



AMPTPL/2018/26

Date: 28.05.2018

To

Additional Principal Chief Conservator of Forests (C),
Ministry of Environment Forest and Climate Change,
Regional Office (SZ), Kendriya Sadan,
4th Floor, E&F Wings, 17th Main Road,
Koramangala II Block, Bangalore-560034 (Karnataka)
rosz.bng-mef@nic.in

Dear Sir,

Sub : Half yearly Compliance report of Environment and CRZ clearance for modernization and operation of Berth – 07 in M/s. Mormugao Port Trust for the period of October 2017 to March 2018 – Reg.

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

Adani Mormugao Port Terminal Private Limited is concessionaire of M/s Mormugao Port Trust for Berth No. 7. Please find enclosed herewith the compliance report to the conditions stipulated in the cited reference for the Half Yearly period of **October 2017 to March 2018** in both hard & soft copy for your kind reference.

Thanking you,
Yours Faithfully,

For **M/s Adani Mormugao Port Terminal Private Limited**

(Debasish Neogi)
Business Head

Encl: Compliance Report (Hard & soft copy)

Copy to:

1. **The Director (Monitoring-IA-III Division)**, Ministry of Environment, Forest & Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi- 110003.
2. **The Zonal Officer**, Central Pollution Control Board, 1st & 2nd Floor, Nisaraga bhawan, A Block, Thimmaiah Main Road, 7th D Cross, Shivanagar, opposite Pushpanjali theatre, Bengaluru – 560010.
3. **The Member Secretary**, Goa State Pollution Control board, Dempo Towers, 1st Floor, EDC Patto Plaza, Panaji, Goa-403001.
4. **The Member Secretary** Goa Coastal Zone Management Authority (GCZMA) 1st Floor, Pt. Deendayal Upadhyay Bhavan, Behind Pundalik Devasthan, Porvorim.
5. **The Chairman**, Mormugao Port trust, Administrative Office, Headland Sada, Mormugao, Goa – 403804.

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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Received

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

प्रमाणित
RECEIVED
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forests & Climate Change
क्षेत्रीय कार्यालय, दक्षिण वलय
Regional Office, Southern Zone
केन्द्रीय सदन, चौथा तल, बंगलूरु
Kendriya Sadan, 4th Floor, Bangalore
बंगलूरु/बंगलूरु-560034

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
| Status of conditions stipulated in Environment 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. No. | Conditions | Compliance |
|----------------|---|--|
| 6 | Specific Conditions | |
| i | "Consent for Establishment" shall be obtained from Goa Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site. | Complied, Copy of Consent for Establishment (CTE) submitted with six monthly compliance reports dated 25 th November, 2014. Now construction completed and terminal is in operation with valid Consent from GSPCB (No.5/356/10-PCB/CI-3743,dated 23/01/2018 valid up to 31/01/2020) |
| ii | The project proponent shall provide lining for collection of run off from coal stockyard and the leachate shall be treated before disposal. | Complied, Runoff from Coal Stock Yard is being collected in RCC dump pond provided with proper lining. Settled water from dump pond is reused for dust suppression and settled coal solid particles is sent back to coal stock piles. |
| iii | The project proponent shall provide dry fog and sprinkling systems for effective dust suppression. | Complied For effective dust suppression following measures are provided: <ul style="list-style-type: none"> • 224 Nos of dry fog dust suppression system has been provided in conveyor system and at 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) |
| iv | Entire transportation of coal shall be in closed conveyor. | Complied, The coal is being transported through covered conveyor from jetty to silo/ stock yard. AMPTPL has provided 2700 meters long covered conveyor system from jetty to silo including 11 closed transfer Points provided with Dry Fog Dust Suppression (DFDS) nozzles. |
| v | There shall be no washing of conveyor belt | Being Complied No washing of Conveyor belt is done. |


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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
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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 |
|----------------|--|---|
| vi | The project proponent shall provide wind screen min 15 m height fabric HDPE all along the periphery. The height shall be designed taking into account the wind velocity modelling etc. Also explore creepers in consultation with forest department. | Complied Wind screen of MS structure along with HDPE fabric/perforated sheet of 15 meters height has been provided along the coal stacking yard facility taking into account the wind velocity and creepers have been developed along the wind screen. |
| vii | Coal shall be kept under moist conditions using water sprinklers. Transportation shall be in closed conveyors with water spray. | Complied The coal is being stored under the moist condition. Sprinklers are provided for the same. Coal is being transported through covered conveyors with inbuilt dry fog dust suppression system. |
| 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 This is an old berth within the existing premises of MPT and only modernization activity has been done. |
| x | Oil spills if any shall be properly collected and disposed as per the Rules. Proper Oil Contingency Management Plan shall be put in place. | Complied., AMPTPL is handling dry cargo only such as coal. However, the AMPTPL is abiding by the Oil Spill Contingency Management Plan prepared by M/s MPT. (No such incident occurred till date) |
| 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. Compliance of earlier clearance is being submitted by M/s MPT. All recommendations made in the Environment Management Plan as contained in the Environment Impact Assessment of the project are covered and effectively implemented. |

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
| Status of conditions stipulated in Environment 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. No. | Conditions | Compliance |
|---------|--|--|
| 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. | Complied, Coal is being unloaded directly into hopper from the ship and transported to the stack yards through closed conveyor system. Inbuilt dust suppression system has been provided in hoppers, transfer towers and storage yards to avoid fugitive emissions. Coal cargo is not being unloaded directly onto the berth. AMPTPL has installed water meters and log sheet maintained to record water consumption in dust suppression system. |
| 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. | Complied/Being Complied Green belt with suitable native species has been developed, along the periphery and coal stock yard. Currently about 11813 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. |

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
| Status of conditions stipulated in Environment 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. 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. | Complied There is no discharge of sewage and other liquid waste into marine environment. The domestic sewage is being collected in septic tanks provided within the premises of AMPTPL and sent to Sewage Treatment Plant of MPT. However as MPT sewage treatment plant is under maintenance/upgradation, it is being sent to sewage treatment plant of Municipal Corporation located at Baina. Ballast is not being taken by AMPTPL. |
| 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. | Complied, The domestic sewage is being collected in septic tanks provided within the premises of AMPTPL and sent to Sewage Treatment Plant of MPT. However as MPT sewage treatment plant is under maintenance/upgradation, it is being sent to sewage treatment plant of Municipal Corporation located at Baina for treatment and solid waste generated is disposed to local authorities. No effluent or solid wastes is being discharged into the water or 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 | Complied Regular Environmental Monitoring is carried out, to assess the quality of treated effluents from STP, Ambient Air Quality, Noise level, DG set through NABL accredited laboratory. Results for all the monitoring parameter are within the prescribed limit. Summary of the monitoring report for the period Oct'17-Mar'18 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. | Complied Compliance submitted through Half Yearly compliance of October-2016 to March-2017. |

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
| Status of conditions stipulated in Environment 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. No. | Conditions | Compliance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|---|---|----|-------------|----------------|---|--------------------------------|-------|---|------------------|------|---|--|------|---|-----------------------|------|---|-------------------------------|------|---|--------------------------------------|------|---|-------------------------------|------|---|---------------------------------|------|--------------|--|--------------|
| xix | The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purpose. | <p>Complied, AMPTPL has kept separate budget for implementation of Environment Management Plan and it is not diverted for any other purpose.</p> <p>Budget allocated for implementation of EMP for FY 17-18 is 34.2 Lakhs. A brief summary of environmental expenditure during FY17-18 is given below.</p> <table border="1"> <thead> <tr> <th>SN</th><th>DESCRIPTION</th><th>COST (in lacs)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Environment Quality Monitoring</td><td>18.00</td></tr> <tr> <td>2</td><td>Waste Management</td><td>1.00</td></tr> <tr> <td>3</td><td>Sponsorships for Pollution awareness program</td><td>2.00</td></tr> <tr> <td>4</td><td>Broad Band for CAAQMS</td><td>0.15</td></tr> <tr> <td>5</td><td>General Maintenance of CAAQMS</td><td>2.00</td></tr> <tr> <td>6</td><td>Green belt Maintenance & Development</td><td>6.00</td></tr> <tr> <td>7</td><td>Electricity charges of CAAQMS</td><td>1.80</td></tr> <tr> <td>8</td><td>Consent to Operate Renewal fees</td><td>3.25</td></tr> <tr> <td colspan="2">TOTAL</td><td>34.20</td></tr> </tbody> </table> | SN | DESCRIPTION | COST (in lacs) | 1 | Environment Quality Monitoring | 18.00 | 2 | Waste Management | 1.00 | 3 | Sponsorships for Pollution awareness program | 2.00 | 4 | Broad Band for CAAQMS | 0.15 | 5 | General Maintenance of CAAQMS | 2.00 | 6 | Green belt Maintenance & Development | 6.00 | 7 | Electricity charges of CAAQMS | 1.80 | 8 | Consent to Operate Renewal fees | 3.25 | TOTAL | | 34.20 |
| SN | DESCRIPTION | COST (in lacs) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Environment Quality Monitoring | 18.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Waste Management | 1.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Sponsorships for Pollution awareness program | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Broad Band for CAAQMS | 0.15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | General Maintenance of CAAQMS | 2.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Green belt Maintenance & Development | 6.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Electricity charges of CAAQMS | 1.80 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Consent to Operate Renewal fees | 3.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TOTAL | | 34.20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | <p>Complied 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.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. General Conditions | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| i | Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality. | <p>Compiled, There was no digging activity during the compliance period. Construction activity is completed and project is in operational phase.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
| Status of conditions stipulated in Environment 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. 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. | Complied. There was no visit of officers of Ministry/Regional Office at Bangalore during the Compliance period. Full support will be 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. | Complied Six monthly EC & CRZ clearance Compliance reports of the stipulated conditions are regularly submitted to Regional Office of Ministry at Bangalore, and other authorities (CPCB, GPCB MoEF, MPT etc). Last Compliance report for the period April'17-Sep'17 was submitted vide letter no. AMPPTL/ECR/CPCB/2017-18/06 dated 20.12.2017. |
| 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 for Compliance. |
| 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. There is no change in project profile or implementation agency. |
| 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. | Complied Financial Closure Date: 14 th May, 2010 Concession agreement date with MPT: 22 nd September, 2009 |

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
| Status of conditions stipulated in Environment 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. No. | Conditions | Compliance |
|----------------|--|---|
| 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 Complied by Murmugao Port Trust(MPT). |
| 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. This condition does not pertain to project proponent. However, it is learnt that Goa State Pollution Control Board has complied with the same. |
| 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 for Compliance. |
| 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. | Complied All applicable clearances from the concerned statutory 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 http://www.envfor.nic.in . 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. | Complied MPT has given advertisement on 11 th January, 2014 in the newspapers mentioned below. 1) Sunaparant 2) Times of India, Goa. Copy of the same has been already been submitted to RO-MoEF&CC (Bangalore). |

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
| Status of conditions stipulated in Environment 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. No. | Conditions | Compliance |
|----------------|---|--|
| 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. | Complied Copy of six monthly EC&CRZ compliance report is being regularly uploaded by AMPTPL on company website at https://www.adaniports.com/ports-downloads?port=Murmugao-Terminal |
| 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. | Complied The same has been Complied by Murmugao Port Trust. |
| 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. | Complied AMPTPL is regularly uploading the status of compliance including results of monitored data on its company website. The same can be viewed at https://www.adaniports.com/ports-downloads?port=Murmugao-Terminal Six monthly compliance report is regularly sent to Regional office of MoEF&CC at Bangalore, CPCB Zonal office, SPCB and other authorities. Last compliance report for the period April'17-Sep'17 was sent vide letter no. AMPPTL/ECR/CPCB/2017-18/06 dated 20.12.2017. |

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|  | Adani Murmugao Port Terminal Pvt.Ltd. | From : October 2017 to March 2018 |
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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 |
|----------------|--|---|
| 16. | The environmental statement for each financial year ending 31 st 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. | <p>Complied</p> <p>Environment Statement in Form V is submitted to Goa State Pollution Control Board for each financial year. Environment Statement for the year FY 16-17 has been submitted on 14th July, 2017 vide letter no AMPTPL/EMR/GSPCB/2017-18/05 and has also been uploaded on company website.</p> <p>Copy of the same is available on company website at https://www.adaniports.com/ports-downloads?port=Murmugao-Terminal</p> |

"ENVIRONMENTAL MONITORING REPORT"

FOR



ADANI MURMUGAO PORT TERMINAL PVT. LTD. (AMPTPL),
GROUND FLOOR, PORT USERS COMPLEX, NEAR STATE BANK OF INDIA,
MORMUGAO HARBOUR, GOA 403802 INDIA – TEL 0832 2594253

OCTOBER-2017 TO MARCH-2018

PREPARED BY:



M/s POLLUCON LABORATORIES PVT. LTD.

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TC-5945



ISO 9001:2015



ISO 14001:2015



OHSAS 18001:2007

"ENVIRONMENT MONITORING REPORT"

FOR

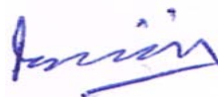


**ADANI MURMUGAO PORT TERMINAL PVT. LTD. (AMPTPL),
GROUND FLOOR, PORT USERS COMPLEX, NEAR STATE BANK OF INDIA,
MORMUGAO HARBOUR, GOA 403802 INDIA – TEL 0832 2594253**

For and on behalf of Pollucon Laboratories Pvt. Ltd., Surat

Approved by : Dr. Arun Kumar Bajpai

Signed

: 



Designation : Lab Manager (Q)

This report has been prepared by Pollucon laboratories Pvt. Ltd. with all reasonable skills, care and diligence, incorporating our General Terms and Conditions of Business and taking account of the resources devoted, flow chart, diagram etc. is provided by the client itself.



Authorized Signatory

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Authorized Signatory

CHAPTER – 1

AMBIENT AIR QUALITY MONITORING

MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



Authorized Signatory

Results of AAQM for Sada Village [October-2017 to March-2018]

| Sr. No. | Date of sampling | Particulate Matter (PM ₁₀) µg/m ³ | Particulate Matter (PM _{2.5}) µg/m ³ | Lead as Pb µg/m ³ | Benzo (a) Pyrene (BaP)-particulate phase only ng/m ³ | Arsenic as As ng/m ³ | Nickel as Ni ng/m ³ | Carbon Monoxide as CO mg/m ³ | Benzene as C ₆ H ₆ µg/m ³ | Ammonia (NH ₃) µg/m ³ | Sulphur Dioxide (SO ₂) µg/m ³ | Oxides of Nitrogen (NO ₂) µg/m ³ | Ozone (O ₃) µg/m ³ |
|---------|------------------|---|--|---------------------------------|--|------------------------------------|-----------------------------------|--|---|---|---|--|--|
| 1 | 02/10/2017 | 33.53 | 15.42 | BDL* | BDL* | BDL* | BDL* | 0.18 | BDL* | 10.59 | 5.47 | 15.31 | 16.58 |
| 2 | 05/10/2017 | 60.42 | 36.67 | BDL* | BDL* | BDL* | BDL* | 0.38 | BDL* | 35.61 | 14.36 | 27.64 | 18.39 |
| 3 | 09/10/2017 | 38.62 | 16.67 | BDL* | BDL* | BDL* | BDL* | 0.25 | BDL* | 14.44 | 10.54 | 18.70 | 21.61 |
| 4 | 12/10/2017 | 59.49 | 32.50 | BDL* | BDL* | BDL* | BDL* | 0.40 | BDL* | 24.32 | 16.36 | 32.32 | 24.39 |
| 5 | 16/10/2017 | 44.57 | 19.58 | BDL* | BDL* | BDL* | BDL* | 0.30 | BDL* | 37.38 | 6.66 | 29.36 | 28.47 |
| 6 | 19/10/2017 | 50.39 | 27.50 | BDL* | BDL* | BDL* | BDL* | 0.22 | BDL* | 28.57 | 12.76 | 25.36 | 26.38 |
| 7 | 23/10/2017 | 48.61 | 21.67 | BDL* | BDL* | BDL* | BDL* | 0.21 | BDL* | 18.29 | 8.43 | 20.36 | 17.81 |
| 8 | 26/10/2017 | 66.39 | 35.42 | BDL* | BDL* | BDL* | BDL* | 0.50 | BDL* | 30.09 | 13.71 | 23.44 | 25.34 |
| 9 | 30/10/2017 | 42.48 | 20.42 | BDL* | BDL* | BDL* | BDL* | 0.53 | BDL* | 31.61 | 9.64 | 26.53 | 22.50 |
| 10 | 02/11/2017 | 42.39 | 18.33 | BDL* | BDL* | BDL* | BDL* | 0.30 | BDL* | 14.51 | 11.67 | 21.59 | 19.60 |
| 11 | 06/11/2017 | 62.59 | 29.58 | BDL* | BDL* | BDL* | BDL* | 0.46 | BDL* | 21.45 | 8.52 | 26.74 | 21.61 |
| 12 | 09/11/2017 | 35.31 | 17.50 | BDL* | BDL* | BDL* | BDL* | 0.14 | BDL* | 10.41 | 5.40 | 17.39 | 15.58 |
| 13 | 13/11/2017 | 52.62 | 21.67 | BDL* | BDL* | BDL* | BDL* | 0.24 | BDL* | 15.24 | 9.38 | 23.53 | 18.49 |
| 14 | 16/11/2017 | 65.61 | 34.58 | BDL* | BDL* | BDL* | BDL* | 0.52 | BDL* | 29.58 | 15.76 | 32.53 | 22.50 |
| 15 | 20/11/2017 | 33.42 | 19.58 | BDL* | BDL* | BDL* | BDL* | 0.34 | BDL* | 31.67 | 7.59 | 15.29 | 25.69 |
| 16 | 23/11/2017 | 45.82 | 20.42 | BDL* | BDL* | BDL* | BDL* | 0.60 | BDL* | 25.23 | 14.36 | 30.55 | 20.37 |
| 17 | 27/11/2017 | 28.38 | 15.42 | BDL* | BDL* | BDL* | BDL* | 0.27 | BDL* | 18.52 | 12.47 | 25.38 | 16.51 |
| 18 | 30/11/2017 | 68.52 | 37.50 | BDL* | BDL* | BDL* | BDL* | 0.44 | BDL* | 20.32 | 10.72 | 27.35 | 26.65 |
| 19 | 04/12/2017 | 24.60 | 16.67 | BDL* | BDL* | BDL* | BDL* | 0.24 | BDL* | 15.72 | 13.65 | 29.40 | 18.40 |
| 20 | 09/12/2017 | 59.42 | 27.50 | BDL* | BDL* | BDL* | BDL* | 0.53 | BDL* | 17.65 | 10.66 | 24.58 | 26.59 |
| 21 | 11/12/2017 | 37.73 | 22.08 | BDL* | BDL* | BDL* | BDL* | 0.46 | BDL* | 13.47 | 12.33 | 30.34 | 22.38 |
| 22 | 14/12/2017 | 58.32 | 25.83 | BDL* | BDL* | BDL* | BDL* | 0.21 | BDL* | 25.53 | 12.45 | 26.69 | 23.32 |
| 23 | 18/12/2017 | 31.28 | 15.42 | BDL* | BDL* | BDL* | BDL* | 0.11 | BDL* | 10.64 | 5.74 | 15.64 | 17.70 |
| 24 | 21/12/2017 | 46.29 | 26.67 | BDL* | BDL* | BDL* | BDL* | 0.27 | BDL* | 29.48 | 9.71 | 19.49 | 21.46 |
| 25 | 25/12/2017 | 56.29 | 23.75 | BDL* | BDL* | BDL* | BDL* | 0.39 | BDL* | 14.44 | 18.52 | 22.34 | 24.33 |
| 26 | 28/12/2017 | 62.40 | 30.42 | BDL* | BDL* | BDL* | BDL* | 0.69 | BDL* | 32.52 | 15.49 | 32.81 | 19.85 |
| 27 | 01/01/2018 | 54.82 | 30.83 | BDL* | BDL* | BDL* | BDL* | 0.41 | BDL* | 23.65 | 5.49 | 17.45 | 17.50 |
| 28 | 04/01/2018 | 31.49 | 15.42 | BDL* | BDL* | BDL* | BDL* | 0.14 | BDL* | 10.41 | 11.61 | 27.25 | 15.52 |
| 29 | 08/01/2018 | 42.42 | 24.58 | BDL* | BDL* | BDL* | BDL* | 0.32 | BDL* | 28.70 | 9.68 | 20.52 | 19.49 |
| 30 | 11/01/2018 | 50.32 | 29.58 | BDL* | BDL* | BDL* | BDL* | 0.47 | BDL* | 13.45 | 17.40 | 24.19 | 22.26 |
| 31 | 15/01/2018 | 28.58 | 17.50 | BDL* | BDL* | BDL* | BDL* | 0.27 | BDL* | 18.52 | 13.34 | 29.64 | 20.56 |
| 32 | 18/01/2018 | 55.81 | 35.83 | BDL* | BDL* | BDL* | BDL* | 0.60 | BDL* | 34.36 | 10.71 | 26.84 | 24.63 |



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| | | | | | | | | | | | | | |
|----|------------|-------|-------|------|------|------|------|------|------|-------|-------|-------|-------|
| 33 | 22/01/2018 | 34.72 | 16.67 | BDL* | BDL* | BDL* | BDL* | 0.53 | BDL* | 15.45 | 15.58 | 32.26 | 18.44 |
| 34 | 25/01/2018 | 45.57 | 18.33 | BDL* | BDL* | BDL* | BDL* | 0.36 | BDL* | 24.20 | 7.52 | 28.62 | 23.40 |
| 35 | 29/01/2018 | 56.69 | 31.25 | BDL* | BDL* | BDL* | BDL* | 0.78 | BDL* | 30.48 | 12.69 | 31.47 | 21.58 |
| 36 | 01/02/2018 | 45.57 | 25.42 | BDL* | BDL* | BDL* | BDL* | 0.41 | BDL* | 34.38 | 8.55 | 30.52 | 21.50 |
| 37 | 05/02/2018 | 39.51 | 20.42 | BDL* | BDL* | BDL* | BDL* | 0.25 | BDL* | 26.49 | 5.44 | 18.41 | 25.45 |
| 38 | 08/02/2018 | 68.22 | 40.42 | BDL* | BDL* | BDL* | BDL* | 0.33 | BDL* | 21.76 | 11.33 | 15.37 | 19.38 |
| 39 | 12/02/2018 | 49.49 | 22.50 | BDL* | BDL* | BDL* | BDL* | 0.19 | BDL* | 32.57 | 14.45 | 25.43 | 22.10 |
| 40 | 15/02/2018 | 34.53 | 19.58 | BDL* | BDL* | BDL* | BDL* | 0.26 | BDL* | 13.45 | 7.63 | 19.50 | 15.58 |
| 41 | 19/02/2018 | 51.20 | 30.42 | BDL* | BDL* | BDL* | BDL* | 0.53 | BDL* | 37.65 | 10.35 | 23.86 | 26.29 |
| 42 | 22/02/2018 | 42.42 | 16.67 | BDL* | BDL* | BDL* | BDL* | 0.29 | BDL* | 19.55 | 15.36 | 32.35 | 17.56 |
| 43 | 26/02/2018 | 58.38 | 31.25 | BDL* | BDL* | BDL* | BDL* | 0.37 | BDL* | 12.55 | 17.57 | 21.45 | 24.27 |
| 44 | 01/03/2018 | 62.71 | 26.67 | BDL* | BDL* | BDL* | BDL* | 0.36 | BDL* | 18.29 | 12.69 | 15.59 | 15.64 |
| 45 | 05/03/2018 | 40.47 | 18.75 | BDL* | BDL* | BDL* | BDL* | 0.31 | BDL* | 11.55 | 8.52 | 20.52 | 17.46 |
| 46 | 08/03/2018 | 52.27 | 22.50 | BDL* | BDL* | BDL* | BDL* | 0.21 | BDL* | 27.27 | 16.07 | 24.45 | 23.59 |
| 47 | 12/03/2018 | 44.49 | 16.25 | BDL* | BDL* | BDL* | BDL* | 0.54 | BDL* | 28.57 | 9.38 | 33.52 | 18.58 |
| 48 | 15/03/2018 | 35.57 | 20.83 | BDL* | BDL* | BDL* | BDL* | 0.15 | BDL* | 21.58 | 5.34 | 17.46 | 27.43 |
| 49 | 19/03/2018 | 54.20 | 28.75 | BDL* | BDL* | BDL* | BDL* | 0.40 | BDL* | 10.64 | 17.59 | 27.52 | 25.39 |
| 50 | 22/03/2018 | 68.38 | 36.67 | BDL* | BDL* | BDL* | BDL* | 0.33 | BDL* | 31.44 | 11.73 | 26.41 | 21.63 |
| 51 | 26/03/2018 | 43.29 | 25.42 | BDL* | BDL* | BDL* | BDL* | 0.22 | BDL* | 19.45 | 14.40 | 30.38 | 19.55 |
| 52 | 29/03/2018 | 36.39 | 19.58 | BDL* | BDL* | BDL* | BDL* | 0.32 | BDL* | 16.41 | 16.54 | 29.36 | 22.38 |

BDL*: - Below Detection Limit: Ozone as O₃ (µg/m³): 10

BDL*: - Below Detection Limit - Lead as Pb (µg/m³): 0.5

BDL*: - Below Detection Limit - Carbon Monoxide as CO (mg/m³): 0.01

BDL*: - Below Detection Limit - Ammonia NH₃ (µg/m³): 10

BDL*: - Below Detection Limit - Benzene as C₆H₆ (µg/m³): 2

BDL*: - Below Detection Limit - Benzo (a) Pyrene (BaP) - Particulate Phase only (ng/m³): 0.5

BDL*: - Below Detection Limit - Arsenic as As (ng/m³): 2

BDL*: - Below Detection Limit - Nickel as Ni (ng/m³): 10



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CHAPTER – 2

SEA WATER AND SEA SEDIMENTS MONITORING MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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Results of Sea water Monitoring

| Sr. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|--|--------------------------|---|--|---|---|--|--|
| Sampling Location | | | Near Jetty | | | | | |
| GPS Location | | | 15° 24.748'N, 73° 47.938'E | | | | | |
| Date of sampling | | | 25/10/2017 | | 16/11/2017 | | 13/12/2017 | |
| | | | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 1 | pH | -- | 6.86 | 7.17 | 7.41 | 7.49 | 8.11 | 8.17 |
| 2 | Temperature | °C | 29 | 30 | 28 | 27 | 29 | 28 |
| 3 | Total Suspended Solids | mg/L | 78 | 90 | 158 | 168 | 154 | 198 |
| 4 | BOD (3 Days @ 27 °C) | mg/L | 6 | 5 | 5 | 4 | 4 | 3.5 |
| 5 | Dissolved Oxygen | mg/L | 5 | 4.8 | 5.8 | 4.6 | 5.4 | 4.8 |
| 6 | Salinity | ppt | 29.88 | 30.26 | 28.8 | 29.92 | 30.4 | 31.7 |
| 7 | Oil & Grease | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 8 | Nitrate as NO ₃ | μmol/L | 0.542 | 0.678 | 25 | 26.8 | 24.6 | 27.1 |
| 9 | Nitrite as NO ₂ | μmol/L | 0.048 | 0.052 | 1.6 | 1.5 | 1.8 | 1.7 |
| 10 | Ammonical Nitrogen as NH ₃ | μmol/L | 0.326 | 0.41 | 2.54 | 2.8 | 2.69 | 2.91 |
| 11 | Phosphates as PO ₄ | μmol/L | 1.09 | 1.22 | 1.03 | 1.93 | 2.08 | 2.15 |
| 12 | Total Nitrogen | μmol/L | 0.916 | 1.14 | 1.1 | 1.55 | 4.58 | 4.73 |
| 13 | Petroleum Hydrocarbon | μg/L | 7 | 1.6 | 11 | 2.2 | 12 | 1.8 |
| 14 | Total Dissolved Solids | mg/L | 32980 | 33540 | 32928 | 34020 | 34852 | 35654 |
| 15 | COD | mg/L | 18 | 14 | 22 | 18 | 20 | 16 |
| 17 | Flora and Fauna | | | | | | | |
| 17.1 | Primary Productivity | mgC/L/day | 1.46 | 0.54 | 1.463 | 0.338 | 1.688 | 0.674 |
| 18 | Phytoplankton | | | | | | | |
| 18.1 | Chlorophyll | mg/m ³ | 3.47 | 0.854 | 1.095 | 0.134 | 2.35 | 0.24 |
| 18.2 | Phaeophytin | mg/m ³ | BDL * | 1.03 | 1.372 | 1.885 | BDL * | 1.816 |
| 18.3 | Cell Count | No, x 10 ³ /L | 232 | 62 | 196 | 23 | 225 | 49 |
| 18.4 | Name of Group Number and name of group species of each group | -- | Bacillariophyceae Nitzschia sp. Navicula sp. Fragillaria sp. Coscinodiscus sp. Skeletonema sp. Pinnularia sp. Asterionella sp. Cymbella sp. Cyanophyceae Nostoc sp. Oscillatoria sp. Green Algae Ankistrodesmu | Bacillariophyceae Fragillaria sp. Pinnularia sp. Synedra sp. Gyrosigma sp. Cyanophyceae Oscillatoria sp. Green Algae Volvox sp. Chlorella sp. -- -- -- -- -- | Bacillariophyceae Achnanthes sp. Amphiprora sp. Asterionella sp. Coscinodiscus sp. Pinnularia sp. Thalassionema sp. Green Algae Ulothrix sp. Spirogyra sp. Hydrodictyon sp. | Bacillariophyceae Fragillaria sp. Synedra sp. Gyrosigma sp. Gomphonema sp. Green Algae Pandorina sp. Chlorella sp. Cyanophyceae Oscillatoria sp. Nostoc sp. -- -- -- | Bacillariophyceae Asterionella sp. Coscinodiscus sp. Navicula sp. Skeletonema sp. Fragillaria sp. Gomphonema sp. Green Algae Ankistrodesmu s sp. Chlorella sp. Pediastrum sp. Ulothrix sp. | Bacillariophyceae Nitzschia sp. Gyrosigma sp. Pinnularia sp. Gomphonema sp. Green Algae Chlorella sp. Ulothrix sp. Spirogyra sp. Cyanophyceae Anabaena sp. -- |



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| | | | | | | | | |
|------|--|--|--|--|--|--|--|----------------|
| | | | s sp. Chlorella sp. Scenedesmus sp. | | Cyanophyceae Oscillatoria sp. Spirulina sp. | | Cyanophyceae Anabaena sp. Oscillatoria sp. | -- -- -- |
| 19 | Zooplanktons | | | | | | | |
| 19.1 | Abundance (Population) | Nox10 ³ /1 100m ³ | 1700 | | 19 | | 28 | |
| 19.2 | Name of Group Number and name of group species of each group | -- | Gastropods Nematodes Echinoderms Copepods Decapods | | Copepods Cyclops Krill Polychaete worms Decapods Ctenophores Chaetognathes | | Daphnia Ostracods Decapods Copepods Krill Barnacles | |
| 19.3 | Total Biomass | mL/100 m ³ | -- | | 3.1 | | 4.2 | |
| 20 | Microbiological Parameters | | | | | | | |
| 20.1 | Total Bacterial Count | CFU/mL | 2100 | | 1640 | | 2040 | |
| 20.2 | Total Coliform | /mL | 1030 | | 880 | | Absent | |
| 20.3 | E.coli | /mL | 660 | | 720 | | Absent | |
| 20.4 | Enterococcus species | /mL | Absent | | Absent | | Absent | |
| 20.5 | Salmonella species | /mL | Absent | | Absent | | Absent | |
| 20.6 | Shigella species | /mL | Absent | | Absent | | Absent | |
| 20.7 | Vibrio species | /mL | Absent | | Absent | | Absent | |

BDL*: Below Detection Limit



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Results of Sea water Monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|--|-------------------------|---|---|--|---|---|--------|
| Sampling Location | | | Near Jetty | | | | | |
| GPS Location | | | 15° 24.748' N, 73° 47.938' E | | | | | |
| Date of sampling | | | 12/01/2018 | | 13/02/2018 | | 21/03/2018 | |
| | | | Surface | Bottom | Surface | Bottom | Surface | Bottom |
| 1 | pH | -- | 7.93 | 8.08 | 7.56 | 7.66 | 7.63 | 8.02 |
| 2 | Temperature | °C | 30 | 29 | 30 | 28 | 31 | 30 |
| 3 | Total Suspended Solids | mg/L | 166 | 178 | 172 | 184 | 165 | 176 |
| 4 | BOD (3 Days @ 27 °C) | mg/L | 5.5 | 3.8 | 5.6 | 4.6 | 4.4 | 3.6 |
| 5 | Dissolved Oxygen | mg/L | 5.6 | 4.4 | 5.6 | 4.8 | 5.5 | 4.4 |
| 6 | Salinity | ppt | 33.2 | 34.1 | 29.8 | 30.6 | 33.28 | 34.3 |
| 7 | Oil & Grease | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 8 | Nitrate as NO ₃ | µmol/L | 26.2 | 27.7 | 24.5 | 26.5 | 25.7 | 26.2 |
| 9 | Nitrite as NO ₂ | µmol/L | 1.9 | 1.6 | 1.3 | 1.2 | 1.7 | 1.55 |
| 10 | Ammonical Nitrogen as NH ₃ | µmol/L | 2.51 | 2.79 | 2.37 | 2.41 | 2.55 | 2.78 |
| 11 | Phosphates as PO ₄ | µmol/L | 1.88 | 1.97 | 1.75 | 1.86 | 1.95 | 2 |
| 12 | Total Nitrogen | µmol/L | 4.41 | 3.57 | 3.93 | 3.88 | 4.46 | 4.62 |
| 13 | Petroleum Hydrocarbon | µg/L | 14 | 2.1 | 11.8 | 1.9 | 12.6 | 1.7 |
| 14 | Total Dissolved Solids | mg/L | 34789 | 35147 | 34130 | 34040 | 34990 | 35249 |
| 15 | COD | mg/L | 24 | 19 | 19 | 13 | 21 | 17 |
| 17 | Flora and Fauna | | | | | | | |
| 17.1 | Primary Productivity | mgC/L/day | 1.463 | 0.225 | 2.09 | 0.675 | 2.36 | 0.338 |
| 18 | Phytoplankton | | | | | | | |
| 18.1 | Chlorophyll | mg/m ³ | 2.27 | 0.614 | 2.93 | 0.72 | 2.36 | 0.338 |
| 18.2 | Phaeophytin | mg/m ³ | BDL * | 1.27 | BDL * | 1.16 | 1.04 | 2.71 |
| 18.3 | Cell Count | No.x 10 ³ /L | 201 | 32 | 208 | 64 | 249 | 78 |
| 18.4 | Name of Group Number and name of group species of each group | -- | Bacillariophyceae Asterionella sp. Navicula sp. Coscinodiscus sp. Nitzschia sp. Rhizosolenia sp. Thalassionema sp. Skeletonema sp. Green Algae Chlorella sp. Spirogyra sp. Scenedesmus sp. | Bacillariophyceae Synedra sp. Fragillaria sp. Pinnularia sp. Nitzschia sp. Green Algae Volvox sp. Chlorella sp. Cyanophyceae Oscillatoria sp. Spirulina sp. | Bacillariophyceae Asterionella sp. Coscinodiscus sp. Gyrosigma sp. Pinnularia sp. Cyclotella sp. Nitzschia sp. Synedra sp. Green Algae Spirogyra sp. Chlorella sp. Pandorina sp. Cyanophyceae Oscillatoria sp. Spirulina sp. | Bacillariophyceae Fragillaria sp. Navicula sp. Nitzschia sp. Coscinodiscus sp. Green Algae Chlorella sp. Pediastrum sp. Cyanophyceae Oscillatoria sp. Anabaena sp. Microcystis sp. Green Algae Volvox sp. Chlorella sp. | Bacillariophyceae Fragillaria sp. Navicula sp. Nitzsa sp. Coscinodiscus sp. Green Algae Chlorella sp. Pediastrum sp. Cyanophyceae Oscillatoria sp. | |



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| | | | | | | | |
|------|--|---------------------------------------|--|--|--|--|--|
| | | | Cyanophyceae Oscillatoria sp. Anabaena sp. Microcystis sp. | | | | |
| 19 | Zooplanktons | | | | | | |
| 19.1 | Abundance (Population) | Nox10 ³ /100m ³ | 22 | 15 | 26 | | |
| 19.2 | Name of Group Number and name of group species of each group | -- | Polychaete worms Isopods Bryozoans Decapods Crustaceans Molluscs Cyclops | Molluscs Decapods Echinoderms Mysids Gastropods Ostracods | Decapods Echinoderms Mysids Gastropods Ostracods | | |
| 19.3 | Total Biomass | mL/100 m ³ | 3.3 | 4.4 | 3 | | |
| 20 | Microbiological Parameters | | | | | | |
| 20.1 | Total Bacterial Count | CFU/mL | 2510 | 2100 | 1980 | | |
| 20.2 | Total Coliform | /mL | Absent | Absent | Absent | | |
| 20.3 | E.coli | /mL | Absent | Absent | Absent | | |
| 20.4 | Enterococcus species | /mL | Absent | Absent | Absent | | |
| 20.5 | Salmonella species | /mL | Absent | Absent | Absent | | |
| 20.6 | Shigella species | /mL | Absent | Absent | Absent | | |
| 20.7 | Vibrio species | /mL | Absent | Absent | Absent | | |

BDL*: Below Detection Limit



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Results of Sea Sediment Monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|--|-------------------|--|---|--|--|----------------------------------|--|
| Sampling Location | | | Near Jetty | | | | | |
| GPS Location | | | N 15° 24.748', E 73° 47.938' | | | | | |
| Date of sampling | | | 25/10/2017 | 16/11/2017 | 13/12/2017 | 12/01/2018 | 13/02/2018 | 21/03/2018 |
| 1 | Organic Matter | % | 0.369 | 0.41 | 0.54 | 0.39 | 0.562 | 0.462 |
| 2 | Phosphorus as P | µg/g | 750 | 480 | 738 | 702 | 746 | 712 |
| 3 | Texture | -- | Sandy | Sandy | Sandy | Sandy | Sandy | Sandy |
| 4 | Petroleum Hydrocarbon | µg/g | BDL* | BDL* | BDL* | BDL* | BDL* | BDL* |
| 5 | Heavy Metals | | | | | | | |
| 5.1 | Aluminum as Al | % | 6.77 | 7 | 5.28 | 6.86 | 5.04 | 6.16 |
| 5.2 | Total Chromium as Cr+3 | µg/g | 206 | 0.1 | 214 | 216 | 230 | 209 |
| 5.3 | Manganese as Mn | µg/g | 1712 | 1150 | 1696 | 1748 | 1696 | 1733 |
| 5.4 | Iron as Fe | % | 5.77 | 5.92 | 5.06 | 5.43 | 5.19 | 5.55 |
| 5.5 | Nickel as Ni | µg/g | 54 | 39.3 | 56 | 52 | 60 | 57 |
| 5.6 | Copper as Cu | µg/g | 72 | 52.7 | 86 | 68 | 82 | 74 |
| 5.7 | Zinc as Zn | µg/g | 98 | 68 | 92 | 104 | 116 | 96 |
| 5.8 | Lead as Pb | µg/g | 14 | 7.3 | 17 | 13 | 15 | 12 |
| 5.9 | Mercury as Hg | µg/g | 0.5 | 0.4 | 0.3 | 0.4 | 0.7 | 0.2 |
| 6 | Benthic Organisms | | | | | | | |
| 6.1 | Macrobenthos (No and name of groups present, No and name of species of each group present) | -- | Polychaete worms Echinoderms Crabs | Mysids Chaetognaths Echinoderms Polychaete worms | Isopods Decapods Mysids Ostracods | Polychaete worms Echinoderms Isopods | Mysids Echinoderms Isopods | Echinoderms Crabs Mysids Bivalves |
| 6.2 | MeioBenthos (No and name of groups present, No and name of species of each group present) | -- | Gastropods Foraminiferans | Foraminiferans Nematodes | Nematodes Foraminiferans | Copepods Foraminiferans | Copepods | Hydrozoa |
| 6.3 | Population | no/m ² | 410 | 382 | 337 | 394 | 385 | 376 |

BDL*: Below Detection Limit



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CHAPTER – 3

STP WATER MONITORING

MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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Results of STP water quality monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|------------------------|------|----------------------------|------------|------------|------------|------------|------------|
| Sampling Location | | | Near MPT Quarter STP Inlet | | | | | |
| Date of sampling | | | 21/10/2017 | 17/11/2017 | 14/12/2017 | 13/01/2018 | 14/02/2018 | 20/03/2018 |
| 1 | pH | -- | 7.22 | 6.92 | 7.14 | 7.17 | 7.31 | 6.98 |
| 2 | Total Suspended Solids | mg/L | 112 | 116 | 112 | 122 | 80 | 104 |
| 3 | BOD (3 Days @ 27 °C) | mg/L | 44 | 56 | 54 | 52 | 32 | 36 |
| 4 | COD | mg/L | 138 | 154 | 206 | 198 | 132 | 112 |
| 5 | Oil & Grease | mg/L | 1.2 | 1.6 | 1.22 | 1.66 | 1.4 | 9.4 |
| 6 | Residual Free Chlorine | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 |

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | | | |
|-------------------|------------------------|------|-----------------------------|------------|------------|------------|------------|------------|
| Sampling Location | | | Near MPT Quarter STP Outlet | | | | | |
| Date of sampling | | | 21/10/2017 | 17/11/2017 | 14/12/2017 | 13/01/2018 | 14/02/2018 | 20/03/2018 |
| 1 | pH | -- | 7.63 | 7.22 | 7.46 | 6.86 | 7.69 | 7.18 |
| 2 | Total Suspended Solids | mg/L | 22 | 26 | 20 | 22 | 22 | 16 |
| 3 | BOD (3 Days @ 27 °C) | mg/L | 13 | 16 | 18 | 17 | 19 | 16 |
| 4 | COD | mg/L | 39 | 92 | 66 | 42 | 78 | 56 |
| 5 | Oil & Grease | mg/L | < 1.0 | < 1.0 | < 1.0 | < 1.0 | < 1.0 | 2.4 |
| 6 | Residual Free Chlorine | mg/L | 0.6 | 0.6 | 0.6 | 0.7 | 0.5 | 0.7 |



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CHAPTER – 4

DUMP POND WATER QUALITY MONITORING MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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Results of Dump Pond Water quality monitoring

| SR. NO. | PARAMETERS | UNIT | RESULT | | | | | |
|-------------------|-------------------------------------|------|------------------------|------------|-----------------------------|------------|--------------------------|------------|
| Sampling Location | | | Dump Pond-1 Near CT 08 | | Dump Pond-2 Near Pump House | | Dump Pond - 3 Near Jetty | |
| Date of sampling | | | 15/12/2017 | 21/03/2018 | 15/12/2017 | 21/03/2018 | 15/12/2017 | 21/03/2018 |
| 1 | pH | -- | 7.46 | 7.8 | 7.17 | 7.58 | 6.83 | 7.3 |
| 2 | Total Dissolved Solids | mg/L | 238 | 269 | 418 | 360 | 510 | 418 |
| 3 | Total Suspended Solids | mg/L | 13 | 27 | 32 | 48 | 46 | 36 |
| 4 | Turbidity | NTU | 8.44 | 6.4 | 10.8 | 7.1 | 14 | 6.4 |
| 5 | BOD (3 Days @ 27 oC) | mg/L | 52 | 32 | 44 | 48 | 54 | 45 |
| 6 | Dissolved Oxygen | mg/L | 5.3 | 5.8 | 4.6 | 5.1 | 4 | 4.8 |
| 7 | COD | mg/L | 92 | 110 | 198 | 160 | 226 | 190 |
| 8 | Salinity | ppt | 0.07 | 0.11 | 0.48 | 0.12 | 0.56 | 0.18 |
| 9 | Oil & Grease | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 10 | Total Hardness as CaCO ₃ | mg/L | 102 | 118 | 196 | 142 | 224 | 196 |
| 11 | Fluoride as F | mg/L | 0.29 | 0.56 | 0.64 | 0.7 | 1.27 | 0.8 |
| 12 | Chloride as Cl | mg/L | 42.2 | 52.4 | 272 | 56.9 | 112 | 96 |
| 13 | Zinc as Zn | mg/L | 0.02 | 0.09 | 0.17 | 0.16 | 0.19 | 0.12 |
| 14 | Cadmium as Cd | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 15 | Lead as Pb | mg/L | BDL * | BDL * | 0.07 | BDL * | 0.33 | BDL * |
| 16 | Mercury as Hg | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |

BDL *: Below Detection Limit



Authorized Signatory

CHAPTER – 5

DRINKING WATER QUALITY MONITORING

MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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Results of Drinking water quality monitoring

| SR. NO. | PARAMETERS | UNIT | RESULT | | | | | |
|-------------------|-------------------------------------|------------------------------|------------|-----------------------|------------|-----------------------|------------|--------|
| Sampling Location | | Sub Station Building Canteen | | Near AMPTPL Exit Gate | | Near Amenity Building | | |
| Date of sampling | | 04/12/2017 | 26/03/2018 | 04/12/2017 | 26/03/2018 | 04/12/2017 | 26/03/2018 | |
| 1 | Colour | Hazen | < 1.0 | 2 | < 1.0 | 1 | < 1.0 | 1 |
| 2 | Turbidity | NTU | 0.31 | 1.1 | 0.43 | 1.2 | 0.37 | 0.98 |
| 3 | Conductivity | µmho/cm | 188 | 227 | 156 | 248 | 176 | 210 |
| 4 | pH | -- | 7.4 | 7.2 | 5.88 | 7.08 | 8.19 | 7.18 |
| 5 | Chloride as Cl | mg/L | 22.6 | 49.9 | 18.6 | 52.9 | 24.6 | 47.9 |
| 6 | Total Dissolved Solids | mg/L | 116 | 148 | 96 | 156 | 114 | 136 |
| 7 | Total Hardness as CaCO ₃ | mg/L | 62 | 32 | 54 | 40 | 58 | 30 |
| 8 | Iron as Fe | mg/L | 0.17 | 0.12 | 0.19 | 0.16 | 0.15 | 0.09 |
| 9 | Sulphate as SO ₄ | mg/L | 9.4 | 11 | 6.46 | 14 | 7.34 | 10 |
| 10 | Residual Free Chlorine | mg/L | < 0.1 | < 0.1 | < 0.1 | < 0.1 | < 0.1 | 0.2 |
| 11 | Calcium as Ca | mg/L | 17.6 | 6 | 15.22 | 8 | 18.6 | 5 |
| 12 | Magnesium as Mg | mg/L | 5.64 | 4.08 | 8.14 | 4.8 | 5.32 | 4.2 |
| 13 | Fluoride as F | mg/L | 0.21 | 0.3 | 0.13 | 0.2 | 0.28 | 0.25 |
| 14 | Nitrate as NO ₃ | mg/L | 2.83 | 1.4 | 1.57 | 1.6 | 1.86 | 1.3 |
| 15 | Manganese as Mn | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 16 | Copper as Cu | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 17 | Cadmium as Cd | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 18 | Arsenic as As | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 19 | Mercury as Hg | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 20 | Lead as Pb | mg/L | BDL * | BDL * | BDL * | BDL * | BDL * | BDL * |
| 21 | Zinc as Zn | mg/L | 0.07 | BDL * | 0.03 | BDL * | 0.06 | BDL * |
| 22 | Coliform | /100 mL | Absent | Absent | Absent | Absent | Absent | Absent |
| 23 | E-Coli | /100 mL | Absent | Absent | Absent | Absent | Absent | Absent |

BDL *: Below Detection Limit



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CHAPTER – 6

SOIL QUALITY MONITORING

MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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Results of Soil quality monitoring

| SR. NO. | PARAMETERS | UNIT | RESULTS | | | |
|-------------------|--------------------------|-----------|------------|------------|-----------------|------------|
| Sampling Location | | | NEAR CT-1 | | NEAR ADANI SITE | |
| Date of sampling | | | 19/12/2017 | 21/03/2018 | 19/12/2017 | 21/03/2018 |
| 1 | Type | -- | Brown | Brown | Brown | Brown |
| 2 | Gravel | % | 0.47 | 0.6 | 0.54 | 0.4 |
| 3 | Coarse Sand | % | 2.74 | 3 | 2.98 | 2.5 |
| 4 | Medium Sand | % | 13.28 | 15 | 14.1 | 16.2 |
| 5 | Fine Sand | % | 10.53 | 11 | 11.2 | 13 |
| 6 | Total Sand | % | 23 | 25 | 18.6 | 19 |
| 7 | Silt & Clay | % | 77 | 75 | 81.4 | 81 |
| 8 | pH (1:5) | -- | 8.66 | 8.7 | 8.93 | 8.99 |
| 9 | Electricity Conductivity | µmho/cm | 592 | 610 | 574 | 630 |
| 10 | Alkali matter | mg/kg | 660 | 540 | 730 | 610 |
| 11 | Cation Exchange Capacity | meq/100 g | 8.13 | 9.2 | 8.07 | 10.2 |
| 12 | Sodium Absorption Ratio | -- | 12.11 | 14 | 12.3 | 13.8 |
| 13 | Organic Matter | mg/kg | 0.42 | 0.34 | 0.47 | 0.25 |
| 14 | Available Nitrogen | meq/100 g | 0.35 | 0.26 | 0.41 | 0.18 |
| 15 | Available Potassium | mg/kg | 3.46 | 4 | 3.58 | 3.2 |
| 16 | Available Phosphorus | mg/kg | 0.58 | 0.32 | 0.17 | 0.24 |
| 17 | Available Sodium | % | 1.1 | 1.4 | 1.34 | 1.8 |
| 18 | Permeability | % | 0.97 | 0.8 | 0.93 | 0.84 |



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CHAPTER – 7

NOISE LEVEL MONITORING

MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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Results of Day Time Noise level monitoring

| October 2017 | | | | | |
|----------------|---------------|-------------------|---------------------|--------------|-----------------------------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 13/10/2017 | 04/10/2017 | 18/10/2017 | 10/10/2017 |
| 1 | 6:00-7:00 | 39.2 | 43.3 | 42.3 | 46.2 |
| 2 | 7:00-8:00 | 41.6 | 40.1 | 44.5 | 44.4 |
| 3 | 8:00-9:00 | 43.6 | 44.6 | 45.8 | 46.6 |
| 4 | 9:00-10:00 | 45.3 | 45.7 | 47.1 | 47.9 |
| 5 | 10:00-11:00 | 49.6 | 50.0 | 49.9 | 48.7 |
| 6 | 11:00-12:00 | 50.3 | 46.9 | 53.3 | 50.7 |
| 7 | 12:00-13:00 | 52.7 | 49.8 | 51.6 | 51.4 |
| 8 | 13:00-14:00 | 53.2 | 51.3 | 53 | 53.6 |
| 9 | 14:00-15:00 | 54.1 | 53.6 | 55.9 | 48.7 |
| 10 | 15:00-16:00 | 55.6 | 55.7 | 57 | 54.3 |
| 11 | 16:00-17:00 | 53.8 | 57.6 | 58.9 | 56.4 |
| 12 | 17:00-18:00 | 54.2 | 54.9 | 56.3 | 52.9 |
| 13 | 18:00-19:00 | 51.9 | 52.3 | 54.6 | 56.2 |
| 14 | 19:00-20:00 | 49.5 | 50.2 | 53.9 | 44.5 |
| 15 | 20:00-21:00 | 50.1 | 48.6 | 51.2 | 54.8 |
| 16 | 21:00-22:00 | 46.5 | 45.6 | 50.9 | 50.6 |
| Day Time Limit | | 75 dB(A) | | | |

Results of Night Time Noise level monitoring

| October 2017 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-------------------------|-----------------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 13/10/2017 & 14/10/2017 | 04/10/2017 & 05/10/2017 | 18/10/2017 & 19/10/2017 | 10/10/2017 & 11/10/2017 |
| 1 | 22:00-23:00 | 46.7 | 45.1 | 47.6 | 46.5 |
| 2 | 23:00-00:00 | 43.4 | 43.9 | 45.3 | 45.6 |
| 3 | 00:00-01:00 | 45.5 | 44.8 | 44.4 | 47.8 |
| 4 | 01:00-02:00 | 44.1 | 42.6 | 43.3 | 44.2 |
| 5 | 02:00-03:00 | 40.8 | 43.2 | 42.2 | 43.1 |
| 6 | 03:00-04:00 | 39.6 | 41.7 | 41.5 | 45.7 |
| 7 | 04:00-05:00 | 40.9 | 39.3 | 40.7 | 42.8 |
| 8 | 05:00-06:00 | 37.5 | 40.1 | 39.8 | 41.3 |
| Night Time Limit | | 70 dB(A) | | | |



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Results of Day Time Noise level monitoring

| November 2017 | | | | | |
|----------------|---------------|-------------------|---------------------|--------------|-----------------------------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 03/11/2017 | 07/11/2017 | 28/11/2017 | 14/11/2017 |
| 1 | 6:00-7:00 | 43.2 | 48.2 | 47.7 | 52.6 |
| 2 | 7:00-8:00 | 44.1 | 43.5 | 46.2 | 55.7 |
| 3 | 8:00-9:00 | 47.4 | 49.7 | 49.8 | 48.6 |
| 4 | 9:00-10:00 | 48.4 | 49.5 | 51.2 | 51.6 |
| 5 | 10:00-11:00 | 51.7 | 53.9 | 53.2 | 53.8 |
| 6 | 11:00-12:00 | 54.4 | 51.1 | 56 | 57.9 |
| 7 | 12:00-13:00 | 59.3 | 52.5 | 60.7 | 54.6 |
| 8 | 13:00-14:00 | 56.4 | 56.4 | 59.2 | 56.4 |
| 9 | 14:00-15:00 | 57.4 | 59.2 | 66.7 | 52.0 |
| 10 | 15:00-16:00 | 60.7 | 58.8 | 61.3 | 58.0 |
| 11 | 16:00-17:00 | 53.4 | 60.7 | 63.5 | 60.8 |
| 12 | 17:00-18:00 | 58.1 | 57.4 | 58.8 | 59.3 |
| 13 | 18:00-19:00 | 56.0 | 55.9 | 62 | 61.6 |
| 14 | 19:00-20:00 | 52.0 | 53.8 | 57.9 | 49.0 |
| 15 | 20:00-21:00 | 48.8 | 51.6 | 54.8 | 50.3 |
| 16 | 21:00-22:00 | 50.0 | 48.8 | 56.0 | 47.3 |
| Day Time Limit | | 75 dB(A) | | | |

Results of Night Time Noise level monitoring

| November 2017 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-------------------------|-----------------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 03/11/2017 & 04/11/2017 | 07/11/2017 & 08/11/2017 | 28/11/2017 & 29/11/2017 | 14/11/2017 & 15/11/2017 |
| 1 | 22:00-23:00 | 53.5 | 54.4 | 52.8 | 51.6 |
| 2 | 23:00-00:00 | 55.2 | 49.1 | 47.0 | 56.5 |
| 3 | 00:00-01:00 | 56.1 | 53.5 | 45.2 | 55.2 |
| 4 | 01:00-02:00 | 48.7 | 56.3 | 44.5 | 47.9 |
| 5 | 02:00-03:00 | 47.4 | 57.6 | 48.4 | 49.3 |
| 6 | 03:00-04:00 | 52.8 | 59.2 | 51.6 | 57.5 |
| 7 | 04:00-05:00 | 50.7 | 61.9 | 49.5 | 52.9 |
| 8 | 05:00-06:00 | 51.4 | 58.5 | 50.5 | 46.4 |
| Night Time Limit | | 70 dB(A) | | | |



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Results of Day Time Noise level monitoring

| December 2017 | | | | | |
|----------------|---------------|-------------------|---------------------|--------------|-----------------------------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 20/12/2017 | 12/12/2017 | 16/12/2017 | 05/12/2017 |
| 1 | 6:00-7:00 | 38.5 | 42.2 | 43.3 | 55.3 |
| 2 | 7:00-8:00 | 40.4 | 54.0 | 54 | 44.5 |
| 3 | 8:00-9:00 | 42.6 | 47.1 | 47.3 | 54.4 |
| 4 | 9:00-10:00 | 47.7 | 60.9 | 53.5 | 47.7 |
| 5 | 10:00-11:00 | 54.3 | 50.9 | 55.1 | 53.7 |
| 6 | 11:00-12:00 | 50.2 | 52.7 | 50.6 | 48.5 |
| 7 | 12:00-13:00 | 64.4 | 57.2 | 59.4 | 44.0 |
| 8 | 13:00-14:00 | 45.1 | 53.5 | 53.3 | 54.5 |
| 9 | 14:00-15:00 | 55.4 | 55.2 | 65.8 | 55.1 |
| 10 | 15:00-16:00 | 60.9 | 61.6 | 54.1 | 49.7 |
| 11 | 16:00-17:00 | 51.8 | 63.9 | 62.3 | 54.0 |
| 12 | 17:00-18:00 | 53 | 51.0 | 58.4 | 51.8 |
| 13 | 18:00-19:00 | 59.4 | 49.6 | 61.2 | 54.3 |
| 14 | 19:00-20:00 | 49.9 | 46.5 | 52.3 | 47.5 |
| 15 | 20:00-21:00 | 58 | 52.3 | 50.3 | 50.6 |
| 16 | 21:00-22:00 | 46.4 | 56.8 | 45.7 | 45.2 |
| Day Time Limit | | 75 dB(A) | | | |

Results of Night Time Noise level monitoring

| December 2017 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-------------------------|-----------------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 20/12/2017 & 21/12/2017 | 12/12/2017 & 13/12/2017 | 16/12/2017 & 17/12/2017 | 05/12/2017 & 06/12/2017 |
| 1 | 22:00-23:00 | 45.2 | 53.1 | 44.4 | 45.4 |
| 2 | 23:00-00:00 | 54.5 | 44.0 | 37.8 | 49.7 |
| 3 | 00:00-01:00 | 52.9 | 52.1 | 46.8 | 38.8 |
| 4 | 01:00-02:00 | 41.5 | 40.7 | 44.8 | 44.2 |
| 5 | 02:00-03:00 | 44.1 | 41.0 | 52.2 | 45.6 |
| 6 | 03:00-04:00 | 51 | 55.7 | 43.9 | 51.5 |
| 7 | 04:00-05:00 | 43.6 | 60.3 | 48.6 | 44.9 |
| 8 | 05:00-06:00 | 40.6 | 41.9 | 50.1 | 40.0 |
| Night Time Limit | | 70 dB(A) | | | |



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Results of Day Time Noise level monitoring

| January 2018 | | | | | |
|----------------|---------------|-------------------|---------------------|--------------|-----------------------------------|
| Day Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 19/01/2018 | 03/01/2018 | 06/01/2018 | 09/01/2018 |
| 1 | 6:00-7:00 | 43.1 | 46.0 | 47.6 | 43.7 |
| 2 | 7:00-8:00 | 41.2 | 45.0 | 50.8 | 47.1 |
| 3 | 8:00-9:00 | 45.2 | 47.0 | 49.6 | 49.6 |
| 4 | 9:00-10:00 | 48.1 | 47.9 | 50.2 | 49.2 |
| 5 | 10:00-11:00 | 46.1 | 50.0 | 45.1 | 50.5 |
| 6 | 11:00-12:00 | 47.6 | 51.9 | 54.4 | 51.6 |
| 7 | 12:00-13:00 | 49.7 | 54.0 | 54.7 | 50.4 |
| 8 | 13:00-14:00 | 50.1 | 55.7 | 52.4 | 55.6 |
| 9 | 14:00-15:00 | 51.1 | 53.7 | 57.7 | 54.6 |
| 10 | 15:00-16:00 | 52.2 | 53.9 | 56.4 | 53.5 |
| 11 | 16:00-17:00 | 54.2 | 56.9 | 54.6 | 52.5 |
| 12 | 17:00-18:00 | 53.2 | 50.3 | 53.4 | 54.5 |
| 13 | 18:00-19:00 | 51.2 | 50.0 | 52.6 | 52.6 |
| 14 | 19:00-20:00 | 50.1 | 48.9 | 51.7 | 50.6 |
| 15 | 20:00-21:00 | 47.1 | 48.0 | 50.6 | 49.5 |
| 16 | 21:00-22:00 | 46.1 | 47.0 | 48.7 | 48.3 |
| Day Time Limit | | 75 dB(A) | | | |

Results of Night Time Noise level monitoring

| January 2018 | | | | | |
|------------------|---------------|-------------------------|-------------------------|-------------------------|-----------------------------------|
| Night Time dB(A) | | | | | |
| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
| | | 19/01/2018 & 20/01/2018 | 03/01/2018 & 04/01/2018 | 06/01/2018 & 07/01/2018 | 09/01/2018 & 10/01/2018 |
| 1 | 22:00-23:00 | 47 | 46.1 | 45.4 | 48.1 |
| 2 | 23:00-00:00 | 46 | 42.9 | 43.8 | 47.1 |
| 3 | 00:00-01:00 | 45.1 | 43.0 | 45.5 | 42.8 |
| 4 | 01:00-02:00 | 43 | 44.1 | 41.9 | 44.0 |
| 5 | 02:00-03:00 | 40.8 | 45.0 | 42.4 | 42.0 |
| 6 | 03:00-04:00 | 44.1 | 39.8 | 42.0 | 41.0 |
| 7 | 04:00-05:00 | 43 | 41.0 | 44.9 | 43.1 |
| 8 | 05:00-06:00 | 41.1 | 43.1 | 42.1 | 44.0 |
| Night Time Limit | | 70 dB(A) | | | |



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Results of Day Time Noise level monitoring**February 2018****Day Time dB(A)**

| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
|-----------------------|---------------|-------------------|---------------------|--------------|-----------------------------------|
| | | 06/02/2018 | 10/02/2018 | 03/02/2018 | 26/02/2018 |
| 1 | 6:00-7:00 | 48 | 44.7 | 42.1 | 46.1 |
| 2 | 7:00-8:00 | 49.1 | 48.5 | 48.5 | 43.1 |
| 3 | 8:00-9:00 | 50.5 | 45.8 | 46.0 | 47.8 |
| 4 | 9:00-10:00 | 52.7 | 49.0 | 48.0 | 51.1 |
| 5 | 10:00-11:00 | 53.1 | 51.7 | 50.1 | 53 |
| 6 | 11:00-12:00 | 52 | 49.9 | 52.9 | 49.8 |
| 7 | 12:00-13:00 | 54 | 52.8 | 54.5 | 52.5 |
| 8 | 13:00-14:00 | 55 | 54.3 | 54.1 | 50.8 |
| 9 | 14:00-15:00 | 53.1 | 60.6 | 45.8 | 53.6 |
| 10 | 15:00-16:00 | 57.9 | 57.0 | 53.9 | 55.4 |
| 11 | 16:00-17:00 | 50 | 53.6 | 55.7 | 53.2 |
| 12 | 17:00-18:00 | 48.7 | 56.7 | 53.6 | 58.6 |
| 13 | 18:00-19:00 | 55.8 | 52.6 | 48.7 | 54.9 |
| 14 | 19:00-20:00 | 48.1 | 49.4 | 52.2 | 48.2 |
| 15 | 20:00-21:00 | 45.2 | 46.9 | 48.6 | 52.4 |
| 16 | 21:00-22:00 | 43.8 | 43.8 | 44.1 | 46.1 |
| Day Time Limit | | 75 dB(A) | | | |

Results of Night Time Noise level monitoring**February 2018****Night Time dB(A)**

| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
|-------------------------|---------------|-------------------------|-------------------------|-------------------------|-----------------------------------|
| | | 06/02/2018 & 07/02/2018 | 10/02/2018 & 11/02/2018 | 03/02/2018 & 04/02/2018 | 26/02/2018 & 27/02/2018 |
| 1 | 22:00-23:00 | 44.1 | 45.1 | 45.0 | 45.0 |
| 2 | 23:00-00:00 | 42.1 | 47.1 | 42.0 | 48.5 |
| 3 | 00:00-01:00 | 41.1 | 50.4 | 43.5 | 44.0 |
| 4 | 01:00-02:00 | 40.0 | 46.2 | 44.7 | 46.6 |
| 5 | 02:00-03:00 | 37.5 | 48.0 | 45.1 | 44.7 |
| 6 | 03:00-04:00 | 41.9 | 42.8 | 40.1 | 49.5 |
| 7 | 04:00-05:00 | 46.1 | 48.4 | 42.5 | 47.8 |
| 8 | 05:00-06:00 | 47.8 | 41.8 | 38.8 | 43.9 |
| Night Time Limit | | 70 dB(A) | | | |


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Results of Day Time Noise level monitoring**March 2018****Day Time dB(A)**

| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
|-----------------------|---------------|-------------------|---------------------|--------------|-----------------------------------|
| | | 27/03/2018 | 13/03/2018 | 03/03/2018 | 06/03/2018 |
| 1 | 6:00-7:00 | 46.9 | 47.8 | 44.9 | 47.4 |
| 2 | 7:00-8:00 | 45.8 | 49.5 | 44.7 | 48.8 |
| 3 | 8:00-9:00 | 48.6 | 49.0 | 45.4 | 49.4 |
| 4 | 9:00-10:00 | 50.3 | 46.2 | 44.2 | 50.7 |
| 5 | 10:00-11:00 | 52.3 | 49.3 | 46.2 | 52.3 |
| 6 | 11:00-12:00 | 53.6 | 50.6 | 48.8 | 54.7 |
| 7 | 12:00-13:00 | 51.8 | 52.4 | 50 | 53.9 |
| 8 | 13:00-14:00 | 52.9 | 51.3 | 50.2 | 52.9 |
| 9 | 14:00-15:00 | 50.3 | 49.0 | 51.6 | 50.2 |
| 10 | 15:00-16:00 | 49.8 | 46.4 | 53.6 | 49.7 |
| 11 | 16:00-17:00 | 47.4 | 49.7 | 49.3 | 48.1 |
| 12 | 17:00-18:00 | 46.1 | 47.6 | 48.8 | 48.8 |
| 13 | 18:00-19:00 | 48.1 | 47.5 | 48.3 | 47.5 |
| 14 | 19:00-20:00 | 49.7 | 44.0 | 46.7 | 46.2 |
| 15 | 20:00-21:00 | 46.6 | 42.4 | 45.1 | 45.7 |
| 16 | 21:00-22:00 | 46.0 | 45.2 | 48.4 | 48.0 |
| Day Time Limit | | 75 dB(A) | | | |

Results of Night Time Noise level monitoring**March 2018****Night Time dB(A)**

| SR. NO. | Sampling Time | Near fire station | Near security tower | Sada village | Adani Site Office Near Gate No.02 |
|-------------------------|---------------|-------------------------|-------------------------|-------------------------|-----------------------------------|
| | | 27/03/2018 & 28/03/2018 | 13/03/2018 & 14/03/2018 | 03/03/2018 & 04/03/2018 | 06/03/2018 & 07/03/2018 |
| 1 | 22:00-23:00 | 44.9 | 45.4 | 47.8 | 48.6 |
| 2 | 23:00-00:00 | 45.7 | 49.6 | 46.7 | 47.7 |
| 3 | 00:00-01:00 | 44.0 | 47.9 | 45.9 | 45.4 |
| 4 | 01:00-02:00 | 42.8 | 46.6 | 44.5 | 47.4 |
| 5 | 02:00-03:00 | 43.8 | 48.4 | 45.8 | 46.9 |
| 6 | 03:00-04:00 | 41.1 | 44.6 | 44.2 | 44.6 |
| 7 | 04:00-05:00 | 40.7 | 43.0 | 43.9 | 44.0 |
| 8 | 05:00-06:00 | 43.9 | 45.5 | 46 | 45.6 |
| Night Time Limit | | 70 dB(A) | | | |



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CHAPTER – 8

D.G. STACK & D.G. STACK NOISE MONITORING MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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D.G. Stack Monitoring Results

| SR. NO. | TEST PARAMETER | UNIT | DG Stack - 1 (2000 KVA) Make Cummins Sr. No.:25388675 | | LIMIT |
|---------|--------------------------------|--------------------|--|------------|-------|
| | | | 20/12/2017 | 30/03/2018 | |
| | | | RESULTS | RESULTS | |
| 1 | Particulate Matter | mg/Nm ³ | 12.41 | 19.41 | 75 |
| 2 | Oxides of Nitrogen as NOX | ppm | 39.45 | 36.71 | 710 |
| 3 | Non Methyl Hydro Carbon (NMHC) | mg/Nm ³ | BDL* | BDL* | 100 |
| 4 | Carbon Monoxide (CO) | mg/Nm ³ | 3.66 | 5.96 | 150 |
| 5 | Sulfur Content in fuel | % | 0.024 | 0.015 | < 2.0 |

BDL*: Below Detection Limit, Results on 15 % O2 Correction when Oxygen is greater than 15 %

| SR. NO. | TEST PARAMETER | UNIT | DG Stack - 2 (2000 KVA) Cummins Sr. No.: 25390869 | | LIMIT |
|---------|--------------------------------|--------------------|--|------------|-------|
| | | | 20/12/2017 | 30/03/2018 | |
| | | | RESULTS | RESULTS | |
| 1 | Particulate Matter | mg/Nm ³ | 18.59 | 24.54 | 75 |
| 2 | Oxides of Nitrogen as NOX | ppm | 33.56 | 33.60 | 710 |
| 3 | Non Methyl Hydro Carbon (NMHC) | mg/Nm ³ | BDL* | BDL* | 100 |
| 4 | Carbon Monoxide (CO) | mg/Nm ³ | 3.32 | 4.92 | 150 |
| 5 | Sulfur Content in fuel | % | 0.022 | 0.013 | < 2.0 |

BDL*: Below Detection Limit, Results on 15 % O2 Correction when Oxygen is greater than 15 %

| SR. NO. | TEST PARAMETER | UNIT | DG Stack – 3 (380 KVA) Cummins Sr. No.: 25386499 | | LIMIT |
|---------|---------------------------|---------|---|------------|-------|
| | | | 20/12/2017 | 30/03/2018 | |
| | | | RESULTS | RESULTS | |
| 1 | Particulate Matter | g/kw-hr | 0.0014 | 0.0009 | 0.3 |
| 2 | Oxides of Nitrogen as NOX | g/kw-hr | 0.0025 | 0.0022 | 9.2 |
| 3 | Hydro Carbon (HC) | g/kw-hr | BDL* | BDL* | 1.3 |
| 4 | Carbon Monoxide (CO) | g/kw-hr | 0.0002 | 0.0002 | 3.5 |
| 5 | Sulfur Dioxide (SO2) | Kg/hr | 0.0005 | 0.0006 | 1.8 |

BDL*: Below Detection Limit, Results on 15 % O2 Correction when Oxygen is greater than 15 %



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D.G. Stack Noise Level Monitoring Results

| SR. NO. | SAMPLING LOCATION | Outside DG Room 1 m distance | |
|------------|---|------------------------------|------------|
| | | 20/12/2017 | 30/03/2018 |
| | | RESULTS | RESULTS |
| 1 | DG Stack - 1 (2000 KVA) Make Cummins Sr. No.:25388675 | 73.5 | 74.5 |
| 2 | DG Stack - 2 (2000 KVA) Cummins Sr. No.: 25390869 | 74.3 | 74.2 |
| 3 | DG Stack – 3 (380 KVA) Cummins Sr. No.: 25386499 | 72.5 | 73.4 |
| LIMIT** | | 75 dB(A) | |

**as per Noise limit for diesel generator sets (upto 1000 KVA) manufactured on or after the 1st January, 2005



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CHAPTER – 9
WEATHER DATA MONITORING
MONITORING PERIOD: OCTOBER-2017 TO MARCH-2018



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| Date | Avg wind Speed (m/s) | Avg wind Direction (deg) | Temperature (°C) | RH % | Precip. (mm) |
|------------|----------------------|--------------------------|------------------|------|--------------|
| 01/10/2017 | 0.4 | 277 | 28 | 43.7 | 0 |
| 02/10/2017 | 2.8 | 200 | 26 | 42.7 | 16 |
| 03/10/2017 | 1.3 | 160 | 32 | 34.3 | 4 |
| 04/10/2017 | 3.9 | 266 | 29 | 45.9 | 0 |
| 05/10/2017 | 1.1 | 188 | 27 | 64.9 | 0 |
| 06/10/2017 | 0.3 | 276 | 31 | 54.1 | 1 |
| 07/10/2017 | 2.5 | 310 | 30 | 39.3 | 3 |
| 08/10/2017 | 2.4 | 289 | 32 | 50.5 | 0 |
| 09/10/2017 | 1.2 | 228 | 25 | 32.3 | 0 |
| 10/10/2017 | 0.6 | 297 | 26 | 31.7 | 12 |
| 11/10/2017 | 0.2 | 265 | 30 | 45.9 | 1 |
| 12/10/2017 | 1.6 | 280 | 28 | 37.3 | 0 |
| 13/10/2017 | 2.3 | 293 | 28 | 45.2 | 8 |
| 14/10/2017 | 1.7 | 316 | 28 | 51.5 | 0 |
| 15/10/2017 | 1.0 | 222 | 29 | 64.9 | 2 |
| 16/10/2017 | 1.9 | 306 | 32 | 58.6 | 0 |
| 17/10/2017 | 2.6 | 195 | 32 | 48.2 | 0 |
| 18/10/2017 | 2.7 | 198 | 29 | 32.2 | 0 |
| 19/10/2017 | 2.9 | 270 | 28 | 54.1 | 0 |
| 20/10/2017 | 3.6 | 253 | 29 | 36.3 | 0 |
| 21/10/2017 | 3.4 | 269 | 31 | 37.4 | 0 |
| 22/10/2017 | 2.1 | 302 | 29 | 62.6 | 0 |
| 23/10/2017 | 2.0 | 312 | 29 | 44.7 | 0 |
| 24/10/2017 | 0.9 | 223 | 27 | 41.3 | 0 |
| 25/10/2017 | 3.2 | 232 | 31 | 62.6 | 0 |
| 26/10/2017 | 3.7 | 151 | 30 | 37.4 | 0 |
| 27/10/2017 | 3.3 | 317 | 27 | 56.8 | 0 |
| 28/10/2017 | 0.1 | 243 | 33 | 62.1 | 0 |
| 29/10/2017 | 3.5 | 186 | 27 | 58.4 | 0 |
| 30/10/2017 | 2.2 | 231 | 26 | 52.1 | 0 |
| 31/10/2017 | 1.4 | 267 | 32 | 34.4 | 0 |
| 01/11/2017 | 1.3 | 221 | 29.5 | 41.0 | 0 |
| 02/11/2017 | 3.8 | 212 | 29.2 | 43.4 | 0 |
| 03/11/2017 | 3.8 | 232 | 28.7 | 50.2 | 0 |
| 04/11/2017 | 1.8 | 110 | 29.1 | 53.0 | 0 |
| 05/11/2017 | 1.2 | 243 | 29.7 | 58.6 | 0 |
| 06/11/2017 | 2.7 | 235 | 28.7 | 45.2 | 0 |
| 07/11/2017 | 1.9 | 249 | 29.1 | 54.6 | 0 |
| 08/11/2017 | 3.6 | 217 | 28.8 | 50.5 | 0 |
| 09/11/2017 | 1.5 | 128 | 28.3 | 41.8 | 0 |
| 10/11/2017 | 2.8 | 199 | 28.9 | 46.8 | 0 |
| 11/11/2017 | 4.4 | 188 | 29.2 | 53.2 | 0 |
| 12/11/2017 | 1.1 | 203 | 28.9 | 47.6 | 0 |
| 13/11/2017 | 3.9 | 180 | 28.6 | 41.0 | 0 |
| 14/11/2017 | 2.1 | 110 | 28.9 | 48.0 | 0 |
| 15/11/2017 | 1.1 | 248 | 28.4 | 53.3 | 0 |
| 16/11/2017 | 1.1 | 174 | 28.9 | 49.5 | 0 |
| 17/11/2017 | 4.1 | 161 | 29.1 | 52.7 | 0 |



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|------------|------|-------|------|------|-----|
| 18/11/2017 | 3.6 | 187 | 28.5 | 41.2 | 0 |
| 19/11/2017 | 2.5 | 238 | 29.1 | 48.0 | 0 |
| 20/11/2017 | 1.6 | 101 | 28.9 | 52.0 | 0 |
| 21/11/2017 | 3.6 | 153 | 29.2 | 56.8 | 0 |
| 22/11/2017 | 1.8 | 174 | 28.8 | 46.7 | 0 |
| 23/11/2017 | 1.6 | 88.11 | 28.9 | 45.5 | 0 |
| 24/11/2017 | 4.2 | 154 | 29.3 | 49.0 | 0 |
| 25/11/2017 | 4 | 234 | 28.8 | 49.8 | 0 |
| 26/11/2017 | 3.9 | 211 | 29.3 | 48.6 | 0 |
| 27/11/2017 | 3.1 | 181 | 29.0 | 46.7 | 0 |
| 28/11/2017 | 3.3 | 168 | 29.0 | 47.0 | 0 |
| 29/11/2017 | 3.7 | 194 | 29.4 | 52.1 | 0 |
| 30/11/2017 | 1.4 | 191 | 28.4 | 49.2 | 0 |
| 01/12/2017 | 1.9 | 242 | 22 | 57.6 | 0.0 |
| 02/12/2017 | 12.9 | 221 | 22 | 59.3 | 0.0 |
| 03/12/2017 | 6.7 | 204 | 17 | 67.1 | 0.0 |
| 04/12/2017 | 9.1 | 192 | 21 | 74.4 | 0.0 |
| 05/12/2017 | 13.9 | 214 | 18 | 68.9 | 2.5 |
| 06/12/2017 | 13.3 | 261 | 18 | 72.5 | 4.1 |
| 07/12/2017 | 8.4 | 235 | 20 | 69.2 | 0.0 |
| 08/12/2017 | 4.9 | 243 | 21 | 51.4 | 0.0 |
| 09/12/2017 | 9.2 | 192 | 19 | 54.7 | 0.0 |
| 10/12/2017 | 4.9 | 180 | 21 | 50.7 | 0.0 |
| 11/12/2017 | 8.2 | 231 | 24 | 65.7 | 0.0 |
| 12/12/2017 | 0.1 | 169 | 21 | 51.3 | 0.0 |
| 13/12/2017 | 4.2 | 245 | 19 | 56.1 | 0.0 |
| 14/12/2017 | 4.9 | 220 | 23 | 72.5 | 0.0 |
| 15/12/2017 | 0.1 | 201 | 20 | 59.0 | 0.0 |
| 16/12/2017 | 5.0 | 251 | 17 | 69.3 | 0.0 |
| 17/12/2017 | 10.9 | 201 | 20 | 70.1 | 0.0 |
| 18/12/2017 | 0.8 | 183 | 25 | 61.5 | 0.0 |
| 19/12/2017 | 13.1 | 274 | 22 | 73.9 | 0.0 |
| 20/12/2017 | 3.5 | 234 | 23 | 64.1 | 0.0 |
| 21/12/2017 | 11.8 | 284 | 23 | 51.7 | 0.0 |
| 22/12/2017 | 11.1 | 201 | 21 | 68.0 | 0.0 |
| 23/12/2017 | 8.0 | 177 | 23 | 73.0 | 0.0 |
| 24/12/2017 | 5.2 | 213 | 24 | 74.0 | 0.0 |
| 25/12/2017 | 5.8 | 198 | 17 | 60.4 | 0.0 |
| 26/12/2017 | 10.1 | 240 | 21 | 52.0 | 0.0 |
| 27/12/2017 | 5.2 | 247 | 22 | 57.8 | 0.0 |
| 28/12/2017 | 2.6 | 188 | 18 | 65.6 | 0.0 |
| 29/12/2017 | 12.2 | 273 | 25 | 71.7 | 0.0 |
| 30/12/2017 | 1.4 | 253 | 26 | 72.7 | 0.0 |
| 01/01/2018 | 1.46 | 156 | 28 | 56.8 | 0.0 |
| 02/01/2018 | 2.11 | 115 | 28 | 63.1 | 0.0 |



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|------------|------|-----|------|------|-----|
| 03/01/2018 | 1.13 | 225 | 29 | 66.7 | 0.0 |
| 04/01/2018 | 1.94 | 150 | 27 | 63.0 | 0.0 |
| 05/01/2018 | 1.18 | 275 | 26 | 64.1 | 0.0 |
| 06/01/2018 | 1.64 | 217 | 27 | 57.5 | 0.0 |
| 07/01/2018 | 2.16 | 184 | 27 | 70.7 | 0.0 |
| 08/01/2018 | 2.42 | 180 | 28 | 59.5 | 0.0 |
| 09/01/2018 | 2.20 | 209 | 28 | 68.0 | 0.0 |
| 10/01/2018 | 1.75 | 195 | 26 | 61.8 | 0.0 |
| 11/01/2018 | 2.06 | 237 | 28 | 62.5 | 0.0 |
| 12/01/2018 | 1.90 | 212 | 28 | 64.3 | 0.0 |
| 13/01/2018 | 1.66 | 161 | 26 | 68.7 | 0.0 |
| 14/01/2018 | 2.14 | 181 | 29 | 59.3 | 0.0 |
| 15/01/2018 | 2.56 | 269 | 27 | 68.5 | 0.0 |
| 16/01/2018 | 2.32 | 138 | 30 | 64.8 | 0.0 |
| 17/01/2018 | 1.54 | 211 | 28 | 67.1 | 0.0 |
| 18/01/2018 | 2.35 | 276 | 27 | 63.3 | 0.0 |
| 19/01/2018 | 1.76 | 136 | 30 | 64.8 | 0.0 |
| 20/01/2018 | 1.22 | 253 | 27 | 59.2 | 0.0 |
| 21/01/2018 | 1.90 | 266 | 28 | 59.8 | 0.0 |
| 22/01/2018 | 2.08 | 239 | 27 | 70.1 | 0.0 |
| 23/01/2018 | 1.67 | 246 | 28 | 70.0 | 0.0 |
| 24/01/2018 | 2.19 | 274 | 28 | 66.3 | 0.0 |
| 25/01/2018 | 2.06 | 205 | 28 | 71.2 | 0.0 |
| 26/01/2018 | 1.88 | 264 | 30 | 60.7 | 0.0 |
| 27/01/2018 | 1.68 | 226 | 29 | 63.3 | 0.0 |
| 28/01/2018 | 1.30 | 174 | 29 | 61.9 | 0.0 |
| 29/01/2018 | 1.03 | 211 | 26 | 62.3 | 0.0 |
| 30/01/2018 | 1.99 | 148 | 27 | 64.9 | 0.0 |
| 31/01/2018 | 1.01 | 242 | 27 | 67.2 | 0.0 |
| 01/02/2018 | 0.41 | 233 | 25.8 | 39.4 | 0.0 |
| 02/02/2018 | 0.31 | 255 | 24.4 | 62.1 | 0.0 |
| 03/02/2018 | 0.43 | 271 | 27.4 | 73.4 | 0.0 |
| 04/02/2018 | 0.76 | 152 | 26.4 | 68.6 | 0.0 |
| 05/02/2018 | 1.71 | 260 | 28.1 | 64.1 | 0.0 |
| 06/02/2018 | 0.38 | 125 | 28.3 | 65.7 | 0.0 |
| 07/02/2018 | 2.22 | 154 | 25.9 | 43.1 | 0.0 |
| 08/02/2018 | 0.42 | 226 | 26.3 | 42.9 | 0.0 |
| 09/02/2018 | 1.98 | 111 | 25.4 | 41.8 | 0.0 |
| 10/02/2018 | 3.08 | 253 | 24.9 | 72.4 | 0.0 |
| 11/02/2018 | 1.33 | 179 | 26.8 | 56.0 | 0.0 |
| 12/02/2018 | 2.57 | 189 | 26.3 | 43.7 | 0.0 |
| 13/02/2018 | 1.97 | 201 | 28.5 | 49.8 | 0.0 |
| 14/02/2018 | 0.36 | 243 | 27.1 | 65.1 | 0.0 |
| 15/02/2018 | 1.17 | 218 | 26.6 | 59.2 | 0.0 |
| 16/02/2018 | 0.88 | 184 | 24.5 | 45.9 | 0.0 |
| 17/02/2018 | 0.37 | 263 | 27.5 | 49.4 | 0.0 |
| 18/02/2018 | 0.55 | 204 | 25.8 | 51.6 | 0.0 |
| 19/02/2018 | 2.44 | 218 | 26.1 | 73.7 | 0.0 |
| 20/02/2018 | 2.31 | 181 | 24.1 | 62.8 | 0.0 |
| 21/02/2018 | 2.34 | 176 | 27.5 | 46.3 | 0.0 |



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|------------|------|-----|------|------|-----|
| 22/02/2018 | 0.93 | 295 | 24.4 | 47.9 | 0.0 |
| 23/02/2018 | 3.40 | 238 | 24.1 | 72.5 | 0.0 |
| 24/02/2018 | 3.17 | 255 | 27.3 | 60.5 | 0.0 |
| 25/02/2018 | 1.09 | 211 | 26.2 | 69.4 | 0.0 |
| 26/02/2018 | 2.14 | 222 | 25.1 | 44.9 | 0.0 |
| 27/02/2018 | 2.74 | 160 | 26.6 | 63.6 | 0.0 |
| 28/02/2018 | 1.20 | 230 | 25.3 | 44.4 | 0.0 |
| 01/03/2018 | 3.39 | 155 | 30.7 | 68.7 | 0.0 |
| 02/03/2018 | 2.77 | 216 | 30.7 | 47.5 | 0.0 |
| 03/03/2018 | 3.95 | 223 | 30.9 | 61.2 | 0.0 |
| 04/03/2018 | 4.67 | 250 | 30.9 | 61.2 | 0.0 |
| 05/03/2018 | 2.26 | 176 | 29.8 | 46.7 | 0.0 |
| 06/03/2018 | 3.84 | 218 | 31.7 | 46.5 | 0.0 |
| 07/03/2018 | 2.77 | 281 | 30.7 | 63.3 | 0.0 |
| 08/03/2018 | 3.01 | 178 | 30.4 | 64.7 | 0.0 |
| 09/03/2018 | 4.52 | 206 | 32.4 | 67.6 | 0.0 |
| 10/03/2018 | 4.55 | 194 | 32.9 | 56.4 | 0.0 |
| 11/03/2018 | 2.53 | 134 | 28.8 | 52.5 | 0.0 |
| 12/03/2018 | 3.23 | 209 | 32.0 | 57.0 | 0.0 |
| 13/03/2018 | 3.33 | 161 | 32.7 | 50.0 | 0.0 |
| 14/03/2018 | 2.26 | 283 | 29.7 | 53.7 | 0.0 |
| 15/03/2018 | 4.07 | 270 | 30.2 | 49.9 | 0.0 |
| 16/03/2018 | 2.41 | 236 | 29.1 | 45.9 | 0.0 |
| 17/03/2018 | 4.01 | 208 | 30.4 | 53.5 | 0.0 |
| 18/03/2018 | 3.25 | 172 | 32.7 | 60.0 | 0.0 |
| 19/03/2018 | 3.26 | 135 | 32.9 | 55.5 | 0.0 |
| 20/03/2018 | 4.20 | 253 | 32.3 | 53.1 | 0.0 |
| 21/03/2018 | 2.64 | 267 | 32.6 | 64.0 | 0.0 |
| 22/03/2018 | 2.67 | 235 | 31.9 | 55.1 | 0.0 |
| 23/03/2018 | 4.81 | 247 | 31.1 | 66.6 | 0.0 |
| 24/03/2018 | 2.48 | 175 | 32.5 | 43.0 | 0.0 |
| 25/03/2018 | 2.19 | 207 | 31.0 | 50.5 | 0.0 |
| 26/03/2018 | 3.05 | 261 | 32.1 | 67.3 | 0.0 |
| 27/03/2018 | 2.35 | 223 | 29.9 | 69.9 | 0.0 |
| 28/03/2018 | 3.46 | 175 | 29.5 | 50.1 | 0.0 |
| 29/03/2018 | 2.12 | 211 | 31.5 | 58.5 | 0.0 |
| 30/03/2018 | 3.31 | 248 | 33.5 | 65.7 | 0.0 |
| 31/03/2018 | 4.61 | 239 | 34.2 | 44.7 | 0.0 |



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