

#### AMPTPL/ECR/CPCB/2016-17/04 Date - 29.11.2016

To Chief Conservator of Forests, Regional Office (SZ), Kendriya Sadan, IVth Floor, E&F Wings, 17<sup>th</sup> Main Road, Koramangala II Block, Bangalore-560034 (Karnataka)

#### Dear Sir,

**Sub**: Half yearly Compliance report of Environment and CRZ clearance for modernization and operation of Berth – 07 in M/s. Murmugao Port Trust – Reg.

**Ref**: Environmental and CRZ clearance for modernization of Berth No. 7 for coal handling granted to M/s Murmugao Port Trust vide letter dated 30<sup>th</sup> December, 2013 bearing F. No. 10-39/2009-IA.III.

Adani Murmugao Port Terminal Private Limited is concessionaire of M/s Murmugao Port Trust for Berth No. 7. Please find enclosed herewith condition wise compliance reports (Hard copy as well as in a CD) of conditions stipulated in the above referred clearance for the period of April-2016 to September-2016.

Thank you, Yours Faithfully, For **M/s Adani Murmugao Port Terminal Private Limited** 

#### (Capt. Anurag Bhagauliwal)

**Business Head** 

# Encl: As above Copy to:

- 1. The Director (Monitoring IA Division), Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003
- 2. The Regional Officer, Central Pollution Control Board, 1<sup>st</sup> & 2<sup>nd</sup> Floor, Nisaraga bhawan, A Block, Thimmaiah Main Road, 7<sup>th</sup> D Cross, Shivanagar, opposite Pushpanjali theatre, Benguluru 560010
- 3. The Member Secretary, Goa State Pollution Control board, Dempo Towers, 1<sup>st</sup> Floor, EDC Patto Plaza, Panaji, Goa-403001
- 4. The Chairman, Murmugao Port trust, Administrative Office, Headland Sada, Murmugao, Goa 403804

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From: April 2016

To: September 2016

#### Status of conditions stipulated in Environmental and CRZ clearance.

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AMPTPL/ECR/CPCB/2016-17/04 Date - 29.11.2016

To, The Chairman, Murmugao Port trust, Administrative Office, Headland Sada, Murmugao, Goa – 403804

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Adani Mormugao Port Terminal Pvt Ltd. Sub Station Building, Near Gate No. 2 of Mormugao Port Trust, Mormugao, 403 803, Goa, India Tel: - +91 832 2579200 Fax: - +91 832 2579299 info@adani.com www.adani.com



प्यादिका.

From: April 2016

: September 2016

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सी. आए. अनुमान द्वारा अन्त किया AMPTPL/ECR/CPCB/2016-17/04 So then अधिकु द्वित्तीन मंत्रात्वक Date - 29.11.2016 the every cost of India

इन्तिस पर्यावरण भवन/Indita Palyavaran Bhawan पोड़, अलीगाज/Jorbagh Road, Aliganj The Director (Monitoring – IA Division ) Delhi-110003 Ministry of Environment, Forests & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110003

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Adani Mormugao Port Terminal Pvt Ltd. Sub Station Building, Near Gate No. 2 of Mormugao Port Trust, Mormugao, 403 803, Goa, India

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Tel: - +91 832 2579200 Fax: - +91 832 2579299 info@adani.com www.adani.com

Registered Office: Adani House, Nr Mithakhali Circle, Navrangpura, Ahmedabad 380 009, Gujarat, India



From: April 2016

To: September 2016

#### Status of conditions stipulated in Environmental and CRZ clearance.



AMPTPL/ECR/CPCB/2016-17/04 Date - 29.11.2016

To,
The Member Secretary,
Goa State Pollution Control board,
Dempo Towers, 1st Floor,
EDC Patto Plaza.

Panaji, Goa-403001

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Date: John Lak Time

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Registered Office: Adani House, Nr Mithakhali Circle, Navrangpura, Ahmedabad 380 009, G



From: April 2016

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UTION CONTROL BOARD Registered Office: Adani House, Nr Mithakhali Circle, Navrangpura, Ahmedabad 380 009, Gujarat, Indian. OF ENV. 8 FORESTS, GOVT. OF INDIA 30 UTH ZONAL OFFICE 30 UTH ZO THIMMAIAH MAIN ROAD, 7th 'D' CROSS SHIVAHAGAR, BENGALURU - 566 0



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Ministry of Employment, Forests & Climate Change For M/s Adani Murmugao Port Terminal Private Limited

(Capt. Anumag Bhagauliwal)

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From: April 2016

: September 2016

Status of conditions stipulated in Environmental and CRZ clearance.

Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa Sr. **Conditions** Compliance No. 6 **Specific Conditions** "Consent for Establishment" Consent to Establish (CTE) has been shall be obtained from Goa Pollution Control Board obtained from Goa Pollution Control Board under Air and Water Act and a copy shall vide letter No. 5/356/10-PCB/Vol. IV 8363 dated 02<sup>nd</sup> March, 2012 and subsequently be submitted to the Ministry before start amendment in CTE vide letter No. of any construction work at the site. 5/356/10-PCB/Vol. IV/379 dated 17<sup>th</sup> April, 2012. Copies submitted with six monthly compliance reports dated 25<sup>th</sup> November, 2014 Complying, runoff from Coal Stock Yard is ii The project proponent shall provide lining for collection of run off from coal being collected in dump pond with lining and is being monitored for the parameters stockyard and the leachate shall be treated before disposal. prescribed before disposal/reuse. The project proponent shall provide dry fog For effective dust suppression following iii and sprinkling systems for effective dust measures are provided: suppression. • 224 Nos of dry fog dust suppression system has been provided in conveyor system and all transfer points. • 45 Nos. Automatic Water Sprinklers have been provided at coal stock yard for dust suppression. • 02 Nos Mist Canon provided. (one is mobile canon and other one tire mounted) iν Entire transportation of coal shall be in The coal is being transported through closed conveyor. covered conveyor from jetty to silo/stock yard. AMPTPL have developed 2700 meters long covered conveyor system from jetty to silo including 11 closed transfer points. Noted and complying with. There shall be no washing of conveyor belt The project proponent shall provide wind Wind screen of MS structure along with νi screen min 15 m height fabric HDPE all HDPE fabric/perforated sheet of 15 meters along the periphery. The height shall be height have been provided along the coal designed taking into account the wind stacking yard facility and creepers are velocity modelling etc. Also explore developed along the wind screen. creepers in consultation with forest department. vii Coal shall be kept under moist conditions The coal is being stored under the moist using water sprinklers. Transportation shall condition. Sprinklers are provided for the be in closed conveyors with water spray. same. Coal is being transported through covered conveyors with dry fog dust

suppression system.



From: April 2016

To : September 2016

Status of conditions stipulated in Environmental and CRZ clearance.

Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port,  $\mathsf{Goa}$ 

Berth	h No. 7 for coal handling at Murmugao Port, Goa							
Sr. No.	Conditions	Compliance						
viii	All the conditions stipulated by Goa Coastal Zone Management Authority (GCZMA) vide letter No. GCZMA/S/13-14/09/360 dated 07.06.2013, shall be complied with.	Being Complied.						
ix	Periodical study on shore line changes shall be conducted and mitigation carried out if necessary. The details shall be submitted along with the six monthly monitoring reports.	Not applicable as the said activity is taken up in the existing port premises. This is an old berth and only modernization is done.						
×	Oil spills if any shall be properly collected and disposed as per the Rules. Proper Oil Contingency Management Plan shall be put in place.	AMPTPL is handling dry cargo only such as coal. However, the AMPTPL is abiding by the Oil Contingency Management Plan prepared by M/s MPT.						
xi	All the conditions stipulated in the earlier Clearances including the recommendations of Environment Management Plan, Disaster Management Plan shall be strictly complied with	Noted and being complied. All recommendations made in the Environment Management Plan as contained in the Environment Impact Assessment of the project are covered and effectively implemented.						
xii	Cargo shall be unloaded directly into hopper from the ship and transported to the stack yards through closed conveyor system only. Inbuilt dust suppression systems shall be provided at hoppers and all the transfer points / storage yards. Cargo shall not be unloaded directly onto the Berth. Water meters shall be provided at different locations to record the consumption of water used for dust suppression and daily log shall be maintained.	<ul> <li>Coal is being unloaded directly into hopper from the ship and transported to the stack yards through closed conveyor system. Inbuild dust suppression system has been provided in hoppers, transfer towers and storage yards to avoid fugitive emissions.</li> <li>Coal is not being unloaded directly on berth.</li> <li>AMPTPL has installed water meters and log sheet maintained to record water consumption in dust suppression system.</li> </ul>						
xiii	At least 15 m width of green belt along the periphery and 15 m width along the stockyard shall be undertaken including plantation of mangroves in consultation with Forest Department.	Green belt developed along the periphery and coal stock yard. Currently about <b>11233</b> plants are planted in port premises and survival rate is good. There is no mangrove in the vicinity of Berth No. 7.						
xiv	The dredge material shall be reused for low level rising wherever possible and excess shall be dumped into sea at the designated dumping areas identified based on mathematical model studies.	Complied, construction of the project is completed and currently it is operational.						



From: April 2016

To : September 2016

	yearly Compliance report for Environment a n No. 7 for coal handling at Murmugao Port, G	
Sr. No.	Conditions	Compliance
xv	To prevent discharge of sewage and other liquid wastes including ballast into marine environment, adequate system for collection, treatment and disposal of liquid wastes must be provided.	<ul> <li>The sewage is being collected in AMPTPL septic tanks and further it is send to Murmugao Port Trust Sewage Treatment Plant located at Baina. There is no discharge in marine environment.</li> <li>Ballast is not being taken by AMPTPL</li> </ul>
xvi	Necessary arrangements for the treatment of the effluents and solid wastes must be made and it must be ensured that the untreated effluents and solid wastes are not discharged into the water or on the beach; and no effluent or solid wastes shall be discharged on the beach.	Complying, The generated effluent and solid waste (if any) will be disposed-off in the environmentally sound manner and will not be discharged into the water and on the beach.
xvii	The quality of treated effluents, solid wastes, emissions and noise levels and the like, from project are must confirm to the standards laid down by the competent authorities including the Central or State Pollution Control Board under the Environment (Protection) Act 1986	Regular Environmental Monitoring is carried out to assess the quality of treated effluents from STP, Ambient Air Quality, Noise level are being monitored through NABL accredited laboratory. Copy of the monitoring report is enclosed as Annexure -1
xviii	All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF along with half yearly compliance report to MoEF-RO	Status of the mitigation measures is enclosed as <b>Annexure – 2</b>
xix	The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purpose.	AMPTPL has kept separate budget earmarked for Environment Management Plan. Total amount spent till date is INR 29 lakhs 88 thousand.
xx	The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive	AMPTPL has a well structured Environment Cell staffed with qualified manpower for implementation of the Environmental Management Plan under the supervision of a Senior Executive.
7. Ge	neral Conditions	
i	Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.	Compiled, construction activity is completed and project is in operational phase.



From: April 2016

To : September 2016

Status of conditions stipulated in Environmental and CRZ clearance.

Half yearly Compliance report for Environment and CRZ Clearance for the modernization of Berth No. 7 for coal handling at Murmugao Port, Goa

	No. 7 for coal handling at Murmugao Port, G	0a
Sr. No.	Conditions	Compliance
ii	Full support shall be extended to the officers of this Ministry/Regional Office at Bangalore 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.	Full support is extended to the officers of Ministry/Regional Office, MoEF as well as officers of Central and State Pollution Control Board during visits.
iii	A six-monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bangalore regarding the implementation of the stipulated conditions.	Six monthly monitoring reports from April, 2016 to September, 2016 are enclosed as <b>Annexure – 1</b>
iv	Ministry of Environment & Forests 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.
V	The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.	Noted.
Vi	In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.	Noted.
vii	The project proponents shall inform 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.	Financial Closure Date: 14 <sup>th</sup> May, 2010 Concession agreement date with MPT: 22 <sup>nd</sup> September, 2009
Viii	A copy of the clearance letter shall be marked to concern Panchayat/local NGO, if any, from whom any suggestion / representation have been made, received while processing the proposal.	Complied by Murmugao Port Trust
ix	Goa State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.	Noted



From: April 2016

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Half yearly Compliance report for Environment and CRZ Clearance for the modernization of
Berth No. 7 for coal handling at Murmugao Port, Goa

Sr. No.	Conditions	Compliance
8.	These 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.
9.	All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.	All applicable clearances from the concerned authorities have been obtained.
10.	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 Environmental and CRZ Clearance and copies of clearance letters are available with the Goa State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . The advertisement should be made within 10 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 Bangalore.	MPT has given advertisement on 11 <sup>th</sup> January, 2014 in the newspapers mentioned below.  1) Sunaparant 2) Times of India, Goa.
11.	The 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.	Noted.
12.	Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.	AMPTPL is regularly uploading the status of compliance on  Link <a href="http://www.adaniports.com/ports-downloads">http://www.adaniports.com/ports-downloads</a>



From: April 2016

To : September 2016

Half yearly Compliance report for Environment and CRZ Clearance for the modernization of
Berth No. 7 for coal handling at Murmugao Port, Goa

	n No. 7 for coal handling at Murmugao Port, Goa							
Sr. No.	Conditions	Compliance						
13.	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.	Noted						
14.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisaad/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 proponent.	Condition does not belong to AMPTPL.						
15.	The proponent shall upload the status of compliance of the stipulated Clearance 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.	AMPTPL is regularly uploading the status of compliance and monitoring results on its website. The same can be viewed on <a href="http://www.adaniports.com/ports-downloads">http://www.adaniports.com/ports-downloads</a>						
16.	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 Clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.	Form V of environment statement is submitted to Goa Pollution Control Board for the year FY 15-16 on 6 <sup>th</sup> May, 2016.  Copy of the same is available on the following web address. <a href="http://www.adaniports.com/ports-downloads">http://www.adaniports.com/ports-downloads</a>						



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To : September 2016

Status of conditions stipulated in Environmental and CRZ clearance.

ANNEXURE 1 - ENVIRONMENT MONITORING REPORT (APRIL 2016 - SEPTEMBER 2016)



From: April 2016

To : September 2016

# Status of conditions stipulated in Environmental and CRZ clearance.

Ambient Air Quality Monitoring for the period of April – 2016 to September-2016

Ambient Air Quality Monitoring for the period of April – 2016 to September-201								2010
Fire Station	04-04-2016	04-07-2016	04-11-2016	14/04/2016	18/04/2016	21/04/2016	25/04/2016	28/04/2016
The Station								
PM <sub>10</sub> (μg/m3)	79.48	105	88.58	122	98.18	83.6	108	91.5
PM <sub>2.5</sub> μg/m3	42.67	59.4	41.42	72.37	48.73	40.58	62.33	54.38
Lead as Pb μg/m3	BDL*	0.65	BDL*	0.74	0.54	BDL*	0.68	BDL*
(BaP)- particulate phase only (ng/m3)	BDL*							
As (ng/m3)	BDL*	2.23	BDL*	2.48	BDL*	BDL*	2.78	BDL*
Nickel as Ni (ng/m3)	BDL*	10.52	BDL*	10.85	10.23	BDL*	11.16	BDL*
CO (mg/m3)	0.44	0.29	0.38	0.56	0.31	0.53	0.37	0.33
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*							
NH <sub>3</sub> (μg/m3)	23.57	33.5	46.44	39.14	28.19	22.22	54.4	48.09
SO <sub>2 (</sub> μg/m3)	14.4	19.47	10.61	12.71	17.37	9.56	18.64	20.51
NO <sub>2</sub> (μg/m3)	36.51	39.57	24.7	42.41	28.61	21.57	32.54	27.54
O <sub>3</sub> (μg/m3)	25.49	28.88	26.42	22.52	29.19	18.79	23.56	27.33
No au Ca acceltus	04-04-2016	04-07-2016	14/04/2016	18/04/2016	19/04/2016	21/04/2016	25/04/2016	28/04/2016
Near Security Tower	04 04 2010	04 07 2010	14/04/2010	10/04/2010	13/04/2010	21/04/2010	23/04/2010	20,04,2010
( ( -)								
PM <sub>10</sub> (μg/m3)	68.21	94.58	107	85.62	82.61	70.67	100	86.41
PM <sub>2.5</sub> μg/m3	31.57	52.55	64.58	44.32	37.66	35.47	58.68	43.35
Lead as Pb μg/m3	BDL*	0.62	0.65	BDL*	BDL*	BDL*	0.56	BDL*
(BaP)- particulate phase only (ng/m3)	BDL*							
As (ng/m3)	BDL*	BDL*	2.26	BDL*	BDL*	BDL*	2.52	BDL*
Nickel as Ni (ng/m3)	BDL*	10.2	10.53	BDL*	BDL*	BDL*	10.83	11.16
CO (mg/m3)	0.34	0.39	0.52	0.41	0.62	0.6	0.48	0.26
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*							
NH <sub>3</sub> (μg/m3)	18.51	25.41	17.88	34.44	33.25	29.14	42.38	36.7
SO <sub>2 (</sub> μg/m3)	20.47	15.66	9.55	19.45	8.69	11.46	13.66	18.48
NO <sub>2</sub> (μg/m3)	26.26	32.36	37.2	34.21	29.35	30.55	36.44	31.21
O <sub>3</sub> (μg/m3)	21.23	23.61	19.29	27.53	219.28	26.77	28.61	30.7
Sada Village	04-04-2016	04-07-2016	04-11-2016	14/04/2016	18/04/2016	21/04/2016	25/04/2016	28/04/2016
PM <sub>10</sub> (μg/m3)	52.49	77.11	62.79	74.58	81.69	67.5	85.32	75.22
PM <sub>2.5</sub> μg/m3	20.49	32.62	24.68	38.48	31.37	22.59	46.43	35.55
Lead as Pb μg/m3	BDL*							
(BaP)- particulate phase only (ng/m3)	BDL*							
As (ng/m3)	BDL*							
Nickel as Ni (ng/m3)	BDL*							
CO (mg/m3)	0.24	0.16	0.13	0.3	0.18	0.27	0.17	0.19
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*							
NH <sub>3</sub> (μg/m3)	10.27	17.23	20.22	14.13	22.29	16.64	12.59	29.83
SO <sub>2 (</sub> μg/m3)	9.5	12.63	5.37	7.43	13.41	6.51	10.62	14.71
NO <sub>2</sub> (μg/m3)	18.56	27.32	15.51	32.55	23.29	17.15	20.64	25.59
O <sub>3</sub> (μg/m3)	19.43	21.12	28.54	20.49	18.44	23.32	25.2	24.19
O <sub>3</sub> (μg/m3)	19.43	21.12	28.54	20.49	18.44	23.32	25.2	24.19



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Fire Station	05-02-2016	05-05-2016	05-09-2016	05-12-2016	16/05/2016	19/05/2016	23/05/2016	26/05/2016	30/05/2016
PM <sub>10</sub> (μg/m3)	98.73	114	78.59	108	97.81	74.31	86.28	125	94.29
PM <sub>2.5</sub> μg/m3	54.43	68.56	44.46	60.66	56.75	38.64	45.71	74.38	50.69
Lead as Pb µg/m3	0.51	0.72	BDL*	0.77	0.62	BDL*	BDL*	0.82	0.56
(BaP)- particulate phase only (ng/m3)	BDI*	BDL*							
As (ng/m3)	BDL*	2.36	BDL*	2.54	BDL*	BDL*	BDL*	2.64	BDL*
Nickel as Ni (ng/m3)	BDL*	10.82	BDL*	10.37	BDL*	BDL*	BDL*	10.77	BDL*
CO (mg/m3)	0.31	0.55	0.45	0.53	0.41	0.3	0.21	0.27	0.6
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH₃ (μg/m3)	44.66	34.4	56.7	45.55	59.25	30.26	42.37	55.75	40.74
SO <sub>2 (</sub> µg/m3)	15.77	10.48	21.34	14.39	23.47	16.46	22.67	17.47	20.64
NO <sub>2</sub> (μg/m3)	32.37	21.65	30.71	39.55	26.29	33.59	37.16	23.34	27.62
O <sub>3</sub> (μg/m3)	23.72	20.72	26.31	29.55	24.38	28.72	30.52	25.6	27.61
Near Security Tower	05-02-2016	05-05-2016	05-09-2016	05-12-2016	16/05/2016	19/05/2016	23/05/2016	26/05/2016	30/05/2016
PM <sub>10</sub> (μg/m3)	91.58	89.61	71.25	92.47	87.6	68.59	79.59	109	82.6
PM <sub>2.5</sub> μg/m3	43.37	47.39	33.48	55.73	48.61	31.35	37.39	58.69	42.51
Lead as Pb µg/m3	0.55	BDL*	BDL*	0.54	BDL*	BDL*	BDL*	BDL*	BDL*
(BaP)- particulate phase only (ng/m3)	BDI*	BDL*							
As (ng/m3)	BDL*	BDL*	BDL*	2.15	BDL*	BDL*	BDL*	2.34	BDL*
Nickel as Ni (ng/m3)	BDL*	10.6	BDL*	10.24	BDL*	BDL*	BDL*	10.39	BDL*
CO (mg/m3)	0.39	0.42	0.32	0.46	0.34	0.24	0.36	0.44	0.48
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	36.89	29.69	41.69	21.84	45.9	25.64	31.34	39.29	47.8
SO <sub>2 (</sub> µg/m3)	12.68	16.63	11.49	8.41	21.71	24.74	18.72	13.53	23.55
NO <sub>2</sub> (μg/m3)	37.77	28.29	33.49	42.75	39.21	26.79	30.41	27.45	31.83
O <sub>3</sub> (μg/m3)	28.41	24.41	30.71	26.3	29.8	23.41	27.71	21.66	19.6
Sada Village	05-02-2016	05-05-2016	05-09-2016	05-12-2016	16/05/2016	19/05/2016	23/05/2016	26/05/2016	30/05/2016
PM <sub>10</sub> (μg/m3)	67.5	72.28	55.8	62.69	77.6	52.4	64.5	82.4	70.47
PM <sub>2.5</sub> μg/m3	35.37	30.43	19.74	36.6	40.72	25.5	31.67	46.47	37.43
Lead as Pb μg/m3	BDL*								
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*								
Nickel as Ni (ng/m3)	BDL*								
CO (mg/m3)	0.23	0.19	0.25	0.33	0.14	0.18	0.11	0.16	0.37
С <sub>6</sub> Н <sub>6</sub> (µg/m3)	BDL*								
NH₃ (μg/m3)	25.38	20.56	13.49	18.87	28.61	19.17	26.34	16.74	31.65
SO <sub>2 (</sub> μg/m3)	8.58	6.38	9.38	5.72	14.7	11.4	13.71	10.52	16.56
NO <sub>2</sub> (μg/m3)	22.62	15.15	18.58	29.34	23.64	27.55	17.83	20.37	16.82
O <sub>3</sub> (μg/m3)	21.7	18.56	23.78	25.66	22.81	26.76	17.69	20.23	24.57



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Fire Station	06-02-2016	06-06-2016	06-09-2016	13/06/2016	16/06/2016	20/06/2016	23/06/2016	27/06/2016	30/06/2016
	WSW-ENE	SW-NE	S-N	WSW-ENE	WSW-ENE	SSW-NNE	SSW-NNE	W-S	W-S
PM <sub>10</sub> (μg/m3)	83.72	92.28	113	67.72	93.62	85.57	78.62	68.51	71.31
PM <sub>2.5</sub> μg/m3	41.55	46.54	66.48	30.75	58.42	44.46	37.4	40.3	32.41
Lead as Pb μg/m3	0.72	0.56	BDL*	BDL*	0.76	BDL*	BDL*	0.54	BDL*
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*	2.25	2.56	BDL*	2.54	BDL*	BDL*	BDL*	BDL*
Nickel as Ni (ng/m3)	BDL*	10.3	10.7	BDL*	10.42	BDL*	BDL*	BDL*	BDL*
CO (mg/m3)	0.68	0.57	0.52	0.21	0.33	0.71	0.37	0.5	0.25
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	30.67	35.68	27.75	18.5	39.31	47.57	33.7	19.49	24.72
SO <sub>2 (</sub> μg/m3)	20.43	16.49	24.62	8.72	18.6	21.63	19.41	9.76	14.48
NO <sub>2</sub> (μg/m3)	32.35	25.39	29.62	20.27	36.36	33.37	28.16	24.28	26.57
O <sub>3</sub> (μg/m3)	23.33	28.32	30.52	21.7	29.55	26.93	22.36	19.27	25.54
Near Security	06-02-2016	06-06-2016	06-09-2016	13/06/2016	16/06/2016	20/06/2016	23/06/2016	27/06/2016	30/06/2016
Tower	WSW-ENE	SW-NE	S-N	WSW-ENE	WSW-ENE	SSW-NNE	SSW-NNE	W-S	W-S
PM <sub>10</sub> (μg/m3)	75.91	68.81	89.29	58.58	84.29	77.71	65.58	71.71	63.59
PM <sub>2.5</sub> μg/m3	37.36	33.48	45.65	25.56	47.35	39.5	26.52	32.61	21.47
Lead as Pb μg/m3	0.58	BDL*	0.52	BDL*	0.68	BDL*	BDL*	BDL*	BDL*
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*	2.16	BDL*	BDL*	2.36	BDL*	BDL*	BDL*	BDL*
Nickel as Ni (ng/m3)	BDL*	BDL*	10.13	BDL*	10.2	BDL*	BDL*	BDL*	BDL*
CO (mg/m3)	0.49	0.44	0.39	0.17	0.53	0.58	0.29	0.4	0.42
С <sub>6</sub> Н <sub>6</sub> (µg/m3)	BDL*								
NH₃ (μg/m3)	28.61	17.73	22.7	13.46	27.58	36.77	24.62	15.55	19.7
SO <sub>2 (</sub> μg/m3)	23.44	12.52	19.71	10.45	15.6	17.73	16.45	11.6	18.39
NO <sub>2</sub> (μg/m3)	26.41	20.6	23.8	18.62	31.62	29.33	33.61	21.4	24.46
O <sub>3</sub> (μg/m3)	30.54	26.25	28.69	23.61	24.55	21.56	29.35	25.62	27.51
Sada Village	06-02-2016	06-06-2016	06-09-2016	13/06/2016	16/06/2016	20/06/2016	23/06/2016	27/06/2016	30/06/2016
	WSW-ENE	SW-NE	S-N	WSW-ENE	WSW-ENE	SSW-NNE	SSW-NNE	W-S	W-S
PM <sub>10</sub> (μg/m3)	55.62	61.71	58.09	40.59	79.51	66.68	59.2	48.58	54.53
PM <sub>2.5</sub> μg/m3	31.67	27.56	18.51	15.63	41.54	35.37	20.56	19.74	16.45
Lead as Pb μg/m3	BDL*								
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*								
Nickel as Ni (ng/m3)	BDL*								
CO (mg/m3)	0.23	0.27	0.31	0.11	0.19	0.45	0.22	0.16	0.14
C <sub>6</sub> H <sub>6</sub> (µg/m3)	BDL*								
NH₃ (μg/m3)	20.65	12.66	16.66	10.73	17.36	21.15	19.32	11.05	15.46
SO <sub>2 (</sub> μg/m3)	12.26	9.66	14.51	5.58	10.6	15.45	13.73	7.6	8.44
NO <sub>2</sub> (μg/m3)	23.59	17.58	20.35	14.76	26.9	22.58	24.6	15.65	21.29
O <sub>3</sub> (μg/m3)	21.42	20.54	24.12	19.42	26.61	29.6	18.5	16.54	22.7



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## Status of conditions stipulated in Environmental and CRZ clearance.

Fire Station	07-04-2016	07-07-2016	07-11-2016	14/07/2016	18/07/2016	21/07/2016	25/07/2016	28/07/2016
	SSW-NNE	W-E	WNW-ESE	W-E	W-E	SSW-NNE	WSW-ENE	SSW-NNE
PM <sub>10</sub> (μg/m3)	76.8	109	73.31	86.69	96.23	61.2	52.59	85.12
PM <sub>2.5</sub> μg/m3	34.49	63.57	33.66	45.71	52.57	25.76	21.61	38.64
Lead as Pb μg/m3	BDL*	0.7	BDL*	BDL*	0.65	BDL*	BDL*	0.51
(BaP)- particulate phase only (ng/m3)	BDL*							
As (ng/m3)	BDL*	2.46	BDL*	BDL*	2.32	BDL*	BDL*	2.1
Nickel as Ni (ng/m3)	BDL*	10.65	BDL*	BDL*	10.55	BDL*	BDL*	10.14
CO (mg/m3)	0.46	0.71	0.39	0.27	0.64	0.31	0.21	0.48
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*							
NH <sub>3</sub> (μg/m3)	19.05	48.65	29.19	32.43	44.76	25.95	17.51	31.14
SO <sub>2 (</sub> μg/m3)	13.48	21.41	15.45	9.72	19.56	14.42	10.58	16.71
NO <sub>2</sub> (μg/m3)	29.62	37.59	24.31	21.55	38.63	27.75	20.67	35.81
O <sub>3</sub> (μg/m3)	18.41	27.51	19.26	23.64	26.72	22.91	17.57	25.66
Near Security	07-04-2016	07-07-2016	07-11-2016	14/07/2016	18/07/2016	21/07/2016	25/07/2016	28/07/2016
Tower	SSW-NNE	W-E	WNW-ESE	W-E	W-E	SSW-NNE	WSW-ENE	SSW-NNE
PM <sub>10</sub> (μg/m3)	66.58	88.38	61.97	74.62	90.57	55.61	46.17	76.87
PM <sub>2.5</sub> μg/m3	28.77	50.43	26.52	40.65	46.51	22.76	19.56	34.35
Lead as Pb μg/m3	BDL*	0.56	BDL*	BDL*	0.52	BDL*	BDL*	BDL*
(BaP)- particulate phase only (ng/m3)	BDL*							
As (ng/m3)	BDL*	2.26	BDL*	BDL*	2.11	BDL*	BDL*	BDL*
Nickel as Ni (ng/m3)	BDL*	10.39	BDL*	BDL*	10.31	BDL*	BDL*	BDL*
CO (mg/m3)	0.37	0.62	0.3	0.23	0.52	0.24	0.16	0.41
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*							
NH₃ (μg/m3)	15.57	39.7	25.34	28.69	36.1	23.85	13.54	26.57
SO <sub>2 (</sub> μg/m3)	15.54	18.64	13.46	11.66	16.6	10.35	7.5	14.62
NO <sub>2</sub> (μg/m3)	27.16	33.4	21.54	25.15	32.57	24.45	19.22	29.43
O <sub>3</sub> (μg/m3)	23.2	25.15	21.45	27.85	28.87	26.4	20.89	22.59
Sada Village	07-04-2016	07-07-2016	07-11-2016	14/07/2016	18/07/2016	21/07/2016	25/07/2016	28/07/2016
	SSW-NNE	W-E	WNW-ESE	W-E	W-E	SSW-NNE	WSW-ENE	SSW-NNE
PM <sub>10</sub> (μg/m3)	50.49	81.48	54.79	65.78	72.73	46.3	32.31	55.38
PM <sub>2.5</sub> μg/m3	22.62	44.42	20.56	30.43	38.66	19.33	15.63	26.32
Lead as Pb μg/m3	BDL*							
(BaP)- particulate phase only (ng/m3)	BDL*							
As (ng/m3)	BDL*							
Nickel as Ni (ng/m3)	BDL*							
CO (mg/m3)	0.32	0.53	0.26	0.19	0.45	0.22	0.14	0.25
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*							
NH <sub>3</sub> (μg/m3)	13.74	30.75	21.59	23.55	31.61	17.66	10.14	20.45
SO <sub>2 (</sub> μg/m3)	9.64	16.56	10.37	7.65	14.72	8.4	5.5	11.36
NO <sub>2</sub> (μg/m3)	24.6	29.56	19.43	16.15	27.53	21.43	15.6	26.41
O <sub>3</sub> (μg/m3)	19.56	23.35	17.24	22.74	16.54	20.29	15.38	18.15

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Fire Station	08-01-2016	08-04-2016	08-08-2016	08-11-2016	15/08/2016	18/08/2016	22/08/2016	25/08/2016	29/08/2016
	NW-SE	WNW-ESE	W-E	WNW-ESE	WSW-ENE	W-E	SW-NE	WNW-ESE	WSW-ENE
PM <sub>10</sub> (μg/m3)	64.32	55.71	88.58	103	79.58	114	76.28	80.52	73.52
PM <sub>2.5</sub> μg/m3	27.42	23.68	47.37	58.59	48.4	64.4	34.49	37.4	29.5
Lead as Pb μg/m3	BDL*	BDL*	BDL*	0.7	BDL*	0.75	BDL*	BDL*	BDL*
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*	BDL*	BDL*	2.46	BDL*	2.54	BDL*	BDL*	BDL*
Nickel as Ni (ng/m3)	BDL*	BDL*	BDL*	10.84	BDL*	10.37	BDL*	BDL*	BDL*
CO (mg/m3)	0.26	0.22	0.64	0.71	0.37	0.8	0.44	0.52	0.34
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	23.54	19.43	35.68	52.56	38.23	58.29	40.46	24.53	41.65
SO <sub>2 (</sub> μg/m3)	12.73	10.61	19.39	23.64	11.58	20.66	17.71	14.52	16.45
NO <sub>2</sub> (μg/m3)	26.52	22.29	36.76	39.4	23.66	35.39	24.83	29.55	32.75
O <sub>3</sub> (μg/m3)	22.4	20.72	28.65	30.37	25.18	29.3	26.36	21.59	23.51
Near Security	08-01-2016	08-04-2016	08-08-2016	08-11-2016	15/08/2016	18/08/2016	22/08/2016	25/08/2016	29/08/2016
Tower	NW-SE	WNW-ESE	W-E	WNW-ESE	WSW-ENE	W-E	SW-NE	WNW-ESE	WSW-ENE
PM <sub>10</sub> (μg/m3)	56.58	48.22	79.97	90.42	67.57	91.94	61.6	74.32	68.54
PM <sub>2.5</sub> μg/m3	22.76	19.56	42.61	52.38	39.39	54.53	27.39	31.3	25.33
Lead as Pb μg/m3	BDL*	BDL*	BDL*	0.55	BDL*	0.6	BDL*	BDL*	BDL*
(BaP)-particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*	BDL*	BDL*	2.2	BDL*	2.38	BDL*	BDL*	BDL*
Nickel as Ni (ng/m3)	BDL*	BDL*	BDL*	10.35	BDL*	10.27	BDL*	BDL*	BDL*
CO (mg/m3)	0.19	0.16	0.57	0.58	0.29	0.72	0.33	0.37	0.27
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	34.79	19.19	30.29	41.47	32.61	46.54	29.76	18.59	26.28
SO <sub>2 (</sub> μg/m3)	10.63	8.43	16.51	19.13	14.68	23.42	20.66	17.72	9.54
NO <sub>2</sub> (μg/m3)	23.62	19.63	31.18	35.59	28.35	32.36	21.73	24.27	27.48
O <sub>3</sub> (μg/m3)	20.35	18.59	25.67	28.81	23.34	27.91	21.2	24.52	29.4
Sada Village	08-01-2016	08-04-2016	08-08-2016	08-11-2016	15/08/2016	18/08/2016	22/08/2016	25/08/2016	29/08/2016
	NW-SE	WNW-ESE	W-E	WNW-ESE	WSW-ENE	W-E	SW-NE	WNW-ESE	WSW-ENE
PM <sub>10</sub> (μg/m3)	47.59	39.62	56.69	77.4	61.18	85.59	48.61	53.19	60.67
PM <sub>2.5</sub> μg/m3	19.74	15.63	32.49	42.36	28.38	46.47	22.62	25.5	20.56
Lead as Pb μg/m3	BDL*								
(BaP)-particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*								
Nickel as Ni (ng/m3)	BDL*								
CO (mg/m3)	0.14	0.11	0.39	0.49	0.23	0.62	0.3	0.36	0.21
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	10.28	14.46	23.13	35.3	26.78	34.69	24.09	16.13	21.61
SO <sub>2 (</sub> μg/m3)	8.5	5.58	13.71	17.08	9.38	12.45	14.55	10.73	7.69
NO <sub>2</sub> (μg/m3)	19.34	15.41	27.33	30.25	16.62	26.21	20.35	17.66	22.59
O <sub>3</sub> (μg/m3)	18.4	16.52	22.64	26.4	19.5	25.7	23.35	17.52	21.38



From: April 2016

To : September 2016

## Status of conditions stipulated in Environmental and CRZ clearance.

Fire Station	09-01-2016	09-08-2016	09-10-2016	09-12-2016	17/09/2016	19/09/2016	22/09/2016	26/09/2016	29/09/2016
	WSW-ENE	WSW-ENE	SW-NE	W-E	WSW-ENE	WSW-ENE	SSW-NNE	SW-NE	WSW-ENE
PM <sub>10</sub> (μg/m3)	68.63	90.33	118	96.43	50.27	61.58	76.52	94.29	105
PM <sub>2.5</sub> μg/m3	31.58	55.68	68.56	43.63	23.37	29.5	40.72	46.54	58.59
Lead as Pb μg/m3	BDL*	BDL*	0.76	0.64	BDL*	BDL*	BDL*	0.54	0.68
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*	BDL*	2.64	2.24	BDL*	BDL*	BDL*	2.52	2.36
Nickel as Ni (ng/m3)	BDL*	10.29	10.33	BDL*	BDL*	BDL*	BDL*	10.33	10.49
CO (mg/m3)	0.44	0.63	0.73	0.55	0.22	0.27	0.31	0.6	0.45
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	33.8	44.6	64.35	30.26	18.48	20.39	31.22	42.37	54.32
SO <sub>2 (</sub> μg/m3)	10.54	19.51	17.54	15.7	9.68	12.46	14.35	18.71	23.37
NO <sub>2</sub> (μg/m3)	35.64	38.51	42.36	34.6	24.32	26.84	32.65	29.46	40.28
O <sub>3</sub> (μg/m3)	23.56	28.67	30.66	25.31	18.49	21.6	24.41	29.65	26.31
Near Security	09-01-2016	09-08-2016	09-10-2016	09-12-2016	17/09/2016	19/09/2016	22/09/2016	26/09/2016	29/09/2016
Tower	WSW-ENE	WSW-ENE	SW-NE	W-E	WSW-ENE	WSW-ENE	SSW-NNE	SW-NE	WSW-ENE
PM <sub>10</sub> (μg/m3)	54.64	81.14	96.32	72.79	43.6	52.39	68.41	79.63	89.61
PM <sub>2.5</sub> μg/m3	24.48	45.65	52.61	38.55	18.44	23.62	32.61	28.69	46.38
Lead as Pb μg/m3	BDL*	BDL*	0.58	BDL*	BDL*	BDL*	BDL*	BDL*	0.6
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*	BDL*	2.26	BDL*	BDL*	BDL*	BDL*	2.34	2.12
Nickel as Ni (ng/m3)	BDL*	BDL*	10.16	BDL*	BDL*	BDL*	BDL*	BDL*	10.27
CO (mg/m3)	0.34	0.48	0.62	0.47	0.17	0.21	0.29	0.32	0.37
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	24.59	35.39	46.19	33.56	16.46	29.44	38.62	31.49	42.74
SO <sub>2 (</sub> µg/m3)	18.44	16.35	19.49	18.44	7.53	9.65	11.51	15.45	20.76
NO <sub>2</sub> (μg/m3)	31.45	41.57	37.61	29.36	18.55	22.51	28.55	24.53	38.6
O <sub>3</sub> (μg/m3)	25.71	30.21	28.55	22.51	16.68	19.41	17.69	26.77	29.4
Sada Village	09-01-2016	09-08-2016	09-10-2016	09-12-2016	17/09/2016	19/09/2016	22/09/2016	26/09/2016	29/09/2016
	WSW-ENE	WSW-ENE	SW-NE	W-E	WSW-ENE	WSW-ENE	SSW-NNE	SW-NE	WSW-ENE
PM <sub>10</sub> (μg/m3)	42.29	67.48	73.67	56.41	35.41	41.61	53.7	68.69	75.58
PM <sub>2.5</sub> μg/m3	16.45	38.66	45.65	27.56	15.63	18.51	25.5	32.49	29.61
Lead as Pb μg/m3	BDL*								
(BaP)- particulate phase only (ng/m3)	BDL*								
As (ng/m3)	BDL*								
Nickel as Ni (ng/m3)	BDL*								
CO (mg/m3)	0.25	0.41	0.52	0.33	0.11	0.16	0.19	0.39	0.3
C <sub>6</sub> H <sub>6</sub> (μg/m3)	BDL*								
NH <sub>3</sub> (μg/m3)	20.24	29.23	36.3	24.65	10.65	14.61	22.81	27.39	31.65
SO <sub>2 (</sub> μg/m3)	6.49	12.57	15.31	10.44	5.51	7.73	9.7	13.65	16.69
NO <sub>2</sub> (μg/m3)	27.49	30.24	33.48	24.63	15.62	19.35	23.55	21.36	35.38
O <sub>3</sub> (μg/m3)	21.29	25.49	23.36	20.43	15.09	17.64	22.45	19.5	24.39

Sea Water Quality Monitoring for the period of April- 2016 to September-2016



From: April 2016

To : September 2016

			Near Movin	g Dolphin	Near Mov	ring Dolphin	Near Movi	ng Dolphin
SR.	TEST PARAMETERS	UNIT	19/04/	2016	13/0	5/2016	14/06	/2016
NO.			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFA CE	BOTTOM
1	pH		6.86	7.17	8.16	8.26	7.96	8.07
2	Temperature	°C	29	30	30	29	30	29
3	Total Suspended Solids	mg/L	78	90	54	98	58	86
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
5	Dissolved Oxygen	mg/L	5	4.8	5.6	4.6	5.4	4.4
6	Salinity	ppt	39.88	40.26	36.38	35.68	40.84	41.66
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
8	Nitrate as NO <sub>3</sub>	mg/L	0.542	0.678	0.587	0.737	0.438	0.642
9	Nitrite as NO <sub>2</sub>	mg/L	0.048	0.052	0.08	0.092	0.078	0.089
10	Ammonical Nitrogen as NH <sub>3</sub>	mg/L	0.326	0.41	0.467	0.663	0.401	0.652
11	Phosphates as PO <sub>4</sub>	mg/L	1.09	1.22	1.82	2.05	1.9	2.22
12	Total Nitrogen	mg/L	0.916	1.14	1.134	1.492	0.917	1.38
13	Petroleum Hydrocarbon	μg/L	BDL*	BDL*	1	BDL*	1.2	BDL*
14	Total Dissolved Solids	mg/L	46990	47530	48830	47060	47270	48120
15	COD	mg/L	28	24	19	14	20	14
16	Oxidisable Particular Organic Carbon	%	0.48	0.42	0.82	0.54	0.77	0.5
Α	Flora and Fauna							
17.1	Primary Productivity	mgC/L/day	1.46	0.54	1.13	0.22	1.24	0.48
В	Phytoplankton							
18.1	Chlorophyll	mg/m <sup>3</sup>	3.47	0.854	1.09	0.136	1.76	0.555
18.2	Phaeophytin	mg/m <sup>3</sup>	BDL*	1.03	1.37	1.884	BDL*	1.14
18.3	Cell Count	Unit x 10 <sup>3</sup> /L	232	62	198	27	222	50
18.4	Name of Group Number		Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae
			Nitzschia sp.	Fragillaria sp.	Achnanthes sp.	Nitzschia sp.	Achnanthes sp.	Nitzschia sp.
	and name of group		Navicula sp.	Pinnularia sp.	Synedra sp.	Coscinodiscus sp.	Synedra sp.	Coscinodiscus sp.
			Fragillaria sp.	Synedra sp.	Asterionella sp.	Cymbella sp.	Asterionella sp.	Cymbella sp.
	species of each group		Coscinodiscus sp.	Gyrosigma sp.	Pinnularia sp.	Gyrosigma sp.	Pinnularia sp.	Gyrosigma sp.
			Skeletonema sp.	Cyanophyceae	Fragillaria sp.	Green Algae	Rhizosolenia sp.	Green Algae
			Pinnularia sp.	Oscillatoria sp.	Thallasiosira sp.	Chlorella sp.	Skeletonema sp.	Volvox sp.
			Asterionella sp.	Green Algae Volvox sp.	Green Algae	Spirogyra sp.	Green Algae	Pediastrum sp.
			Cymbella sp. Cyanophyceae	Chlorella sp.	Volvox sp. Ulothrix sp.	Hydrodictyon sp.	Spirogyra sp. Chlorella sp.	Cyanophyceae Oscillatoria sp.
			Nostoc sp.	Criioi eila sp.	оюннх эр.		спотепа зр.	Оѕсінаціна ѕр.
			Oscillatoria sp.					
			Green Algae					
			Ankistrodesmus sp.					
			Chlorella sp.					
			Scenedesmus sp.					
С	Zooplanktons							
19.1	Abundance (Population)	no/m <sup>2</sup>	275	125	320	120	160	78
19.2	Name of Group Number		Gastropods	Copepods	Nematodes	Copepods	Polychaetes	Decapods
			Nematodes	Decapods	Echinoderms	Krill	Iospods	Crustaceans
	and name of group		Echinoderms	Echinoderms	Gastropods	Ostracods	Foraminiferans	Gastropods
			Copepods	Polychaete worms	Bivalves		Echinoderms	
	species of each group		Decapods		Crustaceans		Bryozoans	
							<u>'</u>	
19.3	Total Biomass	ml/100 m <sup>3</sup>	113	12.01	54.5	9.6	98.6	10
D	Microbiological Parameters							
20.1	Total Bacterial Count	CFU/ml	1380	1240	1590	1400	1780	1610
20.2	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent
	E.coli	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.4	Enterococcus species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.5	Salmonella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
	Shigella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.7	Vibrio species	/ml	Absent	Absent	Absent	Absent	Absent	Absent



From: April 2016

To : September 2016

# Status of conditions stipulated in Environmental and CRZ clearance.

			Near J	letty)	Near I	letty	Near	Jetty
SR.	TEST PARAMETERS	UNIT	15/07	/2016	08-12-	2016	09-09	-2016
NO.			SURFACE	BOTTOM	SURFACE	BOTTOM	SURFACE	BOTTOM
1	pH		7.98	8.11	8.17	8.23	8.11	8.19
2	Temperature	°C	30	29	30	29	29	28
3	Total Suspended Solids	mg/L	74	86	50	86	74	86
4	BOD (3 Days @ 27 °C)	mg/L	BDL*	BDL*	BDL*	BDL*	6	4
5	Dissolved Oxygen	mg/L	5.4	4.8	5.4	4.8	5	4.4
6	Salinity	ppt	39.8	40.66	41.3	42.1	39.8	40.6
7	Oil & Grease	mg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
_								
8	Nitrate as NO <sub>3</sub>	mg/L	0.706	0.502	0.55	0.65	0.59	0.726
9	Nitrite as NO <sub>2</sub>	mg/L	0.08	0.06	0.048	0.08	0.048	0.056
10	Ammonical Nitrogen as NH <sub>3</sub>	mg/L	0.546	0.772	0.43	0.54	0.345	0.448
11	Phosphates as PO <sub>4</sub>	mg/L	1.9	2	1.06	1.9	0.17	0.323
12	Total Nitrogen	mg/L	1.33	2.66	1.538	2.52	0.983	1.23
13	Petroleum Hydrocarbon	μg/L	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
14	Total Dissolved Solids	mg/L	44260	46990	47920	48340	47010	47540
15	COD	mg/L	22	18	18	20	20	14
16	Oxidisable Particular Organic Carbon	%	0.68	0.42	0.53	0.36	0.66	0.32
A	Hora and Fauna	,,	5.00	V. 12	0.55	5.50	2.00	0.52
17.1	Primary Productivity	mgC/L/day	1.66	0.67	2.47	0.225	1.77	0.45
В	Phytoplankton							
18.1		a / 3	2 21	0.774	2.00	0.274	2.00	0.274
_	Chlorophyll	mg/m³	3.31	0.774	2.85	0.374	2.85	0.374
18.2	Phaeophytin	mg/m <sup>3</sup>	BDL*	1.28	BDL*	1.682	BDL*	1.68
18.3	Cell Count	Unit x 10 <sup>3</sup> /L	198	44	258	66	129	33
18.4	Name of Group Number		Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophyceae	Bacillariophycea
			Nitzschia sp.	Navicula sp.	Navicula sp.	Nitzschia sp.	Nitzschia sp.	Navicula sp.
	and name of group		Synedra sp.	Coscinodiscus sp.	Rhizosolenia sp.	Fragillaria sp.	Navicula sp.	Nitzschia sp.
			Tabellaria sp.	Fragillaria sp.	Thallasiosira sp.	Pleurosigma sp.	Rhizosolenia sp.	Coscinodiscus sp.
	species of each group		Skeletonema sp	Cyanophyceae	Coscinodiscus sp.	Synedra sp.	Cocconeis sp.	Pinnularia sp.
			Cyanophyceae	Oscillatoria sp.	Nitzschia sp.	Cheatocerous sp.	Coscinodiscus sp.	Fragillaria sp.
			Nostoc sp.	Green Algae	Melosira sp.		Skeletonema sp.	Synedra sp.
			Green Algae	Hydrodictyon sp.	Gyrosigma sp.		Surirella sp.	
			Ankistrodesmus sp.	Volvox sp.	Cymbella sp.		Asterionella sp.	
			Chlorella sp.	Chlorella sp.	Green Algae		Cyanophyceae	
			Pediastrum sp.		Ankistrodesmus sp.		Microcystis sp.	
					Chlorella sp.			
					Pediastrum sp.			
		+			Scenedesmus sp.			
					эсспецезтаз эр.			
_								
C	Zooplanktons	. 1	160	40	225	100	225	400
19.1	Abundance (Population)	no/m <sup>2</sup>	160	40	225	100	225	100
19.2	Name of Group Number		Mysids	Krill	Copepods	Decapods	Polychaetes Worms	Mysids
			Echinoderms	Worms	Gastropods	Nematodes	Decapods	Snail
	and name of group		Ostracods	Gastropods	Mysids	Snail	Krill	Gastropods
	3 1		Chaetognathes		Snail		Hydrogoans	
	species of each group		Nematodes		Molluscans		, 3	
					Bivalves			
19.3	Total Biomass	ml/100 m <sup>3</sup>	99.87	3.25	116	14.57	166	14.57
D	Microbiological Parameters							
20.1	Total Bacterial Count	CFU/ml	1600	1300	1490	1220	1860	1510
	Total Coliform	/ml	Absent	Absent	Absent	Absent	Absent	Absent
	E.coli	/ml	Absent	Absent	Absent	Absent	Absent	Absent
		_						
	Enterococcus species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
20.5	Salmonella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
	Shigella species	/ml	Absent	Absent	Absent	Absent	Absent	Absent
ZU./	Vibrio species	/ml	Absent	Absent	Absent	Absent	Absent	Absent

Sea Sediment Quality Monitoring for the period of April-2016 to September-2016



From: April 2016

To : September 2016

# Status of conditions stipulated in Environmental and CRZ clearance.

SR.			19/04/2016	13/05/2016	14/06/2016	15/07/2016	08-12-2016	09-09-2016
NO.	TEST PARAMETERS	UNIT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT	SEDIMENT
1	Organic Matter	%	0.769	0.849	0.862	0.66	0.714	0.74
2	Phosphorus as P	mg/kg	250	202	158	180	178	224
3	Texture		Sandy	Sandy	Sandy	Sandy	Sandy	Sandy
4	Petroleum Hydrocarbon	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
5	Heavy Metals							
5.1	Aluminum as Al	%	4.77	4.53	5.12	5.18	5.06	4.77
5.2	Total Chromium as Cr <sup>+3</sup>	mg/kg	0.506	0.474	0.506	0.416	0.402	0.402
5.3	Manganese as Mn	mg/kg	712	746	698	717	690	754
5.4	Iron as Fe	%	1.77	2.24	2.02	2.04	14.94	2.02
5.5	Nickel as Ni	mg/kg	23.87	25.28	24.46	28.67	20.9	27.44
5.6	Copper as Cu	mg/kg	51.98	48.58	50.18	50.17	52.26	49.6
5.7	Zinc as Zn	mg/kg	61.6	63.2	60.72	58.02	62.6	51.36
5.8	Lead as Pb	mg/kg	0.962	1.027	0.933	0.982	0.888	0.972
5.9	Mercury as Hg	mg/kg	BDL*	BDL*	BDL*	BDL*	BDL*	BDL*
6	Benthic Organisms							
			Polychaete worms	Crustaceans	Echinoderms	Molluscans	Polychaete worms	Echinoderms
			Echinoderms	Decapods	Decapods	Decapods	Isopods	Polychaete worms
	Macrobenthos (No and name of		Crabs	Mysids	Isopods	Crabs	Decapods	Molluscans
6.1	groups present, No and name of			Chaetognaths				Bivalves
	species of each group present)			_				
			Gastropods	Bryozoans	Hydrozoa	Foraminiferans	Foraminiferans	Bryozoans
			Foraminiferans	Foraminiferans	Corepods	Copepods	Bryozoans	Copepods
	MeioBenthos (No and name of				•	Nematodes	Ciliates	
6.2	groups present, No and name of							
	species of each group present)							
6.3	Population	no/m <sup>2</sup>	440	353	386	433	481	385

Drinking water Quality Monitoring for the period of April-2016 to September-2016

SR. NO.	PARAMETERS	UNIT	06-11-2016	17/09/2016	06-11-2016	17/09/2016	
			Sub Station Bu	ilding Canteen	Near AMPTPL Exit Gate		
1	Colour	Hazen	< 1.0	< 1.0	< 1.0	< 1.0	
2	Turbidity	NTU	0.24	0.28	0.43	0.58	
3	Conductivity	µmho/cm	163	140	172	192	
4	pH		7.11	7.01	6.83	6.93	
5	Chloride as Cl	mg/L	17.49	17.74	20.49	22.49	
6	Total Dissolved Solids	mg/L	92	92	107	122	
7	Total Hardness as CaCO <sub>3</sub>	mg/L	46	46	53	64	
8	Iron as Fe	mg/L	0.12	0.105	0.12	0.125	
9	Sulphate as SO <sub>4</sub>	mg/L	7.56	6.92	11.55	13.54	
10	Residual Free Chlorine	mg/L	< 0.1	< 0.1	< 0.1	< 0.1	
11	Calcium as Ca	mg/L	14.28	13.6	15.96	20.58	
12	Magnesium as Mg	mg/L	2.88	2.88	3.6	3.6	
13	Fluoride as F	mg/L	0.17	0.19	0.18	0.21	
14	Nitrate as NO <sub>3</sub>	mg/L	3.35	4.48	2.52	1.25	
15	Manganese as Mn	mg/L	BDL*	BDL*	BDL*	BDL*	
16	Copper as Cu	mg/L	BDL*	BDL*	BDL*	BDL*	
17	Cadmium as Cd	mg/L	BDL*	BDL*	BDL*	BDL*	
18	Arsenic as As	mg/L	BDL*	BDL*	BDL*	BDL*	
19	Mercury as Hg	mg/L	BDL*	BDL*	BDL*	BDL*	
20	Lead as Pb	mg/L	BDL*	BDL*	BDL*	BDL*	
21	Zinc as Zn	mg/L	0.035	0.041	0.037	0.033	
22	Coliform	/100 ml	Absent	Absent	Absent	Absent	
23	E-Coli	/100 ml	Absent	Absent	Absent	Absent	



From: April 2016

To : September 2016

#### Status of conditions stipulated in Environmental and CRZ clearance.

					П			
SR.	PARAMETERS	UNIT	06-11-2016	17/09/2016		06-11-2016	17/09/2016	06-11-2016
			Near Work	shop Area	Ш	Near Amenity Building		In Main Office PUB
1	Colour	Hazen	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
2	Turbidity	NTU	0.29	0.28		0.19	0.36	0.22
3	Conductivity	µmho/cm	174	196		92.53	116	122
4	pH		6.87	7.13		0.96	7.68	6.97
5	Chloride as Cl	mg/L	20.99	21.49		12.49	12.49	15.49
6	Total Dissolved Solids	mg/L	108	124		56	84	80
7	Total Hardness as CaCO₃	mg/L	54	63		25	41	40
8	Iron as Fe	mg/L	0.11	0.115	П	0.19	0.15	0.11
9	Sulphate as SO <sub>4</sub>	mg/L	9.93	11.68	П	2.76	3.9	5.62
10	Residual Free Chlorine	mg/L	< 0.1	< 0.1	П	< 0.1	< 0.1	< 0.1
11	Calcium as Ca	mg/L	15.54	19.7	Π	4.64	12.18	10.5
12	Magnesium as Mg	mg/L	4.08	3.84	Π	3.36	2.88	3.6
13	Fluoride as F	mg/L	0.22	0.23	П	0.22	0.29	0.16
14	Nitrate as NO <sub>3</sub>	mg/L	2.69	3.18	Π	1.06	1.35	1.55
15	Manganese as Mn	mg/L	BDL*	BDL*	П	BDL*	BDL*	BDL*
16	Copper as Cu	mg/L	BDL*	BDL*	П	BDL*	BDL*	BDL*
17	Cadmium as Cd	mg/L	BDL*	BDL*	Π	BDL*	BDL*	BDL*
18	Arsenic as As	mg/L	BDL*	BDL*		BDL*	BDL*	BDL*
19	Mercury as Hg	mg/L	BDL*	BDL*		BDL*	BDL*	BDL*
20	Lead as Pb	mg/L	BDL*	BDL*		BDL*	BDL*	BDL*
21	Zinc as Zn	mg/L	0.042	0.052		0.034	0.037	0.034
22	Coliform	/100 ml	Absent	Absent		Absent	Absent	Absent
23	E-Coli	/100 ml	Absent	Absent		Absent	Absent	Absent

Dump Pond Water Quality Monitoring for the period of April-2016 to September-2016

			Dump Pond - 1 Near CT - 8	Dump Pond - 2 Near Pump House
			13/06/2016	13/06/2016
	TEST PARAMETER	UNIT		
1	pH		7.34	7.28
2	Total Dissolved Solids	mg/L	202	370
3	Total Suspended Solids	mg/L	12	9
4	Turbidity	NTU	9.4	4.96
5	BOD (3 Days @ 27 °C)	mg/L	60	31
6	Dissolved Oxygen	mg/L	4.5	4.7
7	COD	mg/L	252	111
8	Salinity	ppt	0.075	0.084
9	Oil & Grease	mg/L	BDL*	BDL*
10	Total Hardness as CaCO <sub>3</sub>	mg/L	108	142
11	Fluoride as F	mg/L	0.33	0.6
12	Chloride as Cl	mg/L	44.48	56.98
13	Zinc as Zn	mg/L	0.043	0.18
14	Cadmium as Cd	mg/L	BDL*	BDL*
15	Lead as Pb	mg/L	0.019	0.11
16	Mercury as Hg	mg/L	BDL*	BDL*

STP water Quality Monitoring for the period of April-2016 to September-2016

				Near MPT Quarter STP										
SR. NO.	SR. NO. TEST PARAMETERS		20/04/2016		05-12-2016		13/06/2016		16/07/2016		08-12-2016		09-08-2016	
		,	INLET	OUTLET	INLET	OUTLET	INLET	OUTLET	INLET	OUTLET	INLET	OUTLET	INLET	OUTLET
1	pH		7.04	7.5	7.18	7.48	7.04	7.37	7.14	7.46	6.96	7.23	7.03	7.17
2	Total Suspended Solids	mg/L	93	25	101	24	94	20	102	25	98	24	84	22
3	BOD (3 Days @ 27 °C)	mg/L	47.5	17	51	14	58	16	50	14	56	18	48	16
4	COD	mg/L	172	60	204	51	192	64	199	52	232	81	180	50
5	Oil & Grease	mg/L	1.48	BDL*	1.46	BDL*	1.58	BDL*	1.46	BDL*	1.5	BDL*	1.2	BDL*
6	Residual Free Chlorine	mg/L	< 0.1	0.6	< 0.1	0.7	< 0.1	0.5	< 0.1	0.8	< 0.1	0.6	< 0.1	0.8

Ambient Noise level Quality Monitoring for the period of April-2016 to September-2016



From: April 2016

To : September 2016

				A 1 . C.
	<b>-</b>	Near Security		Adani Site
	Fire Station	Tower	Sada Village	Office Near
Sampling Time				Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of Monitoring	22/04/2016	15/04/2016	04-06-2016	04-12-2016
6:00-7:00	45.3	40	48.3	45.9
7:00-8:00	48.8	45.6	45.8	50.4
8:00-9:00	45.2	45.9	50.5	48.2
9:00-10:00	50.2	48.5	58.4	45.1
10:00-11:00	55.9	50.9	55.7	53.7
11:00-12:00	58.8	48.4	52	55.5
12:00-13:00	55	50.6	50.3	58.7
13:00-14:00	50.8	45.5	48.1	58.5
14:00-15:00	48.6	45.7	45.4	55.4
15:00-16:00	50	48.7	48.1	50.9
16:00-17:00	55.5	50.9	55.8	48.3
17:00-18:00	58.3	48.4	48.3	50.1
18:00-19:00	58.6	45.4	48	55.6
19:00-20:00	55.7	44.5	50.3	48.4
20:00-21:00	56	45.4	55.5	50.3
21:00-22:00	55.8	48.4	52.1	53.5
Maximum	58.8	50.9	58.4	58.7
Minimum	45.2	40	45.4	45.1
				.0.2
Sampling Time	Fire Station	Near Security Tower	Sada Village	Adani Site Office Near Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819'
Date of	22/04/2016 &	15/04/2016 &	06/04/2016 &	12/04/2016 &
Monitoring	23/04/2016	16/04/2016	07/04/2016	13/04/2016
22:00-23:00	50.3	45.4	48.9	55.6
23:00-00:00	48.9	48.1	45.8	48.4
00:00-01:00	48.5	45.6	45.4	45.6
01:00-02:00	50.8	44.5	48.4	44.4
02:00-03:00	55.4	48.4	45.1	48.9
03:00-04:00	50.1	42.2	45.6	47.4
04:00-05:00	48.6	41	50.3	45.5
05:00-06:00	48.5	40.4	48.9	44.4
Maximum	55.4	48.4	50.3	55.6
	48.5		45.1	44.4
Minimum	48.5	40.4	45.1	44.4



From: April 2016

To : September 2016

		Near Security		Adani Site
	Fire Station	Tower	Sada Village	Office Near
Sampling Time				Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of	20/05/2016	17/05/2016	05-06-2016	05-10-2016
Monitoring	20/03/2010	17/03/2010	05-00-2010	05-10-2010
6:00-7:00	47.7	41.3	47.1	42.7
7:00-8:00	49.3	43.1	45.8	44.3
8:00-9:00	45.5	45.1	43.2	49.8
9:00-10:00	52.2	47.2	48.8	48
10:00-11:00	54.7	50.5	49.7	46.2
11:00-12:00	49.4	49.2	50.7	52.8
12:00-13:00	50.3	47.9	55.4	53.2
13:00-14:00	53.4	42.5	53.3	55.2
14:00-15:00	55.9	46.8	52.1	56.7
15:00-16:00	52.5	49.9	56.6	58.8
16:00-17:00	58.1	52	57.7	59
17:00-18:00	59.4	48.4	54.5	55.6
18:00-19:00	57.4	47.8	51.9	52.7
19:00-20:00	56	42.4	49.5	48.2
20:00-21:00	55.7	44.6	47	46.9
21:00-22:00	53.6	50.6	45.6	50
Maximum	59.4	52	57.7	59
Minimum	45.5	41.3	43.2	42.7
		Near Security		Adani Site
	Fire Station	Tower	Sada Village	Office Near
Sampling Time				Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of	20/05/2016 &	17/05/2016 &	06/05/2016 &	10/05/2016 &
Monitoring	21/05/2016	18/05/2016	07/05/2016	11/05/2016
22:00-23:00	50.5	49.9	44.3	49.8
23:00-00:00	49.4	47.1	45.7	47.8
00:00-01:00	46.3	48.6	42.4	42.3
01:00-02:00	44.4	46.4	44.6	44.5
02:00-03:00	46	42.2	47.5	45.1
03:00-04:00	45.4	43.1	48.9	47
04:00-05:00	42.6	41.5	49	46.6
05:00-06:00	46.2	40.9	44.7	44.8
Maximum	50.5	49.9	49	49.8
Minimum	42.6	40.9	42.4	42.3



From: April 2016

To : September 2016

		Near Security		Adani Site
	Fire Station	Tower	Sada Village	Office Near
Sampling Time				Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of	06-07-2016	06-10-2016	21/06/2016	15/06/2016
Monitoring				
6:00-7:00	40.3	45.7	42.8	44.2
7:00-8:00	45.3	42.9	42.4	45.6
8:00-9:00	42.5	47.8	44	49.7
9:00-10:00	48.2	48.6	46	52.3
10:00-11:00	45.9	47.5	48.3	56.2
11:00-12:00	45.1	42.6	47.3	57
12:00-13:00	48.7	51.1	50.2	55.1
13:00-14:00	44.3	52.2	52.7	58.5
14:00-15:00	46.2	55.2	55.3	55.4
15:00-16:00	45.2	42.3	57.8	53.1
16:00-17:00	43.9	47.4	53.9	52.1
17:00-18:00	47	44.6	50	53
18:00-19:00	52	45.8	52.9	55
19:00-20:00	51.9	43.6	49.2	52.5
20:00-21:00	52.6	48.1	47.6	49
21:00-22:00	49.9	42	48	48.9
Maximum	52.6	55.2	57.8	58.5
Minimum	40.3	42	42.4	44.2
		Noor Cogurity		Adani Site
	Fire Station	Near Security	Sada Village	Office Near
Sampling Time		Tower		Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of	07/06/2016 &	10/06/2016 &	21/06/2016 &	15/06/2016 &
Monitoring	08/06/2016	11/06/201	22/06/2016	16/06/2016
22:00-23:00	50.1	48.2	46.4	47.4
23:00-00:00	51.2	44.3	45	45.4
00:00-01:00	50	45.6	47.1	46.3
01:00-02:00	48.1	46.5	47	48.3
02:00-03:00	47.7	48	45.5	42.5
03:00-04:00	46.8	45.1	44.4	41.9
04:00-05:00	45.2	44.8	44.2	43.9
05:00-06:00	44.5	44	42.9	43
Maximum	51.2	48.2	47.1	48.3
Minimum	44.5	44	42.9	41.9



From: April 2016

To : September 2016

				A 1 . C'I
		Near Security		Adani Site
	Fire Station	Tower	Sada Village	Office Near
Sampling Time				Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of Monitoring	19/07/2016	14/07/2016	07-06-2016	07-12-2016
6:00-7:00	44.5	42.8	36.5	40.1
7:00-8:00	42.1	44.3	37	43.2
8:00-9:00	46.7	45	40.5	44
9:00-10:00	48.3	47.2	42.5	45.1
10:00-11:00	49.3	46	44.6	47.4
11:00-12:00	50.8	52.2	41.1	48.7
12:00-13:00	51	55.5	39.3	49.8
13:00-14:00	53.9	50.6	40.2	50.9
14:00-15:00	54.8	52	42.6	51.4
15:00-16:00	52.9	56.1	43.1	49.5
16:00-17:00	50.7	49.9	45.7	47.8
17:00-18:00	49.1	51.6	46.5	50.2
18:00-19:00	45.4	46.2	44.2	48.6
19:00-20:00	46.9	44.1	47.5	48.9
20:00-21:00	47.9	42.4	45.6	46.4
21:00-22:00	44.4	41.2	43.3	45.3
Maximum	54.8	56.1	47.5	51.4
Minimum	42.1	41.2	36.5	40.1
Sampling Time	Fire Station	Near Security Tower	Sada Village	Adani Site Office Near Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of	19/07/2016 &	14/07/2016 &	06/07/2016 &	12/07/2016 &
Monitoring	20/07/2016	15/07/2016	07/07/2016	13/07/2016
22:00-23:00	42.9	44.1	42	44.7
23:00-00:00	41.7	49.4	40.3	42.5
00:00-01:00	43.3	46.5	39.9	40
01:00-02:00	38.6	45.7	37.1	39.1
02:00-03:00	40.8	41.3	35.4	37.4
03:00-04:00	39.7	40.6	36.5	35.1
04:00-05:00	37.7	38.4	34.8	37.3
05:00-06:00	42.1	39.8	37.5	39
Maximum	43.3	49.4	42	44.7
Minimum	37.7	38.4	34.8	35.1



From: April 2016

To : September 2016

		Near Security		Adani Site
	Fire Station	Tower	Sada Village	Office Near
Sampling Time				Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
<b>Latitude</b> E 073° 47.800′		E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of Monitoring	08-04-2016	08-08-2016	17/08/2016	08-10-2016
6:00-7:00			42.5	45.5
7:00-8:00	37.6	36.7	45.4	44.8
8:00-9:00	40.2	41.6	44.9	46.4
9:00-10:00	41	46.7	45.7	50.7
10:00-11:00	43.7	44.2	44	48.4
11:00-12:00	45.8	43.6	46.6	52.2
12:00-13:00	51.6	49.2	50.5	48.9
13:00-14:00	48.5	47.8	52.8	53.4
14:00-15:00	52.6	45.9	50.8	52
15:00-16:00	53.2	50.3	48.2	54.7
16:00-17:00	54.4	51.5	44.1	56.5
17:00-18:00	51.2	48.3	47.6	58
18:00-19:00	57.9	52.6	46.9	50.1
19:00-20:00	54.9	46.5	42.5	47.9
20:00-21:00	52.7	45.2	45.3	49.5
21:00-22:00	49.9	48.1	44.7	50
Maximum	57.9	52.6	52.8	58
Minimum			42.5	44.8
		36.7		
Sampling Time	Fire Station	Near Security Tower	Sada Village	Adani Site Office Near Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of Monitoring	08-04-2016	08-08-2016	17/08/2016	08-10-2016
22:00-23:00	43.9	44.1	45.8	42.6
23:00-00:00	42.7	45.5	43.5	47.2
00:00-01:00	39.4	43.6	45	43.1
01:00-02:00	40	42.1	42.2	42.8
02:00-03:00	42	44.5	44.8	41.5
03:00-04:00	40.8	42.9	43.2	43.8
04:00-05:00	41.3	43.3	42.3	45.1
05:00-06:00 39.9		40.1 41.4		44.2
Maximum	43.9	45.5	45.8	47.2
Minimum	39.4	40.1	41.4	41.5



From: April 2016

To : September 2016

## Status of conditions stipulated in Environmental and CRZ clearance.

Compliant Time	Fire Station	Near Security Tower	Sada Village	Adani Site Office Near
Sampling Time	N 1 5° 24 5227	N 1 5° 24 420'	N 15° 24.755′	Gate No.02
	Longitude N 15° 24.523′ N 15° 24.438′ Latitude E 073° 47.800′ E 073° 47.967′			N 15° 24.607′
	<b>Latitude</b> E 073° 47.800′		E 073° 47.942′	E 073° 47.819′
Date of 09-10-2016 Monitoring		09-08-2016	09-12-2016	16/09/2016
6:00-7:00	45.8	43.4	48.2	41.8
7:00-8:00	44.9	42.5	46.5	44.8
8:00-9:00	45.1	44	44.6	45
9:00-10:00	52.2	46.7	48.9	52.4
10:00-11:00	56.8	48.3	48.4	48.8
11:00-12:00			50.1	55.3
12:00-13:00	50.9	48	49	56.2
13:00-14:00			50.2	47.6
14:00-15:00			52	47.8
15:00-16:00	55.5	50.7	49.3	50.4
16:00-17:00			47.5	55
17:00-18:00			45.3	54.2
18:00-19:00 48.7		44.1 45.4	51.2	52.1
19:00-20:00	47	49.1	48.5	50.6
20:00-21:00	45.5	46.1	46.9	46
21:00-22:00	43.8	44.4	44.2	45.2
Maximum			52	56.2
Minimum	43.8	52.3 42.5	44.2	41.8
-				-
Sampling Time	Fire Station	Near Security Tower	Sada Village	Adani Site Office Near Gate No.02
Longitude	N 15° 24.523′	N 15° 24.438′	N 15° 24.755′	N 15° 24.607′
Latitude	E 073° 47.800′	E 073° 47.967′	E 073° 47.942′	E 073° 47.819′
Date of Monitoring	09-10-2016	09-08-2016	09-12-2016	16/09/2016
22:00-23:00	43.3	46.2	45.5	48.8
23:00-00:00	45.3	42.8	44.8	46.4
00:00-01:00	42.1	41.9	43.8	45.9
01:00-02:00			41.3	47.3
02:00-03:00 38.4		42.6 41.3 44.5 42.9		40.5
03:00-04:00 40		43.2	41.6	42
04:00-05:00 42.4		42.5 43		44.2
05:00-06:00 43.1		42.2	44.6	46.1
Maximum	45.3	46.2	45.5	48.8
Minimum 38.4		41.9	41.3	40.5

Soil Quality Monitoring for the period of April-2016 to September-2016



From: April 2016

To : September 2016

Near CT-1		06-10-2016	09-10-2016
TEST PARAMETER	UNIT	RESULTS	RESULTS
Туре		Brown	Brown
Gravel	%	0.4	0.28
Coarse Sand	%	2.4	1.86
Medium Sand	%	12.4	15.22
Fine Sand	%	12.22	7.44
Total Sand	%	31.23	28.36
Silt & Clay	%	70.22	71.64
pH (1:5)		8.77	8.67
Electricity Conductivity	µmho/cm	576	704
Alkali matter	mg/kg	631	636
Cation Exchange Capacity	meq/100		
	gm	7.8	8.02
•		12.06	12.9
Organic Matter	mg/kg	0.37	0.4
Available Nitrogen	meq/100		
	gm	0.346	0.36
	mg/kg	3.1	3.22
-	mg/kg	0.198	0.146
Available Sodium	%	0.9	0.93
Permeability	%	0.83	1.12
Near Adani Site		06-10-2016	09-10-2016
TEST PARAMETER	UNIT	RESULTS	RESULTS
Туре		Brown	Brown
Gravel	%	0.9	0.7
G. G. 10.	70	0.5	0.7
Coarse Sand	%	3.8	3.8
Coarse Sand	%	3.8	3.8
Coarse Sand Medium Sand	%	3.8 12.4	3.8 12.7
Coarse Sand Medium Sand Fine Sand	% % %	3.8 12.4 18.68	3.8 12.7 11.56
Coarse Sand Medium Sand Fine Sand Total Sand	% % % %	3.8 12.4 18.68 20.99	3.8 12.7 11.56 12.38
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay	% % % %	3.8 12.4 18.68 20.99 73.82	3.8 12.7 11.56 12.38 87.62
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5)	% % % % %	3.8 12.4 18.68 20.99 73.82 8.8	3.8 12.7 11.56 12.38 87.62 8.83
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity	% % % % %  μmho/cm	3.8 12.4 18.68 20.99 73.82 8.8 462	3.8 12.7 11.56 12.38 87.62 8.83 472 713
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity	% % % % %  μmho/cm mg/kg	3.8 12.4 18.68 20.99 73.82 8.8 462	3.8 12.7 11.56 12.38 87.62 8.83 472
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity Sodium Absorption Ratio	%   %   %   %   %    μmho/cm   mg/kg   meq/100	3.8 12.4 18.68 20.99 73.82 8.8 462 698	3.8 12.7 11.56 12.38 87.62 8.83 472 713 7.33
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity Sodium Absorption Ratio Organic Matter	%   %   %   %   %    μmho/cm   mg/kg   meq/100   gm    mg/kg	3.8 12.4 18.68 20.99 73.82 8.8 462 698	3.8 12.7 11.56 12.38 87.62 8.83 472 713
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity Sodium Absorption Ratio	%  %  %  %  %  %  μmho/cm  mg/kg  meq/100  gm   mg/kg  meq/100	3.8 12.4 18.68 20.99 73.82 8.8 462 698 7.5 13.1 0.38	3.8 12.7 11.56 12.38 87.62 8.83 472 713 7.33 11 0.4
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity  Sodium Absorption Ratio Organic Matter Available Nitrogen	%  %  %  %  %  %  μmho/cm  mg/kg  meq/100  gm   mg/kg  meq/100  gm	3.8 12.4 18.68 20.99 73.82 8.8 462 698 7.5 13.1 0.38	3.8 12.7 11.56 12.38 87.62 8.83 472 713 7.33 11 0.4
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity  Sodium Absorption Ratio Organic Matter Available Nitrogen  Available Potassium	%  %  %  %  %  %  μmho/cm  mg/kg  meq/100  gm   mg/kg  meq/100  gm  mg/kg	3.8 12.4 18.68 20.99 73.82 8.8 462 698 7.5 13.1 0.38 0.376 3.18	3.8 12.7 11.56 12.38 87.62 8.83 472 713 7.33 11 0.4 0.406 3.42
Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity  Sodium Absorption Ratio Organic Matter Available Nitrogen	%  %  %  %  %  %  μmho/cm  mg/kg  meq/100  gm   mg/kg  meq/100  gm	3.8 12.4 18.68 20.99 73.82 8.8 462 698 7.5 13.1 0.38	3.8 12.7 11.56 12.38 87.62 8.83 472 713 7.33 11 0.4
	TEST PARAMETER Type Gravel Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay pH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity  Sodium Absorption Ratio Organic Matter Available Nitrogen  Available Potassium Available Phosphorus Available Sodium Permeability  Near Adani Site TEST PARAMETER Type	TEST PARAMETER Type Gravel Gravel Coarse Sand Medium Sand Fine Sand Total Sand Silt & Clay PH (1:5) Electricity Conductivity Alkali matter Cation Exchange Capacity Sodium Absorption Ratio Organic Matter Available Nitrogen Myad Available Potassium Available Potassium Available Sodium Permeability  Near Adani Site TEST PARAMETER  Wood  Wood Wood Wood Wood Wood Wood W	TEST PARAMETER         UNIT         RESULTS           Type          Brown           Gravel         %         0.4           Coarse Sand         %         2.4           Medium Sand         %         12.4           Fine Sand         %         12.22           Total Sand         %         31.23           Silt & Clay         %         70.22           pH (1:5)          8.77           Electricity Conductivity         µmho/cm         576           Alkali matter         mg/kg         631           Cation Exchange Capacity         meq/100         gm         7.8           Sodium Absorption Ratio          12.06           Organic Matter         mg/kg         0.37           Available Nitrogen         meq/100         gm         0.346           Available Potassium         mg/kg         3.1           Available Phosphorus         mg/kg         0.198           Available Sodium         %         0.9           Permeability         %         0.83           Near Adani Site         UNIT         RESULTS           Type          Brown

From: April 2016

To : September 2016

Status of conditions stipulated in Environmental and CRZ clearance.

# ANNEXURE 2 - STATUS OF THE MITIGATION MEASURES SUGGESTED IN EIA

Sr.	Measures	Status
No		
1	Proposed roads in coal terminal shall be black topped to avoid entertainment of fugitive dust	
2	The Municipal waste generated at the terminal is to be disposed along with the solid waste being disposed at present by the MPT.	Being complied with and taken care off. Dispatch register is maintained.
3	Adequate numbers Toilets shall be constructed in terminal office and office area. The sewage shall be treated in septic tank. The treated sewage from septic tank shall be disposed into existing sewage network of MPT.	Complied. Toilet has been constructed at berth, office and workshop area. Sewage from the septic tank is transported by sewage tankers to MPT Sewage Treatment plant.
4	Drinking water facilities and waste disposal facilities shall be located away from each other.	
5	The water Effluent from coal stock yard to Be settled in a settling tank	Complied. Port has been constructed three water dump ponds. Water effluent from coal stock yard is collected & settled in these dump ponds.
6	Efficient pollution control technique for dust control to be utilized at open stock piles, conveyor transfer points, dump hopper loading points and other such dust generation locations.	been provided in conveyor and 11 no's of transfer points.
7	The stacker can operate from distance with boom to keep the stack pile surface to a minimum.	Complied.
8	All the regularly used roadways at site must be swept daily with a tank mounted road sweeper and washed by a truck mounted cart.	Being Complied. Water tanker equipped with mist cannon arrangement is used to spray water on road to minimize the entrapment of fugitive emission.
9	All the transport shall be properly covered at the bottom and top with perfect sealing of plastic/tarpaulin sheets.	Complied.
10	The stock yard should be covered with screens/ wall of height of at least 7 to 8 mtr.	Complied. Screens/ wall of height of 15 mtr. Is provided along stock yard.



From: April 2016

: September 2016 Status of conditions stipulated in Environmental and CRZ clearance.

11	The will be properly covered with tarpaulin and overloading will not allowed to avoid spillage of loose material on the roads. Regular maintenance and washing of wheel to be done.	Being complied. All the loaded trucks are covering with tarpaulin. Truck wheel washing arrangement is made inside the port to minimize dust emission.
12	Ambient noise level due to vehicular traffic to be controlled by developing green belt.	Green belt developed along the periphery and coal stock yard. Currently about 11233 plants are planted in port premises and survival rate is good.
13	Noise level from air compressor to be reduced by fitting exhaust muffler and intake mufflers	Air compressor is kept in an acoustic enclosure to minimize noise from these machines. Exposures of workers to high noise level are minimized by job rotation and use of ear muff.
14	Green belt development.	Green belt developed along the periphery and coal stock yard. Currently about <b>11233</b> plants are planted in port premises and survival rate is good.
15	For controlling fire from coal stock following measures to be adopted.  1. 3 No. of mobile fire tender to be placed at coal stack pile area.  2. Autogenous combustion of coal stock to be prevented by limiting stock height not more than 6 M.  3. Lump size of coal to be restricted to 20mm which will not lead to formation of air voids, eliminating the possibility of combustion	<ol> <li>Installed fixed fire fighting system         (39 Nos.) at coal stack pile &amp; all CT's</li> <li>Complied</li> <li>Complied</li> <li>Also there are 14 No. of water monitors are provided around coal stock area.</li> </ol>
16	Implementation of Environmental Monitoring Programme.	Being complied. Regular Environmental Monitoring is carried out to access the quality of treated effluents from STP, Ambient Air quality, Noise level are being monitored through NABL accredited laboratory M/s Pollucon Laboratories Pvt Ltd. Regularly and confirming the standards. Also CAAQMS is installed & running successfully.