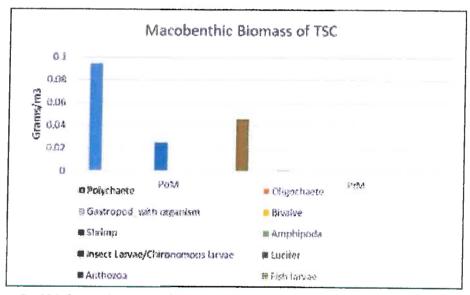


Fig. 35.2: Seasonal variation of macrobenthic biomass g /m³ in TSC wetland the study period- 2021–22

Biomass values were also counted highest at BPS (4.56 g/ m³), during the Post-monsoon season which is found to be contributed majorly by Bivalves. Least values for macrobenthos density were observed at NRI (38.96/ m³) during the Post-monsoon months whereas during the Pre-monsoon months TSC (0.48/ m³) exhibited the least values.

Bhandup Pumping Station (BPS): (Fig.33.1-33.2)

With reference to the season, BPS had exhibited maximum density (203.17/ m³) and minimum biomass (4.56g/ m³) during the post-monsoon season, whereas minimum density (49.75/ m³) and maximum biomass (16.57g/ m³) during the pre-monsoon season. Polychaete (89.43/ m³, 0.25g/ m³) and Bivalve (88.04/m³, 4.10/ m³) contributed majorly to the macrobenthos assemblage. Gastropod (8.13/ m³) was observed only during the pre-monsoon season.

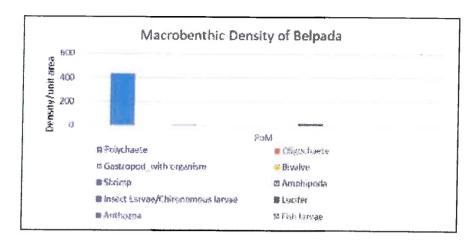


Fig. 36.1: Seasonal variation of macrobenthic density /m³ in Belpada wetlands the study Period - 2021–22

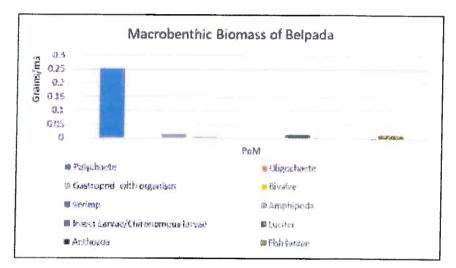


Fig. 36.2: Seasonal variation of microbenthic biomass g/m³ in Belpada wetland during the study period-2021–22

Non-Resident Indian (NRI): (Fig.34.1-34.2)

Pre-monsoon season exhibited increased values of density and biomass (68.83/ m³; 0.32g/ m³) when compared to their Post-monsoon values (38.96/m³; 0.19g/m³). Insect larvae, Oligochaete, Bivalve, Shrimp, Lucifer and Polycheate were recorded from NRI wetland during Post-monsoon season of which only two groups i.e. Insect larvae and Bivalve were observed during the Pre-monsoon season. The most dominating group was Insect larvae (19.00/ m³) during the post-monsoon season and Bivalve (34.92/ m³) during the pre-monsoon season.

Training Ship Chanakya (TSC): (Fig.35.1-35.2)

Macrobenthic density and biomass has shown a gradual decline with season from Post-monsoon (58.63/ m³; 0.17g/ m³). During the Post-monsoon season polycheate (49.79/ m³), shrimp (4.38/ m³) and bivalve (4.17/ m³) were the dominating the group while, during the pre-monsoon season polychaete (0.29/ m³) and amphipod (0.16/ m³) were contributing maximum to the overall density.

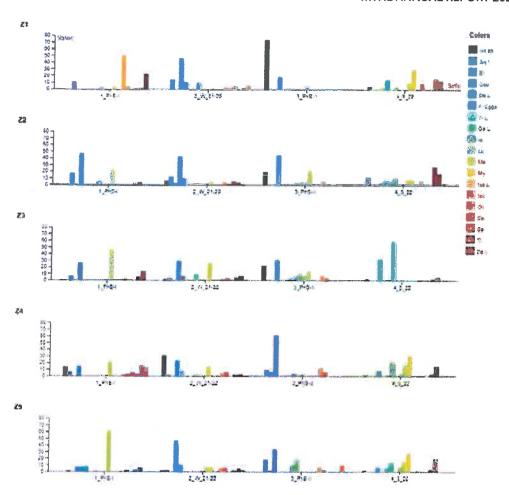


Fig. 37.1: Seasonal Variation in Zooplankton diversity along the five stations of Thane creek during the study period 2021–22

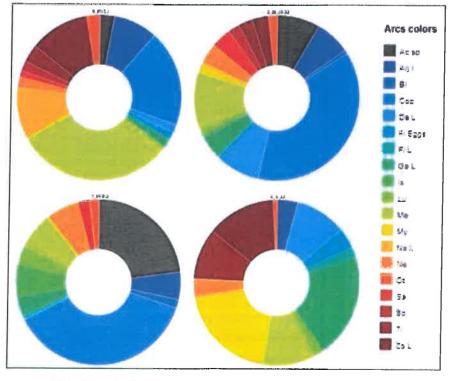


Fig. 37.2: Overall seasonal variation in Zooplankton diversity in Thane Creek during the study period 2021–2022

W



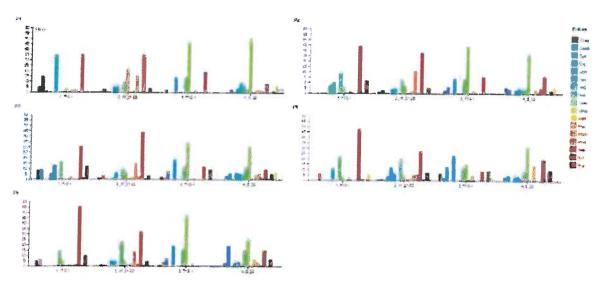


Fig. 38.1: Seasonal Variation in Phytoplankton diversity along the five stations of Thane creek during the study period 2021–22

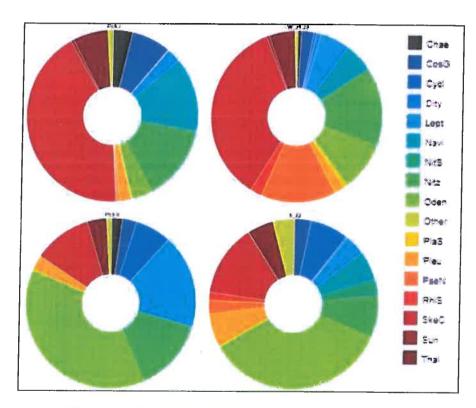


Fig. 38.1: Seasonal Variation in Phytoplankton diversity along the five stations of Thane creek during the study period 2021–22

Belpada: (Fig.36.1-36.2)

Sampling was done only during the post monsoon since the land was dry in the pre-monsoon season. It was observed that Belpada had the maximum faunal diversity as compared to other wetlands (7 No.). There was maximum density (453.34/ m³) observed as compared to the other wetlands. Polychaete (431.97/ m³) was the most dominant group contributing maximum to macrobenthic density followed by insect larvae (9.19/ m³) and Gastropod (8.79/ m³). Polychaete (0.25g/ m³) and Gastropod (0.02g/ m³) were found contributed majorly to the overall biomass values.

Zooplankton (Fig.37.1-37.2)

The Zooplankton standing stock as observed in the present study and the station-wise variations are summarized in the above given graphical representations.

A total of 18 groups of zooplankton were identified in the entire study period. Copepoda was the most dominating group followed by Medusae, *Acetus* sp, Gastropod larvae and Mysida.

Station Z1 shows that the Nauplius larva was the most abundant group in Phase shift I followed by Zoea larva; On the other hand, Nauplius larva was completely absent in Winter, Phase shift II and Summer season. Copepoda was completely absent in Phase shift I, but rather showed a sudden spike in winter season and Phase shift II and was again completely absent in the summer season. *Acetus* sp was abundantly present in Phase shift II and was otherwise absent in all other seasons.

Station Z2 exhibits that Copepoda was most abundant in Phase shift I, winter, Phase shift II and was completely absent in the Summer season. Medusae was second most abundant group in Phase Shift I.

Station Z3 shows that, *Acetus sp*, was completely absent in Phase shift I and showed a sudden increase in abundance in Winter and Phase shift II and was again completely absent in Summer. Aquatic insects were present in all seasons except phase shift two. Nauplius larva was completely absent in all seasons. Tintinida was present in all seasons except Phase shift two.

Station Z4, shows that *Acetus sp* was only present in Phase shift I and winter and was completely absent in Phase shift II and Summer. Nauplius larva was completely absent in all seasons. Copepoda was most abundant in Phase shift two. Copepoda showed a notable increase in abundance from Phase shift I to Phase shift II and was completely absent in Summer. Medusae was present in all seasons, except Phase shift two.

Station Z5 shows that Medusae are most abundant in Phase shift I and showed a sudden decrease in Winter. It was completely absent in Phase shift II and showed a gradual increase in Summer. Nauplius larva was completely absent in all seasons. *Acetus* sp was completely absent in all seasons except Winter. Copepoda was present in all seasons except summer.

In the entire study period, it was observed that Copepoda has the highest species abundance followed by Medusae and *Acetus* sp. Winter showed the most species diversity while Phase shift II showed the least. Nauplius larvae was only present in Phase shift I and completely absent in the following seasons. Medusae was the most dominant group in Phase shift I and it showed a gradual decrease over the following seasons. Lucifer was completely absent in Phase shift I and was present in the next three seasons.

Phytoplankton- (Fig.38.1-38.2)

The phytoplankton composition of Thane creek is summarized, and station wise variations are well elaborated as graphical representations. A total of 19 species of phytoplankton were identified in the entire study period.

During the present study, Station P1 showed that summer season had the most species diversity (14 species) in which *Skeletonema costatum* dominates the first two seasons i.e. Phase Shift-I winter season, followed by *Odentella sp*, which dominates Phase shift II and summer seasons. Phase shift II has the least species diversity. *Coscinodiscus sp*. was present during Phase shift II among all the seasons studied.

For Station P2, maximum diversity was observed during the Summer season with 14 species and the least diversity was observed in Phase Shift-two with only 6 species. *Skeletonema costatum* is the most dominant species during Phase shift I and winter season and *Odentella sp.* is the most abundant species

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during Phase shift II and summer seasons. *Chaetoceros sp.* was present only during the winter season. *Coscinodiscus granii* was absent in Phase shift I, appeared during winter and gradually increases until summer. *Pseudo-Nitzschia sp.* was absent in Phase shift I but this species was the second most abundant during the winter season. However, it was not found in Phase shift II and shows a negligible abundance in summer season. *Navicula sp.* was completely absent in Phase Shift II.

Studies of Station P3 show that winter season had the most species diversity whereas the least species diversity was observed in phase shift two. *Skeletonema costatum* shows the most abundance in Phase shift I and winter season, with a slight increase in abundance in winter. While moving from winter season to summer season, *Skeletonema costatum* shows a steep decrease in their abundance. *Odentella sp.* was absent in the Phase shift I and showed an increase in its abundance in winter season and it became the most abundant species in the Phase shift II and summer seasons. *Rhizosolenia setigera* was only present in the winter and summer seasons and winter showed the most abundance.

At Station P4, Winter season showed the high species diversity (15no.) while Phase shift I showed the least (8no.). Skeletonema costatum was the most abundant species in the Phase shift I and winter season, however it showed a gradual decrease in the phase shift two and then slight increase in the summer season. Nitzschia sp was the second most abundant species in the Phase shift I and winter season, and then showed a gradual decrease in the Phase shift II and summer season. Chaetoceros sp was not found in the Phase shift I and summer season, while it showed a minimum abundance in the winter season and Phase Shift II. Thalassiosira sp. was absent in Phase shift I and present in other seasons with high abundance.

Station P5, the present study shows most species diversity during the winter (14 no) and the least in Phase shift II (8no.). *Skeletonema costatum* dominates the first two seasons, (Phase shift I and winter seasons), disappeared in Phase shift II and reappeared in the summer season with a moderate abundance. *Odentella sp* was the most abundant species in Phase Shift II and summer season. *Nitzschia* sp was the second most abundant species in Phase shift I and the winter season and then it showed a gradual decrease from winter season to summer season. *Cyclotella* sp. was absent in Phase Shift I and it appeared in winter to summer season with a gradual increase in their abundance.

In the entire study period it was observed that *Skeletonema costatum* has the highest contribution in the assemblage followed by *Odentella* sp.

Phase shift II showed the least species diversity. Skeletonema costatum was found to be highest in the first two seasons while it showed a significant decrease for its presence in the next two seasons, whereas Odentella sp. had lowest abundance in the first two seasons and it showed drastic increase in abundance in the following seasons. Nitzschia sigma was completely absent in the first three seasons, however it showed a slight increase in abundance in Summer. Navicula was found to be completely absent in Phase shift two. Leptocylendrous sp. Showed a sudden spike in abundance in Phase shift II and again it decreased in the following seasons.



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Appendix 1, Photo Plate

PLATE 1: Sites / Habitats



Belpada Wetland



BPS Wetland

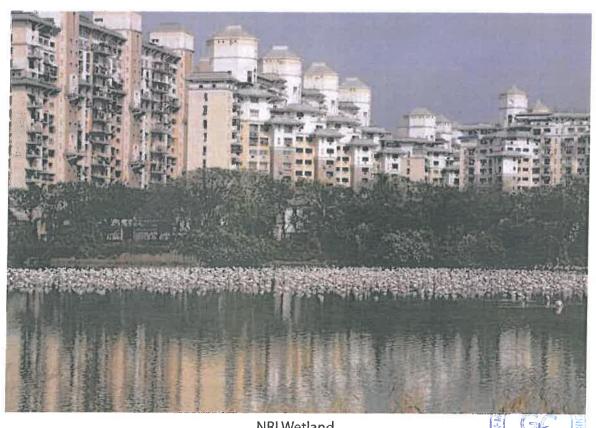
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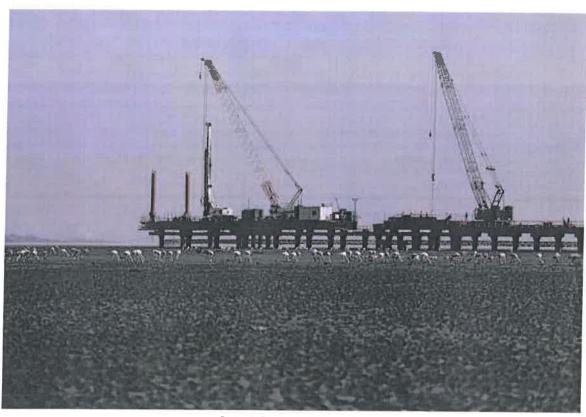
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Mankhurd Saltpans



NRI Wetland



Sewri Construction site



TSC wetland

PLATE 2: Congregation of migratory birds at study sites



Congregation of Black-tailed Godwit



Congregation of Lesser Sandplover, Little Stints, Curlew Sandpiper and Kentish Plovers at Mankhurd Saltpans



Flock of gulls



Flock of Lesser Whistling ducks at Thane Creek



foraging of Waders, Greater Flamingos and Lessere Flamingos on exposed intertidal Mudflat of Thane Creek



Lesser Flamingos feeding at Thane Creek

PLATE 3: Migratory and resident birds at study sites



Eurasian curlew at TSC wetland



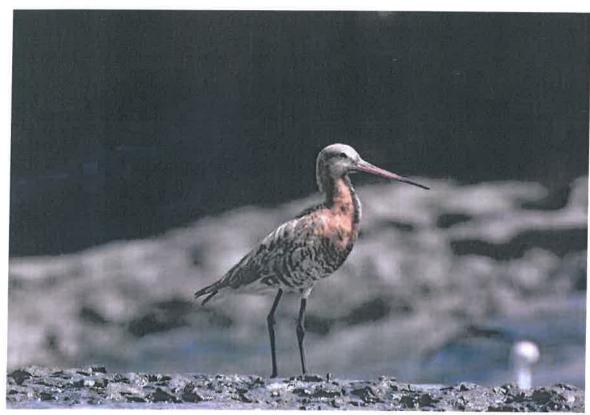
Ruddy turnstone at Vashi mudflats of Thane Creek



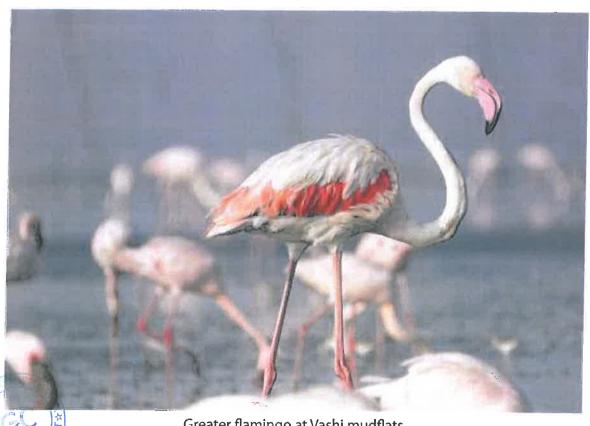
Long-toed stint with Temminck_s stint(1)



White stork in Thane Creek



Black-tailed godwit near Ghansoli mudflats



Greater flamingo at Vashi mudflats







Painted stork at Vashi mudflat of Thane Creek



Western Reef Egret at Nhava-Sheva

PLATE 4: Bird ringing and recoveries



Tagged Lesser sandplover feeding at Vashi mudflat



Tagged Curlew sandpiper

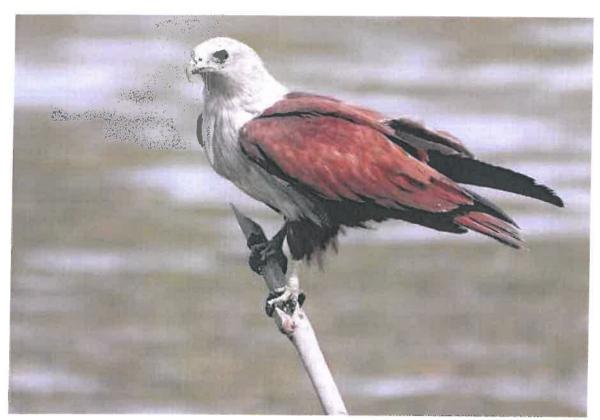


Setting traps for waders mankhurd saltpan



Bird banding session at BPS

PLATE 5: Some raptors observed in the study area



Brahminy kite at Nhava-Sheva



Western Marsh Harrier at BPS



Osprey in flight in Thane Creek

Appendix 2- Checklist of birds recorded from Oct 2021-May 2022

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COMMON NAME	SCIENTIFIC NAME	IUCN STATUS	STATUS	BPS	BEL	NRI	TSC	Kha	Man	7	SEW	NS
Booted Eagle	Hieraaetus pennatus) J	×								+	
Oriental honey buzzard	Pernis ptilorhynchus	23	~				+					
Pandionidae												
Osprey	Pandion haliaetus	27	Z				+			+		
Rallidae												
White-breasted Waterhen	Amaurornis phoenicurus	ΟJ	æ				+	+		+		
Common Coot	Fulica atra	CC	æ	+		+	+	+		+		
Recurvirostridae												
Black-winged Stilt	Himantopus himantopus	C	æ	+	+	+	+	+	+	+		
Pied Avocet	Recurvirostra avosetta	ľ	×	+		+	+			+		
Charadriidae				-								
Red-wattled Lapwing	Vanellus indicus	J I	R	+	+	+	+	+	+	+		
Pacific Golden Plover	Pluvialis fulva	CC	Σ	+	+		+	+		+		
Grey Plover	Pluvialis squatarola	LC C	Z	+	+	+	+		+	+	+	
Little Ringed Plover	Charadrius dubius	υ	×	+	+				+			+
Kentish Plover	Charadrius alexandrinus	CC	Z	+	+				+	+		
Common ringed Plover	Charadrius hiaticula	C	×						+			
Greater Sand Plover	Charadrius leschenaultii)	Z	+								
Lesser Sand Plover	Charadrius mongolus	ΣŢ	×	+	+		+	+	+	+	+	+
Scolopacidae												
Ruff	Calidris pugnax	CC	×	+	+			+				
Common Snipe	Gallinago gallinago))	Σ	+	+	+	+	+				



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COMMON NAME	SCIENTIFIC NAME	IUCN STATUS	STATUS	BPS	E E	QN	167	71/2	:			
Black-tailed Godwit	Limosa limosa	¥	Σ	+	-		<u>-</u>	PU .	Man	2	SEW	S
Bar-tailed Godwit	Limosa lapponica	k	Σ	. 4	-		+	+		+	+	
Whimbrel	Numenius phaeopus	_	2	-			+			+		
Eurasian Curlew	Numenius arquata	2 5	W 4		+					1		
Common Redshank	Tringa totanus		2	+	+	+	+		+	+	+	+
Marsh Sandpiper	Tringa stagnatilis	2 -	≦ :	+	+	+	+	+	+	+	+	+
Common Greenshank		ונ	Z	+	+	+	+	+	+	+	+	
Common dicerioria	Iringa nebularia	Ŋ	¥	+	+	+	+	+	+	+	+	+
Green sandpiper	Tringa ochropus	Ŋ	×				+		+	+	1	.
Wood Sandpiper	Tringa glareola	Ŋ	×	+	+	+	+	1	. -	- -	-	-
Terek sandpiper	Xenus cinereus))	Σ	+		-	-	- -	+	+		
Common Sandpiper	Actitis hypoleucos			- -				+		+		
Ruddy Turnstone	Arenaria interpres	1 2		-	+	+	+	+	+	+	+	+
Red Knot	الماليات المالية	! ي	Ž.				+		+		+	
+ CAD	Canalis caliatas	Z	Σ						+	+		
Great Khot	Calidris tenuirostris	EN	Σ	+		+	+					T
Long toed Stint	Calidris subminuta	2	Σ			-	-	+		+		
Little Stint	Calidris minuta) J	2	-	-	-			+			
Temminck's Stint	Calidris temminckii	2	2	- -	-	F	+	+	+	+	+	+
Curlew Sandpiper	Calidris ferruginea	Į.	=	-	-				+			
Dunlin	Calidris alpina	9	2	- -	+		+	+	+	+	+	+
Broad-billed Sandpiper	Calidris falcinellus	UI UI	2	- -				\dagger	+	+		
Laridae				-			+	+	+	+		
Lesser Black Backed Gull	Larus fuscus									-	-	
Pallas's Gull	I anis ichtbractus	2 2	N.					+		+		
	במים וכוווואמבותי	יר	Σ	+				+		+		

Appendix 2- Checklist of birds recorded from Oct 2021-May 2022

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				7707 (2011)	7 - 0 - 0							
COMMON NAME	SCIENTIFIC NAME	IUCN STATUS	STATUS	BPS	BEL	NRI	TSC	Kha	Man	۲	CEW	Į,
Brown-headed Gull	Larus brunnicephalus	J.	Σ	+	4	-	-			2	JEAN	2
Black-headed Gull	Larus ridibundus	<u> </u>	2	. -	-	-	+	+		+	+	+
Slender-billed Gull		2		+		+	+	+		+	+	+
	raius genei	CC	Σ	+			+	+		+		
Common Gull-Billed Tern	Gelochelidon nilotica	rc	Σ	+	+	+	+	+		+	+	1
Caspian Tern	Hydroprogne caspia	ΓC	Σ	+		+	+	+		. -		-
Common Tern	Sterna hirundo	IC	Σ				-	-			+	
River tern	Sterna aurantia	2	Σ	+		1		-		-		
Little Tern	Sternula albifrons	y	2	· -		-		+		\dagger		
Saunders's Tern	Sternula saundersi))	2	-			1	+		+		
Whiskered Tern	Chlidonias hybrida						+		+	\dagger		
Alcodinidae		3	IAI	+	+	+	+			+	+	+
White-breasted Kingfisher	Halcyon smyrnensis	27	~	+	+	+		-	-	-		
Common Kingfisher	Alcedo atthis	2	~	+	. -	. -	- -	- .	+	+		+
Black Capped Kingfisher	Halcyon pileata	N	~		-	+	+	+ -		+ -		
Jacanidae								F		+		
Phesant-tailed Jacana	Hydrophasianus chirurgus) J	8									
Rostratulidae										+		
Greater painted snine	Dottomti la bound de						İ					
מיניים למווירת מווילת	notratula bengnalensis	rc	œ						+			
Motacillidae							1			1		
Grey Wagtail	Motacilla cinerea	LC	Z						-	-		
									-			

R/W = Resident / Migratory, BPS = Bhandup pumping station, BEL = Belpada, NRI = Non-residential Indian Complex, TSC = Training Ship Chanakya,



CITY AND INDUSTRIAL DEVELOPMENT CORPORATION OF MAHARASHTRA LIMITED

REGD. OFFICE:

(CIN - U99999 MR 1970 SGC - 014574)

"NIRMAL", 2nd Floor, Nariman Point,

Mumbal - 400 021.

PHONE: 00-91-22-6650 0900 : 00-91-22-2202 2509 FAX

HEAD OFFICE:

CIDCO Bhavan, CBD Belaput,

Navi Mumbai - 400 614.

PHONE: 00-91-22-6791 8100

FAX : 00-91-22-6791 8166

Ref. No. NO.CIDCO/Hort/2019/191

Date: 25.11.2019

To, Shri. G.G.Ddeshpande, Executive Engineer (MMRDA), Mumbai Trans Harbour Link (MTHL), Bandra Kurla Complex, Bandra East, Mumbai - 400051.

> Sub: - Permission for removal of existing trees falling in the alignment of construction of Mumbai Trans Harbour Link (MTHL) Project (CH.18+187-CH.19+607KM and CH.20+087-CH.21+800KM) on Navi Mumbal side.

Ref:- MTHL/CIDCO/Tree Removal Permission/19/012/MTHL dt.14.05.2019

With reference to above it is to inform that your request for removal of 348 no of trees falling in the alignment of construction of Mumbai Trans Harbour Link (MTHL) Project (CH.18+187-CH.19+607KM and CH.20+087-CH.21+800KM) on Navi Mumbai side has been considered by the Tree Authority under section 8(3) of the Maharashtra (Urban Areas) Protection and Preservation of Trees Act, 1975 & rules called the Maharashtra (Urban Areas) Protection and Preservation of Tree rules - 2009 & amendment up to 2016 subject to the following conditions.:

1) The Tree Authority Committee of CIDCO has granted the permission to cut 266 no of existing trees and to transplant 82 no of existing trees. You should retain 504 no of existing trees. The details are as below;

Sr. No	Description	Tree no.
1	Trees to be cut	1, 3, 4, 5, 6, 7, 8, 9, 12, 13, 15, 16, 17, 18, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 59, 66, 67, 80, 90, 101, 102, 103, 104, 105, 118, 119, 120, 121, 123, 143, 144, 147, 148, 149, 150, 151, 153, 156, 157, 158, 159, 162, 165, 166, 173, 174, 175, 176, 177, 178, 179, 186, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 225, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 277, 278, 279, 289, 325, 327, 330, 336, 346, 350, 355, 356, 363, 367, 382, 384, 385, 386, 387, 389, 390, 391, 401, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436,

In case of any corruption related complaints, please visit: cidco.maharashtra.gov.in / CIDCO VIGILANCE MODULE NEW / Userlogin.aspx

2 Trees to be Transplant	437, 438, 439, 440, 441, 444, 445, 447, 449, 450, 451, 454, 455, 456, 454, 458, 459, 460, 461, 462, 463, 496, 497, 498, 499, 500, 501, 503, 504, 51570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 597, 599, 600, 600, 602, 603, 604, 624, 627, 628, 637, 639, 640, 641, 642, 643, 644, 658, 659, 661, 662, 663, 667, 678, 679, 680, 682, 683, 684, 688, 696, 698, 699, 700, 701, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 715, 730, 731, 744, 745, 754, 756, 758, 760, 761, 762, 773, 775, 776, 778, 779, 780, 783, 784, 785, 786, 787, 789, 790, 792, 793, 794, 795, 797, 824, 825, 826, 827, 831, 832. 2, 14, 19, 20, 21, 58, 65, 68, 79, 91, 122, 152, 154, 155, 160, 161, 163, 164, 274, 275, 276, 324, 326, 328, 329, 331, 332, 333, 334, 335, 347, 348,
0	349, 354, 357, 364, 365, 366, 383, 388, 413, 448, 452, 598, 638, 647, 660, 664, 665, 666, 668, 669, 670, 671, 672, 675, 676, 677, 681, 685, 686, 687, 689, 690, 691, 692, 693, 694, 695, 697, 702, 714, 732, 743, 755, 757, 759, 777, 781, 788, 791, 796.
Tres to be Retain	10, 11, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 51, 52, 53, 54, 55, 56, 57, 60, 61, 62, 63, 64, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 81, 82, 83, 84, 85, 86, 87, 88, 89, 92, 93, 94, 95, 96, 97, 98, 99, 100, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 124, 125, 126, 128, 129, 130, 131, 132, 133, 135, 136, 137, 138, 139, 140, 141, 142, 145, 146, 167, 168, 169, 170, 171, 172, 180, 181, 182, 183, 184, 185, 187, 188, 189, 190, 191, 192, 193, 194, 218, 219, 220, 221, 222, 223, 224, 226, 227, 228, 229, 230, 231, 232, 233, 234, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 280, 281, 282, 283, 284, 285, 286, 287, 288, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 337, 338, 339, 340, 341, 342, 343, 344, 345, 351, 352, 353, 358, 359, 360, 361, 362, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 392, 393, 394, 395, 396, 397, 398, 399, 400, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 442, 443, 446, 453, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 502, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 605, 606, 607, 608, 609, 610, 611, 612, 615, 616, 617, 618, 619, 620, 621, 622, 623, 625, 626, 629, 630, 631, 632, 633, 634, 635, 636, 645, 646, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 673, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 774, 782, 798, 799, 800, 801,

2) As per the provision under Section 8(3) (a) of the said Act, you are hereby directed that no tree shall be cut/transplanted until fifteen days (15) after the permission is given by the Tree Authority.



- 3) It is mandatory on your part to plant 2 no of trees against each tree to be cut. As per the provision of Maharashtra (Urban Areas) Protection and Preservation of Trees (amendment) Act, 2016 the new trees shall be plant within fifteen days from the date of tree (s) is felled.
- 4) You have to plant 532 no of new trees (against cutting of 266 no of trees) & to transplant 82 no of existing trees at Survey No. 347, Village- Gavhan, Tal-Uran, Dist-Raigad. While planting trees, suitable distance should be kept from the boundary of the plots, so that the newly planted trees will not obstruct the construction of compound wall or any other civil structure in future.

 You shall maintain & protect the new tree plantation (532 no of trees) and transplanted trees (82 no of existing trees) for the period of three years & care should be taken so that tree grows properly & give a report to the tree officer about the condition of these trees once in six months for a period of three years as per the form G under section 9(2),
- 5) Your attention is kindly drawn to the provisions under section of 21 of the Maharashtra (Urban Areas) Protection & Preservation of Trees Act. 1975, as modified on 9th June, 2004.
 - 21 (1) Whoever fells any tree or causes any tree to be felled in contraventions of the provision of the Act or without reasonable excuse fails to comply with any order issued or condition imposed by the Tree Officer or the Tree Authority or voluntarily obstructs and member of the Tree Authority or the Tree Officer or any officers and Servants subordinate to him in the discharge of their functions under this Act. Shall, on convection, be punished with the fine of not less than one thousand rupees which may extend up to five thousand rupees for every offence and also with imprisonment for a term of not less than one week, which may extent up to one year.
 - (3) The felling or causing of felling of each tree without the Permission of The Tree Authority shall constitute a separate offence.
- 6) At the time of transplanting or cutting of trees, if any social problem occurs, you will have to resolve the same at your end.
- You shall submit the report for Cutting and transplantation of the trees carried out to Tree officer, CIDCO.
- 8) Tree authority Committee, CIDCO has granted the permission for removal of 348 no of trees (To Cut 266 nos and to transplant 82 nos). At the time of actual execution of work, applicant Executive Engineer, MTHL Project, MMRDA should take care to remove only those trees which are falling in alignment of construction activities.
- The said permission is valid only up to 90 days from the receipt thereof.
 Thanking You.

Tree Officer

(Tree Authority Committee, CIDCO)



You are further requested to execute the work of cutting / Transplanting of trees phase wise will will not required.

The remaining 226 (Two Hundred Twenty Six) trees (01, 02, 03, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 26, 27, 28, 29, 30, 31, 32, 403, 404, 405, 406, 407, 408, 409, 410, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 433, 434, 436, 437, 438, 439, 440, 441, 442, 444, 445, 446, 447, 449, 452, 453, 454, 455, 456, 457, 460, 464, 468, 473, 474, 475, 476, 479, 480, 483, 488, 489, 490, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 613, 616, 617, 637, 638, 638A, 638B, 639 to 662, 849 to 910, 1099; 1101, 1101A, 1100, 1102, 1103, 1104 to 1128, 1129, 1130, 1131) shall be **Retained** as it is, as per plan attached.

Whoever fells any tree or causes any tree to be felled in contraventions of the provisions of the Act or without reasonable excuse fails to comply with any order issued or condition imposed by the Tree Officer or the Tree Authority or voluntarily obstructs any member of the Tree Authority or the Tree Officer or any Officers and Servants subordinate to him in the discharge of their functions under this Act, shall, on convection, be punished with the fine of not less than one thousand rupees, which may extend up to five thousand rupees for every offense and also with imprisonment for a term of not less than one week. Which may extent up to one year. The felling or causing of children each tree without the permission of the Tree Authority shall constitute a separate offense.

As per provision under section 19 (b) you are directed to plant trees in open spaces as well as R.G. Area as per the norms of Tree Authority before getting occupation /completion certificate of the constructed propose work.

As per direction of the Tree Authority, you are hereby directed to submit the photographs taken while transplanting of trees and the C.D. of the transplantation of the trees, you are also requested to plant indigenous variety of trees having circumference of 6" above and height of 10'-12' above. The list of indigenous variety of trees is enclosed herewith for your ready reference and compliance.

Thanking you.

Yours faithfully.

Supdt.of Gardens & Tree Officer





MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY मुंबई महानगर प्रदेश विकास प्राधिकरण

ED/MTHL/CRZ Clearance/publish/16

Engineering Division Dt. 29th Jan 2016



To. Additional Chief Secretary (Environment) **Environment Department**, Govt. of Maharashtra, Mantralaya, Mumbai - 400 032

Sub: Mumbai Trans Harbour Link (MTHL) project

CRZ Clearance reg.

Ref: Ministry of Environment, Forest and Climate Change, Govt of India letter No. F.No.11-65/2012-IA.III Dt. 25th January 2016

Sir.

Ministry of Environment, Forest and Climate Change, vide letter referred above, has accorded CRZ clearance to the Mumbai Trans Harbour Link (MTHL) project. The copy of the clearance is submitted herewith for your information for ready reference.

Thanking you,

Encl: Copy of CRZ clearance letter

Copy submitted to

The Member Secretary, Maharashtra Pollution Control Board, Sion (E), Mumbai with a request to publish the CRZ Clearance on your website.

Copy submitted for information to,

- 1. The Secretary (Forest), Revenue & Forest Dept, Govt. of Maharashtra, Mantralaya, Mumbai Encl: Copy of CRZ clearance letter
- The Chairman, Maharashtra Coastal Zone Management Authority, Mumbai Encl: Copy of CRZ clearance letter
- 3. The Director, Bombay Natural History Society, Hornbill house, Dr. Salim Ali Chowk, Shaheed Bhagat Singh Road, Mumbai - 400 001 Encl: Copy of CRZ clearance letter
 - 4. The Chief Executive Officer, Raigad Zilla Parishad, Alibaug Encl: Copy of CRZ clearance letter
- 5. The Assistant Commissioner (F-South ward), MCGM, 'F/S' ward Office, Jagganath Bhatankar Marg & Dr. B. A. Road Junction, Parel Naka, Mumbai-400 012 Encl: Copy of CRZ clearance letter
 - 6. The Block Development Officer, Uran Taluka Encl: Copy of CRZ clearance letter
 - 7. Sarpanch, Jasai Village, Tal: Uran, District Raigad
 - 8. Sarpanch, Gavan Village, Tal: Panvel, District Raigad

9. Sarpanch, Chirle Village, Tal: Uran, District Raigad
10. The Block Development officer, Panvel-Tatuko: End: Copy of CR2 clearance letter.
Bandra - Kurla Complex, Bandra (East), Mumbai - 400 051.

EPABX: 2659 0001 - 04 / 2659 4000 • FAX: 2659 1264 • WEB SITE: https://mmrda.maharashtra.gov.in

Yours faithfully.

Engineer-in-Chief



MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY मुंबई महानगर प्रदेश विकास प्राधिकरण

No. ED/MTHL/CRZ Clearance/publish/16

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To. Additional Chief Secretary (Environment) **Environment Department,** Govt. of Maharashtra. Mantralaya, Mumbai - 400 032

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पं. चित्रं cl: Copy of CRZ clearance letter

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Engineer-in-Chief

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The Member Secretary, Maharashtra Pollution Control Board, Sion (E), Mumbai with a request to publish the CRZ Clearance on your website.

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The Chairman, Maharashtra Coastal Zone Management Authority, Mumbai Encl: Copy of CRZ clearance letter

3. The Director, Bombay Natural History Society, Hornbill house, Dr. Salim Ali Chowk, Shaheed Bhagat Singh Road, Mumbai - 400 001

Encl: Copy of CRZ clearance letter

The Chief Executive Officer, Raigad Zilla Parishad, Alibaug

Encl: Copy of CRZ clearance letter

The Assistant Commissioner (F-South ward), MCGM, 'F/S' ward Office, Jagganath Bhatankar Marg & Dr. B. A. Road Junction, Parel Naka, Mumbai-400 012

Encl: Copy of CRZ clearance letter

The Block Development Officer, Uran - Taluka Encl: Copy of CRZ clearance letter

Sarpanch, Jasai Village, Tal: Uran, District Raigad

aSarpanch, Gavan Village, Tal: Panvel, District Raigad

Sarpanch, Chirle Village, Tal: Uran, District Raigad

The Block Development officer, Pancel-Taluks: End: Copy of CR2 (
Bandra - Kurla Complex, Bandra (East), Mumbai - 400 051. 1: copy of CR2 clearance letter

EPABX: 2659 0001 - 04 / 2659 4000 • FAX: 2659 1264 • WEB SITE: https://mmrda.manarashtra.gov.in

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MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY मुंबई महानगर प्रदेश विकास प्राधिकरण

No.ED/MTHL/CRZ/2016

Engineering Division Date: 16/02/2016

To, Chief Conservator of Forests, Near Micro Wave Tower, Bara Banglow Area, Thane (East) – 400 603.

Sub.: Mumbai Trans Harbour Link Road.

- CRZ Clearance for Mumbai Trans Harbour Sea Link (MTHL) by M/s. Mumbai Metropolitan Region Development Authority Reg.

Ref.: Letter obtained from Ministry of Environment & Forests (IA.III Division)

No. F.No.11-65/2012-IA-III dated 25/01/2016.

Sir.

Ministry of Environment & Forests (IA.III Division) has accorded Costal Regulation Zone Clearance (CRZ) for Mumbai Trans Harbour Link Project vide above referred letter.

As required under point no. 8 of General Conditions, the project proponent – Mumbai Metropolitan Region Development Authority has published CRZ clearance in two local Newspapers i.e. India Express – English language and Loksatta – Marathi language on 29/01/2016. The copies of same are enclosed herewith for your information and record please. A copy of CRZ clearance is also enclosed herewith for your ready reference.

Thanking you.

Yours faithfully,

Encl.: 1. Copy of Notice published in Newspapers.

भारताय डाक

2. Copy of CRZ clearance from MoEF.

(P.D. Mamdapure) Engineer-In-Chief

SF AUDIT BHAVAN PO (400051)

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.ज्ञार अल्लेन उपलब्ध अहि. णियक पिरक्षिण्या के में में में के जिस्सेम्परेक तगर है। लिक म्हालमॉस्ट ामांल किम किकी क्रिस्ट क्रकुरियोंने री ्रो वरून ३७/०८/३०१३ पंसून डाकनलोड मनता वेतील..

क्रमही क्रियांच्या स्पूर्व काशक क्ष्मील गीम्ह स्पूर्य ह र्जा के अस क्या नर्जा है। जिस्से कि अस्ति क्या अस्ति अस्ति अस्ति क्या अस्ति है। जिस्स ग्रिपारः 'कि' तमानम्ही ,'मृ' तमानम्ही म्वाह्मक मामत छाष्ट्रीम् निंगत्रकानिनिन्द्रं ,भावशीम् इत्ह प्रक्रिक तसीम् (किलीए क्रीएडर ाणीस्ट रिव क्षकमम कक्रीएर्जी इस्रो ग्गाह. डि. फुरुड fr रुलंगार घमनार हान प्रजांक (पर) क्र मामकी र्नितमीशिह %०६ अमिनीने किमान एक रू, २००३ पासून मार्च, २०१३ पर्यंत मागील १० ,३०० एमएम डाया चे अंडरग्राजेड सेवर पाईप

इ९०९ अम्पेस्ट इ९ फ्लीम्झे ४१-६१०१

<u> इमेडामडी उर्काप रिकेस</u>

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उड़ेासक सपड़ेसण जास्र ठास्त्रीयक वस क्याहर .हिाम गाण्डार माग गर्डी.

महास्क्र ग्रिक्त अधिक क्षांक्रमक ह महीस क्षेत्र ,(मिगर,) द्रुप्जब्ड मि लोश्यर भित्रधीप फोर्मीस घटट छ प्रहिद्देश मियर क्षेत्रक कारण क्षेत्रक प्राप्त क्षेत्रहार

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त, खेळते भाडवत, स्थिएमत भादीविषयो एपडेएतच्या फवाची पूर्तता कराची त कोणतीही वसुनी धकवाकी ग्रम्हपाचे ऑफडेव्हिट

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साव्हसूस

शेत कामा--तो निविदा जारी ः एमईएसमध्ये कंत्राटदाराच्या शास. विभागासोबत कार्यरत ।. पात्र बगपिक्षा एक वर्ग खाली हरू शकतील. तथापि, अशा मिळाल्यावरच विचार करण्यात

🕴 बिल्डिंग क्र. 'एस' ची विशेष (रु. लाखात) : रु. १०७ ॥ रकमेची राशी लागू असेल , १०००/- जीई (एनडब्ल्यू) HARBO गात्रता निकष : का "बी" व १९ सप्टेंबर २०१३. निविदा दा स्वीकारण्याची तारीख:

/वॅकर्स चेक संलग्न नसलेल्या ALCO विणार नाही. निविदेची किंमत या तारखेपासून सहा महिन्याचे



 सरकारी बँकांच्या माध्यमातून रिझर्ल वँकेने डॉलर विक्री सुरु केली. त्यामुळे घसरणीला ब्रेक लागला. तरीही दिवस अखेरीस ११० पैसे गमावलेला रुपया १ डॉलरला ६४.३० रुपये अशा भावावर वंद झाला.

मुंबई महानगर प्रदेश विकास प्राधिकरण

(महाराष्ट्र शासन अंगिकृत)

सी १४ आपि सी -१५वाद्रे-कुर्ला संकुल, बांद्रे (पूर्व), मुंबई -४०० ८५१, दुरध्वनी: २६५९०८०१-०४/२६५९ ४००८ फेक्स:२६५९१२६४ वेबसाईट: www.mmrda.maharashtra.gov.in

कामाचे नाव : मुंबई पारबंदर प्रकल्प (शिवडी ते ऱ्हावा) संदर्भ : केंद्रीय पर्यावरण विभागाचे दि.१९.०७.२०१३ रोजीचे पत्र.

मुंबई पारबंदर प्रकल्पास केंद्रीय पर्यावरण व वने विभागाने दि. १९.०७. २०१३ रोजी पत्र क्र..F.No.11-65/2012-IA-III अन्बये सागरी नियंत्रण विषयक (CRZ) मान्यता दिलेली आहे. सदर पत्रांची प्रत महाराष्ट्र राज्य प्रदुषण नियंत्रण मंडळकडे उपलब्ध आहे तसेच ती केंद्रीय पर्यावरण व वन विभागाच्या http:// www.envfor.nic.in सांकेतिक स्थळावर पाहता

क.अभि/मुं.प्रा.प्र./के.प.वि./मान्यता/१३

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महाराष्ट्र विमानतळ विकास कंपनी मर्या.

मुंबई कार्यालय : ८ वा मजला, सेंटर - १, बल्डे ट्रेड सेंटर, कफ मरेड, मुंबई हरध्यनी झः. ४९१-२२-४९२१ २१२१ फॅक्सः : +९१-२२-२२१६ ३८१४ . नागपुर काणीलयः परिता फाला, सेंद्रल फॉल्लिस्टे बिल्डिंग, मिक्स-सेख, खापरी (रेल्डे) जबळ, नागपुर -४४१ ९०८ दुरख्यनीझः ०७२०४-६६५६६५, फॅक्स: ०७१०४-६६५६००

ई निविदा सूचना

नागपूर विमानतळ, मिहान एसईझेड परिसर व एमएडीसी (श्रेणी-1) च्या गैर-एसईझेड परिसरात सुरक्षा व संरक्षण पुरवण्यासाठी तसेच शिर्डी, मौलापूर (बोरामणी), धुळे, फलटण, कराड, चंद्रपुर व अमरावती (श्रेणी-॥) वेद्याल विमानतव्यांवर सुरक्षा सेवा पुरविण्याकरिता एमएडीसी ऑन लाईन ई-निविदा आमंत्रित करीत आहे.

ई-निविदा पोर्टलहारा निविदा सादर करण्याची शेवरची तारीख व वेळ २६.०९.२०१३ ला दु. १५.०० वानेपर्यंत कक्त. निविदा दस्तावेन आणि इतर तपशील दि. २७.०८.२०१३ पासून https://mahatenders.gov.in ह्या बेबसाईट चरून डाउनलोड केले जाऊ शकतात. निविदापूर्व सभा दि. ७.०९.२०१३ रोजी आहे. यावायतचेही कुठलेही स्पप्टीकरण / शुध्दीपत्रक केवळ वेवसाईटवरच उपलब्ध केले ज़ाईल.

उपाध्यक्ष व व्यवस्थापकीय संचालक

ं उत्तर मध्य रत्ने, अलाहाबाद

निविदा सूचना कार्यालय वरि. मंडल यांत्रिक इंजिनियर (डिझेल) झांशी

निविदा सूचना क्र.: ०४/१३-१४/डिझेल/झांशी दिनांक: १९.०८.२०१३ भारताच्या राष्ट्रपतीकरिता व त्यांचे वर्तमे वरिष्ट मंडल सांत्रिक इंबिनियर (डिझेल) उत्तर मध्य रेल्वे, झांत्री हुरो खालील कमाकरेता वैष, प्रतिष्ठित, अनुभवी कंत्रास्टरताकडून मोहोरवद निविदा मार्गावण्यात वेर आहे. निविदा इ झांबी/एम/डिझेल/डक्ट्यूसी/टी-०४/१३-१४ कामाचे जाव: डिझेल लोकोनोटीव्समध्ये डायव्हा केविनच्य फरनूतनीकरणाचे कार्य. कामाचा अदमासे खर्च 🖲 १०५०५०००/- सम्म पूर्ण करण्याचा अवधी : २४ महिने, बयाणा रक्कम्: र २०२५३०/- निविदा प्रपन्नाचे मून्यः र ५२५०/-(५% व्हॅटसहित), अटी: ६. निविदा फॉर्म बर लिस्त्रप्रयामध्ये सादरं करावा, त्यावर कामार्चे नाव व टेंडर नंबर अंकित केला असावा. २. वर दिलेली वयाणा रक्कम प्रत्येक निविदेसीवत कोगत्याही एका मान्य स्वरूपात बना करावी, यसे निविदा प्रपत्रत निर्देशित आहे. तसेच ती वीष्ट पंडल विरु प्रवंधक/उक्त मध्य रेल्वे/झंघी याचे नावे जारी करावी. ३. निविदा प्रपत्र रोख रकमेत किया वरील रक्तम बना केल्याची मूळ जबती, जी जत मध्य रेखेच्य कोगत्यक्ती रोखपाल/ स्टेशन सुकिंग कार्यालयहाँगे जारी केलोली असावी किया डिमॉड डाक्ट यो रोकपुर बेंक/ राष्ट्रीवीयुत बेंकेने वरिष्ट मंडल किर व्यवस्थारक, उस मध्य रेलने, झांकी यांचे नाने करों केलेला असाव डियूर्ड बैंकेच्या डीडी/बैंकर्स / ४ निवेद करीये किंगी निवेश प्रश्न दिस्क ६.१.१०११ ते १६.९.२०११ वर्ण कोलपण शासकाच्या दिशी

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RAJIV GANDHI JEEVANDAYEE AROGYA YOJAKA SOCIETY Government of Maharashtra

Jeevandayee Bhavan, E.S.1.S Hospital Compound, Ganpat Jadhav Marg, Mumbai - 400018 Phone and Fax: 022-24912291
Email: hc.off1@jeevandayee.gov.in Website: www.jeevandayee.gov.in

CORRIGENDUM II

Ref-Tender Notice- RFP for Printing, Packaging, and Distribution of Health Card Stationery across Maharashtra State dated 3rd August 2013. There have been some modifications in the RFP document. The last date of the submission of the Tender is now extended to 31st August 2013 up to 2 PM. The details of the same in bidding for this tender can be seen on our website www.jeevandayee.gov.in.

CEO

NORTHERN RAILWAY

CORRIGENDUM OFFICE OF THE MEDICAL DIRECTOR, NORTHERN RAILWAY CENTRAL HOSPITAL BASANT LANE, DELHI-110055

File No. E/Med/SR/74/13 Advt No. NRCH/SR/2013/002 Dt : 08.2013 ENGAGEMENT OF SENIOR RESIDENTS In continuation to previous advertisement published vide Advt. No. NRCH/SR/ 2013/001 dated 20.07.13 for appointment of Senior Residents, the age limit may be read as:- (1) General - 33 Years (2) OBC -36 Years (3) SC & ST - 38 Years Instead of - (1) General/UR - 33 Years 1898/13 (2) OBC/SC/ST-38 Years. Serving Customers With A Smile



MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY

MMRDA

(A Government of Maharashtra Undertaking) Plot Nos. C-14 & 15, Bandra-Kurla Complex, Bandra (E), Mumbai – 400 051. Tel. 26590001-04, Fox: 26591264.

Website: www.mmrda.maharashtia.gov.in Name of work: Mumbai Trans Harbour Link Project. Ref:- letter from Ministry of Environment and Forests dated _19.7.2013.

Ministry of Environment and Forests, GOI has accorded Coastal Regulation Zone clearance to the Mumbai Trans Harbour Link Project vide their letter no F.No.11-65/2012-IA-III dated 19.7.2013. Copies of clearance letter are available with the State Pollution Control Board. It can be also downloaded from the website of the Ministry of Environment

& Forests at http:// www.envfor.nic.in

Chief Engineer, Engineering Division

Date: 26/08/2013

Place: Mumbai No.ED/MTHL/MoEF/Clearance/13



PUNIAB STATE TRANSMISSION CORPORATION LIMITED Regd. Off.: PSEB H.O., The Mall, Patiala-147001

Onice of Chief Engineer/Transmission System, Shakti Sadan, Patiala-147001 CORRIGENDUM NO-2

Last date and time for sale of Bid documents, receipt and opening of Tender against Enquiry No. STQ-2012 for Tower Package for the construction of following 400KV lines on turnkey basis:

1. 400KV S/s Nakodar - 400 KV Wadala Granthian D/C line - 90 Kms.

2. 400KV S/s Dhuri (Bhalwan) - 400KV S/S Amloh (Near Bhagwanpura) D/c Line - 48Kms has been revised as follows:

uiry No: STQ-2012

Tender Enquiry No: S10	1-2012	(7.1.27)
Tender Linguis	Old Revised Date & Time	New Revised Date & Time
i) Last date of sale of	26.08.2013 upto	07.10.2013 upto 15,00Hrs
Bid Documents:- ii) Last date/time for Bid	29.08.2013 upto	10.10.2013 upto 11.00Hrs
Submission:-	29.08.2013 at	10.10.2013 at 15.00Hrs
Opening of Bids:-	15.00Hrs.	ed from PSTCL web site

Detailed NIT/Corrigendum No. 2 may be down loaded from PSTCL we Dy. CE/TS (Design), www.pstcl.org.

C-235/2013TS

PSTCL, Patiala Use Solar Power for Domestic Use

> TATA MEMORIAL HOSPITAL E. BORGES MARG, PAREL, MUMBAI-400 012

PUNJAB STATE TRANSMISSION CORPORATION LIMITED.

(Regd. Office, PSEB, Head Office, The Mall, Patiala-147001) NOTICE INVITING TENDER 1. Type of Tender: Open Tender

2. Name & complete address of office giving tender : Chief Engineer / TS, 3rd Floor, Shakti Sadan, PSTCL, Patiala

3. Tender Enquiry No.: STQ-1020 4. Scope of Work: Manufacture, fabrication, galvanization & supply of 220 KV tower material as per PSTCL Specification STQ-1020 Qty. - 8800 MT

Starting date of downfrom website Inadino https://pstcl.nprocure.com Date of Publication

6. Last date of downloading from website https://pstcl.nprocure.com : 23.9.2013 upto 3.00 PM

7. Last date/time for bid submission: 26.9.13 upto 11.00 AM 8. Date/time for opening of bids: 26.9.2013 at 2.30 PM

9. Cost of specification : Rs. 2500/-10.Mode of Payment : As per specification

11. Tender specification can only be downloaded from website https://pstcl.nprocure.com. Details regarding e-Tendering are available on website www.pstci.org. All the prospective bidders are requested to get their digital signatures, register themselves on the web site https://pstci.nprocure.com and get conversant with the process of on line submission of tenders well in time so as to submit the tender by the due deadline. No request for extension in the due date of tender opening on the above grounds shall be antended.

236/ Dy.EE/TS (Design),

C-236/ PSTCL; Patiala 2013 TS Save Electricity Save Money

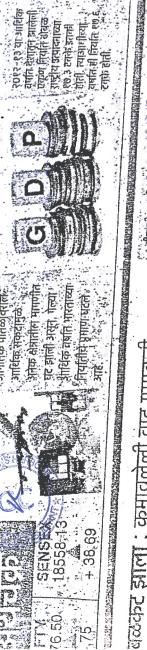
निवर्धः मेगळवात, २७ ऑगस्ट २०१३ 大きのできるとのできる。 おりままできるとう あるから



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जागतिक पातळीवरीता आधिक संकद्मिक

अनेक क्षेत्रातील मानगीत आधिक वर्षात भारताच्या ैनियतिमें भुभाषा घटले_ं 一年 一年 一年 ार झाली असन, गेल्या



त्याओशीहया. १ र्0१२-१३ या आधिक टेंक्नेण नियानि धोबक राष्ट्रीय उत्पादनाच्याः ,वर्षात सी तियात एक खाउ दानके झान्डा टनके होती.

EURO 86.03 - 0.04 RUPEE/\$ 64.31 + 0.90 GOLD/10g.32330 + 530 SILVER/Kg 55085 + 182

 रुपयाची प्रतरण आणि महसुसाच्या बाढीबायत निर्माण ज्ञालेला संशय यागुन्ने ः ♦ सरकारी सेहोच्या साध्यामित रिवास्त बीनो ऑन्ट (विकी सुरू केनी, ह्यामुके ःः सरकारते आंग्र एक विदेन, जारी केने, वित्तीय तृह ४.८ ट्यानयांवर निविज्ञा केली माईल, असा विश्वास सरकारने व्यक्ता केला.

मुंबई महानगर प्रदेश विकास प्राधिकरण

े व सोमवारी सायकाळी ४.३० वाजेपदीत रिझार्ख बेरोजे बाजाराकडे लक्ष

त्या तुलनेत रुपयाने

इचकी मारताना ११० आज पुन्हा एकदा

शुक्रवारी कमावलेली स्य वाद हपयाने

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विले गाही. बाजाराने अपदीच नीचांकी पातळी गाठली तेव्हा बँकेने

हरतक्षेप केला. महिना अखेर असल्याने तेल आयानवार मागणी मॉदवीतात.

यामुळे डॉलरची मागणी वाढते आणि रुपयावर बबाव येतो.

- नदीन रघुवंशी, कोष उपाध्यक्ष, डेव्हलपानेंट क्रेडिट बैंक

डॉलेरला ६४,३० रुपदी अधा भाषांतर बंद झाला.

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बळकट झाला : कमावलेली वाढ गमावली

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🕈 गियांकी पातळीखा दण्यावर नेहगीप्रमाणे रिझब्द कॅफ गेवांगत आनी

मंबई-४०० ०१२

|संदर्भः टीएम्एस्/प्रज्ञारद्धीओ/टेडर/०४/२०१३

सिन्स्रीरेटी गार्ड (माजी सीनेक) (३६४६ सिरुक्तर) च्या पदाजीरता फंटाट नत्याचर मेनजॉट) (त्रीनिक मोली) आणि भाग 'बी' (क्तिंगिय मेली) यान मोब्रोक्य निविद्य आपीत्र। क्रतीत आहे. 17 जेचन निर्णेतकानी पत्रता अर्हता उन्नीण इतर याहिनोत्तरिक्ष कृतया गेवताहर 11<u>1102/1</u>1179.90v,11 रन के असी. निवित्तकारनी क. ५००/- ने निविद्य गृहच परा न क्षेणारे स्थाच्या निविद्यक्ति नादर करणे आवयनन अहि. मिदेद्राकारांनी ''शेष्ट्राुल'' वरून डाठनकोड कराने आणि प्रस्ताव पराये, मिनिश गंथाल्य, त्रीएमही आयंत्रजननेतुतारं सिनव्योती गाडीची राज्य (२००४ सिंटन्हरी) होरे याडीसण्यत सेत आते. इच्छू र्याना भाउचानी आणि त्यारत एयडीआर ऑफिसर, टीएमएच, राष्ट्रिरा ब्लॅक, २ श पनमञ्ज यांच्या करानात्र्याः संवित्तेराज्या आजन्दसोनिगमतीला सुरुवाधित एजन्सीय योग्यावस्त्र पीन पाणतः परणलेन, भाग ' सादर कराको. निविद्य मोदर करण्याची अंतिम सारीख १०/०१/२०१३.

टाटा मेमोरियल हॉस्पिटल ई.बोजेंस मार्ग, परळ

मुंबई पारबंदर प्रवास्तास केदीय पर्यावरण व वने किताताने हि: १९.०७ :२०१३ रोजी אישול - צסס פולף, שתמון: זבוקסססף יסצו בקוק אססס मेनसः २ म् , ९ १ २ ६ ४ विनसाई : अभक्षामानविज्ञावनेनावंत्रीतात ५० था पी १४ आणि मी -१५ ताप्रे-मुख्ती अनुत्त, बांधे (पूर्व), किमाचे पादाः मुन्धं पारबंदर प्रवःल्प (शिवडी ते साता) रींदर्भ : सेंद्रीय पर्यावरण विभाषाचे हि.१९.०७.२०१३ रोजीचे पत (महाराष्ट्र शासन अधिकृत्त) MMRDA

गहि. सदर पत्रांनी पत पत्ताराष्ट्र राज्य मनुषण निर्माण पंडळकडे उपलब्ध आहे तरोग ती केद्रीय | पर्यावरण व नन निभागाच्या भाक्ष*म भागतकार्याठऽचाद्रात सोने* सिनः रमळातर पास्ता पेत्र के. F.No..11-65/2012-IA-III अन्तरो सामरी निध्वण शिमनेक (GRZ) मान्यता दिलेली क.अभि/मुं.गा.ग्र./के.प.वि./मान्यता/१३

ममचे नादा ''मचन रेक्टोज्या (एमचेटीकी ।) आणे आणि किंग स्टेकन्तु दुरायान ५ थी आणि ६ भी एमेच्या रेक्टोनेस्टर्ज्या घंघेशात औरएवंडे वाले डिझाइन, पुरावत, उपाएकी, जीडिफेलेशन, तमाहणी आणि जय्मीचेत्र करणे आणि दतार कामे

गरीकडील चरील फामकर्तमा आयएमबी ग्रसिदीच्या जातीने खाठील मुद्धिगतक. सदर भुदिराजक हे

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यायाने सांगितले

निविदा क्र. एमआरब्हीसी/जन्त्य/म्यल/र्/ओर्पाइ/डाणे-विवा/२०६३-ए४ सिनसिक्त १५.०८. २०१३

जिपत्रक क्र. १ (रेल कॉम्मोनेट)

मुंबई शहर परिवृहन परियोजना

आता ६४.३० रुपये य विकास याजारात ति आहे. त्राचा द्याव

पामायनी आहे.

अभियात्रिया दिप्पा

मान्य अभियता.

4時/-

रंगोंक: २६.०८.२०१.३ उनगण : ग्रंबड्ड

मूख वेळ आणि मारिया | सूचारिम वेळ आणि मारीख

में में महर महण्याने अकिम महिष्य आणि नेत्र रिफ बर, उपरो मेंनी १५,१९ वा १६ वर १५१३ मेंनी १५,४० वा मेंनी उसहण्याची वारित के निमेनेत्र स्थान स्थान स्थान स्थान स्थान स्थान स्थान स्थान स्थान स्थान स्थान स्थान स्थान

मुंबई रल्ये विकास कांपीरश्चन हि.

फ्मा का. (६२२) -१२०९ ६९७२ - क्यन्तिह . www.nivo.indanrallways.gov.in

पक व्यक्ती

र रा गजरता ,स्टेशन बिस्ट्रिंग, चन्तीट, मुंबई - ४०० ०२०.

गुम्हें आमिश्य : ८ या ज्ञाला, तेटर : १, यहडे देश सेटर, कक्ष भोड़, मुन्हें - ४०० ००५, भागपुर नेनामित्रम् : भोव्सा मजाब्सः रोट्स ग्रीसिंदमी जिल्ह्मा, मियान् रोष्, चामसे (रेस्न) जनको आपार था १०८ दूरमधीका वर्णके कित्मधीता कार्यका हिन्द्रमधी, फीला वर्ष्यका हिन्द्रमध्य महाराष्ट्र विमानतळ विकास कंपनी मयी पुरम्मीकारा मन्द्र - द्रेर-अद्वर सम्बद्ध संस्था : अद्यान्त्र - द्रेर हे व्यवस्था MADO

नागपुर विमानत्त्र, मिश्वन एवईक्षेत्र परिसर व एमएडीसी (श्रेणी-1) च्या नीर-एसईग्रेड कराड, चंदपुर व अमरानती (श्रेणी ना) येथील निर्मान्तेळांचर सुरक्षो सेका पुर्धिकथाकरिता परिससन सुरक्षा व सरक्षण पुरनग्यासाठी तते व शिष्टी, सोलगपुर (बोरामणी), मुळे, पत्तरण, एमएकीसी ऑन स्वाहैन ई-विविद्या आमीतित करीस आहे.

ईं निवित्स भेर्टतद्वारा निवित्य संबद फरण्याची श्रेवदन्त्री सारीख न सेळ २ ६, ०९ : २० ९ ३ ला हैं. १५.०० नानेपयीत प्राप्त, निमिक्ष रखावेन आणि धेरा सपसील ति. ९७.७८. २०१३ पाभून https://mahatenders.gov.tn हम्। वेब्याईट यहन इदिनहोत्र केले कार

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पास्ताच्यां राष्ट्रमाच्या नताने आणि लाच्याबतिता थी हितिया हित्तिजनस्य समस्तियः गीजप्, तत्याजन्ताः शिक्स विस्तित्, गुन ह्राजसकितींग देखपालीचे आऊटसोतिंग आणि एसी इर्गिटरीचे परिज एजन्मीजूगक्षमार्गकङ्ग मोत्रोख्द् व्यिकाम्यात सुल्लै निविद्यः जामीत्रेत्र कत्ता आहे. ताद्य कत्त्वाची तान्त्र पेठ स्थान्तर प मध्य टेल्वे (कामाचे नाव

Africa 3	\$.3,000J.
पूर्व इसारा है। अनापा के पूर्	המ'לההי
अंदाजित मृत्य रूपयात ४४;८०,२००/-	33,99,645/-
क. सीएसतिए स्टेशन बेबील एवं झोबंटरीचे परिवास्त से एक्टीते स्टाम बेबील दिवासीन स्तार है.	परिचारम, हाउनाक्षिणचे आकरमोहित प्रिचारी सम्बन्ध

ટેસિ.સ. નવર-૧૨૧૦૦૧૧૧ દેસિ.સ. નવર-૧૨૧૦૦૧૧૫ માન-૧૦૦૧૫ વિભ-૧૦૦૫મા चीफ श्लेबद्रीका इंजिनीय प्रोजेस्टस डाबर्षस्टर ग्रोजेक्ट्स मार्गिक्षि भारताने 順訊

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ह एये असा भोपनचा हाना. एक् डॉनारची

तो यद आलेला ा निम्मान ४८ स्थ

HYIN

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मिनडीकरीता पगरत गिरणाची पृतीत करणाऱ्या इतर शास, विभागासीवत सर्गात) ४००००५, भारताच्या राष्ट्रपतीच्यात्रतीने खालील निरीष्ठत कामक्रियत ब्राही काप्यासाठी एपर्नम्साचे पात्र मुन्नीबद्ध बंजारदार आणि एपर्क्स्ताम्भे बंजारदासन्था | मुख्य अभियंता (नेन्ही) मुंगई, २६, अस्सामे मिल्डिंग, कोलाबा, मुंगई. िनिकार देखाती । यक्षा क्षा क्षा

मेलिटरी इंजिनियर सर्व्हिसेस

Carrier? दिनांकः २३/८/२०१३

भिग्मित्यत्तिमा अ माउजनात्रोहरू وليه الرابعة (د ATTENDED ! Tel: Ikely MSO/FIN भिषादाह 1x छ THE NEW 30/08/24 Confidence ग्यागरजी, ग TRUM, ER rigarizad), Title that Shirtsty A.

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RAJIV GANDHI JEEVANDAYEE AROGYA YOJANA SOCIETY Governingal of Maharashtra Joovandayoe Bhavan, E.S.I.S Hospital Compound, Ganpal Jadhay Marg, Mumbal - 400018

Finall: No. off1@jeavandayea, gov.in Websits: www.jeevandayea, gov.in

modifications in the KFP document. The last date of the Ref-Tonder Notice- RFP for Printing, Packaging, and Distribution of Health Card Stationery across Maharashtra State dated 3rd August 2013. There have been some submission of the Tender is now extended to 31st August 2013 up to 2 PM. The details of the same, in bidding for this tender can be seen on our website www.jeevandayee.gov.ln.

1898/13 File No. ElMod/SR/74/13 published vide Advi. No NRCH/SR 36 Years (3) SC & ST 39 Years instead of (1) General/UR: 33 Years Adv. No. NRCHSR/2013/002 Dt.: 08,2013 ENGAGEMENT OF SENIOR RESIDENTS of Sanlor Residents, the age limit, may be in continuation to provixus advertisement 2013/001 dated 20.07.13 for appointmen read as:: (1) General - 33 Years (2) OBC (2) OBC/SC/ST - 38 Years, ·

OFFICE OF THE MEDICAL DIRECTOR, NORTHERN RALWAY CENTRAL HOSPITAL BASANT LANE, DELHI-110065

MUMBAI METROPOLITAN REGION DEVELOPMENT AUTHORITY Plot Nos. C-14 & 15, Bandra-Kurla Complex, Bandra (E), (A Government of Maharashtra Undertaking)

CEO.

2. Name & complete address of Office, PSEB, Head Office, The Mell, Patiela-147001) 1. Type of Tender: Open Tender

labrication, galvanization & supply of 220 KV tower material 3. Tender Enquiry No.: STQ-1020 Scope of Work: Manufacture, Sadan, PSTCL, Pallata

vide their their to F.No. 11-65/2012-1A-III dated 19.7.2013. Copies of clearanégijottéfizare available with the State Poliution Control Board.

เลา อัง ฟูจิง ผู้งุฟูกเจลสอง from the พื่อปรกจ of the Ministry of Environment

A loresignat bilg: " www.anvior.nlc.in

Jare. 26/08/2013 Flace: Mumbai

wingly of Environment and Forests, GOI has accorded Coasial Requalion Zone clearance to the Mumbal Trans Harbour Link Project

Ministry of Environment and Forests dated 19.7.2013.

Mout Jeller From

Murnbal - 400 051. Tel. 26590001-04, Fax: 26591264.

Website: www.mmtda.mahetashtra.gay.in laine of work,; Mumbal Trans Harbour Link Project.

loading from website 5.Starting date of downhttps://pstel.nprocure.com

Engineering Division

ED/MTHUMOEF/Clearance/13

39 Chief Engineer,

Sd/

Last date/time for bid subwebsite https://psict.nprocure.com/ Date/filme for opening of bids 23.9.2013 upto 3.00.PW

Office of Chief Engineer/Transmission System, Shakil Sadan, Pallaia-147001

CORRIGENDUM NO.2

.

DSICI PUNIAB STATE TRANSMISSION CORPORATION LIMITED

Rand. Off.; PSEB H.O., The Mall, Patista-147001

Last date and time for sale of Birl documents, receipt and opining of Torder! agreed Enquity No. STQ-2012 for Tower Package for the construction of

officering 400KV lines on turnkey hasts;

10.Mode of Payment : As per

Cost of specification; Rs. 2500/-

26.9.2013 at 2.30 PM

members of the bank were also present its corporate office in Mumbai. Flag Mukherjee and Raj Kumar Goyal Execut Central Bank Of India celebrated 67th Independence Day on August 15, 2013 hoisting was carried out by Malay Capt. S Kannan, CSO., seen during Malay Mukherjee and Raj Kumar Goyal, Executive Directors, and lag hoisting ceremony on the occasion. tive Directors, 6. Last date of downloading from per PSTCL Specification office giving tender : Chiof Engineer / TS, 3rd Floor, Shakil STQ-1020 Qty. - 8800 MT Date of Publication



WEEKLY UPDATE ON THE BEACONS IN INDIA'S PROGRE ral areas. To keep the expansion mo-

mentum going, the bank is planning to take its branch network to 800 by the end of current fiscal and "God willing, we will be having 1000 branches by the end of FY15," he said,

Central Bank celebrates

ndependence Day

unbanked, and 'far flung areas," the Prichoo in Shopian. "We have a strong commitment to J&K, our core area of operations, in an effort to make the state financially inclusive, the bank has always ensured to make its presence felt in every block of the state, including The new business units include Sojmoli in Tral area of Pulwama district, Wandevalgam, and Ahlan Gadole in Ananthag, Trenz and Fruit Mandi Chairmansaidant

MC organises interaction A



conflict is assuming political overtones, hiked for the tenor of more than economy, is currently facing tough wherossall nine currencies. In respect declining and the \$4 trillion that went reason for the rupee's woes. Though the petson, dongress, (1), said, ""The probeconomy," Sanjay Jha, National Spokesrecovery of the US economy is the main was, 'A Defining Decade - Why India's with the biggest sufferer being the bartly global and partly domestic. The US-Eurozone recovery is bad in the short terin, it holds lot of promise over the long term. Unemployment rates are Growth is Unstoppable'. Shailesh Vaid-Mumbai on August 22, 2013. The topic An interactive meeting was organised Chamber ndian Merchants' by the

Executives and staff

NHB profits rise

National Housing Bank (NHB) an Bank posted a net profit of 450 cros Bank increased by 6,113 crore from 28490 crore to 34,603 crore, an increas of 22%. The Bank's total loan dispurse rural housing was about 14%, aggregal ing to 7,718 crores. Of the lotal dishurs. ments inade during the year, loans up Bank crossed the cumulative refinant disbursement of 1,00,000 crore durin dal year ended 30th June, 2013, TI during the current year as against 38 ments during the year were 17,63 nounced its annual results for the finar crore in the previous year, an increase growth of 22% out of which the share r over 16%. The loans and advances of H crore (previous year 14,454 crores), 15 takh constituted about 60%, the year 2012-13.

DBI Bank hikes rates

deposits across select maturity bugg (B) and non-resident external (NR) ets, aimed at attracting foreign currei rates on FCNR (B) deposits for the ten times. The critical growth v/s inflation's NRE Deposits, the rates have her IDBI Bånk has increased interest rate on foreign currency non-resident PCA cy inflows from NRI diagnora, Intere of 3 years and above thas been in ya' President, IMC, sald, "The Indian yr creased by 100 basis points (bp 50 lyps, The bank is now offering a pe. a result of the above revision. No pr NRI deposits. The revised rates, whin fook effect from August 20, 2013, sh. years up to 7 years by up to 25 bps interest rate of 9.5% on MRE deposits mature penalty shall be levied on ret. be valid up to November 30, 2013 su

The state of Rending and state of the state



RUMBAL METROFOLITAK REGION DEVELOPMENT AUTHORITY

RARDA

I/A Govt. of Maharashtra Undertaking)
 C-14 & 15, Bandra-Kurla Complex. Bandra (E).
 Mumba - 400 051. Tel. 26594001-04 Fax 26591264

Email: ce.mmrda@gmail.com Website: https://www.mmrda.maharashtra.gov.in

Sub. : Mumbai Trans Harbour Link Project

Ref.: Letter from Ministry of Environment & Forests dated 25/01/2016.

Ministry of Environment & Forests, Gol has granted coastal regulation zone clearance to the Mumbai Trans Harbour Link Project vide their letter no. F.No.11-65/2012-IA-III dated 25/01/2016. Copies of clearance letter can be downloaded form website of Ministry of Environment & Forests at http://environmentclearance.nic.in

No.ED/MTHL/MoEF/Clearance/16

Date: 29/01/2016

Place: Mumbai

Sd/

Engineer-in-Chief

Engineering Division

CENTRAL PUBLIC WORKS DEPARTMENT. ROTTGETRIVITIES ESTERDERS

The Indian EXPRESS Sat. 30 January 2016

**Expered times epaper indianexpress co

page no. 24

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CENTRAL PUBLIC WORKS DEPARTMENT NOTICE INVITING E-TENDERS

The Executive Engineer, Mumbal Central Division No. II, CPWD Nirman Sadan, 2nd Floor, Kane Nagar, Antop Hill, Mumbai-37 invites on behalf of President of India online item rate tenders for following works :-

1. NIT No.58/EE/MCD II/2015-16 [Recall]

Name of Work :- Addition/Alteration to CGH at S.M.Plot. Sector-VII. Antop Hill, Mumbai-37 during 2015-16. SH.Upgradation of Bidg. No.51 (Flat 10 Nos. 2063, 2064, 2066. 2073, 2074, 2075, 2084, 2085, 2087, 2089), Estimated Cost: Rs.9,68,484/-, Earnest Money: Rs.19,370/-, Period of completion: 05 (Five) Months, Last Date and Time of Submission of Tender :- 15.00 hrs. of 36/02/2016 and opening on 06/02/2016 at 3.30 PM

2. NIT No.97/EE/MCD 11/2015-16 Name of Work :- A/R & M/O to CGH at SPL, Kane Nagar, Sector-II & III, Mumbai-37, during 2015-16. SH:Repairs to nternal rooms by plastering and painting. Estimated Cost - Rs. 260/-, Earnest Money :- Rs. 15,645/-, Period of completion:- 03 (Three) Months, Last Date and Time of Submission of Tender :- 15.00 hrs. of 06/02/2016 and pening on 06/02/2016 at 3.30 PM

J. NIT No.98/EE/MCD II/2015-16

Name of Work :- Urgent internal repairs and painting of 35 tos, new allotted vacant and dilapidated quarters of building vo.53, 54, 55 and 58 Revenue pool (Income Tax Department). Estimated Cost :- Rs.14,66,365/-, Earnest Money :-Rs.29,327/-, Period of completion:- 06 (Six) Months. ast Date and Time of Submission of Tender :- 15.00 irs, of 06/02/2016 and opening on 06/02/2016 at 3.30 PM NIT No.99/EE/MCD II/2015-16

lame of Work :- Structural repairs to distressed building of GH, SPL, Kane Nagar in Sector-III, Antop Hill, Mumbai-37 uring 2015-16. SH:Minor repairs with external painting to uilding No.31, Estimated Cost :- Rs.7,41,875/-, Earnest loney :- Rs.14,838/-, Period of completion:- 03 (Three) lonths, Last Date and Time of Submission of Tender :-5.00 hrs. of 06/02/2016 and opening on 06/02/2016 at 3.30 PM NIT No.100/EE/MCD II/2015-16

ame of Work :- Special Repair to S.M.Plot, Phase-II, Sector-II, Antop Hill, Mumbar-37 during 2015-16 SH:Repairs to anholes, gully traps and sewerlines building No.1 to 51, stimed Cost :- Rs.17,69,072/-, Earnest Money :- 335,351/-, Period of completion:- 12 (Twelve) Months, st Date and Time of Submission of Tender :- 15.00 s. of 06/02/2016 and opening on 06/02/2016 at 3.30 PM NIT No.102/EE/MCD II/2015-16

ime of Work :-Aesthetic improvement of CGS Colony at M.Plot, Phase-II, Sector-VII, Antop Hill, Mumbai-37 during 15-16. SH:Development of pump house area by surface essing, cement concrete, repairs to sluice chamber, pump use near building No.25 (Section A), Estimated Cost 7,37.019/-, Earnest Money :- Rs.14,740/-, Period of mpletion:- 02 (Two) Months, Last Date and Time of bmission of Tender :- 15.00 hrs. of 06/02/2016 and ning on 06/02/2016 at 3.30 PM

NT No.103/EE/MCD II/2015-16

me of Work :-Providing concerting coil over existing grill compound wall, north side of the building No.186.188 & ?, around the garden at Sector-VI, Kane Nagar, Mumbai-Estimated Cost :- Rs.6,92,458/-, Earnest Money :- 13,849/-, Period of completion:- 01 (One) Month, it Date and Time of Submission of Tender: - 15.00 of 06/02/2016 and opening on 06/02/2016 at 3.30 PM tender forms and other details can be obtained from website www.tenderwizard.com/CPWD or w.cpwd.gov.in, www.tenderhome.com and w.eprocure.gov.in.

EX-SERVICEMEN CONTRIBUTORY HEALTH SCHEME (ECHS)

- 1. Application invited for appointment of one 'HELPER' each at ECHS Polyclinic Solapur, Osmanabad, Latur and Beed for six months (may extended) on contractual basis.
- 2. Conversant with Hindi and Marathi, min. qualification SSC.

3. Fixed salary - Rs 8000 - pm.

4. Send application with CV by E-mail Registered Post or through ECHS Polyclinic by 10 Feb 2016 to undermentioned address.

Contact 0241-2321233 (working hours) (Excluding Sundays and Gazzated Holidays)

ECHS Cell, Station Headquarters

PO: Camp, Jamkhed Road, Ahmednagar-414002

Contact No: 0241-2323565, 2321233

E-mail: echscellstnhqnagar@yahoo.com



मुंबई महानगर प्रदेश विकास प्राधिकरण

(महाराष्ट्र शासन औरकत)

सी - ५४ व ५५, बॉर्ट-कुर्ली संयुक्त, बॉद्र (पूर्व), मुंबई-४०० ०५५ दुरुवनी : २६५१४००५-०४ फॅब्स् : २६५९५२६४

ई-मेन : ce.mmrda@gmail.com वेबसाईट : https://www.mmrda.maharashtra.gov.in

विषय : मंबर्ड पारबंदर प्रकल्प

संदर्भ : केंद्रीय पर्यावरण विभागाचे दिनांक २५/०१/२०१६ रोजीचे पत्र

मंबई पारबंदर प्रकल्पास केंद्रीय पर्यावरण व बने विभागाने पत्र क्र.F.No.11-65/2012-IA-III दिनांक २५/०१/२०१६ अन्वये सागरी नियंत्रण क्षेत्र विषयक (CRZ) मान्यता दिलेली आहे. सदर पत्राची प्रत केंद्रीय पर्यावरण व वन विभागाच्या http://environmentclearance.nic.in या सांकेतिक स्थळावर उपलब्ध आहे.

क्र.अभि/मुं.पा.प्र/के.प.वि/मान्यता/१६

दिनांक : २९/०१/२०१६

स्थळ : मुंबई

स्त्री/-प्रमुख

अभियांत्रिकी विभाग



शुद्धिपत्रक- २

शहर आणि औद्योगिक विकास महामंडळ (महाराष्ट्र) मर्यादित तिडको नवी मुंबई प्रकल्पग्रस्तांसाठी UPSC (Civil Services) - २०१७ स्पर्धा परीक्षेच्या तयारी कारता दिल्ली येथील नामवंत कोचिंग इंस्टाटयूटमध्ये नि:शुल्क कोचिंग मृळ जाहिरात दिनांकः – २३.१२.२०१५, शुद्धिपत्रकं-१ -०९.०१.२०१६ सदरील बदल बार्टी, पूर्ण योनी कळिबला आहे.

तिङ्को नवी मुंबई प्रकल्पग्रस्तांसाठी कौशल्यवृडी कार्यक्रम सिङ्कांतारा अंतरीन पात्र प्रकल्पग्रस्त पदवीधरासाठी दिल्ली येथील नामबंत कोचिंग इंस्टीटबूटमध्ये (बाजीराम एंड रवी, अल्टरनेटीव्ह लर्निंग सिस्टीम प्रा.ली., श्रीराम आय.ए.एस.) UPSC Civil Services-2017 - Preliminary and Mains या दान्ही स्पर्धा परीक्षा पूर्व तवारीसाठी उमेदवारांना पुरस्कृत (Sponsor) करण्यात येणार आहे. संदर नामवंत काचिंग इंस्टोटबृटमध्ये प्रवंशपरीक्षा COMMON ENTRANCE TEST (CIDCO-DELHI-CET-2017) बार्टी, पुणे च्या माध्यमाने देण्यात येईल, तरो त्यासाटा ऑनलाईन अर्ज मागविण्यात येत आहे.

ऑनलाईनहारे अर्ज स्विकारण्याची अंतिम तारीख	
ई- प्रवेश पत्र (Admit Card) मिळण्याची तार्राख	
CIDCO-DELHI-CET-2016 परीक्षंची तारीख	दि. २७ मार्च, २०१६

ऑनलाईन अर्ड काण्यासाठी

http://barti.maharashtra.gov.in.>NOTICEBOARD>CIDCO-DELHI-CET-2017 वर क्लिक करा.

अधिक माहितीनाटी संपर्क <u>- http://cidcopap.cee.gov.in</u> कॉलसेंटर ६५३५ ४८५५, £ 8 0 2 4 2 0 3 0 5 8 8 0 2 4 2 0 0

CIN - U99999 MH 1970 SGC-014874] www.cidco.maharashtra.gov.in

व्यवस्थापक (पुनवंसन)

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Registered Office: L&7

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- Net Profit after tax, minority inte of associates (after extraordinar
- 4 Equity share capital
- 5 Reserves (excluding revaluation Balance Sheet of previous year)
- 6 Earnings per share of ₹ 2/- each (not annualised): (a) Basic EPS (₹) (b) Diluted EPS (₹)
- Earnings per share of ₹ 2/- each (not annualised): (a) Basic EPS (₹) (b) Diluted EPS (₹)

Notes:

The Company reports conso Regulation 33 of the SEBI (L results are available on the C and NSE (www.nseindia.com nine months ended Decembe

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The above is an extract of the Regulation 33 of the SEBI (Lit Quarterly Financial Results at respectively and on the Comp.

(iii) The above extract is based or results in newspapers with ad March 31, 2015 added to facil

Mumbai January 29, 2016





Annexure - X



Ref No: MMRDA/MTHL/P1/GC/EOT-1//2021 /75/

To,
The Team Leader,
M/s AECOM Asia Company Ltd.
(In Consortium with PADECO Co. Ltd —
Dar-Al-Handasah - T.Y. Lin International)
6th floor, A Wing, MMRDA Bldg (Old),
E-Block, BKC, Bandra (East) Mumbai-51

Date: 22	.11.2021
MT	HL
General C	onsultant
INWARD NO:	MMRDA 1275
DATE	23.11.202

Project:

Procurement of Mumbai Harbour Link Project (package 1) Construction of 10.380 Km Long bridge section (CH-0+000 – Ch- 10+380) across the Mumbai bay including Sewri Interchange under Identification NO MMRDA/ENG1/000752

--- Extension of Time limit to M/s L&T for completion of contract for Pkg-1

Ref:-

- 1. Contract Agreement: MMRDA/ENG/000752 dated 26.12.2017
- 2. MMRDA's Letter of Acceptance (LOA) to M/s L&T-IHI Consortium dated 17.11.2017
- 3. GC's letter of Commencement to M/s L&T-IHI Consortium dated 23.03.2018
- 4. M/s L&T-IHI Consortium letter to GC 09.04.2021 requesting EOT to contract of Pkg-
- M/s L&T-IHI Consortium letter to GC 24.06.2021 on additional clarification on EOT proposal Pkg-1
- GC's recommendation to MMRDA vide letter no. MTHL/P1/GC/MMRDA/LT/CNT-2292/2021 dated 07.09.2021.
- 7. MMRDA letter to JICA vide No. MMRDA/MTHL-PIU/P1/EOT-1/0698/2021dt29/10/2021.
- 8. Letter from JICA vide No. JICA (ID) 2021-662 dt. 22/11/2021.

Dear Sir,

This has reference to the various letters received by Employer referred above for EOT for MTHL Package 1 Contract. The Contract was awarded to M/s L&T-IHI Consortium with the commencement date 23.08.2018 and as per the Contract; the original completion period is 22.09.2022.

The GC vide their letter dated 07.09.2021, verified the reasons for delay and critical path for completion of the balance work and recommended to MMRDA for approving EOT up to 30.09.2023 (374 days).

It is observed that unavoidable delays beyond the control of Contractor i.e permission from various authorities, realignment at OSD-02 and OSD-03 foundations due to mismatch in ONGC Pipeline and laying of new MbPT pipeline, Covid-19 pandemic restrictions etc is the governing delay affecting the completion of the overall project.

Therefore, the Engineer has recommended an interim Extension of Time for a period of 374 days to be granted to the Contractor under 8.4(b) of the General Conditions of the Contract. The contractor is entitled to claim under the clause 20.1 of GCC and shall be paid the actual costs incurred by him for

Mumbai Metropolitan Region Development Authority

Page 1 of 4

such extension of validity of insurances & PBG etc upon submission of proof of payment to the satisfaction of the Engineer

Employer has received concurrence from JICA for EOT to Package 1 for the period of 374 days i.e. till 30th September 2023. Copy of letter of JICA is enclosed herewith for your reference.

In the JICA letter, they have requested MMRDA to setup a mechanism for rigorous review of the safety protocols, processes and mechanism adopted by the contractor to avoid recurrence of safety incidents under the captioned packages. GC is also requested to take note of JICA's point set up a mechanism for rigorous review of the safety at worksite.

This is for your kind information.

Thanking you.

Yours faithfully,

(Sunil Wandhekar) Engineer-In-Chief

Encl: As Above.

Ochandrakant Bansod

Okishore Raju po

Sim ahash on. 23.11. 2021

MTHL					
General Consultant [Pkg -]					
Department	A		Rmx		
Resident Engineer					
Contract Administration	CONTRACTOR OF STREET		ALCOHOLOGICAL SCHOOL		
Quantity Survey / Biffing	Total Wilder Combined in	C-AMB - MINE			
Planning & Monitoring	-				
Quality Control					
Sefety / Environment					
Utilities / Staisi					
Design Related					
roundation					
3rdbstructure					
Superstructure PC/Steel					
tieotechnical					
Administration					





JICA (ID) 2021- 652 November 12, 2021

TEL: (91-11) 4909-7000

URL: https://www.jica.go.jp/

FAX: (91-11) 4909-7001 / 7002 / 7003 / 7004

Mr. Sunil Wandhekar. Engineer-in-Chief, **MMRDA** Mumbai

Sub: Mumbai Trans Harbour Link Project (MTHL): ID-P 255 & ID-P 283 **Extansion of Time for Package 1**

Ref: MMRDA/MTHL-PIU/P1/EOT-1/0698/2021 dated October 29, 2021

Dear Mr. Wandhekar,

This has reference to your captioned letter wherein MMRDA has submitted a proposal for Extension of Time (EoT) for package 1 under the captioned project.

Upon review, it is understood by JICA that the GC of the project has recommended that Extension of Time (EoT) for a period of 374 days (With Revised Completion date as September 30, 2023) shall be granted to the Contractor of Package 1 under 8.4 (b) of the GCC and the same has been accepted and agreed by MMRDA. In view of the above, MMRDA is requested to go-ahead with your proposal and issue the EoT to the contractor of the captioned package in accordance with your proposal.

We wish to take this opportunity to reiterate that amendment to the contract documents concurred by JICA (including amendment in contract price, variations and additional items among others) shall require prior written concurrence from JICA in accordance with the Loan Agreement of the captioned project.

In view of frequent accidents during civil works under Package 1 of the captioned project, we wish to request MMRDA to set up a mechanism for rigorous review of the safety protocols, processes and mechanisms adopted by the contractor to avoid recurrence of safety incidents under the captioned package.

Your kind cooperation in this matter shall be highly appreciated.

Yours sincerely,

NAGAI Shinsuke

Senior Representative

Mr. Avanish Mishra, Deputy Director General, DEA, Ministry of Finance, New Delhi

Mr. SUNOUCHI Tatsuhiko, Director, SAD1, JICA HQ, Tokyo

ich

JICA(ID) 2021- 4.19 September(6,2021

Mr. Sunil Wandhekar Engineer In Chief MMRDA Mumbal

Sub: Mumbai Trans Harbour Link Project (MTHL) (ID-P 255) Extension of Time for Package 3

Ref:

Letter No. MTHL/P3/GC/MMRDA/LT/EOT-573/Jica.2021 dated September 15, 2021

Dear Mr. Wandhekar,

This has reference to the captioned letter wherein MMRDA has submitted a proposal for Extension of Tender (EOT) of Package 3 under the captioned project.

Upon review, it is understood by JICA that the GC of the project has recommended that an interim EOT for a period of 529 days (with completion date as March 3, 2023) to be granted to the contractor of Package 3 in accordance with Clause 8.4 (b) of the GCC and the same has been accepted and agreed by MMRDA. In view of the above, MMRDA is requested to go-ahead with your proposal and issue the EoT to the contractor of the captioned package in accordance with your proposal.

We wish to take this opportunity to reiterate that amendment to the contract document concurred by JICA (including amendment in contract price, variations in scope, additional items etc.) shall require prior written concurrence from JICA in accordance with the Loan Agreement of the captioned project.

Your kind cooperation in the matter will be highly appreciated.

Yours sincerely.

NAGAI Shinsuke Senior Representative

CC:

Mr. A.K Mishra, Deputy Director General, DEA, Ministry of Finance, Govt. of India, New Delhi.

Mr. Takuro Takeuchi, Senior Director SAD I, JICA HQ, Tokyo.

HOA India Office

Annexure XII

MAHARASHTRA COASTAL ZONE MANAGEMENT AUTHORITY

Tel. No.: 2202 9388

E-mail: dirl.mev-mh@nic.in

Website: https://mczma.gov.in/

No. CRZ 2022/CR 185/TC 4

Office of the -

Maharashtra Coastal Zone Management Authority,

Environment & Climate Change Department, 15th Floor, New Administrative Building.

Mantralaya, Mumbai- 400 032 Date: 09th December, 2022

To,

Director (IA-III),

Coastal Zone Regulation, Ministry of Environment, Forests & Climate Change, Indira Paryavaran bhavan, Jor Bagh Road, New Delhi - 110 003.

Subject:

Proposal for extension of Mumbai Trans Harbour Link (MTHL) project by MMRDA

The Maharashtra Coastal Zone Management Authority in its 161st meeting held on 10th November, 2022 deliberated the subject proposal for extension of Mumbai Trans Harbour Link (MTHL) project.

- 2. The Authority noted that the proposal is for implementing the MTHL project. The MTHL was awarded the CRZ clearance by MoEF&CC vide it's letter No. F. No. 11-65/2012-IA.III dated 25th January, 2016. General consultant has opined that the CRZ clearance is valid till 24th January, 2021. Presently, physical progress is about 83%. Considering Covid 19 pandemic situation, the project timeline has been extended from Sep, 2022 to Sep, 2023. Thus the total extension granted to the contractor is about 12 months.
- 3. The Authority noted that the main bridge work will be completed by Sep, 2023, however, the dismantling of Temporary Access Bridge (TAB) and other ancillary works w3ill be completed post construction of main bridge as these facilities will be required till end of construction. In view of this, a proposal is submitted for extension for the CRZ clearance for further 3 years.
- 4. The Authority noted that as per para 4.2 of the CRZ Notification, 2011 amended on 6th March, 2018, the clearance accorded to the projects under this notification shall be valid for a period of seven years from the date of issue of such clearance:

Provided that the construction activities shall commence within a period of five years from the date of the issue of clearance and the construction be completed and the operations be commenced within seven years from the date of issue of such clearance:

Provided further that the period of validity may be extended for a maximum period of three years in case an application is made to the concerned authority by the applicant within the validity period, along with recommendation for extension of validity of the clearance by the concerned State / Union Territory Coastal Zone Management Authority";

5. The Authority noted that the validity of the CRZ clearance is for period of 7 years from the date of issue of CRZ clearance. In the instant case, the CRZ clearance dated 25th January, 2016 is valid upto January, 2023. As informed by the MMRDA during the meeting, work of the project is ongoing and physical progress is about 85%.

- 6. In the light of above, after deliberation, the Authority decided to recommend the proposal to MoEF&CC, New Delhi for extension of the validity of CRZ clearance dated 25th January, 2016 for father 3 years from January, 2023 i.e. upto 25th January, 2026.
- 7. Minutes of the meeting attached herewith.

(Abhay Pimperkar)
Director, Environment & MS, MCZMA

Copy for information to:

- 1. Secretary (Environment) & Chairperson, (MCZMA), Environment & CC Department, Room No. 217 (Annex), Mantralaya, Mumbai -32.
- 2. Member Secretary, Maharashtra Pollution Control Board, Kalpataru Point, 3rd and 4th floor, Road No. 8, Sion Cir, opp. PVR Theater, Mumbai -400022
- 3. District Collector, Mumbai City, Old Custom House, Shahid bhagar Sing Marg, Fort, Mumbai 01
- 4. Municipal Commissioner, Municipal Corporation of Greater Mumbai, Fort, Mumbai 01
- 5. Engineer In Chief, MTHL project, 2nd floor New Administrative building, MMRDA, Engineering Division, E block, BKC, Bandra Kurla Complex, Bandra (E), Mumbai 51 You are requested to apply online on Parivesh Portal of MoEF&CC, New Delhi along with this CRZ recommendation letter.
- 6. Select File (TC 4)



MINUTES OF THE 161st MEETING OF MAHARASHTRA COASTAL ZONE MANAGEMENT AUTHORITY (MCZMA) HELD ON 10th NOVEMBER, 2022

The 161st meeting of the Maharashtra Coastal Zone Management Authority (MCZMA) was held under the Chairmanship of Secretary (Environment and Climate Change). In view of present pandemic situation of COVID-19, it was decided to appraise the proposals by using information technology facilities. Hence, the proposals were appraised through Videoconferencing technology on Cisco WebEx platform on 10th November, 2022. List of members present in the meeting is at Annexure-I.

Item No.1:

Proposed infrastructural Post Harvesting facilities to fishermen at Fish Landing Centre, Dhakti Dahanu, Rajpuri, Dighi and Veldur in Maharashtra by Commissioner of Fisheries.

The officials from the office of Commissioner of Fisheries presented the proposal before the Authority. The proposal is for development of infrastructural post harvesting facilities such as construction of jetty, boat yards with ramp, cleaning of navigational channel, fish drying platforms, approach road etc for local fisherman at fish landing centres at Dhakti Dahanu, Rajpuri, Dighi and Veldur. Site specific details of the proposed activities are as follows:

Sr. No.	Location	Proposed activities	CRZ Status as per approved CZMP, 2011
1	Dhakti Dahanu, Tal. Dahanu Dist. Palghar	1) Construction of jetty connected to boat yard I (35m X 05m) 2) Construction of boat yard I (150m X 20m) 3) Construction of boat yard II (75 m X 20m) 4) Ramp connected to boat yard II (70 m X 07m)	





- 6. In the light of above, after deliberation, the Authority decided to recommend the proposal to MoEF&CC, New Delhi for extension of the validity of CRZ clearance dated 25th January, 2016 for father 3 years from January, 2023 i.e. upto 25th January, 2026.
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Director, Environment & MS, MCZMA

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- 3. District Collector, Mumbai City, Old Custom House, Shahid bhagar Sing Marg, Fort, Mumbai 01
- 4. Municipal Commissioner, Municipal Corporation of Greater Mumbai, Fort, Mumbai 01
- 5. Engineer In Chief, MTHL project, 2nd floor New Administrative building, MMRDA, Engineering Division, E block, BKC, Bandra Kurla Complex, Bandra (E), Mumbai 51 You are requested to apply online on Parivesh Portal of MoEF&CC, New Delhi along with this CRZ recommendation letter.
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Shairman Chairman

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5) Construction	of approach
road	
(90m X 05m)	>
Murud, Dist. yard I with protection (160) 2) Construction connected to be (120 m X 7m) 3) Construction culvert undern yard I (45m X 03m)	Om X 15m) of ramp ooat yard I of box neath boat of boat h rubble m X 15m) of ramp of ramp
II (30m X 10m)	/414
	of boat CRZ-IB (Intertidal
Shrivardhan, yard (230 m X 2)	0 m) area) & CPT TVP
Dist. Raigad 2) Ramp attached	to boat (Rajapuri Creek)
yard (40 m X 10n	n)
3) Construction of j	jetty (50
m X 5 m)	
4) Jetty head "T"	(30 m X
10 m)	
5) Surfacing of a	approach
Veldur Tal 1) G and (400 m X 5 r	m)
Construction of	
Guhagar, Dist. Jetty (100 m X 05) Ratnagiri 2) Construction	5 m) area), CRZ TTT
a) construction of	f fish (Rural area) & CDZ
arying plattorm	with IVB (Vashishti)
rubble protection	(50 m Estuary)
X 30 m)	⇒เซ็ลม์เ
3) Surfacing / hard	paving
area (50 m X 30m))
4) Clearing of berthir	ng area

Member Secretary

The proposal was earlier deliberated in 146th meeting of MCZMA held on 04.09.2020, wherein the Authority noted the project details along with Rapid EIA report. After deliberation the Authority suggested PP that the recommendation / report of the Central water Power Research Station (CWPRS) needs to be sought on impact of the solid jetty and other structures on the hydrodynamics of the coastal water body at four (4) sites i.e. Dhakti Dahanu, Rajpuri, Dighi and Veldur.

Accordingly, the Commissioner of Fisheries have submitted CWPRS report dated 22.06.2021 which mentions that CWPRS has given recommendation for the proposed structures.

As per the CWPRS report dated 22.06.2021, total 4 coastal sites have been proposed to provide infrastructural facility viz. Dhakti-Dahanu (Dist. Palghar), Rajpuri, Dighi (Dist. Raigad) & Veldur (Dist. Ratnagiri). Since the project is of small magnitude & require need bases solutions for the local fishermen community the comments are offered based on the experience gained from the other fish landing sites and prevailing site conditions. In this regard, the opinion of CWPRS is as follows:

1) Dhakti Dahanu:

There is a proposal to develop two boat yard and road connecting the same to the nearby approach. All these facilities are land based and are not interfering with the flow of water. One jetty abutting to the boat yard II and a ramp to approach the boat yard I is being proposed. Since the jetty is going to be pile mounted, its interference with the water will be minimum. Ramping of 70m long is going to be in the water and will partially interfere with the water flow it may also result in the sedimentation on the east side of the ramp. In order to avoid the siltation, two tiers of hume pipes of about one meter diameter should be used to create free flow condition and to avoid siltation. Regular cleaning of the hume pipes should also be made mandatory. Based on the experience gained from the other sites and prevailing site conditions. CWPRS is of the view/opinion for the proposed layout & may be implemented by adopting aforesaid precautions.

2) Rajpuri:

Member-Secretary

- 4. In order to mitigate the siltation problem due to ramp construction, suggestions of the CWPRS should be implemented in letter and spirit
- 5. PP to ensure that during construction and operation phase, ecologically sensitive features like mangroves if any, should not be cut/damaged for the project. If the proposed activities are in 50 m mangrove buffer zone, prior High Court permission should be obtained, as per order dated 17th September, 2018 in PIL 87/2006.
- 6. Natural course of creek/river water should not be hampered due to proposed activities.
- 7. During construction phase, the project implementing agency should proactively implement all possible appropriate environmental measures to achieve minimum disturbance to coastal ecosystem.
- 8. The construction debris and dredged material should not be disposed off in the mangrove area & creek water to avoid any adverse impact on marine water quality.
- 9. PP to ensure that best industrial practices should be followed for fire safety measures and for conservation of coastal environment
- 10. Debris generated during the construction activity should not be dumped in CRZ area. It should be ensured that debris is processed in a scientific manner at a designated site.
- 11. The Project proponent should be effectively implement the mitigation measure and Environment Management Plan during construction and operation phase of the project.
- 12. All other required permission from different statutory authorities should be obtained

Item No.2:

Proposed construction of Municipal Dispensary, Health Post Maternity Home, Govt Rest House, shopping Centre & DP Roads on land bearing plot no. 194B of village Ghatkoper (E), N ward, Kurla, Mumbai by PWD & Rare Township

The Authority decided to defer the matter for want of more information.

Item No.14:

Proposed construction of 4 lane Bridge Connecting Nariman Point to Colaba/Cuffe Parade by MMRDA

Member Secretary

Chairman

Page 6 of 18

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The MMRDA officials presented the proposal before the Authority. MMRDA has proposed construction of 4 Lane Bridge connecting Nariman Point to Colaba/Cuffe Parade. The length of the proposed bridge is about 1.8 km with 19 m wide viaduct accommodating 2+2 lanes.

The project involves the connectivity of the two major points of Mumbai city, Nariman point and Colaba. The proposed alignment option starts with up ramp from captain prakash pethe rmarg to give access to traffic travelling from Navy Nagar to Nariman side. Down ramp of approx. 360 m. length is provided for traffic travelling from Nariman side to Mantralaya. There are two proposed down ramps on captain prakash peth marg and wodehouse road to give access to traffic travelling from Nariman side to Navy Nagar and Colaba causeway respectively.

The PP has carried out the CRZ survey (1:4000 scale) through IRS, Chennai (MoEF&CC authorized agency). As per the said CRZ map, the site falls in CRZ IB, CRZ II, CRZ IVA and outside CRZ area.

Sr. no.	CRZ Classification	Area in sqm
1	CRZ IB	671.59
2	CRZ II	2442.58
3	CRZ IVA	18257.27
4	Outside CRZ	1186.25
Total		22557.69

The PP has submitted the EIA / EMP report prepared by M/s Ultra Tech (MoEF accredited). As per the EIA report, the main purpose of this new construction bridge (Sea link) is to connect the traffic from Nariman Point Road to Cuff Parade road which will ease the congestion rate on existing road Cap. Prakash Pethe Marg. The EIA report further states that proposed alignment is not passing through mangroves area. However, around 93 trees present in the median of the road will be transplanted during construction of the bridge resulting in deterioration of biodiversity. Rehabilitation and Resettlement is involved in the project. The study has been conducted and as action plan has been made.

The Authority noted that the proposed alignment of the proposed bridge is situated near to Fishermen settlement (Koliwada) at Colaba end. The Expert

Member Secretary

Page 7 of 18 Chairman

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Members raised concern about the impact of the project on local fishing and livelihood of fishermen. EIA report mentions about the socio-economic impact of the project, which states that communication with the local community (fishermen, boat owners) should be institutionalized and done on regular basis. The project proponent should take appropriate steps to implement Rehabilitation and Resettlement.

When asked about the impact of project on local fishing and livelihood of local fishermen, the MMRDA officials presented that there is no fishing activity along the alignment of the proposed road.

The Authority after deliberation opined that the MMRDA need to submit the revise the EIA report incorporating the details of impact of proposed bridge on fishermen settlement (Koliwada) at Colaba end, local fishing & livelihood of fishermen and its mitigation measures. It is noted that the MMRDA has formulated the fisherfolk compensation policy on December, 2015 for affected fishermen. With respect to project, the MMRDA need to incorporate the details of same in revised EIA report. It was further felt that comments / remarks of the office of Commissioner, Fisheries need to be sought in the matter. Accordingly, the proposal was deferred for want of above said reports.

Item No.21:

Proposal for Coastal Protection work under Maharashtra Sustainable climate resilient coastal protection and management investment program at Devbaug, Tal. Malvan by MMB.

The Maharashtra Maritime Board (MMB) officials presented the proposal before the Authority. MMB has proposed construction of river bank protection wall along a 1.3 km length using sheet piling. Fencing wall is proposed using laterite stone for land protection along with reclamation work covering area of approx. 15 ha (1 million cubic meter sand from de-siltation activity of Karli river channel). MMB officials presented that the protection wall is critically important in order to save the land from erosion. Project area falls under CRZ IA, III B & IVB.

Expert Member, MCZMA voiced a concern about the impact of project on surrounding biodiversity of the Devbaug and Tarkarli which are well known for its pristine beauty and tourist destination. He raised a concern that aesthetics of the area should not be compromised.

Member Secretary

The Authority discussed that the project is situated at the Karli Creek side of the village Devbaug which is Critically Vulnerable Coastal area (ecologically sensitive area). Along with coastal protection works, de-siltation of the Karli creek is also proposed. The Authority felt that MMB need to first explore the soft measures for Coastal Protection work. MCZMA in its 160th meeting 5th August, 2022 has prescribed guidelines pertaining to proposals of anti-sea erosion protections works. MMB need to go through the said guidelines.

In the light of above, the Authority decided that MMB should explore soft measures for Coastal Protection work program at Devbaug, Tal. Malvan, taking into consideration above said guidelines prescribed by the MCZMA in its 160th meeting regarding anti-sea erosion protection works. MMB should also clarify about the impact of the de-silting activity in karli creek on local fishing in Karli creek. Accordingly, the proposal was deferred.

Item No.22: Proposal for extension of Mumbai Trans Harbour Link (MTHL) project by MMRDA

The MMRDA officials presented the matter before the Authority. The MMRDA is implementing the MTHL project. The MTHL was awarded the CRZ clearance by MoEF&CC vide it's letter No. F. No. 11-65/2012-IA.III dated 25th January, 2016.

General consultant has opined that the CRZ clearance is valid till 24th January, 2021

Presently, physical progress is about 83%. Considering Covid 19 pandemic situation, the project timeline has been extended from Sep, 2022 to Sep, 2023. Thus the total extension granted to the contractor is about 12 months.

The main bridge work will be completed by Sep, 2023, however, the dismantling of Temporary Access Bridge (TAB) and other ancillary works w3ill be completed post construction of main bridge as these facilities will be required till end of construction. In view of this, a proposal is submitted for extension for the CRZ clearance for further 3 years.

The Authority noted that as per para 4.2 of the CRZ Notification, 2011 amended on 6th March, 2018, the clearance accorded to the projects under this notification shall be valid for a period of seven years from the date of issue of such clearance:

Member Secretary

Chairman

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Provided that the construction activities shall commence within a period of five years from the date of the issue of clearance and the construction be completed and the operations be commenced within seven years from the date of issue of such clearance:

Provided further that the period of validity may be extended for a maximum period of three years in case an application is made to the concerned authority by the applicant within the validity period, along with recommendation for extension of validity of the clearance by the concerned State / Union Territory Coastal Zone Management Authority";

The Authority noted that the validity of the CRZ clearance is for period of 7 years from the date of issue of CRZ clearance. In the instant case, the CRZ clearance dated 25th January, 2016 is valid upto January, 2023. As informed by the MMRDA during the meeting, work of the project is ongoing and physical progress is about 85%.

In the light of above, after deliberation, the Authority decided to recommend the proposal to MoEF&CC, New Delhi for extension of the validity of CRZ clearance dated 25^{th} January, 2016 for father 3 years from January, 2023. i.e. upto 25^{th} January, 2026.

Item No.23:

Proposed quadrupling of Virar-Dahanu Road Railway Project under Mumbai Urban Transport project III, Dist. Palghar by M/s Mumbai Railway Vikas Corporation Ltd.

The Mumbai Rail Vikas Corporation Ltd officials presented the proposal before the Authority. The proposal is for quadrupling of Virar- Dahanu Road Railway project under Mumbai Urban Transport Project - III on Western Railway is one of the components of MUTP-III.

Quadrupling of Virar- Dahanu Road section involves laying of 3^{rd} and 4^{th} lines parallel to and on the west of existing double line corridor.

The Corridor from Churchgate to Virar consists of minimum quadruple lines, while Virar Dahanu road has only double lines. At present, EMU (Electric Multiple Units) ply upto Virar - Dahanu Road (63.80 km). As existing double line corridor is over saturated, it is not possible to increase number of suburban V

Member Secretary

services in this section. Therefore it is decided to lay one additional pair of line in this section.

Alignment of proposed corridor is planned on west side and parallel to existing line. It will involve minimum land acquisition and diversion of bare minimum forest land as major part of the land require for the project is existing Railway land.

The proposed corridor passes through various villages of vasai, Palghar and Dhanau. It passes through CRZ IA, CRZ IB, CRZ II and CRZ III area as per

approved CZMP, 2011., (MH 87, MH 90, MH 98)

	-1111 , 2022., (1111 107 , 1111 1 70 ,		
Sr no.	village and taluka	Length (m)	CRZ status
1	Naringi, Kopari, Gaskopari and Shirgoan, Tal Vasai	2960	CRZII
	·	0440	
2	Kasrali, Tal Vasai	2640	CRZIA
3	Kasrali, Tal Vasai	50	CRZII
4	Wadiv, Tal Palghar	1100	CRZ IA (50 m
			mangrove buffer zone)
5	Kandarvan and Karavale Tal Palghar	1550	CRZIA
6	Karavale Tal Palghar	200	CRZ III
7	Karavale Tal Palghar	1025	CRZ IA and CRZ
8	Karavale Tal Palghar	475	CRZ III
9	Vangoan, Tal Dahanu	100	CRZ III
10	Kapshi and Asangoan, Tal Dahanu	750	CRZ IA (50 m mangrove buffer zone)
11	Asangoan, Tal Dahanu	700	CRZIB
12	Asangoan, Tal Dahanu	1200	CRZIA
13	Asangoan and pale, Tal Dahanu	700	CRZ IB
14	Pale, Tal Dahanu	120	CRZ IA (50 m mangrove buffer)
15	Pale, Tal Dahanu	2680	CRZ IB
	Total	16250 meter	



Chairman

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The PP has submitted the EIA / EMP report prepared by M/s IL&FS Environment Infrastructure and Services Ltd (MoEF accredited consultant). The Authority noted the observations of the EIA report about the impact of the project, mitigation measures for the project. The PP presented that out of 26.51 Ha forest land required for the project and 17.05 Ha land is covered with mangroves.

The Mumbai Rail Vikas Corporation Ltd vide letter dated 7.11.2022 submitted that scope of the project is laying 3rd and 4th line paralel to existing tracks as it is augmentation of the existing corridor. Existing corridor is in use since 1984 i.e. more than 150 years. Minimum 170 ha of land is required to lay the double the line track for 64 km length. Out of this, 130 Ha of land is owned by Railways and only 48 Ha of land is being acquired for the project. Thus eu to laying of the track parallel to existing corridor, requirement of land is minimum as compared to laying of the corridor on completely new alignment. The corridor from Churchgate to Virar consists of minimum quaruple lines, while Virar Bahanu road has only double lines. At present, EMUs (Electric Multiple Units) ply upto to Virar, while MEMUs(Mainline Electric Multiple Units) serve the double line section of Virar- Dahanu Road (63.80 km). As existing double line corridor is over saturated, it is possible to increase number of suburban services in this section. Therefore, it decided to lay one additional pair of lines in this section. This will enable separate corridor for suburban services as is existing for the Churchtage Virar Section. There will be saving of about 1 hour daily in travel time of 5 lakhs passengers. The purpose corridor will serve the requirement of about 2 million population in the section from Virar to Dhanau Road in the Palghar District.

The Authority discussed the project and raised a concern of the area of mangroves to be cut for the proposed activity. The PP presented that the alignment of the railway line is most suitable considering the existence of double line and other land constraints. All possible statutory permissions including Prior High Court permission would be obtained for mangrove cutting. The Authority noted that the quadrupling the Railway line is vital infrastructure project for the public. However, balance needs to strike between the development and environment. The PP need to exercise extra caution with objective to have less impact on the surrounding mangroves and coastal ecology. During the construction phase, all possible efforts/ measures should be taken to maintain the coastal ecology and biodiversity. Necessary training / awareness

Member secretary

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should be imparted to contractors & workers so that adequate environmental safeguards could be implemented on site, during execution of the project activities.

In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to MoEF&CC subject to compliance of following conditions:

- 1. The proposed activity should be carried out strictly as per the provisions of CRZ Notification, 2011 (as amended from time to time) and guidelines/clarifications given by MoEF from time to time.
- 2. PP to ensure that proposed activities should be carried out with exercising extra caution with objective to have less impact on the surrounding mangroves and coastal ecology.
- 3. Prior High Court permission should be obtained by the PP as per Hon'ble High Court order dated 17th Sep, 2018 in PIL 87/2006, since the project involves cutting of mangroves.
- 4. NoC from the Mangrove Cell should be obtained by the PP. Compensatory mangrove plantation should be carried out in consultation with Mangrove Cell.
- 5. PP to obtain the prior Forest Clearance under Forest (Conservation) Act, 1980.
- 6. During the construction phase, all possible efforts/ measures should be taken to maintain the coastal ecology and biodiversity. Necessary training / awareness should be imparted to contractors & workers so that adequate environmental safeguards could be implemented on site, during execution of the project activities
- 7. PP to ensure that noise and vibration level is within permissible limit during construction phase of the project.
- 8. PP to strictly ensure that activities of local fisherman communities should not be hampered due to the proposed project.
- 9. Project proponent should implement Environment Management plan for the project effectively and efficiently during construction and operational phase of the project to ensure that coastal environment is protected. It is also suggested to have a third-party monitoring/Audit of all such management initiatives by Govt agency during and after completion of project from time to time.
- 10. All recommendation of the socioeconomic, disaster Management studies, traffic studies should be complied with by the MCGM.

Member Secretary

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- 11. The PP shall set up a full-fledged inhouse Environment Management Cell for effective implementation of the Environment Management Plan including Mangrove replantation plan, monitoring, as well as Disaster Management Plan.
- 12. No labour camp are allowed in CRZ area & it should also be ensured that the waste water from these entities should not be released into sea. Mobile toilets with mobile STPs to be provided in work front area.
- 13. All the other mandatory permission from different statutory authorities should be obtained prior to the commencement of work of project

Item No.24: Proposal for additional permission to construct the temporary Gabion wall for access to Arm - 2 and temporary rock filling for access to Arm - 3 of Worli connector of Mumbai Coastal Road project by MCGM

The MCGM officials presented the proposal before the Authority. The MoEF&CC, New Delhi vide letter dated 11^{th} May, 2017 has granted the CRZ clearance to the Coastal Road, Mumbai. Further, amended CRZ clearance is also obtained on 18.5.2021 from MoEF&CC, New Delhi due to certain design modifications for smooth traffic movement.

In order to expedite the construction process and achieve the completion of coastal road project, MCGM has proposed temporary construction of gabion walls near Arm 2 and rock fill near Arm 3 of the Worli connector bridge which would facilitate access for the cranes to approach the proposed offshore bridge pier locations during monsoon.

During the monsoon season the operation of marine vessels is not permitted due to high turbulence in the sea. Also the pilling work for construction of the Arm 2 and Arm 3 of the Worli connector bridge of MCRP- South was disturbed due to local fishermen restrictions. This resulted in loss of peak construction period impacting the main bridge and its connecting arms.

The MCGM officials presented that Gabion walls / Rocks will be removed once the construction of Arm 2 and Arm 3 is completed.

The Authority noted that the EMP has been prepared by M/s Building Environment Pvt Ltd (MoEF accredited consultant). As per the EMP, the construction process of gabion walls/ temporary rock fills may have impact on

Member Secretary

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water quality due to sediment suspension during laying of initial layer of gabion boxes/rockrmass on sea bed. This may cause temporary turbidity in sea water. However, the Worli region represents rocky sea bottom due to which high turbidity is not anticipated. Also the gabion walls / rock fill being temporary structures the construction region is proposed to be restored by removing the gabion boxes / temporary rockrfill. Therefore no adverse impact on marine environment is anticipated.

The Authority noted that the project site falls under CRZ I (B) and CRZ IV (A) area as per approved CZMP, 2019 of the Mumbai. As per para 7(iii) of the CRZ Notification, 2019:

"For all other permissible and regulated activities as per this notification, which fall purely in CRZ-II and CRZ-III areas, the CRZ clearance shall be considered by the concerned Coastal Zone Management Authority and such projects in CRZ-II and III, which also happen to be traversing through CRZ-I or CRZ-IV areas or both, CRZ clearance shall, however be considered only by the Ministry of Environment, Forest and Climate Change, based on recommendations of the concerned Coastal Zone Management Authority"

In the light of above, the Authority after deliberation decided to recommend the proposal to MoEF&CC, New Delhi subject to following conditions:

- 1. This CRZ recommendation is only for temporary construction of gabion walls near Arm 2 and rock fill near Arm 3 of the Worli connector bridge
- 2. After the completion of the arm 2 and arm 3, the said temporary gabion wall should be removed.
- 3. Activity of local fishermen should not be obstructed due to proposed activity.
- 4. All other required permission from different statutory authorities should be obtained

Item No.25:

Extension of validity of CRZ clearance for proposed construction of new Freight Railway Double Line from JNPT (MH) to Dadri (UP) by DFCCIL

The Dedicated Freight Corridor (DFC) officials presented the matter before the Authority. The proposal is for construction Dedicated Freight Corridor

Member Secretary

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(DFC) from JNPT (MH) to Dadri (UP) which passes through Raigad, Thane and Palghar districts.

The MCZMA vide letter dated 29.7.2013 granted the CRZ recommendation to the project and MoEF&CC, new Delhi vide letter dated 17.11.2014 granted the CRZ clearance for the project. While granting the CRZ clearance, MoEF, New Delhi in its CRZ clearance put a condition that

"it is noted that 543 mangroves to be removed for the project. The project proponent shall obtain prior permission from Hon'ble High Court of Bombay for cutting or damaging of 543 mangroves"

Subsequently, Hon'ble High Court vide order dated 2^{nd} March, 2015 has granted leave (approval) for cutting of 543 mangroves, considering the project as National importance project.

	Original		Revised	74
Village	Area Ni	Numbers	Area	Numbers
Payegoan	2.10	225	3.81	1196
Juchandra	0.090	12	0.05	2267
Shirgoan/ Kasarli	4.29	174	5.63	
Tivri	0.92	09	1.14	
Total	7.40	420	10.64	3463

The DFCC vide letter dated 7.11.2022 submitted that as an effect of Covid-19 pandemic office was functioning with limited staff and the further extension of validity beyond 7 years could not be requested in time. The DFCC is the project of national importance being monitored by the PMO. The DFC, with its advantages of speed, higher carrying capacity and reduced cost of transporting freight will aid the country in getting a competitive edge in the exports market and boosting of Indian economy. The project will have overreaching impact on reduction of diesel truck traffic on roads owing to modal shift leading to significant reduction in air pollution. One DFC train will carry a load equivalent of 400 road trucks and has the potential to take nearly 10,000 number of trucks carrying containers off the road per day by 25 DFC trains in initial stages of operation and gradually enhanced to much higher levels at subsequent stages. In Greening of DFC corridor, the project has the potential to plant more

Member Secretary

than 5 crores trees all along the entire length of its alignment as well as in its establishments to support the GoI initiatives on green agenda on afforestation.

The Authority noted that as per CRZ amended Notification 6th Marcy, 2018 "(v) The clearance accorded to the projects under this notification shall be valid for a period of seven years from the date of issue of such clearance: Provided that the construction activities shall commence within a period of five years from the date of the issue of clearance and the construction be completed and the operations be commenced within seven years from the date of issue of such clearance:

Provided further that the period of validity may be extended for a maximum period of three years in case an application is made to the concerned authority by the applicant within the validity period, along with recommendation for extension of validity of the clearance by the concerned State / Union Territory Coastal Zone Management Authority";

The Authority noted that the CRZ clearance is granted by the MoEF, New Delhi on 17.11.2014. The 7 years is completed on 17.11.2021. Application is received on 5.9.2022. The DFCC vide letter dated 7.11.2022 submitted that as an effect of Covid-19 pandemic office was functioning with limited staff and the further extension of validity beyond 7 years could not be requested in time. The Authority discussed the matter and noted the national importance of the project. It was noted that DFCC has approached Hon'ble High Court for obtaining permission for cutting of 3043 mangroves. Hon'ble High Court has passed an order dated 29th August, 2022 directing the DFCC to approach competent Authority for obtaining permission to remove/ fell 3043 mangrove trees. Considering the necessity of the early completion of the nationally important project and covid-19 period restrictions, the Authority felt that the matter could be sent to MoEF&CC, New Delhi for further appropriate decision.

In the light of above, The Authority after deliberation decided to send the matter to MoEF&CC for further appropriate decision regarding

Item No.26:

Revalidation for CRZ clearance for storage and fabrication activities to assemble equipment of system packages of 11A, 11B, 12, 15, 16A, 16 B and MMRCL storage package at Wadala, Mumbai by MMRCL

Member Secretary

The Authority noted that MCZMA vide letter dated CRZ 2018/ CR 346/ TC 4 dated 26.12.2018 has granted the CRZ clearance to the project activities of storage and fabrication to assemble equipment of system packages of 11A, 11B, 12, 15, 16A, 16 B of Metro Line 3 project at Wadala, Mumbai. As per the specific condition of the CRZ clearance, the recommendation was valid for 3 years from the date of issuance i.e. till 26/12/2021. Further, the MCZMA vide letter dated 1.6.2022 has granted the revalidation for the said CRZ clearance. The Authority noted took note of clearance and validity granted to the project.

Discussion Items:

Hon'ble High Court order dated 20th October, 2022 in WP (L) No. 32454/2022 (Akshay Sthapatya Pvt Ltd & Anr V/s Union of India & ors) and WP No. 2621/2019 (Samudra Real Estate Pvt Ltd V/s Union of India & Ors)

The Authority took note of the orders dated 20th Oct, 2022 passed by the Hon'ble High Court of Mumbai regarding SRA projects of Greater Mumbai and decided to defer the matter for want of more information in the matter.

------Meeting ended with vote of thanks to chair------

Annexure I

List of members/officials present in the online meeting:

- 1. Mr. Bhushan Gagrani, ACS, UDD, Member, MCZMA
- 2. Dr. Mahesh Shindikar, College of Engineering, Pune, Expert Member, MCZMA
- 3. Mr. Mirashe, Representative from the Industry Dept, Member MCZMA
- 4. Dr. Anish Andheria, Expert Member, MCZMA
- 5. Mr. Maruti Kudale, Ex Director, CWPRS, Expert Member, MCZMA
- 6. Mr. Sunil Bhat, Dyche. MCGM, Member MCZMA
- 7. Mr. Narendra Toke, Director, Environment & CC and Member Secretary, MCZMA

Member Secretary

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