

**Annexure - 1**

**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
I	<p>M/s Essar Oil Limited shall comply with new standards / norms for Oil Refinery Industry Under the Environment Protection Rule 1986 vide GSR 186 (E) dated 18<sup>th</sup> March 2008.</p> <p>The design of refinery unit shall incorporate process features and equipments to comply with the emission and effluent standards for petroleum refinery.</p>	<p>Nayara Energy Limited (Formerly known as Essar Oil Limited) are in compliance with the conditions given for Oil &amp; Gas Industries in GSR 186 (E) dated 18<sup>th</sup> March, 2008. The detailed compliance report is attached as <b>Annexure 1.1</b>.</p> <p>The design of refinery units incorporates process features and equipment in such a manner to comply with all the norms prescribed in GSR 186 (E) dated 18<sup>th</sup> March 2008.</p> <p><b>Following features have been adapted at design stage to reduce air emission:</b></p> <p>Low Temperature Shell Claus off Gas Treating Units (LT SCOT) at sulfur recovery unit.</p> <p>Sulfur Recovery Unit having sulfur recovery efficiency 99.9%.</p> <p>Multistage multiple Cyclones in Fluidized Catalytic Cracking &amp; Regeneration unit for particulate emission control.</p> <p>Amine Absorbers - The fuel gas produced in the refinery contains H<sub>2</sub>S. This is removed in the Amine absorber columns and the sweet gas is routed to Refinery fuel gas system.</p> <p>Use of Low Sulfur Refinery fuel Gas and Fuel Oil in heaters / furnaces. Installed Low NOX burners in all heaters / furnaces.</p> <p>Floating roof tanks are provided for storage of class A products; this reduces HC vapor loss. Double seal has been provided in order to minimize vapor leakage.</p>

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		<p>All vent offs are connected to the flare to take care emergency releases from refinery plant.</p> <p>As shown under <b>Annexure 1.1</b> all parameters monitored to comply with the emission &amp; effluent standards for petroleum refinery as per GSR 186 (E) dated 18<sup>th</sup> March, 2008 are well below the prescribed limits.</p>
II	<p>The gaseous emissions (SO<sub>2</sub>, NO<sub>x</sub>, H<sub>2</sub>S, NH<sub>3</sub>, NMHC, HC, VOC and Benzene) from various process units shall confirm to the standards prescribed by the concerned State Pollution Control Board.</p> <p>All the measures detailed in the Environment Management Plan (EMP) and response to the public hearing shall be taken to control the point / stack and fugitive gaseous emission from the proposed facilities for ensuring that the ambient air quality around the</p>	<p>The gaseous emissions parameters as prescribed by Gujarat Pollution Board in Consolidated Consent &amp; Authorization (CC &amp; A) from stacks attached to heaters / furnaces and to various process units are being complied. It may kindly be noted that the CC&amp;A specifies only SO<sub>2</sub>, NO<sub>x</sub>, PM, CO, Ni+V, H<sub>2</sub>S gases and there is no gaseous emission source for NH<sub>3</sub> &amp; NMHC from process units.</p> <p>Regarding HC and VOC since refinery is operated in a closed loop hence VOC emission is minimum. However, VOC are monitored as a part of LDAR programme as per GSR 186 (E) dated 18<sup>th</sup> March, 2008.</p> <p><b>Gaseous emissions monitoring results for Mar'18 to Aug'18 are tabulated in <u>Table no. : 01A, 01 B, 2A &amp; 2B:</u></b></p> <p>All the measures taken as detailed in Environmental Management Plan for mitigation of adverse impacts on environment due to Refinery operations is as follows:</p> <p><b>Air Pollution Prevention / Control Measures:</b></p> <p>Air pollution prevention / Control measures adopted at site are as following:</p>

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EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	<p>refinery due to the expansion is maintained with in prescribed limit under the EPA, 1986.</p>	<ul style="list-style-type: none"> <li>✚ Installed Low Temperature Shell Claus off Gas Treating Units (LT SCOT) at sulfur recovery unit.</li> <li>✚ Installed Multistage multiple Cyclones in Fluidized Catalytic Cracking &amp; Regeneration unit for particulate emission control.</li> <li>✚ Installed Amine Absorbers - The fuel gas produced in the refinery contains H<sub>2</sub>S. This is removed in the Amine absorber columns and the sweet gas is routed to Refinery fuel gas system.</li> <li>✚ Use of Low Sulfur Fuel - Refinery fuel Gas and Fuel Oil are used as fuel in heaters / furnaces.</li> <li>✚ Installed Low NO<sub>x</sub> burners in all heaters / furnaces.</li> <li>✚ Installed Sulfur Recovery Unit having sulfur recovery efficiency 99.9%.</li> <li>✚ Floating roof tanks: Floating roof tanks are provided for storage of class A products; this reduces HC vapor loss. Double seal has been provided in order to minimize vapor leakage.</li> <li>✚ Good Flare Management- all vent offs are connected to the flare to take care emergency releases from refinery plant.</li> <li>✚ Leak Detection and Repair Program (LDAR) has been implemented in the refinery.</li> </ul> <p>No issues raised regarding control of the fugitive gaseous emission during the Public hearing. However, Adequate control measures as mentioned above have been taken to ensure that ambient air quality around the refinery is maintained within prescribed limit. The <b>summary of the ambient air quality monitoring for the period March'18 to August'18 are as shown in Table no. 03A &amp; 03B.</b></p>

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KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT					
		The <b>summary of the stack monitoring for the period March'18 to August'18</b> are as shown in <b>Table no. 01 A, 01 B 02 A &amp; 02 B.</b> , all parameters are well below the limits prescribed by statutory authority.					
<b>Manual monitoring result of stack emission for the month of Mar'18 to Aug'18 carried out by M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20):</b>							
<b>(A) Emission through heater's/furnace's stacks (Table no. 01 A):</b>							
Sr. No.	PLANT	Parameters monitored					
		PM (mg/Nm3) Min-Max	SO <sub>2</sub> (mg/Nm3) Min-Max	NO <sub>x</sub> (mg/Nm3) Min-Max	CO (mg/Nm3) Min-Max	Ni (mg/Nm3) Min-Max	Vanadium (mg/Nm3) Min-Max
1	CDU/VDU	15-46	190-255	92-110	15-28	0.030	0.20
2	CDU - II	52-86	443-739	124-157	17-26	0.040	0.29
3	DHDT	7-14	11-41	56-82	5-13	NA	NA
4	VGOHT	7-29	26-49	64-84	7-16	NA	NA
<b>GPCB Limit (for Sr. No. 1 to 4 above )</b>		<b>100</b>	<b>1700</b>	<b>450</b>	<b>200</b>	<b>5</b>	<b>5</b>
5	NHT/CCR	5-7	11-29	54-80	6-15	NA	NA
6	DHDS	4-8	8-12	58-82	6-10	NA	NA
7	FCC Feed heater	5-8	12-22	43-108	5-11	NA	NA
8	HMU – 1	4-8	22-41	31-82	6-18	NA	NA
9	HMU-2	5-8	8-44	21-74	08-12	NA	NA
10	DCU - 1	5-8	17-27	57-86	12-26	NA	NA
11	DCU - 2	6-8	12-31	37-48	14-27	NA	NA
12	DCU - 3	4-7	6-24	32-52	11-26	NA	NA
<b>GPCB Limit (for Sr. No. 5 to 12)</b>		<b>10</b>	<b>50</b>	<b>350</b>	<b>150</b>	<b>-</b>	<b>-</b>

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
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## (B) Emission through processes stacks (Table no. 02 A):

Sr. No.	Plant	Parameters monitored			
		Sulfur recovery (%)	H <sub>2</sub> S (mg/Nm <sup>3</sup> )	NO <sub>x</sub> (mg/Nm <sup>3</sup> )	CO (mg/Nm <sup>3</sup> )
			Min-Max	Min-Max	Min-Max
1	SRU	99.8	1	18-44	11-22
2	SRU - 1	99.7	1	32-51	10-16
GPCB Limit (for Sr. No. 1 & 2)		98.7	15	350	150

Sr. No.	Plant	Parameters monitored					
		PM (mg/Nm <sup>3</sup> )	SO <sub>2</sub> (mg/Nm <sup>3</sup> )	NO <sub>x</sub> (mg/Nm <sup>3</sup> )	CO (mg/Nm <sup>3</sup> )	Ni (mg/Nm <sup>3</sup> )	V (mg/Nm <sup>3</sup> )
		Min-Max	Min-Max	Min-Max	Min-Max	Min-Max	Min-Max
3	FCC Regenerator	31-62	229-457	72-112	52-273	0.05-0.07	0.21-0.35
GPCB Limit (for Sr. No. 3)		100	1700	450	400	5	5

## Legends:

CDU/VDU	Crude Distillation Unit / Vacuum Distillation Unit
CDU - II	Crude Distillation Unit - II
NHT/CCR	Naphtha Hydro Treater/ Continuous Catalytic Reforming
DHDS	Diesel Hydro de Sulfurization
FCCU	Fluidized Catalytic Cracking Unit
HMU	Hydrogen Manufacturing Unit
DHDT	Diesel Hydro Treater
VGOHT	VGO Hydro Treater

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																		
	<table border="1" data-bbox="590 410 1629 743"> <tr><td><b>DCU</b></td><td>Delayed Coker Unit</td></tr> <tr><td><b>SRU</b></td><td>Sulfur Recovery Unit</td></tr> <tr><td><b>PM</b></td><td>Particulate Matter</td></tr> <tr><td><b>SO2</b></td><td>Sulfur Dioxide</td></tr> <tr><td><b>NOx</b></td><td>Oxides of Nitrogen</td></tr> <tr><td><b>H2S</b></td><td>Hydrogen Sulfide</td></tr> <tr><td><b>CO</b></td><td>Carbon Monoxide</td></tr> <tr><td><b>Ni</b></td><td>Nickel</td></tr> <tr><td><b>V</b></td><td>Vanadium</td></tr> </table> <p data-bbox="201 748 432 776"><b>NA:</b> Not Applicable</p> <p data-bbox="201 808 2016 873">The Monitoring report by M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20 is attached as <b>Annexure 1.1.1.</b></p> <p data-bbox="201 906 2016 971"><b>Note:</b> The Monitoring is carried out by NABL accredited third party, i.e. Unistar Laboratories Private Limited, Vapi. The NABL accreditation certificate are shown below:</p>	<b>DCU</b>	Delayed Coker Unit	<b>SRU</b>	Sulfur Recovery Unit	<b>PM</b>	Particulate Matter	<b>SO2</b>	Sulfur Dioxide	<b>NOx</b>	Oxides of Nitrogen	<b>H2S</b>	Hydrogen Sulfide	<b>CO</b>	Carbon Monoxide	<b>Ni</b>	Nickel	<b>V</b>	Vanadium	
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**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	 <p><b>NABL</b> National Accreditation Board for Testing and Calibration Laboratories (An Autonomous Body under Department of Science &amp; Technology, Govt. of India) <b>CERTIFICATE OF ACCREDITATION</b> <b>UNISTAR ENVIRONMENT &amp; RESEARCH LABS PVT. LTD. (LABORATORY DIVISION)</b> has been assessed and accredited in accordance with the standard <b>ISO/IEC 17025:2005</b> "General Requirements for the Competence of Testing &amp; Calibration Laboratories" for its facilities at White House, 2<sup>nd</sup> Floor, Plot No. C-5/24, Char Rasta, Vapi, Gujarat in the discipline of <b>CHEMICAL TESTING</b> <small>(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)</small> Certificate Number T-2239 Issue Date 15/09/2016 Valid Until 14/09/2018 This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard &amp; the additional requirements of NABL. Signed for and on behalf of NABL N. Venkateswaran Program Manager, Anil Relia Director, Prof. S. K. Joshi Chairman</p>	 <p><b>NABL</b> National Accreditation Board for Testing and Calibration Laboratories (An Autonomous Body under Department of Science &amp; Technology, Govt. of India) <b>CERTIFICATE OF ACCREDITATION</b> <b>UNISTAR ENVIRONMENT &amp; RESEARCH LABS PVT. LTD. (LABORATORY DIVISION)</b> has been assessed and accredited in accordance with the standard <b>ISO/IEC 17025:2005</b> "General Requirements for the Competence of Testing &amp; Calibration Laboratories" for its facilities at White House, 2<sup>nd</sup> Floor, Plot No. C-5/24, Char Rasta, Vapi, Gujarat in the discipline of <b>BIOLOGICAL TESTING</b> <small>(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)</small> Certificate Number T-2240 Issue Date 15/09/2016 Valid Until 14/09/2018 This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard &amp; the additional requirements of NABL. Signed for and on behalf of NABL N. Venkateswaran Program Manager, Anil Relia Director, Prof. S. K. Joshi Chairman</p>

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### National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)



NABL /T/1442/C, B

20.08.18

Mr. Mukesh J Pathak  
QM-Unistar Environment and Research Labs Pvt. Ltd  
White House, 2nd Floor, Plot No C-5/24,  
Nr. GIDC Office Char,Rasta, Vapi, 396195,  
Gujrat, India  
Phone No.1: 260-2433966, 9909994689  
Email-Id: mukesh.pathak@uerl.in Web: www.uerl.in

**Subject: Renewal of accreditation**

Dear Sir,

NABL is pleased to inform you the renewal of accreditation in accordance with ISO/IEC 17025:2005 in the discipline of Chemical and Biological testing as per the scope and authorized signatories recommended by the assessment team.

The lab is advised to provide the year of publication for standard test methods wherever not given in chemical scope within 30 days time.

The accreditation is subject to continued compliance of NABL norms during the accreditation period. You are required to contact us after 10 months for Desktop surveillance audit.

The details of your Accreditation are as:

Discipline	Certificate No.	Validity
Chemical, Biological	TC-7753 in lieu of T-2239, T-2240	Issue date 15.09.18 Valid till 14.09.20

Accreditation Certificate is under process of preparation and will be released soon.

Being an accredited laboratory of NABL you must fulfill all the Terms and Conditions laid down in our document NABL-131. You are requested to follow NABL-133 (current issue) for using NABL symbol.

Yours faithfully,

Pooja Singh  
Assistant Director

*"NABL is now allowing its accredited CABs (testing, calibration and medical laboratories) to use 'NABL Accredited CAB Combined ILAC MRA Mark' on their test / calibration reports through a valid Agreement. For more details, please refer NABL document NABL 133 available on NABL website [www.nabl-india.org](http://www.nabl-india.org) under publication section*



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	<p><b>Continuous Emission Monitoring system</b></p> <p>Apart from this Continuous emission monitoring system is provided &amp; hooked up with CPCB server for all stacks. Stack emission data for the month of <b>Mar'18 to Aug'18</b> are shown in table below:</p> <p><b>(A) Emission through heater's/furnace's stacks (Table no. 01 B) :</b></p> <table border="1" data-bbox="520 613 1696 1318"> <thead> <tr> <th rowspan="3">Unit</th> <th colspan="2">SO<sub>2</sub></th> <th colspan="2">NO<sub>x</sub></th> <th colspan="2">CO</th> <th colspan="2">PM</th> </tr> <tr> <th colspan="2">mg/Nm<sup>3</sup></th> <th colspan="2">mg/Nm<sup>3</sup></th> <th colspan="2">mg/Nm<sup>3</sup></th> <th colspan="2">mg/Nm<sup>3</sup></th> </tr> <tr> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>CDU</td> <td>77.6</td> <td>539.08</td> <td>1.07</td> <td>137.05</td> <td>1.16</td> <td>162.41</td> <td>2.49</td> <td>69.21</td> </tr> <tr> <td>VDU</td> <td>59.8</td> <td>551.73</td> <td>44.26</td> <td>98.97</td> <td>14.72</td> <td>91.36</td> <td>3.95</td> <td>29.13</td> </tr> <tr> <td>CDU-II</td> <td>97.9</td> <td>1134.29</td> <td>7.4</td> <td>199.41</td> <td>26.83</td> <td>121.34</td> <td>4.84</td> <td>84.54</td> </tr> <tr> <td>FCCR</td> <td>312.3</td> <td>690.2</td> <td>112.75</td> <td>306.75</td> <td>198.58</td> <td>373.68</td> <td>22.82</td> <td>43.26</td> </tr> <tr> <td>NHT/CCR</td> <td>3.2</td> <td>37.41</td> <td>49.01</td> <td>61.07</td> <td>7.77</td> <td>21.15</td> <td colspan="2" rowspan="7">Will be installed by TA18*</td> </tr> <tr> <td>DHDS</td> <td>7.7</td> <td>45.68</td> <td>4.36</td> <td>67.77</td> <td>7.74</td> <td>16.9</td> </tr> <tr> <td>FCCH</td> <td>1.5</td> <td>43.65</td> <td>45.58</td> <td>133.13</td> <td>5.42</td> <td>14.4</td> </tr> <tr> <td>DHDT</td> <td>36.4</td> <td>187.8</td> <td>11.36</td> <td>193.55</td> <td>14.05</td> <td>145.11</td> </tr> <tr> <td>VGOHT</td> <td>1.3</td> <td>80.58</td> <td>3.28</td> <td>177.39</td> <td>1.04</td> <td>177.71</td> </tr> <tr> <td>HMU-1</td> <td>1.3</td> <td>24.55</td> <td>0.49</td> <td>37.28</td> <td colspan="2" rowspan="2">Will be installed by TA18</td> </tr> <tr> <td>HMU-2</td> <td>1.2</td> <td>17.97</td> <td>0.19</td> <td>19.97</td> </tr> <tr> <td>DCU-1</td> <td>1.7</td> <td>42.43</td> <td>15.49</td> <td>162.19</td> <td>17.57</td> <td>145.99</td> <td colspan="2"></td> </tr> <tr> <td>DCU-2</td> <td>4.4</td> <td>43.48</td> <td>15.9</td> <td>49.43</td> <td>2.82</td> <td>146.5</td> <td colspan="2"></td> </tr> <tr> <td>DCU-3</td> <td>2.0</td> <td>39.28</td> <td>1.06</td> <td>60.8</td> <td>9.06</td> <td>110.64</td> <td colspan="2"></td> </tr> <tr> <td>SRU</td> <td colspan="2">Not in Consent</td> <td>30.29</td> <td>79.82</td> <td colspan="2">Will be installed by TA18</td> <td colspan="2">Not in Consent</td> </tr> </tbody> </table>	Unit	SO <sub>2</sub>		NO <sub>x</sub>		CO		PM		mg/Nm <sup>3</sup>		mg/Nm <sup>3</sup>		mg/Nm <sup>3</sup>		mg/Nm <sup>3</sup>		Min	Max	Min	Max	Min	Max	Min	Max	CDU	77.6	539.08	1.07	137.05	1.16	162.41	2.49	69.21	VDU	59.8	551.73	44.26	98.97	14.72	91.36	3.95	29.13	CDU-II	97.9	1134.29	7.4	199.41	26.83	121.34	4.84	84.54	FCCR	312.3	690.2	112.75	306.75	198.58	373.68	22.82	43.26	NHT/CCR	3.2	37.41	49.01	61.07	7.77	21.15	Will be installed by TA18*		DHDS	7.7	45.68	4.36	67.77	7.74	16.9	FCCH	1.5	43.65	45.58	133.13	5.42	14.4	DHDT	36.4	187.8	11.36	193.55	14.05	145.11	VGOHT	1.3	80.58	3.28	177.39	1.04	177.71	HMU-1	1.3	24.55	0.49	37.28	Will be installed by TA18		HMU-2	1.2	17.97	0.19	19.97	DCU-1	1.7	42.43	15.49	162.19	17.57	145.99			DCU-2	4.4	43.48	15.9	49.43	2.82	146.5			DCU-3	2.0	39.28	1.06	60.8	9.06	110.64			SRU	Not in Consent		30.29	79.82	Will be installed by TA18		Not in Consent		
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DHDT	36.4	187.8	11.36	193.55	14.05	145.11																																																																																																																																														
VGOHT	1.3	80.58	3.28	177.39	1.04	177.71																																																																																																																																														
HMU-1	1.3	24.55	0.49	37.28	Will be installed by TA18																																																																																																																																															
HMU-2	1.2	17.97	0.19	19.97																																																																																																																																																
DCU-1	1.7	42.43	15.49	162.19	17.57	145.99																																																																																																																																														
DCU-2	4.4	43.48	15.9	49.43	2.82	146.5																																																																																																																																														
DCU-3	2.0	39.28	1.06	60.8	9.06	110.64																																																																																																																																														
SRU	Not in Consent		30.29	79.82	Will be installed by TA18		Not in Consent																																																																																																																																													
	TA18* - Turn around 2018,Planned in November – December 2018																																																																																																																																																			

## Annexure - 1

## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

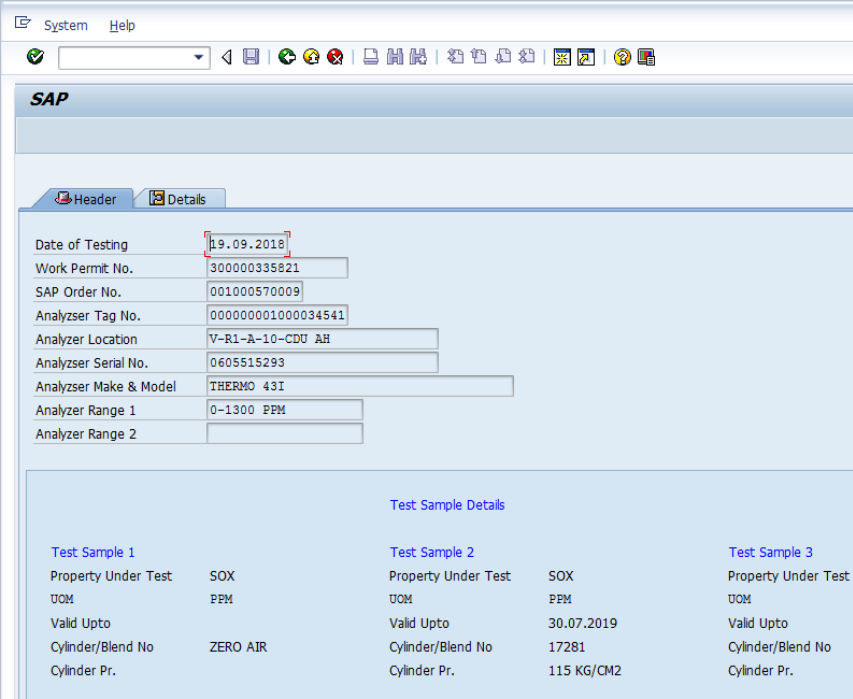
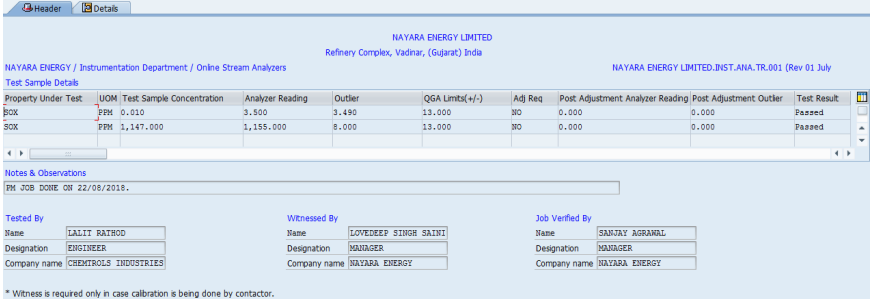
Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																							
	<p data-bbox="247 418 924 446"><b>(B) Emission through processes stacks (Table no. 02 B):</b></p> <table border="1" data-bbox="766 451 1449 673"> <thead> <tr> <th data-bbox="766 451 945 487">Sr. No.</th> <th data-bbox="945 451 1155 487">Plant</th> <th data-bbox="1155 451 1449 487">NOx (mg/Nm3)</th> </tr> <tr> <td colspan="2"></td> <th data-bbox="1155 487 1449 527">Min-Max</th> </tr> </thead> <tbody> <tr> <td data-bbox="766 527 945 560">1</td> <td data-bbox="945 527 1155 560">SRU</td> <td data-bbox="1155 527 1449 560">2-80</td> </tr> <tr> <td data-bbox="766 560 945 592">2</td> <td data-bbox="945 560 1155 592">SRU - 1</td> <td data-bbox="1155 560 1449 592">6-21</td> </tr> <tr> <td colspan="2" data-bbox="766 592 1155 633"><b>GPCB Limit (for Sr. No. 1 &amp; 2)</b></td> <td data-bbox="1155 592 1449 633"><b>350</b></td> </tr> </tbody> </table> <table border="1" data-bbox="535 738 1680 990"> <thead> <tr> <th data-bbox="535 738 693 771">Sr. No.</th> <th data-bbox="693 738 924 771">Plant</th> <th data-bbox="924 738 1092 844">PM (mg/Nm3)</th> <th data-bbox="1092 738 1291 844">SO2 (mg/Nm3)</th> <th data-bbox="1291 738 1480 844">NOx (mg/Nm3)</th> <th data-bbox="1480 738 1680 844">CO (mg/Nm3)</th> </tr> <tr> <td colspan="2"></td> <th data-bbox="924 844 1092 885">Min-Max</th> <th data-bbox="1092 844 1291 885">Min-Max</th> <th data-bbox="1291 844 1480 885">Min-Max</th> <th data-bbox="1480 844 1680 885">Min-Max</th> </tr> </thead> <tbody> <tr> <td data-bbox="535 885 693 950">3</td> <td data-bbox="693 885 924 950">FCC Regenerator</td> <td data-bbox="924 885 1092 950">24-43</td> <td data-bbox="1092 885 1291 950">89-690</td> <td data-bbox="1291 885 1480 950">68-307</td> <td data-bbox="1480 885 1680 950">199-374</td> </tr> <tr> <td colspan="2" data-bbox="535 950 924 990"><b>GPCB Limit (for Sr. No. 3)</b></td> <td data-bbox="924 950 1092 990"><b>100</b></td> <td data-bbox="1092 950 1291 990"><b>1700</b></td> <td data-bbox="1291 950 1480 990"><b>450</b></td> <td data-bbox="1480 950 1680 990"><b>400</b></td> </tr> </tbody> </table> <p data-bbox="199 998 315 1023"><b>Legends:</b></p> <p data-bbox="199 1055 430 1079"><b>NA: Not applicable</b></p> <p data-bbox="199 1112 955 1136"><b>Note :</b> Calibration detail for analyzers from SAP is shown below:</p>	Sr. No.	Plant	NOx (mg/Nm3)			Min-Max	1	SRU	2-80	2	SRU - 1	6-21	<b>GPCB Limit (for Sr. No. 1 &amp; 2)</b>		<b>350</b>	Sr. No.	Plant	PM (mg/Nm3)	SO2 (mg/Nm3)	NOx (mg/Nm3)	CO (mg/Nm3)			Min-Max	Min-Max	Min-Max	Min-Max	3	FCC Regenerator	24-43	89-690	68-307	199-374	<b>GPCB Limit (for Sr. No. 3)</b>		<b>100</b>	<b>1700</b>	<b>450</b>	<b>400</b>	
Sr. No.	Plant	NOx (mg/Nm3)																																							
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<b>GPCB Limit (for Sr. No. 3)</b>		<b>100</b>	<b>1700</b>	<b>450</b>	<b>400</b>																																				

**Annexure - 1**

**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																																																																																
	<p>For CDU I :</p>  <p><b>Header</b>   <b>Details</b></p> <p>Date of Testing: 19.09.2018          Work Permit No.: 300000335821          SAP Order No.: 001000570009          Analyzer Tag No.: 00000001000034541          Analyzer Location: V-R1-A-10-CDU AH          Analyzer Serial No.: 0605515293          Analyzer Make &amp; Model: THERMO 43I          Analyzer Range 1: 0-1300 PPM          Analyzer Range 2:</p> <p><b>Test Sample Details</b></p> <table border="1"> <thead> <tr> <th colspan="2">Test Sample 1</th> <th colspan="2">Test Sample 2</th> <th colspan="2">Test Sample 3</th> </tr> </thead> <tbody> <tr> <td>Property Under Test</td> <td>SOX</td> <td>Property Under Test</td> <td>SOX</td> <td>Property Under Test</td> <td>SOX</td> </tr> <tr> <td>UOM</td> <td>PPM</td> <td>UOM</td> <td>PPM</td> <td>UOM</td> <td>PPM</td> </tr> <tr> <td>Valid Upto</td> <td></td> <td>Valid Upto</td> <td>30.07.2019</td> <td>Valid Upto</td> <td></td> </tr> <tr> <td>Cylinder/Blend No</td> <td>ZERO AIR</td> <td>Cylinder/Blend No</td> <td>17281</td> <td>Cylinder/Blend No</td> <td></td> </tr> <tr> <td>Cylinder Pr.</td> <td></td> <td>Cylinder Pr.</td> <td>115 KG/CM2</td> <td>Cylinder Pr.</td> <td></td> </tr> </tbody> </table>	Test Sample 1		Test Sample 2		Test Sample 3		Property Under Test	SOX	Property Under Test	SOX	Property Under Test	SOX	UOM	PPM	UOM	PPM	UOM	PPM	Valid Upto		Valid Upto	30.07.2019	Valid Upto		Cylinder/Blend No	ZERO AIR	Cylinder/Blend No	17281	Cylinder/Blend No		Cylinder Pr.		Cylinder Pr.	115 KG/CM2	Cylinder Pr.		 <p><b>Header</b>   <b>Details</b></p> <p align="center">NAYARA ENERGY LIMITED Refinery Complex, Vadinar, (Gujarat) India</p> <p>NAYARA ENERGY / Instrumentation Department / Online Stream Analyzers</p> <p>Test Sample Details</p> <table border="1"> <thead> <tr> <th>Property Under Test</th> <th>UOM</th> <th>Test Sample Concentration</th> <th>Analyzer Reading</th> <th>Outlier</th> <th>QGA Limit(+/-)</th> <th>Adj Req</th> <th>Post Adjustment</th> <th>Analyzer Reading</th> <th>Post Adjustment</th> <th>Outlier</th> <th>Test Result</th> </tr> </thead> <tbody> <tr> <td>SOX</td> <td>PPM</td> <td>0.010</td> <td>3.500</td> <td>3.490</td> <td>13.000</td> <td>NO</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td></td> <td>Passed</td> </tr> <tr> <td>SOX</td> <td>PPM</td> <td>1,147.000</td> <td>1,155.000</td> <td>8.000</td> <td>13.000</td> <td>NO</td> <td>0.000</td> <td>0.000</td> <td>0.000</td> <td></td> <td>Passed</td> </tr> </tbody> </table> <p>Notes &amp; Observations PM JOB DONE ON 22/08/2018.</p> <table border="1"> <thead> <tr> <th colspan="2">Tested By</th> <th colspan="2">Witnessed By</th> <th colspan="2">Job Verified By</th> </tr> </thead> <tbody> <tr> <td>Name</td> <td>LALIT RATHOD</td> <td>Name</td> <td>LOVEDEEP SINGH SAINI</td> <td>Name</td> <td>SANJAY AGRWAL</td> </tr> <tr> <td>Designation</td> <td>ENGINEER</td> <td>Designation</td> <td>MANAGER</td> <td>Designation</td> <td>MANAGER</td> </tr> <tr> <td>Company name</td> <td>CEMENTROLS INDUSTRIES</td> <td>Company name</td> <td>NAYARA ENERGY</td> <td>Company name</td> <td>NAYARA ENERGY</td> </tr> </tbody> </table> <p>* Witness is required only in case calibration is being done by contractor.</p>	Property Under Test	UOM	Test Sample Concentration	Analyzer Reading	Outlier	QGA Limit(+/-)	Adj Req	Post Adjustment	Analyzer Reading	Post Adjustment	Outlier	Test Result	SOX	PPM	0.010	3.500	3.490	13.000	NO	0.000	0.000	0.000		Passed	SOX	PPM	1,147.000	1,155.000	8.000	13.000	NO	0.000	0.000	0.000		Passed	Tested By		Witnessed By		Job Verified By		Name	LALIT RATHOD	Name	LOVEDEEP SINGH SAINI	Name	SANJAY AGRWAL	Designation	ENGINEER	Designation	MANAGER	Designation	MANAGER	Company name	CEMENTROLS INDUSTRIES	Company name	NAYARA ENERGY	Company name	NAYARA ENERGY
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Designation	ENGINEER	Designation	MANAGER	Designation	MANAGER																																																																																													
Company name	CEMENTROLS INDUSTRIES	Company name	NAYARA ENERGY	Company name	NAYARA ENERGY																																																																																													

Detailed calibration reports for analyzers are maintained in our SAP server. Screen shot of the same is attached as **Annexure 1.1.2.**

## Annexure - 1

## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS					ACTION TAKEN REPORT						
Calibration Schedule:												
EQUIPMENT	ROOM	AT	ANALYSER	APPLICATION	FREQ.	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
1000012900	OSA_CDUI2	GAS	NOX	DUCT	3 MON			1000553465			1000570024	
1000012901	OSA_CDUI2	GAS	SOX	DUCT	3 MON			1000553466			1000570025	
1000025024	OSA_DHDS	GAS	CO	40F001 HEATER	3 MON	1000527834			1000542858			1000559941
1000025028	OSA_DHDS	GAS	SOX	40F001 HEATER	3 MON	1000527833			1000542857			1000559940
1000034535	OSA_VDU1	GAS	CO	HEATER	3 MON			1000553457			1000570016	
1000034536	OSA_VDU1	GAS	NOX	DUCT	3 MON			1000553458			1000570017	
1000034541	OSA_CDUI1	GAS	SOX	STACK	3 MON			1000553450			1000570009	
1000034542	OSA_CDUI1	GAS	NOX	STACK	3 MON			1000553451			1000570010	
1000034545	OSA_VDU1	GAS	CO	HEATER	3 MON			1000553456			1000570015	
1000034568	OSA_FCCU	GAS	CO	STACK	3 MON	1000527910			1000542949			1000560037
1000036218	OSA_HMUM	GAS	SOX	REFORMER STACK	3 MON		1000546331			1000564519		
1000036219	OSA_HMUM	GAS	NOX	REFORMER STACK	3 MON		1000546332			1000564520		
1000043521	OSA_UTY1	LIQUID	PH	197FX001A SERVICE O/L	3 MON	1000542742			1000559753			1000576247
1000044625	OSA_HMUI1	GAS	SOX	REFORMER STACK	3 MON		1000532288			1000547207		
1000044626	OSA_HMUI1	GAS	NOX	REFORMER STACK	3 MON		1000532287			1000547206		
Detailed calibration schedule is attached herewith as <b>Annexure 1.1.3.</b>												

## Annexure - 1

## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																																																																
	<p>Ambient Air Quality for Mar'18 to Aug'18 are shown in <u>Table no. 03 A</u>.</p> <p>Manual Monitoring by Third Party, M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20).</p> <p style="text-align: center;"><u>Table no. 03 A: Analysis results for Ambient Air Quality</u></p> <table border="1" data-bbox="531 639 1686 1412"> <thead> <tr> <th rowspan="2">Sr. No</th> <th rowspan="2">Particulars/ Parameters</th> <th rowspan="2">Unit</th> <th rowspan="2">GPCB CC&amp;A Limit</th> <th colspan="2">At 93 gate</th> <th colspan="2">Refinery main gate</th> <th colspan="2">Labor Gate</th> <th colspan="2">PORT A CAMP</th> </tr> <tr> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Wind Direction (From)</td> <td></td> <td></td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> </tr> <tr> <td>2</td> <td>PM10</td> <td>µg/m<sup>3</sup></td> <td>100</td> <td>61</td> <td>88</td> <td>56</td> <td>78</td> <td>61</td> <td>88</td> <td>54</td> <td>88</td> </tr> <tr> <td>3</td> <td>PM2.5</td> <td>µg/m<sup>3</sup></td> <td>60</td> <td>16</td> <td>28</td> <td>16</td> <td>26</td> <td>17</td> <td>28</td> <td>14</td> <td>28</td> </tr> <tr> <td>4</td> <td>Sulphur Dioxide (SO<sub>2</sub>)</td> <td>µg/m<sup>3</sup></td> <td>80</td> <td>12</td> <td>28</td> <td>14</td> <td>26</td> <td>12</td> <td>26</td> <td>16</td> <td>27</td> </tr> <tr> <td>5</td> <td>Nitrogen Oxides (NO<sub>2</sub>)</td> <td>µg/m<sup>3</sup></td> <td>80</td> <td>16</td> <td>32</td> <td>18</td> <td>29</td> <td>16</td> <td>28</td> <td>19</td> <td>32</td> </tr> </tbody> </table>	Sr. No	Particulars/ Parameters	Unit	GPCB CC&A Limit	At 93 gate		Refinery main gate		Labor Gate		PORT A CAMP		Min	Max	Min	Max	Min	Max	Min	Max	1	Wind Direction (From)			NW	NW	NW	NW	NW	NW	NW	NW	2	PM10	µg/m <sup>3</sup>	100	61	88	56	78	61	88	54	88	3	PM2.5	µg/m <sup>3</sup>	60	16	28	16	26	17	28	14	28	4	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	12	28	14	26	12	26	16	27	5	Nitrogen Oxides (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	16	32	18	29	16	28	19	32	
Sr. No	Particulars/ Parameters					Unit	GPCB CC&A Limit	At 93 gate		Refinery main gate		Labor Gate		PORT A CAMP																																																																				
		Min	Max	Min	Max			Min	Max	Min	Max																																																																							
1	Wind Direction (From)			NW	NW	NW	NW	NW	NW	NW	NW																																																																							
2	PM10	µg/m <sup>3</sup>	100	61	88	56	78	61	88	54	88																																																																							
3	PM2.5	µg/m <sup>3</sup>	60	16	28	16	26	17	28	14	28																																																																							
4	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	12	28	14	26	12	26	16	27																																																																							
5	Nitrogen Oxides (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	16	32	18	29	16	28	19	32																																																																							

## Annexure - 1

## PART – II

## COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS				ACTION TAKEN REPORT								
	6	Carbon Monoxide (CO)	mg/m <sup>3</sup>	4	<1	<1	<1	<1	<1	<1	<1	<1	<1
7	Benzene	µg/m <sup>3</sup>	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	
8	Benzo(a) - Pyrene	µg/m <sup>3</sup>	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	

Online Monitoring for Ambient Air Quality (Table no. 03 B) :

Table no. 03 B: Analysis results for Ambient Air Quality

Sr. No	Particulars/ Parameters	Unit	GPCB CC&A Limit	AAQMS 1		AAQMS 2	
				Min	Max	Min	Max
1	PM10	µg/m <sup>3</sup>	100	34	85	29	78
2	PM2.5	µg/m <sup>3</sup>	60	14	56	5	54
3	Sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	1	52	1	64
4	Nitrogen Oxides (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	4	30	20	40
5	Carbon Monoxide (CO)	mg/m <sup>3</sup>	4	<1	2	<1	1

**Annexure - 1**

**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS			ACTION TAKEN REPORT				
	6	Benzene	µg/m <sup>3</sup>	5	<1	<1	<1	<1
	7	Benzo(a) - Pyrene	µg/m <sup>3</sup>	1	<0.1	<0.1	<0.1	<0.1

III The company shall confirm to the process vent standards for organic chemicals including non-VOCs and all possible VOC i.e. TOCs standards and process vent standards for top priority chemicals.

Regular monitoring shall be carried out for VOC and HC and on-line monitors for VOC measurements may be installed.

We confirm to the process vent standards for organic chemical including non VOCs and all possible VOC. All process vents are connected to flare. The pilot burners on the flare are continuously on and therefore there is no chance of unburned HC release to the atmosphere.

Regular monitoring is being carried out for VOC as under:

Manual monitoring for VOC are regularly carried out as per GSR 186 (E) dated 18<sup>th</sup> March, 2008 The company has well established procedure for leak detection and repair under which VOCs are monitored in all the units manually though photo-ionization VOC meters since 2010. No leak has been detected till date. The procedure in brief for LDAR (Leak Detection and Repair) is shown below. (For detailed procedure please refer **Annexure 1.2**).



Annexure - 1

PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		<p><b>Procedure for VOC monitoring :</b></p> <ul style="list-style-type: none"><li>- The VOC Meter should be assembled and started in open &amp; clean atmosphere.</li><li>- The instrument should be calibrated as per recommendation of instrument supplier.</li><li>- Concentration of VOCs emitted by the leaking component should be checked at the surface interface (e.g. at the interface between a valve stem and packing).</li><li>- The probe inlet should be placed at the surface of the component interface where there is possibility of Leak. It should be moved along the periphery while observing the instrument readings.</li><li>- The interface where leakage is indicated should be sampled slowly until the maximum reading is obtained. If the maximum reading exceeds the defined concentration limit then record the reading. Set the meter to zero reading and again take the maximum reading for cross verification.</li></ul>





**Annexure - 1**

**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																								
		<div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p><i>Refinery Integrated Management System</i></p> <p align="right"></p> <p><b>Procedure for Leak Detection and Repair Program (LDAR)</b></p> <hr/> <p><b>AMENDMENT DETAILS</b></p> <table border="1"> <thead> <tr> <th colspan="2">Amendment</th> <th>Discard</th> <th colspan="2">Insert</th> <th>Notes on Amendments</th> </tr> <tr> <th>No</th> <th>Date dd.mm.yyyy</th> <th>Details</th> <th>Rev.No.</th> <th>Details</th> <th>Rev No.</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>28.08.2018</td> <td>Old Procedure EOL-MGT-DP-TS-ENV-001</td> <td>03</td> <td>Revised Procedure NAYA-MGT-HSEF-ENV-01</td> <td>01.00</td> </tr> <tr> <td>2</td> <td>28.08.2018</td> <td>EOL ESSAR OIL Essar Logo ERIMS</td> <td>03</td> <td>NAYA (In Doc. Numbering) Nayara Energy Limited Nayara Logo RIMS</td> <td>01.00 Organizational Change Requirement</td> </tr> </tbody> </table> </div> <div style="width: 48%;"> <p><i>Refinery Integrated Management System</i></p> <p align="right"></p> <p><b>Procedure for Leak Detection and Repair Program (LDAR)</b></p> <hr/> <p><b>Contents</b></p> <p>AMENDMENT DETAILS..... 2 -</p> <p>1. OBJECTIVE..... 4 -</p> <p>2. SCOPE ..... 4 -</p> <p>3. DEFINITIONS:..... 4 -</p> <p>3.1. Volatile Organic Compounds (VOC):..... 4 -</p> <p>3.2. Fugitive Emission:..... 4 -</p> <p>3.3. Essential Equipment:..... 4 -</p> <p>3.4. Leak:..... 5 -</p> <p>4. PROCEDURE FOR MONITORING:..... 5 -</p> <p>5. MONITORING REQUIREMENTS &amp; REPAIR SCHEDULE: ..... 6 -</p> <p>6. PRECAUTIONS:..... 6 -</p> <p>7. RESPONSIBILITY:..... 7 -</p> <p>7.1 Head Operations is responsible for:..... 7 -</p> <p>7.2 Head Environment is responsible for:..... 7 -</p> <p>7.3 Head Maintenance is responsible for:..... 7 -</p> <p>8. REFERENCES: ..... 7 -</p> </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <p>NAYA-MGT-HSEF-ENV-01</p> <p>Rev: 01.00 Dated: 28.08.2018</p> <p>- 2 - of 9</p> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <p>NAYA-MGT-HSEF-ENV-01</p> <p>Rev: 01.00 Dated: 28.08.2018</p> <p>- 3 - of 9</p> </div>	Amendment		Discard	Insert		Notes on Amendments	No	Date dd.mm.yyyy	Details	Rev.No.	Details	Rev No.	1	28.08.2018	Old Procedure EOL-MGT-DP-TS-ENV-001	03	Revised Procedure NAYA-MGT-HSEF-ENV-01	01.00	2	28.08.2018	EOL ESSAR OIL Essar Logo ERIMS	03	NAYA (In Doc. Numbering) Nayara Energy Limited Nayara Logo RIMS	01.00 Organizational Change Requirement
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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008


Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																								
		<p>Apart from above, VOC emissions are manually monitored in the vicinity of potential sources of VOC emissions. VOC emission monitoring results for the month of Mar'18 to Aug'18 are tabulated in <b>Table no. 04</b>.</p> <p style="text-align: center;"><b><u>Table no. 04: VOC monitoring results</u></b></p> <table border="1" data-bbox="961 618 1919 1369"> <thead> <tr> <th data-bbox="970 625 1041 699">Sr. No.</th> <th data-bbox="1045 625 1625 699">VOC monitoring area / unit / plant</th> <th data-bbox="1629 625 1755 699">Unit</th> <th data-bbox="1759 625 1911 699">VOC Min-Max</th> </tr> </thead> <tbody> <tr> <td data-bbox="970 703 1041 777">1</td> <td data-bbox="1045 703 1625 777">Near Truck Gantry No. 5 (HC Truck Loading)</td> <td data-bbox="1629 703 1755 777">Ppm</td> <td data-bbox="1759 703 1911 777">40-60</td> </tr> <tr> <td data-bbox="970 781 1041 855">2</td> <td data-bbox="1045 781 1625 855">Primary Treatment Plant of Truck Dispatch Area</td> <td data-bbox="1629 781 1755 855">ppm</td> <td data-bbox="1759 781 1911 855">38-104</td> </tr> <tr> <td data-bbox="970 859 1041 933">3</td> <td data-bbox="1045 859 1625 933">Expansion ETP</td> <td data-bbox="1629 859 1755 933">ppm</td> <td data-bbox="1759 859 1911 933">191-243</td> </tr> <tr> <td data-bbox="970 937 1041 1011">4</td> <td data-bbox="1045 937 1625 1011">Hazardous waste storage sites</td> <td data-bbox="1629 937 1755 1011">ppm</td> <td data-bbox="1759 937 1911 1011">0</td> </tr> <tr> <td data-bbox="970 1015 1041 1089">5</td> <td data-bbox="1045 1015 1625 1089">Primary Treatment Unit of ISBL-1 process</td> <td data-bbox="1629 1015 1755 1089">ppm</td> <td data-bbox="1759 1015 1911 1089">132-194</td> </tr> <tr> <td data-bbox="970 1092 1041 1167">6</td> <td data-bbox="1045 1092 1625 1167">At Battery Limit in CDU/VDU</td> <td data-bbox="1629 1092 1755 1167">ppm</td> <td data-bbox="1759 1092 1911 1167">2-5</td> </tr> <tr> <td data-bbox="970 1170 1041 1245">7</td> <td data-bbox="1045 1170 1625 1245">At Battery Limit in CDU - II</td> <td data-bbox="1629 1170 1755 1245">ppm</td> <td data-bbox="1759 1170 1911 1245">1-5</td> </tr> <tr> <td data-bbox="970 1248 1041 1323">8</td> <td data-bbox="1045 1248 1625 1323">Downwind of equalization tank (Oil Separation Basin Unit-8400) of base ETP</td> <td data-bbox="1629 1248 1755 1323">ppm</td> <td data-bbox="1759 1248 1911 1323">263-292</td> </tr> <tr> <td data-bbox="970 1326 1041 1369">9</td> <td data-bbox="1045 1326 1625 1369">Primary Treatment Plant of Crude Tank Storage (COT) Area</td> <td data-bbox="1629 1326 1755 1369">ppm</td> <td data-bbox="1759 1326 1911 1369">9.1-10.8</td> </tr> </tbody> </table>	Sr. No.	VOC monitoring area / unit / plant	Unit	VOC Min-Max	1	Near Truck Gantry No. 5 (HC Truck Loading)	Ppm	40-60	2	Primary Treatment Plant of Truck Dispatch Area	ppm	38-104	3	Expansion ETP	ppm	191-243	4	Hazardous waste storage sites	ppm	0	5	Primary Treatment Unit of ISBL-1 process	ppm	132-194	6	At Battery Limit in CDU/VDU	ppm	2-5	7	At Battery Limit in CDU - II	ppm	1-5	8	Downwind of equalization tank (Oil Separation Basin Unit-8400) of base ETP	ppm	263-292	9	Primary Treatment Plant of Crude Tank Storage (COT) Area	ppm	9.1-10.8
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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		<p>The detection limit of the instrument used for measurement of VOC is 0 to 10,000 PPM.</p> <p>Instrument are regularly calibrated. Calibration report is shown below.</p> <div style="text-align: center;">  <p><b>Labindia Instruments Pvt. Ltd.</b>  <small>1st, 1st phase 1st floor,                      Nandanagar, Chhambha, Old State Road,                      Vadodra - 390 010 (Gujarat)                      Tel: +91-79-88848394                      Email: patil@labindia.com</small></p> </div> <p>Dt: 16.07.2018</p> <p>Essar Oil Ltd,                      Jamnagar - Okha Highway,                      Vadinar - 361 305 (Gujarat)</p> <p><b>TO WHOM SO EVER IT MAY CONCERN</b></p> <p>This is to certify that below mentioned instruments have been successfully calibrated on 16.07.2018</p> <p>Instrument S/N: PCE0002 &amp; PCDN0002</p> <p>Calibration Gas Details mentioned below :</p> <p>Calibration Gas : Isobutylene                      Concentration : 100 PPM                      Next Calibration Due : Oct'18</p> <p>Best regards,                      For Labindia Instruments Pvt. Ltd.</p> <p><i>(Signature)</i></p> <p>Vikas Patil                      Sr. Sales &amp; Service Engineer-NIP Division                      Cell No. +91-9888488394</p> <p><small>Aiming For The Best™                      100% QUALITY, 0% DEFECTS, 0% WASTE                      CHENNAI - 600 044   HYDRABAD - 500 082   PUNE - 411 004   BANGALORE - 560 002   DELHI - 110 028   MUMBAI - 400 001   CHANDIGARH - 160 002   COIMBATORE - 435 001   KOLKATA - 700 001   RAIPUR - 835 001   SURAT - 395 001   VADODRA - 390 001   JAIPUR - 302 001   BHOPAAL - 482 001   BHUBANESHWAR - 751 001   GUWAHATI - 781 001   HYDRABAD - 500 001   KANPUR - 208 001   LUCKNOW - 226 001   MUMBAI - 400 001   RAJASTHAN - 302 001   ROURKELA - 769 001   TIRUPATI - 517 001   VISAKHAPATNAM - 515 001   WARANGAL - 506 001   BANGALORE - 560 001   CHENNAI - 600 001   COIMBATORE - 435 001   DELHI - 110 001   GUWAHATI - 781 001   HYDRABAD - 500 001   KANPUR - 208 001   LUCKNOW - 226 001   MUMBAI - 400 001   RAJASTHAN - 302 001   ROURKELA - 769 001   TIRUPATI - 517 001   VISAKHAPATNAM - 515 001   WARANGAL - 506 001</small></p>

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**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																		
IV	<p>The total SO<sub>2</sub> emission load for 32 MMTPA refinery capacity and petrochemical complex will be below 24.60 tons/ day and for III phase for 60 MMTPA production petrochemicals shall not exceed 38.69 tons /day.</p> <p>Regular record on sulfur emission shall be maintained as part of the environmental data record.</p> <p>SRU of 99% sulfur removal will be established and efficiency will be monitored at regular intervals.</p>	<p>Presently, refinery is operating at 20 MMTPA capacity. Minimum SO<sub>2</sub> emission load is 15.04 MT/day. Maximum SO<sub>2</sub> emission load is 15.23 MT/day, which is within limit.</p> <p>Regular record on sulfur emission are being maintained as a part of environmental data record. Details are as shown below:</p> <p align="center"><b>Table no.: 05 Sulfur emission records</b></p> <table border="1" data-bbox="1060 808 1824 997"> <tr> <td colspan="6" data-bbox="1060 808 1824 914">Sulfur emission records based on the monitoring carried out by NABL accredited laboratory are maintained as given below.<b>SO<sub>2</sub> emission from Stacks, Tons/Day</b></td> </tr> <tr> <th data-bbox="1060 917 1194 954">Mar'18</th> <th data-bbox="1199 917 1318 954">Apr'18</th> <th data-bbox="1323 917 1463 954">May'18</th> <th data-bbox="1467 917 1587 954">Jun'18</th> <th data-bbox="1591 917 1696 954">Jul'18</th> <th data-bbox="1701 917 1824 954">Aug'18</th> </tr> <tr> <td data-bbox="1060 958 1194 997">15.05</td> <td data-bbox="1199 958 1318 997">15.03</td> <td data-bbox="1323 958 1463 997">15.04</td> <td data-bbox="1467 958 1587 997">15.06</td> <td data-bbox="1591 958 1696 997">15.23</td> <td data-bbox="1701 958 1824 997">15.18</td> </tr> </table> <p>SRU of 99% sulfur removal efficiency have been established and efficiency is being monitored at regular interval as under:</p> <p><b>Sulfur removal efficiency for SRUs are shown in table no 06 A, 06 B, 07 A &amp; 07 B</b></p>	Sulfur emission records based on the monitoring carried out by NABL accredited laboratory are maintained as given below. <b>SO<sub>2</sub> emission from Stacks, Tons/Day</b>						Mar'18	Apr'18	May'18	Jun'18	Jul'18	Aug'18	15.05	15.03	15.04	15.06	15.23	15.18
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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																																																		
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KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS			ACTION TAKEN REPORT									
							Amine	CRU	Amine	CRU	Amine	CRU	Sulphur, TPD
	Actual	26651	3867	94.99	47.0	25315	1818	23826	1711	612.9			
<b>For SRU Expansion (Table no. 07 B)</b>													
		Stack Gas	Sox wt%	H2S wt%	SOx in Stack gas, kg/hr	H2S in Stack gas, kg/hr	S in Sox, kg/hr	S in H2S, kg/hr	S in Stack Gas, kg/hr	Total S in Stack gas, t/d	Potential Sulphur, TPD	Sulphur Recovery	
	Actual	105307	0.0344	0.001	36.20	1.05	18.10	0.99	19.09	0.4582	612.9	99.9%	
<p>Refinery has two units of SRU. One, base SRU which has been upgraded to 99.9% design efficiency from 99.4 % by replacing Super Clause Process by LT-SCOT Process. Second, SRU expansion which was installed during expansion of the base refinery; it is also based on LT- SCOT Process designed to operate at 99.9% efficiency.</p>													

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**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

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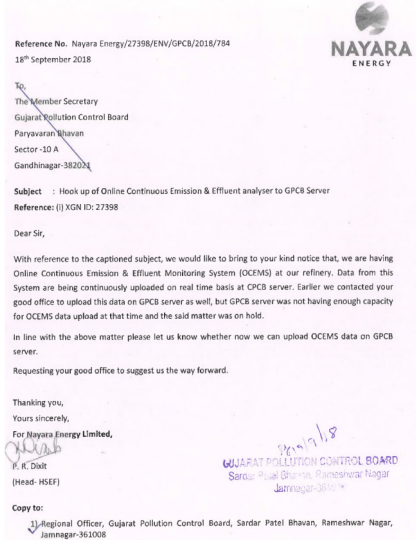
Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	<p>Performance evaluation will be done for all these activities on annual basis to check adequacies and improve on the deficiencies.</p>	<p>Performance evaluations of SRUs are done annually.</p> <p>Presently, both SRUs are operating more than 99.7% sulfur recovery efficiency.</p> <p>Following measures are adapted for maintaining the performance:</p> <ol style="list-style-type: none"> <li>1. Process analyzer are monitored on daily basis for smooth running of plant.</li> <li>2. And when there is any deviation in reading from the design limit then immediately analyzer is attended.</li> <li>3. Stack Analyzer is being attended every 3 month.</li> </ol>
V	<p>On-line monitoring shall be carried out for stack emission of SO<sub>2</sub> &amp; NO<sub>x</sub> contributed mainly from CDU, VDU, SRU, etc and data shall be transferred to CPCB and SPCB regularly.</p>	<p>Online monitoring is being carried out for stack emission of SO<sub>2</sub> &amp; NO<sub>x</sub> in all stacks including CDU, VDU and SRU. Online data are being transmitted to CPCB server since June' 2015. Earlier we have contacted GPCB to upload the data on their server, but at that time GPCB server did not have enough capacity. We have again approached GPCB office to suggest a way forward. Request letter to GPCB for the same is as given below.</p>

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**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	<p>The instruments used for ambient air quality monitoring shall be calibrated regularly.</p> <p>The monitoring protocol shall ensure continuous monitoring of all the parameters.</p>	 <p>The Instruments used for ambient air quality are periodically calibrated by M/s Chemtrol. The calibration report is as given below.</p> <p>Two stations of Continuous Ambient Air Quality monitoring have been installed in upwind and downwind direction and on line data are being transmitted to CPCB server since March'2013.</p> <p>One of our Environment Engineer is assigned to check continuous operation of online analysers, in case of any abnormality the concerned department is immediately informed and prompt action is being taken to rectify the problem.</p>

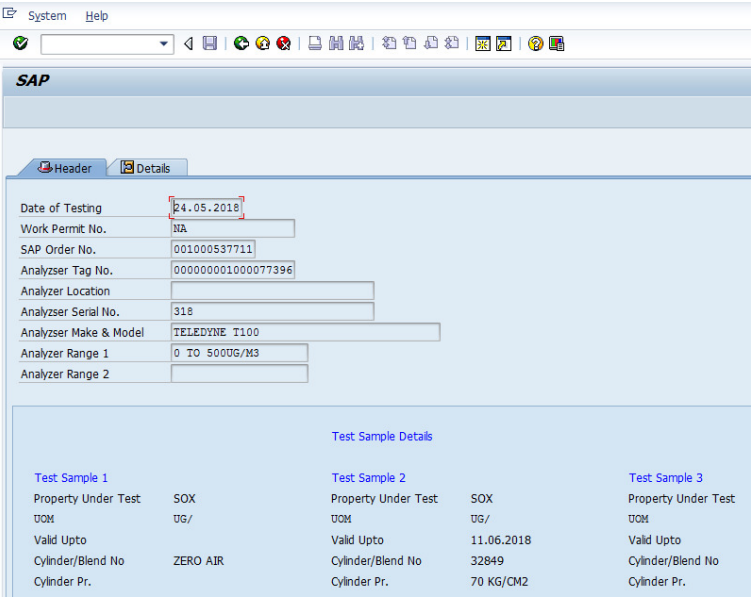
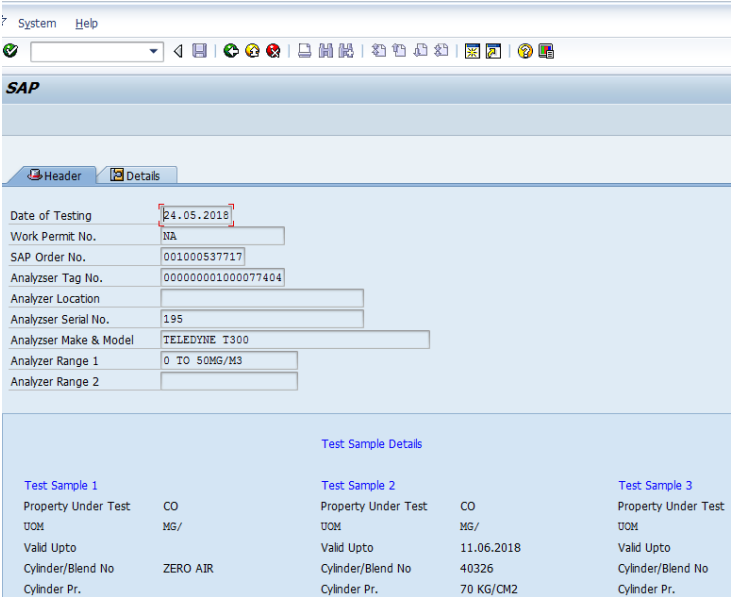


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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	<p>Calibration report:</p> <p>For AAQMS I :</p> 	<p>For AAQMS II :</p> 
VI	<p>The existing plant is using low NOx burners and the same or the one which are more efficient than the existing shall be used for the expansion of the projects too in all furnaces/ heaters.</p>	<p>For the expansion of the project to 20 MMTPA low NOx burner has been provided in the existing DCU heaters, DHDT, VGOMHC, which are similar to the burners installed in the preexisting unit i.e. CDU, VDU, NHTCCR, FCCH, DHDS.</p> <p>We confirm to use the same or the one which are more efficient than the existing, for the expansion of the projects in all furnaces/ heaters.</p>

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																																
VII	The company shall install Hydro desulphurization and sulfur recovery unit with efficiency more than 99%	Hydro desulphurization & sulfur recovery unit with efficiency 99.9 %. were installed and commissioned in November, 2006.																																																
VIII	For additional LPG storages, refrigerated storage or mounded bullets shall be installed.	No additional LPG storages has been created after issuance of this EC & we confirm that For additional LPG storages required in future , refrigerated storage or mounded bullets will be installed.																																																
IX	Low sulfur internal fuel oil and fuel gas shall be fired in process heaters.	<p>Low sulfur Internal fuel gas is being fired in all the process heaters except CDU, VDU, CDU-II, VGOHT and DHDT wherein mixture of low sulfur fuel oil and fuel gas is being fired.</p> <p>Quality of fuel oil &amp; fuel gas for the month of Mar'18 to Aug'18 is shown <u>in table no. 08 A &amp; 08 B.</u></p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="1041 873 1220 899" style="text-align: center;"><u>Table no. 08 A</u></div> <div data-bbox="1650 873 1829 899" style="text-align: center;"><u>Table no. 08 B</u></div> </div> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3" data-bbox="915 932 1398 1003">Sulphur Concentration in Wt% in Fuel Oil</th> <th colspan="3" data-bbox="1493 932 1955 1003">H2S Concentration in mg/Nm3 in Fuel Gas</th> </tr> <tr> <th data-bbox="915 1006 1024 1078">Sr. No.</th> <th data-bbox="1024 1006 1184 1078">Month</th> <th data-bbox="1184 1006 1398 1078">Monthly Average</th> <th data-bbox="1493 1006 1602 1078">Sr. No.</th> <th data-bbox="1602 1006 1711 1078">Month</th> <th data-bbox="1711 1006 1955 1078">Monthly Average</th> </tr> </thead> <tbody> <tr> <td data-bbox="915 1081 1024 1114">1</td> <td data-bbox="1024 1081 1184 1114">Mar</td> <td data-bbox="1184 1081 1398 1114">0.74</td> <td data-bbox="1493 1081 1602 1114">1</td> <td data-bbox="1602 1081 1711 1114">Mar</td> <td data-bbox="1711 1081 1955 1114">32.5</td> </tr> <tr> <td data-bbox="915 1117 1024 1149">2</td> <td data-bbox="1024 1117 1184 1149">Apr</td> <td data-bbox="1184 1117 1398 1149">0.84</td> <td data-bbox="1493 1117 1602 1149">2</td> <td data-bbox="1602 1117 1711 1149">Apr</td> <td data-bbox="1711 1117 1955 1149">21.9</td> </tr> <tr> <td data-bbox="915 1153 1024 1185">3</td> <td data-bbox="1024 1153 1184 1185">May</td> <td data-bbox="1184 1153 1398 1185">0.77</td> <td data-bbox="1493 1153 1602 1185">3</td> <td data-bbox="1602 1153 1711 1185">May</td> <td data-bbox="1711 1153 1955 1185">14.3</td> </tr> <tr> <td data-bbox="915 1188 1024 1221">4</td> <td data-bbox="1024 1188 1184 1221">Jun</td> <td data-bbox="1184 1188 1398 1221">0.59</td> <td data-bbox="1493 1188 1602 1221">4</td> <td data-bbox="1602 1188 1711 1221">Jun</td> <td data-bbox="1711 1188 1955 1221">11.8</td> </tr> <tr> <td data-bbox="915 1224 1024 1256">5</td> <td data-bbox="1024 1224 1184 1256">Jul</td> <td data-bbox="1184 1224 1398 1256">0.44</td> <td data-bbox="1493 1224 1602 1256">5</td> <td data-bbox="1602 1224 1711 1256">Jul</td> <td data-bbox="1711 1224 1955 1256">16.8</td> </tr> <tr> <td data-bbox="915 1260 1024 1292">6</td> <td data-bbox="1024 1260 1184 1292">Aug</td> <td data-bbox="1184 1260 1398 1292">0.57</td> <td data-bbox="1493 1260 1602 1292">6</td> <td data-bbox="1602 1260 1711 1292">Aug</td> <td data-bbox="1711 1260 1955 1292">19.4</td> </tr> </tbody> </table>	Sulphur Concentration in Wt% in Fuel Oil			H2S Concentration in mg/Nm3 in Fuel Gas			Sr. No.	Month	Monthly Average	Sr. No.	Month	Monthly Average	1	Mar	0.74	1	Mar	32.5	2	Apr	0.84	2	Apr	21.9	3	May	0.77	3	May	14.3	4	Jun	0.59	4	Jun	11.8	5	Jul	0.44	5	Jul	16.8	6	Aug	0.57	6	Aug	19.4
Sulphur Concentration in Wt% in Fuel Oil			H2S Concentration in mg/Nm3 in Fuel Gas																																															
Sr. No.	Month	Monthly Average	Sr. No.	Month	Monthly Average																																													
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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
X	<p>Quarterly monitoring of fugitive emissions will be carried out by Fugitive Emission Detectors (GMI Leak Surveyor).</p> <p>Guidelines of CPCB shall be followed for monitoring fugitive emissions.</p>	<p>Quarterly Monitoring of fugitive emissions is being carried out as per GSR (186) E, 2008. (Detailed compliance is covered under <b>Annexure 1.1</b> GSR condition no.ii)</p> <p>Guidelines of GSR (186) E, 2008 are being followed for monitoring fugitive emissions.</p>
XI	<p>Floating roof double seal tanks will be provided to reduce the VOC fugitives' emission.</p> <p>For management of fugitive emissions, all unsaturated hydrocarbons will be routed to the flare systems. The flare system shall be designed for smoke less burning.</p>	<p>Floating roof double seal tanks have been provided to reduce the VOC fugitives' emission for all Class-A &amp; B Hydrocarbons (HC).</p> <p>For management of fugitive emissions, all unsaturated hydrocarbons are being routed to the flare system which is designed for smokeless burning with steam.</p>
XII	<p>Flare Gas Recovery (FGR) system shall be installed for reduction of hydrocarbon loss and emission of VOCs, NOx, N<sub>2</sub>O, and SOx &amp; CO<sub>2</sub> to the environment.</p>	<p>At present flare losses are minimal therefore it is flared directly. However, we have already made provision for installing Flare Gas Recovery System for reduction of hydrocarbon loss and emission of VOCs, NOx, N<sub>2</sub>O and SOx &amp; CO<sub>2</sub> to the environment.</p>
XIII	<p>FCC shall be provided with an ESP and other sources of particulate will be controlled to meet E (P) Act standards.</p>	<p>FCC has been provided with high efficiency cyclones so as to ensure that the particulate emissions are within the limit. We are meeting the E (P) Act standards by installing cyclones. This is a general practice to provide cyclones in FCC.</p> <p>Monitoring report for the stack emission parameter for the period of Mar'18 to Aug'18 is as given in <b>Table no. 09 A &amp; 09 B.</b></p>
	<p><b>Monitoring results for FCC regenerator for the month of Mar'18 to Aug'18 carried out by M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20) :</b></p>	

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
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Table no. 09 A

Sr. No.	Plant	Parameters monitored					
		PM (mg/Nm3)	SO2 (mg/Nm3)	NOx (mg/Nm3)	CO (mg/Nm3)	Ni (mg/Nm3)	V (mg/Nm3)
		Min-Max	Min-Max	Min-Max	Min-Max	Min-Max	Min-Max
1	FCC Regenerator	31-62	229-457	72-112	52-273	0.05-0.07	0.21-0.35
<b>GPCB Limit (for Sr. No. 3)</b>		<b>100</b>	<b>1700</b>	<b>450</b>	<b>400</b>	<b>5</b>	<b>5</b>

## Continuous Emission Monitoring System

Table no. 09 B

Sr. No.	Plant	PM (mg/Nm3)	SO2 (mg/Nm3)	NOx (mg/Nm3)	CO (mg/Nm3)
		Min-Max	Min-Max	Min-Max	Min-Max
1	FCC Regenerator	22-43	313-690	113-307	199-374
<b>GPCB Limit (for Sr. No. 3)</b>		<b>100</b>	<b>1700</b>	<b>450</b>	<b>400</b>

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																												
XIV	<p>Regular Ambient Air Quality Monitoring shall be carried out.</p> <p>The location and results of existing monitoring stations will be reviewed in consultation with the concerned State Pollution control Board based on the occurrence of maximum ground level concentration and downwind direction of wind.</p>	<p>Regular Ambient Air Quality Monitoring is being carried out at 4 nos. of Ambient air quality sampling stations installed within the Refinery premises one in in up wind &amp; one in down wind direction and 2 nos in cross wind direction.</p> <p>Ambient Air Quality Monitoring is being carried out once a week at 4 locations. Reports are regularly submitted to GPCB.</p> <p>Monitoring results for the month of Mar'18 to Aug'18 carried out by M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20) are as given in <u>Table no. 10</u>.</p> <p style="text-align: center;"><u>Table no. 10</u></p> <table border="1" data-bbox="865 894 2028 1344"> <thead> <tr> <th rowspan="2">Sr. No</th> <th rowspan="2">Particulars/ Parameters</th> <th rowspan="2">Unit</th> <th rowspan="2">GPCB CC&amp;A Limit</th> <th colspan="2">At 93 gate</th> <th colspan="2">Refinery main gate</th> <th colspan="2">Labor Gate</th> <th colspan="2">PORT A CAMP</th> </tr> <tr> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Wind Direction (From)</td> <td></td> <td></td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> <td>NW</td> </tr> <tr> <td>2</td> <td>PM10</td> <td>µg/m<sup>3</sup></td> <td>100</td> <td>61</td> <td>88</td> <td>56</td> <td>78</td> <td>61</td> <td>88</td> <td>54</td> <td>88</td> </tr> </tbody> </table>	Sr. No	Particulars/ Parameters	Unit	GPCB CC&A Limit	At 93 gate		Refinery main gate		Labor Gate		PORT A CAMP		Min	Max	Min	Max	Min	Max	Min	Max	1	Wind Direction (From)			NW	NW	NW	NW	NW	NW	NW	NW	2	PM10	µg/m <sup>3</sup>	100	61	88	56	78	61	88	54	88
Sr. No	Particulars/ Parameters	Unit					GPCB CC&A Limit	At 93 gate		Refinery main gate		Labor Gate		PORT A CAMP																																
			Min	Max	Min	Max		Min	Max	Min	Max																																			
1	Wind Direction (From)			NW	NW	NW	NW	NW	NW	NW	NW																																			
2	PM10	µg/m <sup>3</sup>	100	61	88	56	78	61	88	54	88																																			

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT											
		3	PM2.5	$\mu\text{g}/\text{m}^3$	60	16	28	16	26	17	28	14	28
		4	Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	80	12	28	14	26	12	26	16	27
		5	Nitrogen Oxides (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	80	16	32	18	29	16	28	19	32
		6	Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	4	<1	<1	<1	<1	<1	<1	<1	<1
		7	Benzene	$\mu\text{g}/\text{m}^3$	5	<1	<1	<1	<1	<1	<1	<1	<1
		8	Benzo(a) - Pyrene	$\mu\text{g}/\text{m}^3$	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Additional stations shall be set up, if required, It will be ensured that at least one monitoring station is set up in up wind & in down wind direction along with those in other direction.	<p>Apart from above sampling stations, 2 nos. of Continuous AAQM (One in upwind &amp; one in downwind) installed within the Refinery premises. Real time data of CAAQMS are transmitted to CPCB through M/s Chemtrol server since March 2013.</p> <p>Monitoring result of CAAQMS for the month of Mar'18 to Aug'18 are as given in <b>Table no. 11</b></p>											

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

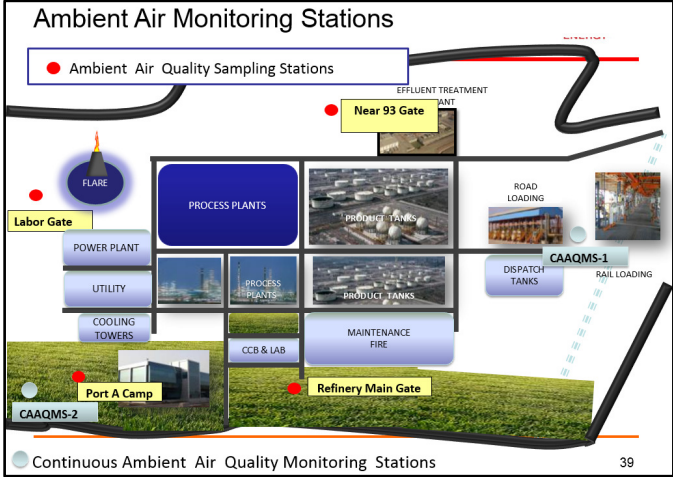
Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT							
		<u>Table no. 11: Monitoring result of CAAQMS</u>							
		Sr. No	Particulars/ Parameters	Unit	GPCB CC&A Limit	AAQMS 1		AAQMS 2	
						Min	Max	Min	Max
		1	PM10	$\mu\text{g}/\text{m}^3$	<b>100</b>	34	85	29	78
		2	PM2.5	$\mu\text{g}/\text{m}^3$	<b>60</b>	14	56	5	54
		3	Sulphur Dioxide (SO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	<b>80</b>	1	52	1	64
		4	Nitrogen Oxides (NO <sub>2</sub> )	$\mu\text{g}/\text{m}^3$	<b>80</b>	4	30	20	40
		5	Carbon Monoxide (CO)	$\text{mg}/\text{m}^3$	<b>4</b>	<1	2	<1	1
		6	Benzene	$\mu\text{g}/\text{m}^3$	<b>5</b>	<1	<1	<1	<1
		7	Benzo(a) - Pyrene	$\mu\text{g}/\text{m}^3$	<b>1</b>	<0.1	<0.1	<0.1	<0.1

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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		
XV	<p>The practice of acoustic plant design shall be adopted to limit noise exposure for personnel to an 8 hr time weighted average of 90 dB (A).</p>	<p>The practice of acoustic plant design is being adapted., in refinery to limit noise exposure for personnel to an 8 hr time weighted average of 90 db (A), All the equipment have been designed and are operated with noise level of &lt;90 dB (A).</p> <p>The design of project is such that the sound level in the work area is not exceeding 90 dB (A). Wherever practicable, attempts have been made to reduce the noise level below 90dB (A). However the areas where it is not reasonably practicable to reduce the noise level below the limit have been designated high noise area, where the movement is restricted and limited exposure is allowed to the working personnel.</p> <p>Following measures have been adapted to reduce the noise exposure:</p>



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**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT															
		<ul style="list-style-type: none"> <li>✚ The major areas of concern for noise generation has been addressed by considering it during procurement of the machinery from vendors, project implementation stage and by giving correct specification during tender floating.</li> <li>✚ Periodic audiometric test is being conducted for employees working close to noise prone areas, such as compressors, DG Sets, the loading and unloading sections.</li> <li>✚ PPE's are provided to ensure for eardrum protection of the employees, workers as well as visitors.</li> <li>✚ Acoustic barriers or acoustic enclosures and silencers are provided for the high noise generating equipment.</li> <li>✚ Sound proofing / glass paneling have been provided at critical operating stations / control rooms.</li> </ul> <p>Further Periodical Monitoring of the exposure to the person working in high noise is being done.</p> <p>Results of noise exposure for personnel to an 8 hr time weighted average is as shown in <b>Table no. 12.</b></p> <p>The below result indicates that the personal working in the high noise area are not continuously exposed to high noise.</p>															
	<p><b>Table no. 12 Results of Personal Noise dosimetry at Nayara Energy Limited, Vadinar, India.</b></p> <p><b>Date of Project: 29-01-2018 to 7-02-2018</b></p> <p><b>Calibrator: QUEST QC-10, Acoustic Calibrator, Serial No.: QIH010149</b></p> <table border="1" data-bbox="191 1317 2026 1398"> <thead> <tr> <th data-bbox="191 1317 317 1398">Date of Sampling</th> <th data-bbox="317 1317 457 1398">Instrument ID</th> <th data-bbox="457 1317 575 1398">Employee Name</th> <th data-bbox="575 1317 693 1398">Employee ID</th> <th data-bbox="693 1317 793 1398">Location/Depa</th> <th data-bbox="793 1317 894 1398">Activity</th> <th data-bbox="894 1317 982 1398">Pre-calib ratio</th> <th data-bbox="982 1317 1071 1398">Post-calib ratio</th> <th data-bbox="1071 1317 1138 1398">Shift</th> <th data-bbox="1138 1317 1287 1398">Duration of Sampling</th> <th data-bbox="1287 1317 1407 1398">Total Duration</th> <th data-bbox="1407 1317 1495 1398">Total Durat</th> <th data-bbox="1495 1317 1665 1398">The Factories Act (5 dB)</th> <th data-bbox="1665 1317 1927 1398">Comments</th> <th data-bbox="1927 1317 2026 1398">Observations</th> </tr> </thead> </table>		Date of Sampling	Instrument ID	Employee Name	Employee ID	Location/Depa	Activity	Pre-calib ratio	Post-calib ratio	Shift	Duration of Sampling	Total Duration	Total Durat	The Factories Act (5 dB)	Comments	Observations
Date of Sampling	Instrument ID	Employee Name	Employee ID	Location/Depa	Activity	Pre-calib ratio	Post-calib ratio	Shift	Duration of Sampling	Total Duration	Total Durat	The Factories Act (5 dB)	Comments	Observations			

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS						ACTION TAKEN REPORT										& Recommendations
					rtment		n (dB)	n (dB)		Start Time	Stop Time		ion (min)	Exchange Rate			
														Lavg (dB A)	TWA (dBA)		
<b>To view additional details, please unhide the columns.</b>																	
<b>Personal Noise sample at HMU-2</b>																	
29/1/2018	EHM010022	Mr. Hardik Pobhoriya	20045659	HMU-2	Routine operation in the plant	114.0	114.0	B	14:13	21:42	7:29	449	76.6	76.1	The monitored employee took routine rounds in the plant for 2 hours and spent rest of the time in the porta cabin.	None	
30/1/2018	EHH050012	Mr. Rahul Paliwal	20044255	HMU-2	Routine operation in the plant	114.1	114.0	B	15:02	22:27	7:25	445	74.8	74.2	The monitored employee spent 2 hours at the pump house area and rest of the time at the porta cabin.	None	
<b>Personal Noise sample at HMU-1</b>																	
31/1/2018	ENS100709	Mr. Satish Yadav	20050197	HMU-1	Routine operation in the plant	114.0	114.0	A	6:11	14:15	8:04	484	76.3	76.3	The monitored employee spent three to four hours at the pump house area and rest of the time at the porta cabin.	None	
1/2/2018	EHH050012	Mr. Tarun Dhameliya	2004232	HMU-1	Routine operation in the plant	114.0	113.9	A	6:22	13:56	7:34	454	82.7	82.4			
<b>Personal Noise sample at DHD T</b>																	
29/1/2018	EHH050012	Mr. Arvind Kumar	20053295	DHD T	Routine operation in	114.0	114.1	B	14:55	22:56	8:01	481	77.7	77.8	The monitored employee spent four hours on routine rounds in the plant and spent	None	

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008


Sr. No.	SPECIFIC CONDITIONS						ACTION TAKEN REPORT											
						the plant											rest of the time in the porta cabin.	
	30/1/2018	EHH050012	Mr. Mustaq Vohra	20045664	DHD T	Routine operation in the plant	114.0	114.0	A	6:15	13:40	7:25	445	77.9	77.1	The monitored employee spent four hours on routine rounds in the plant and spent rest of the time in the porta cabin.		
<b>Personal Noise sample at DHDS</b>																		
	30/1/2018	EHH050012	Mr. Parth Desai	20045662	DHD S	Routine operation in the plant	114.0	113.8	B	14:10	21:50	7:40	460	79.5	79.2	The monitored employee spent four hours on routine rounds in the plant and spent rest of the time in the porta cabin.		
	31/1/2018	NXG080022	Mr. Sanjay Chawhan	20045052	DHD S	Routine operation in the plant	114.0	113.9	A	6:40	14:10	7:30	450	80.6	79.9	The monitored employee spent four to five hours on routine rounds in the plant and spent rest of the time in the porta cabin.		
<b>Personal Noise sample at CDU/VDU</b>																		
	29/1/2018	NXG080033	Mr. Dipak Kumar Mantri	20049375	CDU/VDU	Routine operation in the plant	114.0	113.9	B	15:40	21:50	6:10	370	79.1	77.3	The monitored employee took routine rounds in the plant for three hours. The rest of the time was spent at the porta cabin.		
	30/1/2018	ENS100709	Mr. Savan Vachhani	20053199	CDU/VDU	Routine operation in the plant	114.0	113.7	B	14:55	21:44	6:49	409	83.8	83.1	The monitored employee was at the compressor area for three hours and took routine rounds in the plant for one hour. The	None	

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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS						ACTION TAKEN REPORT										
																rest of the time was spent at the porta cabin.	
	31/1/2018	NXG080033	Mr. Viral Shah	20046190	CDU/VDU	Routine operation in the plant	114.1	114.0	A	6:47	13:56	7:09	429	81.5	81.0	The monitored employee took routine rounds in the plant for two-three hour. The rest of the time was spent at the porta cabin.	
XVI	<p>All the pumps and other equipment's where is a likelihood of HC leakages shall be provided with LEL indicators and Hydrocarbon detectors.</p> <p>Provision for immediate isolation of such equipment, in case of a leakage will also be made.</p>						<p>All the pumps and other equipment where there is a likelihood of HC leakages are being provided with hydrocarbon detectors with LEL indicators. Around 619 nos. of Hydrocarbon detectors have been installed in all areas where there is a likelihood of HC leakages from pumps and other equipment.</p> <div style="text-align: center;">  </div> <p>The range of detector is 0-100% LEL of the Hydrocarbon of respective area and Alarm value is L1: 20% LEL and L2: 40% LEL.</p> <p>Standby pumps have been provided so that leaky pumps are immediately isolated and maintained.</p>										

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## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	The company shall provide a well-defined Leak Detection and Repair (LDAR) programme for quantification and control of fugitive emissions. The detector sensitivity will be in PPM levels.	The company has well established procedure for leak detection and repair as per GSR 186 (E) dated 18 <sup>th</sup> March, 2008 under which VOCs are monitored in all the units manually though photo-ionization VOC meters since 2010. NO leak has been detected till date.  The detection limit of the instrument used for measurement of VOC is 0 to 10,000 PPM.  <b>LDAR program summary for the month of Mar'18 to Aug'18 is shown in <u>Table no. 13</u>.</b>

**Table no. 13. LDAR PROGRAM SUMMARY- March'2018 to August'2018**

Sr. No	Unit	Dates	Total Component Monitored	Min VOC in PPM	Max VOC in PPM	Leak Observed
1	HMU-1	01/03/2018 to 14/03/2018	4238	0	224	Nil
2	HMU-2	15/03/2018 to 30/03/2018	2920	0	0	Nil
3	FCCU	01/04/2018 to 14/04/2018	7481	0	23	Nil
4	Utility-1	15/04/2018 to 29/04/2018	1027	0	61	Nil
5	Utility-2	01/05/2018 to 30/05/2018	491	0	285	Nil
6	DCU	01/06/2018 to 29/06/2018	9601	0.1	5	Nil
7	DHDS	01/07/2018 to 14/07/2018	3022	0	500	Nil

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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS		ACTION TAKEN REPORT																																				
	8	NHT/ CCR	15/07/2018 to 30/07/2018	5995	0	800	Nil																																
	9	COT	15/08/2018 to 30/08/2018	281	0.1	16.2	Nil																																
	Total 35055 components were monitored from Mar'18 to Aug'18.																																						
XVII	<p>The product loading gantry shall be connected to the product sphere in closed circuit through the vapor arm connected to the tanker.</p> <p>Data on fugitive emission from here shall be regularly monitored and records will be maintained.</p>		<p>The LPG Loading gantry has been connected to the product sphere in closed circuit through the vapor arm connected to the tanker.</p> <p>Data on fugitive emission from product gantry &amp; nearby area are tabulated in <b>table no. 14</b>.</p> <p align="center"><b>Table no. 14</b></p> <table border="1" data-bbox="961 889 1919 1370"> <thead> <tr> <th data-bbox="961 889 1041 969">Sr. No.</th> <th data-bbox="1041 889 1625 969">VOC monitoring area / unit / plant</th> <th data-bbox="1625 889 1757 969">Unit</th> <th data-bbox="1757 889 1919 969">VOC Min-Max</th> </tr> </thead> <tbody> <tr> <td data-bbox="961 969 1041 1016">1</td> <td data-bbox="1041 969 1625 1016">Near Truck Gantry No. 5 (HC Truck Loading)</td> <td data-bbox="1625 969 1757 1016">ppm</td> <td data-bbox="1757 969 1919 1016">0</td> </tr> <tr> <td data-bbox="961 1016 1041 1073">2</td> <td data-bbox="1041 1016 1625 1073">Primary Treatment Plant of Truck Dispatch Area</td> <td data-bbox="1625 1016 1757 1073">ppm</td> <td data-bbox="1757 1016 1919 1073">38-104</td> </tr> <tr> <td data-bbox="961 1073 1041 1135">3</td> <td data-bbox="1041 1073 1625 1135">Expansion ETP</td> <td data-bbox="1625 1073 1757 1135">ppm</td> <td data-bbox="1757 1073 1919 1135">191-243</td> </tr> <tr> <td data-bbox="961 1135 1041 1196">4</td> <td data-bbox="1041 1135 1625 1196">Hazardous waste storage sites</td> <td data-bbox="1625 1135 1757 1196">ppm</td> <td data-bbox="1757 1135 1919 1196">0</td> </tr> <tr> <td data-bbox="961 1196 1041 1253">5</td> <td data-bbox="1041 1196 1625 1253">Primary Treatment Unit of ISBL-1 process</td> <td data-bbox="1625 1196 1757 1253">ppm</td> <td data-bbox="1757 1196 1919 1253">132-194</td> </tr> <tr> <td data-bbox="961 1253 1041 1315">6</td> <td data-bbox="1041 1253 1625 1315">At Battery Limit in CDU/VDU</td> <td data-bbox="1625 1253 1757 1315">ppm</td> <td data-bbox="1757 1253 1919 1315">0</td> </tr> <tr> <td data-bbox="961 1315 1041 1370">7</td> <td data-bbox="1041 1315 1625 1370">At Battery Limit in CDU – II</td> <td data-bbox="1625 1315 1757 1370">ppm</td> <td data-bbox="1757 1315 1919 1370">0</td> </tr> </tbody> </table>					Sr. No.	VOC monitoring area / unit / plant	Unit	VOC Min-Max	1	Near Truck Gantry No. 5 (HC Truck Loading)	ppm	0	2	Primary Treatment Plant of Truck Dispatch Area	ppm	38-104	3	Expansion ETP	ppm	191-243	4	Hazardous waste storage sites	ppm	0	5	Primary Treatment Unit of ISBL-1 process	ppm	132-194	6	At Battery Limit in CDU/VDU	ppm	0	7	At Battery Limit in CDU – II	ppm	0
Sr. No.	VOC monitoring area / unit / plant	Unit	VOC Min-Max																																				
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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT			
		8	Downwind of equalization tank (Oil Separation Basin Unit-8400) of base ETP	ppm	263-292
		9	Primary Treatment Plant of Crude Tank Storage (COT) Area	ppm	9.1-10.8
XVIII	<p>The company shall ensure that no halogenated organic is sent to the flares.</p> <p>If any of the halogenated organic are present, then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options.</p> <p>Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.</p>	<p>There is no halogenated organic presently handled at the Refinery.</p> <p>In case same is required to be handled it will be ensured that no halogenated organic is sent to the flares and suggested treatment will be implemented.</p> <p>All other streams containing organic carbon stream are routed to flare system.</p>			
XIX	<p>Water requirement of the refinery and petrochemical complex shall be met from sea water desalination and no water shall be drawn either from the ground or from the surface.</p>	<p>Water requirement of refinery is being met through existing sea water desalination plant and no water is being drawn either from ground or from the surface.</p> <p>Necessary approval like FCA (permission obtained vide letter no.8C/12/385/96-FCW dated 8<sup>th</sup> December, 99), CRZ (permission obtained vide letter no.16011/22/2000-IA-III dated 3<sup>th</sup> November, 2000) &amp; WLP (permission obtained vide letter no. FCA/WLP/29/1043-48/2003-04 dated 27<sup>th</sup> February, 2004) clearance was obtained for sea water intake and associated facilities.</p>			

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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																
XX	<p>No discharge of wastewater from sweet water ETP shall be carried out. The quantity of wastewater generation is 3726 m<sup>3</sup>/hr from the project.</p> <p>This effluent after appropriate treatment will be reused in process/ utilities or cooling or for green belt development.</p>	<p>Wastewater from ETP is being reused in Fire Water, Service Water &amp; Cooling Towers make up and horticulture</p> <p>The quantity of wastewater from ETP for the month of March'18 to August'18 is as shown in <b>Table no. 15:</b></p> <p align="center"><b>Table no. 15 : Wastewater from ETP</b></p> <table border="1" data-bbox="873 626 2011 771"> <thead> <tr> <th>Sr. No.</th> <th></th> <th>Mar'18</th> <th>Apr'18</th> <th>May'18</th> <th>June'18</th> <th>July'18</th> <th>Aug'18</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>Trade effluent, M3/hr*</td> <td>698</td> <td>596</td> <td>588</td> <td>631</td> <td>627</td> <td>621</td> </tr> </tbody> </table> <p>*Note: The quantity shown for wastewater from ETP is for 20 MMTPA refinery.</p> <p>The influent is being routed to Effluent Treatment Plant (ETP) for required treatment and the entire Treated Effluent is then reused as Fire Water, Service Water &amp; Cooling Towers and horticulture and as RO feed. Permeate of Reverse osmosis plant is used as boiler feed water after DM treatment.</p> <p><b>Details of Effluent Treatment Plant(ETP):</b></p> <p>All AOC (Accidental Oil Contamination) and COC (Continuous Oil Contamination) water from plant sent to Primary Treatment unit (PTU) for removal of free oil and dirt by gravity separation through Tilted Plate Interceptor and oil skimmer. In refinery five PTU is provided at different location.(Process, PIT, RLCB, TLCB, COT). All the primary treated water are collected &amp; equalized</p>	Sr. No.		Mar'18	Apr'18	May'18	June'18	July'18	Aug'18	01	Trade effluent, M3/hr*	698	596	588	631	627	621
Sr. No.		Mar'18	Apr'18	May'18	June'18	July'18	Aug'18											
01	Trade effluent, M3/hr*	698	596	588	631	627	621											



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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																				
		<p>in the oil separation basin. After that Physico_chemical Treatment given which comprises of four units like pH Adjustment Tank, Flash Mixer, Flocculator, and Dissolved Air Flootation Tank.</p> <p>A two stage biological treatment is provided for biodegradation of organic matter for reduction of BOD/COD. It comprises of Bio tower followed by extended aeration type activated sludge process.</p> <p>The treated effluent is then pumped to Dual Media Filter followed by Activated Carbon Filter (ACF) for tertiary treatment.</p> <p><b>Quality of treated waste water for the month of Mar'18 to Aug'18 is given in Table no 16 carried out by M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20):</b></p>																																				
<b>Table no. 16: Quality of treated waste water for the month of Mar'18 to Aug'18</b>																																						
<table border="1"> <thead> <tr> <th data-bbox="573 948 856 1008">Pollutant Parameters</th> <th data-bbox="865 948 1297 1008">Limiting value for concentration (mg/l except for pH)</th> <th data-bbox="1306 948 1640 1008">Quality of Treated Effluent Min-Max</th> </tr> </thead> <tbody> <tr> <td data-bbox="573 1015 856 1045">pH</td> <td data-bbox="865 1015 1297 1045">6.0-8.5</td> <td data-bbox="1306 1015 1640 1045">7.35-7.51</td> </tr> <tr> <td data-bbox="573 1052 856 1083">Oil &amp; Grease</td> <td data-bbox="865 1052 1297 1083">5.0</td> <td data-bbox="1306 1052 1640 1083">&lt;4</td> </tr> <tr> <td data-bbox="573 1089 856 1120">BOD (3 days, 27 °C)</td> <td data-bbox="865 1089 1297 1120">15.0</td> <td data-bbox="1306 1089 1640 1120">9.0 - 13.0</td> </tr> <tr> <td data-bbox="573 1127 856 1157">COD</td> <td data-bbox="865 1127 1297 1157">125.0</td> <td data-bbox="1306 1127 1640 1157">29.40 - 45.700</td> </tr> <tr> <td data-bbox="573 1164 856 1195">Suspended Solids</td> <td data-bbox="865 1164 1297 1195">20.0</td> <td data-bbox="1306 1164 1640 1195">10.0 - 16.0</td> </tr> <tr> <td data-bbox="573 1201 856 1232">Phenol (as C<sub>6</sub>H<sub>5</sub>OH)</td> <td data-bbox="865 1201 1297 1232">0.35</td> <td data-bbox="1306 1201 1640 1232">&lt;0.1</td> </tr> <tr> <td data-bbox="573 1239 856 1269">Sulphide (as S)</td> <td data-bbox="865 1239 1297 1269">0.50</td> <td data-bbox="1306 1239 1640 1269">0.25 - 0.470</td> </tr> <tr> <td data-bbox="573 1276 856 1307">Cyanide (as CN)</td> <td data-bbox="865 1276 1297 1307">0.2</td> <td data-bbox="1306 1276 1640 1307">&lt;0.05</td> </tr> <tr> <td data-bbox="573 1313 856 1344">Ammonia as N</td> <td data-bbox="865 1313 1297 1344">15</td> <td data-bbox="1306 1313 1640 1344">&lt;5</td> </tr> <tr> <td data-bbox="573 1351 856 1382">TKN</td> <td data-bbox="865 1351 1297 1382">40</td> <td data-bbox="1306 1351 1640 1382">&lt;5</td> </tr> <tr> <td data-bbox="573 1388 856 1419">P</td> <td data-bbox="865 1388 1297 1419">3</td> <td data-bbox="1306 1388 1640 1419">0.22 - 0.560</td> </tr> </tbody> </table>			Pollutant Parameters	Limiting value for concentration (mg/l except for pH)	Quality of Treated Effluent Min-Max	pH	6.0-8.5	7.35-7.51	Oil & Grease	5.0	<4	BOD (3 days, 27 °C)	15.0	9.0 - 13.0	COD	125.0	29.40 - 45.700	Suspended Solids	20.0	10.0 - 16.0	Phenol (as C <sub>6</sub> H <sub>5</sub> OH)	0.35	<0.1	Sulphide (as S)	0.50	0.25 - 0.470	Cyanide (as CN)	0.2	<0.05	Ammonia as N	15	<5	TKN	40	<5	P	3	0.22 - 0.560
Pollutant Parameters	Limiting value for concentration (mg/l except for pH)	Quality of Treated Effluent Min-Max																																				
pH	6.0-8.5	7.35-7.51																																				
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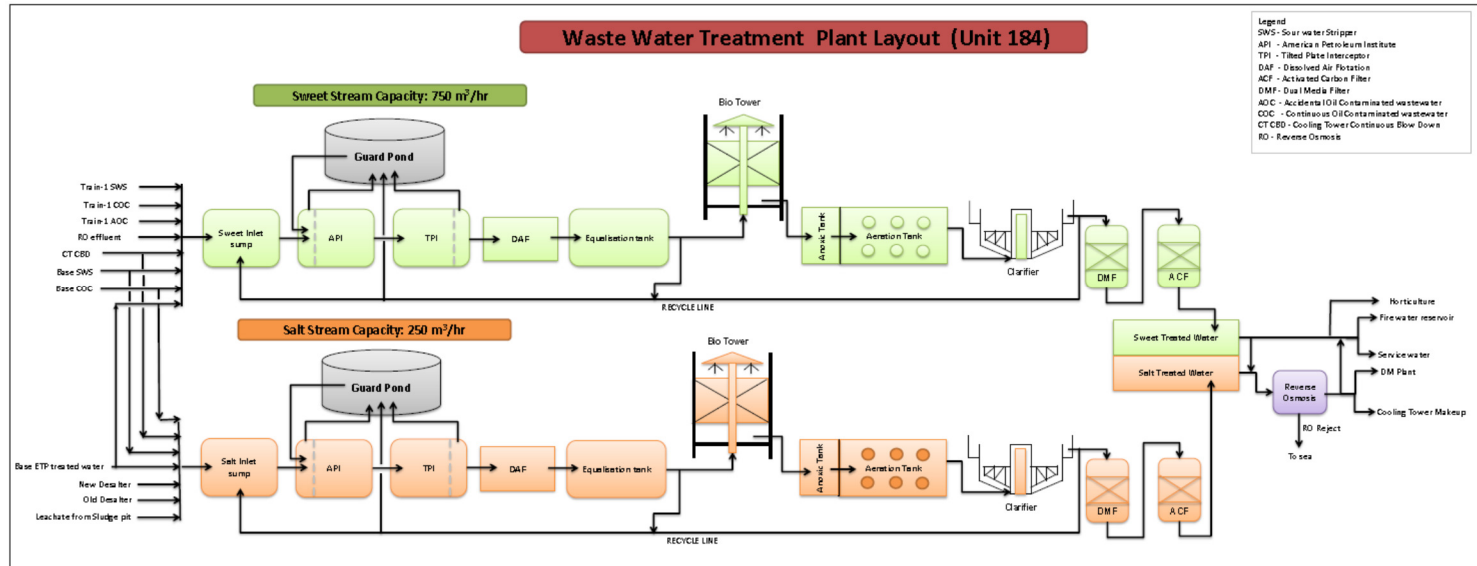
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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT	
	Cr (Hexavalent)	0.1	<0.1
	Cr (Total)	2	<0.001
	Pb	0.1	<0.003
	Hg	0.01	<0.002
	Zn	5	0.04-0.067
	Ni	1	0.08-0.123
	Cu	1	0.04-0.085
	V	0.2	<0.01
	Benzene	0.1	<0.001
	Benzo(a)- Pyrene	0.2	<0.001

ETP block diagram is shown below :



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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT														
	Only brine from desalination plant and cooling tower blow down will be discharged to sea through a well designed diffuser at a location identified by National Institute of Oceanography (NIO). The quantity of sea water return is 26932 m <sup>3</sup> /hr.	<p>Brine from desalination plants and cooling tower blow down is being discharged to sea through well designed diffuser at a location identified by National Institute of Oceanography.</p> <p>The quantity of sea water return to sea is monitored daily and is well below the stipulated limits as shown in <b>Table no. 17</b>.</p> <p style="text-align: center;"><b>Table no. 17: Sea Water return quantity:</b></p> <table border="1" data-bbox="869 678 2016 930"> <thead> <tr> <th></th> <th>Mar'18</th> <th>Apr'18</th> <th>May'18</th> <th>June'18</th> <th>July'18</th> <th>Aug'18</th> </tr> </thead> <tbody> <tr> <td>Sea water return, M3/hr (Min-Max)*</td> <td>3456 - 4133</td> <td>3531 - 4079</td> <td>3663-4269</td> <td>2783-4502</td> <td>2896 -3516</td> <td>2906-3618</td> </tr> </tbody> </table> <p>*Note: The quantity shown for sea water return is for 20 MMTPA refinery.</p>		Mar'18	Apr'18	May'18	June'18	July'18	Aug'18	Sea water return, M3/hr (Min-Max)*	3456 - 4133	3531 - 4079	3663-4269	2783-4502	2896 -3516	2906-3618
	Mar'18	Apr'18	May'18	June'18	July'18	Aug'18										
Sea water return, M3/hr (Min-Max)*	3456 - 4133	3531 - 4079	3663-4269	2783-4502	2896 -3516	2906-3618										
XXI	Regular monitoring of relevant parameters for the underground water in the surrounding areas will be undertaken and the results will be submitted to the relevant States pollution Control Boards.	<p>Monitoring of relevant parameters for the underground water in the surrounding areas is being carried out six-monthly, recent was monitored in Aug'18, results given in <b>Table no. 18</b>.</p> <p>Report submitted to State pollution Control Board six monthly along with EC compliance report. Acknowledgement copy for letter submitted to GPCB, Gandhinagar is shown below.</p>														



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## COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

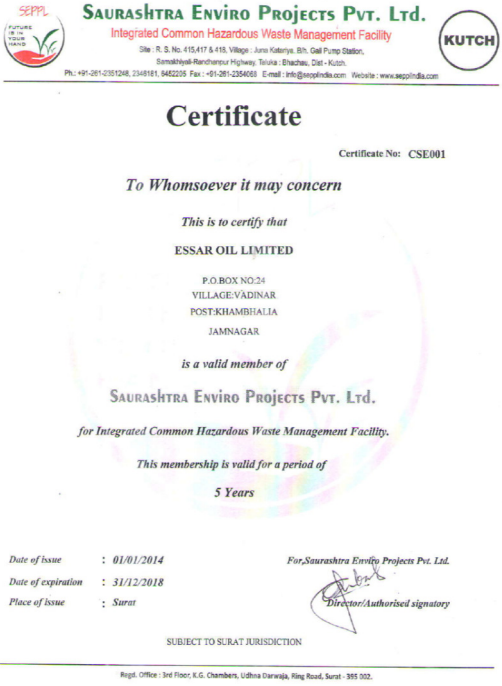
Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																																									
XXII	<p>All organic waste shall be sent to incinerator only. For potential of heat recovery, the possibility of installing incinerator at site shall be explored and plan may be submitted to the SPCB.</p> <p>Alternatively, it will be sent for use as fuel in the cement Kiln.</p>	<p>All organic waste, i.e. Oily Sludge with high CV is being co-processed in DCU in refinery.</p> <p>Data of oily sludge co-processed in DCU for the month of Mar'18 to Aug'18 is shown in <b>Table no.19</b>:</p> <p style="text-align: center;"><b>Table no. 19</b></p> <table border="1" data-bbox="877 641 2007 1144"> <thead> <tr> <th data-bbox="877 641 978 727">Sr. No.</th> <th data-bbox="982 641 1121 727">Organic Waste</th> <th data-bbox="1125 641 1276 727"></th> <th data-bbox="1281 641 1398 727">Mar</th> <th data-bbox="1402 641 1520 727">Apr</th> <th data-bbox="1524 641 1642 727">May</th> <th data-bbox="1646 641 1764 727">June</th> <th data-bbox="1768 641 1885 727">July</th> <th data-bbox="1890 641 2007 727">Aug</th> </tr> </thead> <tbody> <tr> <td data-bbox="877 730 978 1015" rowspan="2">01</td> <td data-bbox="982 730 1121 1015" rowspan="2">Oily Sludge (Dry Basis 30% moisture )</td> <td data-bbox="1125 730 1276 787">Gen.(MT)</td> <td data-bbox="1281 730 1398 787">196</td> <td data-bbox="1402 730 1520 787">0</td> <td data-bbox="1524 730 1642 787">347</td> <td data-bbox="1646 730 1764 787">1686</td> <td data-bbox="1768 730 1885 787">1977</td> <td data-bbox="1890 730 2007 787">143</td> </tr> <tr> <td data-bbox="1125 790 1276 1015">Co-processed (MT)</td> <td data-bbox="1281 790 1398 1015">177</td> <td data-bbox="1402 790 1520 1015">34</td> <td data-bbox="1524 790 1642 1015">342</td> <td data-bbox="1646 790 1764 1015">1580</td> <td data-bbox="1768 790 1885 1015">1672</td> <td data-bbox="1890 790 2007 1015">379</td> </tr> <tr> <td data-bbox="877 1018 978 1144" rowspan="2">02</td> <td data-bbox="982 1018 1121 1144" rowspan="2">Oily Sludge &amp; BSW</td> <td data-bbox="1125 1018 1276 1058">Gen.(MT)</td> <td data-bbox="1281 1018 1398 1058">400</td> <td data-bbox="1402 1018 1520 1058">0</td> <td data-bbox="1524 1018 1642 1058">0</td> <td data-bbox="1646 1018 1764 1058">0</td> <td data-bbox="1768 1018 1885 1058">0</td> <td data-bbox="1890 1018 2007 1058">250</td> </tr> <tr> <td data-bbox="1125 1062 1276 1144">Incineration(MT)</td> <td data-bbox="1281 1062 1398 1144">12</td> <td data-bbox="1402 1062 1520 1144">190</td> <td data-bbox="1524 1062 1642 1144">74</td> <td data-bbox="1646 1062 1764 1144">62</td> <td data-bbox="1768 1062 1885 1144">0</td> <td data-bbox="1890 1062 2007 1144">11</td> </tr> </tbody> </table> <p>Refinery is also a member of GPCB approved TSD facility of M/s SEPPL located at Gandhidham &amp; M/s Recycling Solution Pvt Ltd (RSPL), Panoli. Membership certificate is shown below, which can be utilized if need be.</p>	Sr. No.	Organic Waste		Mar	Apr	May	June	July	Aug	01	Oily Sludge (Dry Basis 30% moisture )	Gen.(MT)	196	0	347	1686	1977	143	Co-processed (MT)	177	34	342	1580	1672	379	02	Oily Sludge & BSW	Gen.(MT)	400	0	0	0	0	250	Incineration(MT)	12	190	74	62	0	11
Sr. No.	Organic Waste		Mar	Apr	May	June	July	Aug																																			
01	Oily Sludge (Dry Basis 30% moisture )	Gen.(MT)	196	0	347	1686	1977	143																																			
		Co-processed (MT)	177	34	342	1580	1672	379																																			
02	Oily Sludge & BSW	Gen.(MT)	400	0	0	0	0	250																																			
		Incineration(MT)	12	190	74	62	0	11																																			

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PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		 <p><b>Saurashtra Enviro Projects Pvt. Ltd.</b> Integrated Common Hazardous Waste Management Facility Site: P. S. No. 10/117 &amp; 118, Village: Juna Kalarya, B.H. Gas Pump Station, Sambhavlal-Bharuchera Highway, Taluka: Eranol, Dist: Kutch. Ph: +91-261-2352248, 2348181, 8442205 Fax: +91-261-2354068 E-mail: info@sappindia.com Website: www.sappindia.com</p> <p><b>Certificate</b> Certificate No: CSE001</p> <p><i>To Whomsoever it may concern</i></p> <p><i>This is to certify that</i> <b>ESSAR OIL LIMITED</b> P.O. BOX NO.24 VILLAGE:VADINAR POST:KHAMBHALLIA JAMNAGAR</p> <p><i>is a valid member of</i> <b>SAURASHTRA ENVIRO PROJECTS PVT. LTD.</b> <i>for Integrated Common Hazardous Waste Management Facility.</i></p> <p><i>This membership is valid for a period of</i> <b>5 Years</b></p> <p>Date of issue : 01/01/2014 Date of expiration : 31/12/2018 Place of issue : Surat</p> <p><i>For Saurashtra Enviro Projects Pvt. Ltd.</i> <i>Director/Authorised signatory</i></p> <p>SUBJECT TO SURAT JURISDICTION</p> <p><small>Regd. Office : 3rd Floor, K.G. Chambers, Vidhaya Darwaja, Ring Road, Surat - 395 002.</small></p>
XXIII	Solid waste generated as Pre-treater and Reformer Catalysts, Sulphur guard absorbent and Alumina Balls will be disposed off as the authorization from the State Pollution Control Board.	The company has obtained authorization from GPCB vide order no.: AWH-81987 issued in 2016 and valid till 2022 for collection, treatment, storage and disposal of hazardous waste, and conditions there under are being complied with.  Type of hazardous waste, their mode of disposal and permitted quantity mentioned in CC&A is as given below in <b>Table no. 20</b> .

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## PART – II

## COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT				
<b>Table no. 20: Type of hazardous waste, their mode of disposal and permitted quantity</b>						
Sr. No.	Description of Wastes	Schedule - I	Quantity per Year	Mode of Handling & Disposal		
1	Oily Sludge from ETP	35.3	13000 MT	Collection, Storage, Transportation and disposal through TSDF/ Incineration / actual users / Co-processing in Delayed Coker Unit (DCU)		
2	Slop Oil	4.3	120000 MT	Collection, Storage and Recycle within the Plant		
3	Oily rags/ Oil contaminated waste	5.2	5000 MT	Collection, Storage, Transportation and disposal through TSDF/ Incineration / actual users /		
4	Used Lubricating Oil	5.1	300 MT	Collection, storage, transportation and disposal by selling it to registered re-refiner units		
5	Oily Sludge & BSW	4.1	5000 MT	Collection, Storage, Transportation and disposal through TSDF/ Incineration / actual users / Co-processing in Delayed Coker Unit (DCU)		
6	Spent Catalyst from Various Units	4.2	8000 MT	Collection, Storage, Transportation & Disposal through actual users / TSDF/ Incineration		
7	Contaminated cotton rags or other	33.2	155 MT	Collection, Storage, Transportation & Disposal through actual users / TSDF/ Incineration		

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT				
			cleaning materails			
		8	Discarded Empty Drums/ Containers	33.1	50000 Nos	Collection, Storage, Transportation & Disposal through actual users
		9	Spent Resin Waste	35.2	15 MT	Collection, Storage, Transportation and disposal through TSDF/ Incineration / actual users
		10	Insulated copper wire scrap/ copper with PVC sheathing cable	IV/7	200 MT	Collection, storage and disposal by selling it to registered recycler, reprocessors/ actual user
		11	Lead Acid Battery Waste	-	10 MT	Collection, Storage, Transportation & Disposal through actual users
		12	Expired Hazardous Chemicals	II/ E3	100 MT	Collection, Storage, Transportation and disposal through TSDF/ Incineration / actual users
		13	Spent Carbon	36.2	200 MT	Collection, Storage, Transportation and disposal through TSDF/ Incineration / actual users/ incineration in power plant boilers
		14	e- waste	-	20 MT	Collection, storage and disposal by through actual user/ registered recycler



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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT				
		15	Waste Coke	II- Class A-70	100 MT	Collection, storage and disposal by through actual user
		16	Spent Catalysts and Molecular Sieves	1.6	100 MT	Collection, Storage, Transportation and disposal through TSDF/ Incineration / actual users
		The details of HW generated and disposed in Financial Year 2017-18 is shown in <b>Table no. 21 A &amp; 21 B</b>				
		The details of HW generated and disposed for the month of March'18 to August'18 is shown in <b>Table no. 21 C</b>				

**Table no. 21 A Details of HW generated during the FY 2017-18.**

Sr. No.	Type of waste	Schedule	Unit	Quantity Generated in FY 17-18	Method of Storage	Mode of Disposal
1.	<b>Oily Sludge from ETP (Semi- Solid)</b>	35.3/l	MT	3584	Oily sludge is stored in Reinforced Cement concrete (RCC) pits lined with 1.5 mm thick HDPE liner & connected to leachate collection sump which is finally connected to ETP where leachate is treated.	Reprocessing at Delayed Coker Unit of Refinery (In-house)/ Co-processing in Cement Plant (M/s Ultratech Cement, Kovaya)
2	<b>Used Lubricating Oil (Liquid)</b>	5.1/l	MT	51	The waste is packed in closed 200 Kg. MS drums and storage facility having HDPE liner, Reinforced Cement concrete (RCC) floor, covered at the top & Leachate collection and treatment facility.	Sold to GPCB authorized Re-refiner M/s Reliance Barrels Supply Co, Ahmedabad

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS				ACTION TAKEN REPORT		
3	Oily sludge & BSW / emulsion	4.1/l	MT	400	The waste is packed in MS drums of 200 Kg and storage facility having HDPE liner, Reinforced Cement concrete (RCC) floor, covered at the top & Leachate collection and treatment facility.	Sent to Pollution Control Board authorized TSDF / Incineration facility M/s Saurashtra Enviro Projects Pvt. Ltd. (Bhachau)	
4	Discarded Empty Drums / Containers (Solid)	33.1/l	Nos.	14295	Stored in the storage facility having Reinforced Cement concrete (RCC) floor and covered at the top.	Sold to GPCB authorized Decontamination and Reconditioning Facility M/s Reliance Barrels Supply Co., Ahmedabad	
5	Slop Oil (Liquid)	4.3/l	MT	27272	Slop oil generated is collected in slop oil Tanks having combined capacity of 6500 m <sup>3</sup> .	In-house recycling / reprocessing in mfg. process.	
6	Spent Resins waste	35.2/l	MT	12.58	Packed in 200 lit MS Drums, closed from top with lid & ring and then stored in the storage facility having Reinforced Cement concrete (RCC) floor and covered at the top.	Sent to Pollution Control Board authorized recycling facility M/s Recycling Solutions Pvt. Ltd	
7	Heater Deposits	II-Class, A70	MT	14.57	Stored in 1 MT jumbo bags at storage facility having Reinforced Cement concrete (RCC) floor and covered at the top.	Sent to Pollution Control Board authorized recycling facility M/s Recycling Solutions Pvt. Ltd	
8	Spent Catalyst From Various Units (Solid)	4.2/l	MT	180.23	Packed in 200 lit MS Drums, closed from top with lid & ring and then stored in the storage facility having Reinforced Cement concrete (RCC) floor and covered at the top.	Sold to Pollution Control Board authorized & registered recyclers M/S Bravo Agrotech, M/s Vyankatesh Metals and Alloys, M/s Refracast Metallurgical Pvt. Ltd. and M/s Rubamin Ltd.	
9	Electronic and Electric Waste (Solid)	B-1110 GC010.18	MT	11.4	Stored in the storage facility having Reinforced Cement concrete (RCC) floor and covered at the top.	Sold to Pollution Control Board authorized recycler M/s Eco Green Recycling, Valsad	

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## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS				ACTION TAKEN REPORT	
10	Lead Acid Battery Waste (Solid)	17/IV	MT	10.15	Stored in the storage facility having HDPE liner, Reinforced Cement concrete (RCC) floor, covered at the top & Leachate collection and treatment facility.	Sold to Pollution Control Board authorized & registered recycler M/S S.K. Metal Industries, Rajkot & M/S Mateshwari Metals, Surat
11	Spent Carbon (Solid)	36.2/l	MT	141.63	The waste is packed in closed MS drums of 200 Kg stored in the storage facility having Reinforced Cement concrete (RCC) floor and covered at the top.	Incineration in VPCL Boiler
12	Wastes or residues containing oil	5.2	MT	20.5	Stored in the storage facility having HDPE liner, Reinforced Cement concrete (RCC) floor, covered at the top & Leachate collection and treatment facility.	Sent to Pollution Control Board authorized TSD/Incineration facility M/s Saurashtra Enviro Projects Pvt. Ltd. (Bhachau)
13	Insulated Copper Cable with PVC Sheathing (Solid)	7/IV	MT	0.86	At Warehouse	Sold to Pollution Control Board authorized & registered recycler M/s Rechotech E-waste Management.

Table no. 21 B: details of HW disposed during the FY 2017-18.

Type of Waste as authorized in CC &A	Date of Dispatch	Unit	Quantity dispatched in FY17	Recycler/Reprocessor/ Coprocessor details	Recycler/Reprocessor/ Coprocessor authorization details
Used Lubricating Oil	17.05.17	KG	7500	M/s Reliance Barrels Supply Co, Ahmedabad	AWH 61732 Valid till 12/02/2019
	26.08.17		8680		
	31.08.17		7560		
	27.02.18		2320		
Discarded Empty Drums	Throughout the Year	Nos.	11380	M/s Reliance Barrels Supply Co, Ahmedabad	AWH 61732 Valid till 12/02/2019

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## PART – II

## COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS			ACTION TAKEN REPORT		
	Spent Catalyst from Various units (Spent Ni-Co-Mo Catalyst)	Throughout the Year	MT	337	M/s Rubamin Ltd., Baroda	AWH 66619 Valid till 02/11/2019
				26	M/s, Vyankatesh Metals & Alloys, Indore	MPPCB/INDORE/REG/NEW/12/B Valid till 14/09/2019
				98	M/s Refracast Metallurgical (P) Ltd, Raipur	1962/RO/TS/CECB/2007 valid till 31/03/2018
	Spent Catalyst from Various units (Spent ZnO Catalyst)	28.06.17	MT	52.56	M/s Bravo Agrotech, Surendranagar	AWH-89563 Valid till 19/09/2022
		22.02.18		27.8		
	Spent Resins Waste	05.10.17	MT	12.58	M/s Recycling Solutions Pvt. Ltd. Panoli, Ankleshwar	AWH-83687, Valid till 31/12/2021
	Lead Acid Batteries	Throughout the Year	MT	17.68	M/s S.K. Metal Industries, Rajkot & M/s Mateshwari Metals Olpad (Surat)	AWH 48984 Valid till 07/05/2017 AWH 63034 valid till 09/03/2019
	E waste	06.02.18 08.02.18	MT	8.7	M/s Eco Green Recycling, Valsad	AWH-85342 valid till 11/01/2020
	Heater Deposits	04.12.17	MT	14.57	M/s Recycling Solutions Pvt. Ltd. Panoli, Ankleshwar	AWH-83687, Valid till 31/12/2021
	Spent Carbon	36.2/l	MT	7.13	M/s Recycling Solutions Pvt. Ltd. Panoli, Ankleshwar	AWH-83687, Valid till 31/12/2021
Insulated Copper Cable with PVC Sheathing	28.03.18	MT	15.45	M/s Rechotech E-waste Management	AWH 72839 Valid till 22/04/2020	

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## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS		ACTION TAKEN REPORT			
<b>Table no. 21 C Details of HW generated &amp; disposed for the Month of April'2018 to September'2018.</b>						
	<b>Type of Waste</b>	<b>Opening Stock as on 01.04.2018</b>	<b>Generation till 30.09.2018</b>	<b>Disposal till 30.09.2018</b>	<b>Closing Stock as on 30.09.2018</b>	<b>Disposal Mode</b>
	Oily sludge from ETP	379.10	3975.30	4148.71	205.69	Inhouse reprocessing in DCU unit
	Used Lubricating Oil	34.94	17.61	27.34	25.21	Sold to authorized recycler M/s Reliance Barrels
	Discarded Empty Drums	8443.00	7626.00	8747.00	7322.00	Sold to authorized recycler M/s Reliance Barrels
	Slop Oil	0.00	14090.00	14090.00	0.00	Inhouse reprocessing
	Spent Catalyst from Various units (Spent Ni-Co-Mo, Spent ZnO, Spent Super Claus, Spent TK250)	39.83	45.17	85.00	0.00	27.48 MT Spent ZnO Catalyst sent to authorized recycler M/s Bravo Agrotech. 57.70 MT Spent Ni-Mo Catalyst sent to authorized recycler M/s Rubamin limited
	Lead Acid Batteries	4.22	4.27	0.00	8.49	–
	E waste (SCRAP CFL)	3.67	19.30	0.00	22.97	–
	Oily Sludge and BSW	387.50	0.00	337.61	49.89	Sent to authorized Incineration facility M/s Saurashtra Enviro Projects Pvt Ltd
	Oily Cotton Rags/ Oil Contaminated Waste	8.39	8.89	4.71	12.57	Sent for coprocessing to M/s Ultratech Cement
	Spent Carbon	0.00	67.11	67.11	0.00	Resuing as fuel in Power Plant Boilers
	Insulated Copper Cable with PVC Sheathing	189.09	2.34	124.34	67.09	Sold to authorized recycler M/s Recotech

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## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT																													
	Spent catalysts shall be regenerated and waste oil will be sold to the registered recycler only.	<p>Spent catalyst generated from refinery is being sold to actual users. Details for last six month is shown in <b>Table no. 22.</b></p> <p style="text-align: center;"><b>Table no. 22</b></p> <table border="1" data-bbox="871 578 2028 1008"> <thead> <tr> <th></th> <th>Opening Stock as on 01.04.2018</th> <th>Generation till 30.09.2018</th> <th>Disposal till 30.09.2018</th> <th>Closing Stock as on 30.09.2018</th> <th>Disposal Mode</th> </tr> </thead> <tbody> <tr> <td>Spent Catalyst from Various units (Spent Ni-Co-Mo, Spent ZnO, Spent Super Claus, Spent TK250)</td> <td>39.83</td> <td>45.17</td> <td>85.00</td> <td>0.00</td> <td>27.48 MT Spent ZnO Catalyst sent to authorized recycler M/s Bravo Agrotech. 57.70 MT Spent Ni-Mo Catalyst sent to authorized recycler M/s Rubamin limited</td> </tr> </tbody> </table> <p>Used/spent oil generated from equipment is being sold to GPCB authorized recyclers as shown in <b>Table no. 23.</b></p> <p style="text-align: center;"><b>Table no. 23: Used Oil generated &amp; disposed</b></p> <table border="1" data-bbox="871 1214 2028 1421"> <thead> <tr> <th></th> <th>Opening Stock as on 01.04.2018</th> <th>Generation till 30.09.2018</th> <th>Disposal till 30.09.2018</th> <th>Closing Stock as on 30.09.2018</th> <th>Disposal Mode</th> </tr> </thead> <tbody> <tr> <td>Used Lubricating Oil</td> <td>34.94</td> <td>17.61</td> <td>27.34</td> <td>25.21</td> <td>Sold to authorized recycler M/s Reliance Barrels</td> </tr> </tbody> </table>							Opening Stock as on 01.04.2018	Generation till 30.09.2018	Disposal till 30.09.2018	Closing Stock as on 30.09.2018	Disposal Mode	Spent Catalyst from Various units (Spent Ni-Co-Mo, Spent ZnO, Spent Super Claus, Spent TK250)	39.83	45.17	85.00	0.00	27.48 MT Spent ZnO Catalyst sent to authorized recycler M/s Bravo Agrotech. 57.70 MT Spent Ni-Mo Catalyst sent to authorized recycler M/s Rubamin limited		Opening Stock as on 01.04.2018	Generation till 30.09.2018	Disposal till 30.09.2018	Closing Stock as on 30.09.2018	Disposal Mode	Used Lubricating Oil	34.94	17.61	27.34	25.21	Sold to authorized recycler M/s Reliance Barrels
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**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		<p>Copy of work order with hazardous waste authorized recycler is attached as <b>Annexure-1.3</b>.</p> <p>Manifest copies for the hazardous waste disposed is attached as <b>Annexure-1.4</b>.</p> <p>Refinery is already a member of GPCB approved TSDF facility of M/s Saurashtra Enviro Projects Pvt Ltd (SEPPL) located at Gandhidham and M/s Recycling Solution Pvt Ltd (RSPL), Panoli. Membership certificate is shown below.</p> <div data-bbox="1260 738 1606 1226" style="text-align: center;"> <p><b>Saurashtra Enviro Projects Pvt. Ltd.</b> Integrated Common Hazardous Waste Management Facility</p> <p><b>Certificate</b> Certificate No: CSE001</p> <p><i>To Whomsoever it may concern</i></p> <p><i>This is to certify that</i></p> <p><b>ESSAR OIL LIMITED</b></p> <p>PO BOX NO.24 VILLAGE VADINAR POSTER KHAMBHALIA JAMNAGAR</p> <p><i>is a valid member of</i></p> <p><b>Saurashtra Enviro Projects Pvt. Ltd.</b> <i>for Integrated Common Hazardous Waste Management Facility.</i></p> <p><i>This membership is valid for a period of</i> <b>5 Years</b></p> <p>Date of issue : 01/01/2014 Date of expiration : 31/12/2018 Place of issue : Surat</p> <p><i>For Saurashtra Enviro Projects Pvt. Ltd.</i> <i>Authorized signatory</i></p> <p><small>SUBJECT TO SEBAT REGISTRATION</small></p> <p><small>Head Office: 3rd Floor, I.C. Chambers, Udhva Chowk, Raj Road, Surat - 392 002.</small></p> </div>

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**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT						
XXIV	<p>Oily sludge shall be sent to melting pit treatment for recovery of oil. The recovered oil shall be recycled into the refinery system.</p> <p>The residual sludge will be stored in HDPE lined pit for disposal after treatment. The sludge will be incinerated in the premises only.</p>	<p>Oily sludge is being co-processed in Delayed coker unit.</p> <p>Oily sludge is being stored in sludge drying pit with HDPE liner &amp; leachate collection facility and is being sent to Delayed coker unit for co-processing in our refinery.</p>						
XXV	<p>The project authorities shall strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals rules, 1989 as amended in 2000 for handling of hazardous chemicals.</p>	<p>We are in compliance with all the applicable conditions under MSIHC Rules 1989.</p> <p>The details of the compliance of the applicable conditions are as given in the <b>Table no 24</b>.</p> <p align="center"><b>Table no. 24: compliance of the applicable conditions of MSIHC</b></p> <table border="1" data-bbox="871 930 2018 1412"> <thead> <tr> <th data-bbox="871 930 976 963">Sr. No</th> <th data-bbox="980 930 1633 963">Condition</th> <th data-bbox="1638 930 2018 963">Compliance Status</th> </tr> </thead> <tbody> <tr> <td data-bbox="871 966 976 1412">1</td> <td data-bbox="980 966 1633 1412"> <p>An occupier who has control of an industrial activity in term of sub-rule (I) shall provide evidence to show that he has,-</p> <p>(a) identified the major accident hazards; and</p> </td> <td data-bbox="1638 966 2018 1412"> <p>a) Refinery has identified all the hazards linked with all kinds of operational, administrative and technical activities. Each department and units have their Aspect Impact Risk Register as per the activities being carried out which is being updated timely.</p> </td> </tr> </tbody> </table>	Sr. No	Condition	Compliance Status	1	<p>An occupier who has control of an industrial activity in term of sub-rule (I) shall provide evidence to show that he has,-</p> <p>(a) identified the major accident hazards; and</p>	<p>a) Refinery has identified all the hazards linked with all kinds of operational, administrative and technical activities. Each department and units have their Aspect Impact Risk Register as per the activities being carried out which is being updated timely.</p>
Sr. No	Condition	Compliance Status						
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**Annexure - 1**

**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT	
			<p>(b) taken adequate steps to -</p> <p>(i) prevent such major accidents and limit their consequences to persons and the environment;</p> <p>(ii) Provide to the persons working on the site with the information, training and equipment including antidotes necessary to ensure their safely.</p>
		2	<p>An occupier shall prepare and keep up-to-date an on-site emergency plan detailing how major accidents will be dealt with on the site on which the industrial activity is</p>
			<p>b)</p> <p>(i) Refinery has well established safety systems and procedures in place. It also has Emergency Response Disaster Management Plan for prevention of major accidents. Mock drills are carried out timely as a part of prevention plan.</p> <p>(ii)Refinery has dedicated training centre known as Nalanda Knowledge Centre wherein Induction training including fire fighting, first aider, safety system awareness is being allotted to all the employees and contractors. In addition to this, Emergency Response Disaster Management Plan training, first aider training and safety refresher training is allotted every three years to all the personnel.</p> <p>Refinery has Emergency Response Disaster Management Plan in line with the industrial</p>

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**PART – II**

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**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT		
	<p>Necessary approvals from Chief controller of explosives must be obtained before commissioning of the expansion project.</p> <p>Requisite On-site and off-site Disaster Management plans will be prepared and implemented.</p> <p>Regular mock drill shall be carried out for both On-Site and Off-site plans.</p>		<p>carried on and that plan shall include the name of The person who is responsible for safety on the site and the names of those who are authorized to take action in accordance with the plan in case of an emergency.</p>	<p>activity as well as crude handling operations. The Plan is attached herewith as <b>Annexure 1.6.</b></p>
		3	<p>The occupier shall ensure that the emergency plan prepared in accordance with sub-rule (I) takes into account any modification made in the industrial activity and that every person on the site who is affected by the plan-is informed of its relevant provisions.</p>	<p>Refinery has Emergency Response Disaster Management Plan in line with the industrial activity as well as crude handling operations The Plan is attached herewith as <b>Annexure 1.6.</b></p>
		4	<p>An occupier, who has control of an industrial activity in term of sub-rule 1 of this rule, shall arrange to obtain or develop information in the form of safety data sheet as specified in Schedule 9. The information shall be accessible upon request for reference.</p>	<p>Refinery has a separate portal known as Process Safety Management portal wherein all the MSDS as well as chemical database are available.</p>
		<p>All necessary approvals from Chief Controller of Explosives have been obtained prior commissioning of the expansion project.</p> <p>Detailed approval from PESO are attached as <b>Annexure 1.5.</b></p> <p>Emergency Response Disaster Management Plan (ERDMP) for onsite and offsite has been prepared and is attached herewith as <b>Annexure 1.6.</b></p> <p>Regular mock drills on ERDMP are conducted. Schedule of the Mock drill for the year 2018-19 is as given in <b>Table no. 25.</b></p>		

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KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008


Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		<p>Table no. 25: Mock drill schedule for the year 2018-2019</p>

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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR

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		<div style="text-align: center;"> <p><b>NAYARA ENERGY LIMITED, VADINAR</b>  <b>FIRE SERVICES, HSEF DEPARTMENT</b>  <b>MOCK DRILL SCHEDULE FOR THE YEAR 2018-2019</b></p>  </div> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>Sr. No.</th> <th>UNIT / PLANT</th> <th>APRIL</th> <th>MAY</th> <th>JUNE</th> <th>JULY</th> <th>AUG</th> <th>SEPT</th> <th>OCT</th> <th>NOV</th> <th>DEC</th> <th>JAN</th> <th>FEB</th> <th>MARCH</th> <th>Nos. of Mock Drills</th> </tr> </thead> <tbody> <tr><td>1</td><td>CPP</td><td></td><td>O</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>2</td><td>UTILITY-1/2 (Base Refinery &amp; Expansion)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>S</td><td>1</td></tr> <tr><td>3</td><td>NHT/CCR</td><td></td><td></td><td>Δ</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>4</td><td>HMU-1 /HMU-2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>O</td><td></td><td>1</td></tr> <tr><td>5</td><td>CDU-II</td><td></td><td></td><td></td><td>O</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>6</td><td>CDU-I</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>O</td><td></td><td></td><td>1</td></tr> <tr><td>7</td><td>FCCU</td><td></td><td></td><td></td><td></td><td></td><td>O</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>8</td><td>DHDS /ARU/SRU</td><td></td><td></td><td></td><td></td><td></td><td></td><td>T</td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>9</td><td>PIT</td><td></td><td>O</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>10</td><td>DISPATCH - TLCB / RLCB</td><td></td><td></td><td></td><td></td><td></td><td></td><td>S</td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>11</td><td>COT</td><td>O</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>12</td><td>LABORATORY</td><td></td><td></td><td></td><td>O</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>13</td><td>NAYARA HUB</td><td></td><td></td><td></td><td></td><td></td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>14</td><td>DCU</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>O</td><td>1</td></tr> <tr><td>15</td><td>VGO</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>O</td><td></td><td></td><td></td><td>1</td></tr> <tr><td>16</td><td>DHDT</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Δ</td><td></td><td></td><td>1</td></tr> <tr><td>17</td><td>ISOM</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>O</td><td></td><td>1</td></tr> <tr><td>18</td><td>SRU- 1</td><td></td><td></td><td></td><td></td><td></td><td></td><td>O</td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr style="background-color: #e0f0ff;"><td colspan="2">Level-1</td><td>1</td><td>2</td><td>0</td><td>2</td><td>2</td><td>2</td><td>1</td><td>0</td><td>1</td><td>1</td><td>2</td><td>2</td><td>16</td></tr> <tr style="background-color: #ffe0e0;"><td colspan="2">Level-2</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>2</td></tr> <tr style="background-color: #e0ffe0;"><td colspan="2">Level-3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr style="background-color: #e0e0e0;"><td colspan="2">TOTAL</td><td>1</td><td>2</td><td>1</td><td>2</td><td>2</td><td>2</td><td>1</td><td>0</td><td>1</td><td>2</td><td>2</td><td>2</td><td>18</td></tr> </tbody> </table> <p style="font-size: small; text-align: center;">Legend :- * OffSite Mock Drill conducted by District Administration as per the ITPs and approval</p> <div style="display: flex; justify-content: space-around; font-size: small;"> <div style="text-align: center;"> <span style="color: blue;">O</span> LEVEL-01  <span style="color: red;">Δ</span> LEVEL-02         </div> <div style="text-align: center;"> <span style="color: yellow;">T</span> TOXIC  <span style="color: orange;">E</span> EVACUATION         </div> <div style="text-align: center;"> <span style="color: green;">S</span> SPILL MANAGEMENT  <span style="color: purple;">©</span> LEVEL-3         </div> </div> <p style="margin-top: 20px;">Mock drill carried out during the month of Mar'18 to Aug'18 is shown in <b>Table no. 26</b> and detailed reports are attached as <b>Annexure-1.7</b>.</p> <p style="text-align: center;"><b>Table no. 26: Mock Drill details</b></p>	Sr. No.	UNIT / PLANT	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MARCH	Nos. of Mock Drills	1	CPP		O											1	2	UTILITY-1/2 (Base Refinery & Expansion)												S	1	3	NHT/CCR			Δ										1	4	HMU-1 /HMU-2											O		1	5	CDU-II				O									1	6	CDU-I										O			1	7	FCCU						O							1	8	DHDS /ARU/SRU							T						1	9	PIT		O											1	10	DISPATCH - TLCB / RLCB							S						1	11	COT	O												1	12	LABORATORY				O									1	13	NAYARA HUB						E							1	14	DCU												O	1	15	VGO									O				1	16	DHDT										Δ			1	17	ISOM											O		1	18	SRU- 1							O						1	Level-1		1	2	0	2	2	2	1	0	1	1	2	2	16	Level-2		0	0	1	0	0	0	0	0	0	1	0	0	2	Level-3		0	0	0	0	0	0	0	0	0	0	0	0	0	TOTAL		1	2	1	2	2	2	1	0	1	2	2	2	18
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**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT	
		Plant	Date
		NHT/CCR	15.06.2018
		Laboratory	25.07.2018
		FCCU	27.08.2018
XXVI	Green belt shall be provided to mitigate the effects of fugitive emissions all around the plant in a minimum of 33% of the plant area in consultation with DFO as per CPCB guidelines.	<p>Green Belt has been developed in area of 410 Ha around the periphery and in vacant area*.</p>  <p>Apart from this we have also done voluntary mangrove aforestation in area of 175 Ha.</p> 	

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
		<p>*Note : currently 20 MMTPA refinery is established in 1171 Ha area out of total project area of 2275 Ha. As per the current establishment, we have developed green belt in 410 Ha area which is 35.04 % of the plant area.</p> <p>We confirm to develop the balance green belt area required for the 46 MMTPA refinery to make minimum 33% of total Plant area as green belt.</p> <p>The layout map showing existing &amp; proposed green belt is as attached herewith as <b>Annexure-1.8.</b></p>
XXVII	The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	CREP compliance report is attached as <b>Annexure-1.9.</b>
XXVIII	The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.	<p>Four reservoirs / ponds have been created within refinery premises for storage and recharging of ground water. Total capacity of these ponds is 3, 25,000 m<sup>3</sup>.</p> <p>Four ground water recharge wells have been made within refinery.</p>

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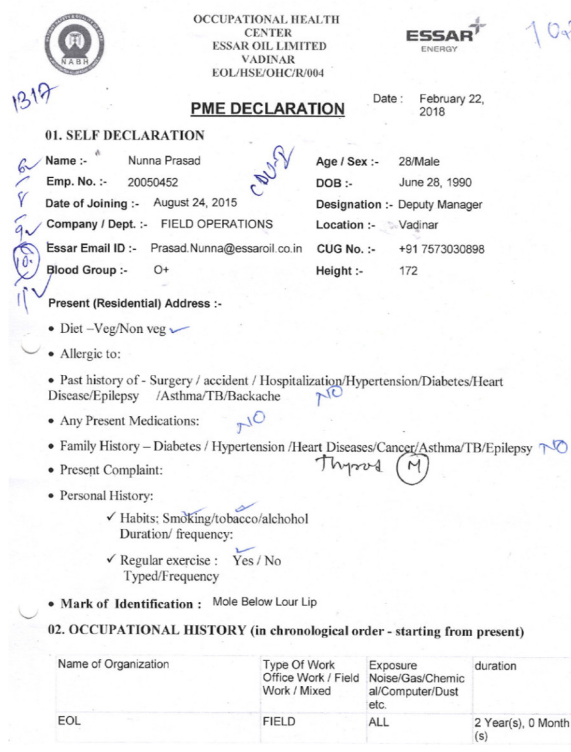
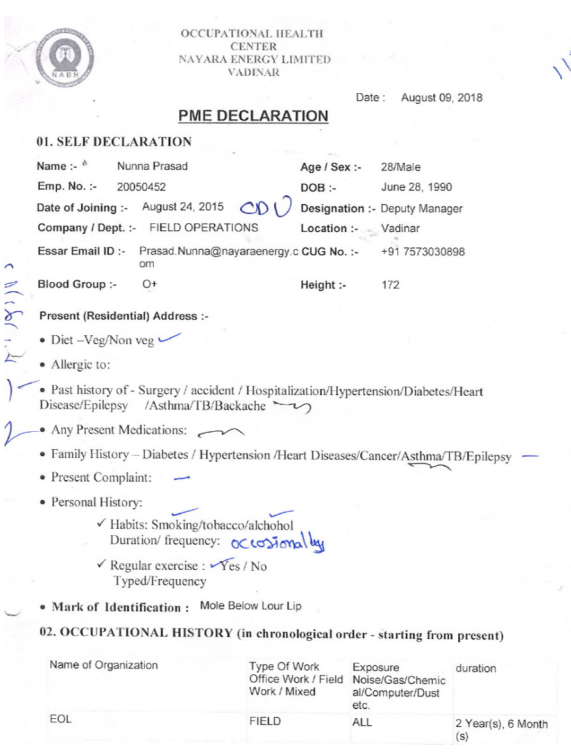
Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	 	  
XXIX	Occupational Health Surveillance of the workers shall be done on regular basis and records be maintained as per the Factories Act.	Occupational health Surveillance of the worker is being done six monthly and records are maintained at Occupational Health Centre (OHC) at refinery site as per Factory Act.  Some of the records are shown below.

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	 <p><b>1319</b></p> <p><b>ESSAR ENERGY</b> 10285</p> <p><b>OCCUPATIONAL HEALTH CENTER</b> ESSAR OIL LIMITED VADINAR EOL/HSE/OHC/R/004</p> <p><b>PME DECLARATION</b> Date : February 22, 2018</p> <p><b>01. SELF DECLARATION</b></p> <p>Name :- NUNNA PRASAD Age / Sex :- 28/Male Emp. No. :- 20050452 DOB :- June 28, 1990 Date of Joining :- August 24, 2015 Designation :- Deputy Manager Company / Dept. :- FIELD OPERATIONS Location :- Vadinar Essar Email ID :- Prasad.Nunna@essaroil.co.in CUG No. :- +91 7573030898 Blood Group :- O+ Height :- 172</p> <p>Present (Residential) Address :- • Diet –Veg/Non veg ✓ • Allergic to: • Past history of - Surgery / accident / Hospitalization/Hypertension/Diabetes/Heart Disease/Epilepsy /Asthma/TB/Backache NO • Any Present Medications: NO • Family History – Diabetes / Hypertension /Heart Diseases/Cancer/Asthma/TB/Epilepsy NO • Present Complaint: Thyroid (M) • Personal History: ✓ Habits: Smoking/tobacco/alcohol Duration/ frequency: ✓ Regular exercise : Yes / No Typed/Frequency • Mark of Identification : Mole Below Lour Lip</p> <p><b>02. OCCUPATIONAL HISTORY (in chronological order - starting from present)</b></p> <table border="1"> <thead> <tr> <th>Name of Organization</th> <th>Type Of Work Office Work / Field Work / Mixed</th> <th>Exposure Noise/Gas/Chemical/Computer/Dust etc.</th> <th>duration</th> </tr> </thead> <tbody> <tr> <td>EOL</td> <td>FIELD</td> <td>ALL</td> <td>2 Year(s), 0 Month(s)</td> </tr> </tbody> </table>	Name of Organization	Type Of Work Office Work / Field Work / Mixed	Exposure Noise/Gas/Chemical/Computer/Dust etc.	duration	EOL	FIELD	ALL	2 Year(s), 0 Month(s)	 <p><b>NAYARA ENERGY LIMITED</b> 11573</p> <p><b>OCCUPATIONAL HEALTH CENTER</b> NAYARA ENERGY LIMITED VADINAR</p> <p><b>PME DECLARATION</b> Date : August 09, 2018</p> <p><b>01. SELF DECLARATION</b></p> <p>Name :- NUNNA PRASAD Age / Sex :- 28/Male Emp. No. :- 20050452 DOB :- June 28, 1990 Date of Joining :- August 24, 2015 Designation :- Deputy Manager Company / Dept. :- FIELD OPERATIONS Location :- Vadinar Essar Email ID :- Prasad.Nunna@nayaenergy.cug No. :- +91 7573030898 Blood Group :- O+ Height :- 172</p> <p>Present (Residential) Address :- • Diet –Veg/Non veg ✓ • Allergic to: • Past history of - Surgery / accident / Hospitalization/Hypertension/Diabetes/Heart Disease/Epilepsy /Asthma/TB/Backache • Any Present Medications: • Family History – Diabetes / Hypertension /Heart Diseases/Cancer/Asthma/TB/Epilepsy • Present Complaint: • Personal History: ✓ Habits: Smoking/tobacco/alcohol Duration/ frequency: occasionally ✓ Regular exercise : Yes / No Typed/Frequency • Mark of Identification : Mole Below Lour Lip</p> <p><b>02. OCCUPATIONAL HISTORY (in chronological order - starting from present)</b></p> <table border="1"> <thead> <tr> <th>Name of Organization</th> <th>Type Of Work Office Work / Field Work / Mixed</th> <th>Exposure Noise/Gas/Chemical/Computer/Dust etc.</th> <th>duration</th> </tr> </thead> <tbody> <tr> <td>EOL</td> <td>FIELD</td> <td>ALL</td> <td>2 Year(s), 6 Month(s)</td> </tr> </tbody> </table>	Name of Organization	Type Of Work Office Work / Field Work / Mixed	Exposure Noise/Gas/Chemical/Computer/Dust etc.	duration	EOL	FIELD	ALL	2 Year(s), 6 Month(s)
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XXX	All the recommendations made in the EIA / EMP and Risk Assessment Reports in respect of environmental management and risk mitigation measures relating to refinery and petrochemical complex shall be implemented.	All recommendations made in the EIA / EMP and Risk Assessment Reports in respect of environmental management and risk mitigation measures relating to refinery have been implemented. Details are given below.																



**Annexure - 1**

**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	<p><b>Following measures have been adapted as per Environmental Management Plan indicated in EIA</b> for mitigation of adverse impacts on environment due to Refinery operations:</p> <p><b>Air Pollution Prevention / Control Measures:</b></p> <p>Air pollution prevention / Control measures adapted at site are as following:</p> <ul style="list-style-type: none"> <li>✚ Installed Low Temperature Shell Claus off Gas Treating Units (LT SCOT) at sulfur recovery unit.</li> <li>✚ Installed Multistage multiple Cyclones in Fluidized Catalytic Cracking &amp; Regeneration unit for particulate emission control.</li> <li>✚ Installed Amine Absorbers - The fuel gas produced in the refinery contains H<sub>2</sub>S. This is removed in the Amine absorber columns and the sweet gas is routed to Refinery fuel gas system. Subsequently H<sub>2</sub>S is stripped out from rich amine in amine regeneration unit. Lean amine is reused while H<sub>2</sub>S is sent to sulfur recovery unit.</li> <li>✚ Use of Low Sulfur Fuel - Refinery fuel Gas, Natural gas and Fuel Oil are used as fuel in heaters / furnaces.</li> <li>✚ Installed Low NOX burners in all heaters / furnaces.</li> <li>✚ Installed Sulfur Recovery Unit having sulfur recovery efficiency 99.9%.</li> <li>✚ Floating roof tanks: Floating roof tanks are provided for storage of class A products; this reduces HC vapor loss. Double seal has been provided in order to minimize vapor leakage.</li> <li>✚ Good Flare Management- all vent offs are connected to the flare to take care emergency releases from refinery plant.</li> <li>✚ All access roads (internal as wells as external) which is being used are paved either with concrete or bitumen to suppress the dust generation along the roads.</li> </ul> <p><b>Air Environment:</b></p> <p>The major sources of air emission is process emissions from FCCU, SRU and emissions from fuel burning in the different heaters / furnaces of refinery's plant operations. To minimize impacts, major steps taken are following:</p> <ul style="list-style-type: none"> <li>✚ Regular monitoring and record keeping of emission at refinery as part of environmental data records.</li> </ul>	

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	<ul style="list-style-type: none"> <li>✚ Monitoring the Performance of Sulfur Recovery Units (SRU) on monthly basis.</li> <li>✚ Energy conservation schemes have been launched, for instance, steam traps management variable speed control drive.</li> <li>✚ Leak Detection and Repair Program (LDAR) has been implemented in the refinery. The program includes leak detection of valves, flanges and pumps etc. Total 35505 nos. of components were monitored during period of Mar'18 to Aug'18.</li> <li>✚ Stack Monitoring Facility (SMF) have been provided at proper location in all stacks.</li> <li>✚ Ambient air quality is being monitored simultaneously at 4 locations within refinery premises once a week.</li> <li>✚ Two Continuous On-line Ambient Air Quality Monitoring stations (CAAQMS) have been installed. The same has been hooked up with CPCB server since March 2013.</li> <li>✚ Continuous Emission Monitoring has been hooked up with CPCB server since June 2015.</li> </ul> <p><b>Noise Environment:</b></p> <p>The design of project is such that the sound pressure level in the work area is not exceeding 90 dB (A). Restricted areas are those locations where it is not reasonably practicable to reduce the noise level below the work area limit. Wherever practicable, attempts have been made to reduce the noise level below 90 dB (A). The noise level is not exceeding 70 dB (A) during day time and 65 dB (A) during night time at the boundary of the project site. The equipment have been chosen in such a way that the above noise limit is never exceeded. The noise levels at the nearest habitation after refinery expansion is less than the stipulated standards of CPCB. Good Standard Operational Procedure, the following generic measures have been implemented in base refinery and same will be implemented in addition to the existing green belt, in the future expansion of the project:</p> <ul style="list-style-type: none"> <li>✚ The major areas of concern for noise generation has been addressed by considering it during procurement of the machinery from vendors, project implementation stage and by giving correct specification during tender floating.</li> <li>✚ Monitoring of job and location specific noise levels for compliance with HSE regulations by verifying acceptability of noise levels caused by the project activities and comparison with noise criteria.</li> <li>✚ Periodic audiometric test is being conducted for employees working close to noise prone areas, such as compressors, DG Sets, the loading and unloading sections.</li> </ul>	

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT
	<ul style="list-style-type: none"> <li>✚ PPE's are provided to ensure for eardrum protection of the employees, workers as well as visitors.</li> <li>✚ Acoustic barriers and silencers have been used in equipment wherever necessary.</li> <li>✚ Sound proofing / glass paneling have been provided at critical operating stations / control rooms.</li> <li>✚ Either acoustic barriers/ shelters shall be developed in noisy workplaces or acoustic enclosures are provided for the high noise generating equipment</li> <li>✚ Monitoring of ambient noise levels is carried out regularly inside the refinery area.</li> </ul> <p><b>Water &amp; Waste water Environment:</b></p> <ul style="list-style-type: none"> <li>✚ <b>Water:</b> The main source of water requirement of refinery is sea water. Sea water is drawn from Gulf of Kutchh by a 44 inch pipeline laid from Gulf of Kutchh to refinery site. Sea water is mainly used as cooling media in cooling towers and for producing sweet water by desalination plant. Cooling Tower blow down, desalination plant reject and RO reject are sent back to sea via a 52 inch pipeline and diffuser system. Sweet water is used for producing DM water, steam and potable water and in process / operation.</li> <li>✚ <b>Wastewater:</b> Main source of wastewater generation is refinery operations. Wastewater is treated in the wastewater treatment plant. Full quantity of treated waste water, is reused / recycled for cooling towers, fire water make-up and feed to RO plant and green belt. The quality of treated water is daily monitored to ensure that treated water quality is always in compliance with statutory limits.</li> <li>✚ Continuous Effluent Monitoring has been hooked up with CPCB server since November'2015.</li> </ul> <p><b>Land Environment:</b></p> <ul style="list-style-type: none"> <li>✚ Soils in the adjoining areas are sandy loam to silty loam with moderate infiltration rates, amenable to groundwater pollution. Considering this fact, every precaution have been taken</li> </ul>	

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT									
	<p>to avoid spillage of oils and other petroleum products on soils to protect groundwater contamination and to avoid any danger to other soil microbial groups which are sensitive to oil pollution.</p> <ul style="list-style-type: none"> <li>✚ Green belt coverage inside the refinery is well maintained.</li> <li>✚ Adequate storage facility for temporary storage of hazardous and non-hazardous wastes with HDPE liner facility has been created within refinery premises.</li> </ul> <p><b>Green Belt Development:</b></p> <p>Along the periphery of the Essar Oil’s Refinery at Vadinar, a large green belt has been developed.</p> <p>410 Ha area is covered under thick Green Belt in refinery and associated facilities.</p>										
	<p>In respect of activities in the marine national park, the recommendations of NIO shall be followed for protection of marine national park.</p>	<p>In respect of activities in the marine national park, the recommendations of NIO have been implemented for protection of marine national park. Details are given below.</p>									
	<p><b>Recommendations of NIO</b></p> <p>NIO carried out Environment Impact Assessment (EIA) sequential studies for marine facilities of M/s Nayara Energy Limited (Formerly Known as Essar Oil Ltd), Vadinar from 1994 onwards. The compliance status of the salient recommendations stipulated in those studies is given in <b>Table no. 27.</b></p> <p align="center"><b>Table no. 27: Compliance status of the salient recommendations given by NIO</b></p> <table border="1"> <thead> <tr> <th data-bbox="205 1224 310 1260">Sr.no.</th> <th data-bbox="310 1224 856 1260">NIO recommendations</th> <th data-bbox="856 1224 2028 1260">Compliance status</th> </tr> </thead> <tbody> <tr> <td data-bbox="205 1260 310 1333">01</td> <td data-bbox="310 1260 856 1333"><b>Diffuser for discharge of return sea water into Gulf of Kutch</b></td> <td data-bbox="856 1260 2028 1333">Diffuser has been installed as per the design and recommendations of NIO</td> </tr> <tr> <td data-bbox="205 1333 310 1369">02</td> <td data-bbox="310 1333 856 1369"><b>Overall Risk Assessment of Marine Facility</b></td> <td data-bbox="856 1333 2028 1369">Risk assessment was carried out through the third party, viz. M/s Enviro-Software, Bangalore.</td> </tr> </tbody> </table>		Sr.no.	NIO recommendations	Compliance status	01	<b>Diffuser for discharge of return sea water into Gulf of Kutch</b>	Diffuser has been installed as per the design and recommendations of NIO	02	<b>Overall Risk Assessment of Marine Facility</b>	Risk assessment was carried out through the third party, viz. M/s Enviro-Software, Bangalore.
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KHAMBHALLIA, JAMNAGAR

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XXXI	The company shall undertake all relevant measures, as indicated during the public Hearing for improving the Socio-economic conditions of the surrounding area. CSR activities will be undertaken by involving local village and administration.	<p>During public hearing following point has been discussed and the compliance of the same as submitted in GPCB is as given in <b>Table no. 28.</b></p> <p><b>Table no. 28: Compliance status of Public Hearing points on Socio-economic &amp; CSR activities.</b></p> <table border="1"> <thead> <tr> <th data-bbox="865 1255 961 1326">Sr. No</th> <th data-bbox="961 1255 1495 1326">Public Queries</th> <th data-bbox="1495 1255 2018 1326">PH coordinating Officer's Reply</th> </tr> </thead> <tbody> <tr> <td colspan="3" data-bbox="865 1326 2018 1372">Shri Jitubahi Bhatt local villager, stated</td> </tr> </tbody> </table>	Sr. No	Public Queries	PH coordinating Officer's Reply	Shri Jitubahi Bhatt local villager, stated														
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**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**



Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT		
		1	<p>Due to any Industrial activity people get direct employment as well as indirect employment. This company should therefore keep local village people in direct employment.</p> <p>Skilled category people are being recruited from outside the State. Company should make necessary arrangement to see that locals are made skilled and then recruited these locally skilled people within the company.</p>	<p>They are already complying with the GR of Government of Gujarat regarding 85% of local employment. Since the definition of the local as stated earlier is restricted to state of Gujarat as whole and so it is not within the purview of this company to change the definition of “locals”. The company officials further informed that if qualified persons are available from nearby area the company is committed to give top priority to them. List of employees from nearby local area is attached as <b>Annexure 1.11</b>.</p>
		Shri Dilipbahi Jadeja, Ex Sarpanch of Vadinar, stated		
		2	<p>Each farmer whose land has been acquired should be given employment within the company.</p>	<p>At present no additional land is going to be acquired. The present land was acquired way back in 1993. Also that preference would be given to people of the nearby village as per their skills.</p>
<p>Apart from that we are committed to making positive impact in communities in surrounding village of Vadinar. We are committed to maintaining the highest standards of CSR in its business activities. The facilitates development initiatives in line with provisions under the Companies’ Act, 2013, and aligns its vision with Nayara’s philosophy of 4Ps – PEOPLE at the core, PROGRESS towards aspirations, POWER of synergy, and PASSION with compassion.</p>				

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT	
		3	<p>Fodder for the cattle of nearby villages should be provided by the company</p> <p>Fodder distribution in nearby villages is being done; Infrastructures - Gaushalas of nearby area have been upgraded.</p> <div data-bbox="1509 560 2007 870">  <p>Gaushala Construction</p> </div> <div data-bbox="1509 907 2007 1214">  <p>Gaushala Renovation</p> </div>
		4	<p>Pipelines for water supply in vadinar village should be provided by the company.</p> <p>Water supply Pipeline has been laid to 4 villages namely Mithoi, Zankhar, Singach &amp; Vadinar and rest 6 villages are provided with drinking water by road tankers.</p>

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Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT	
		Shri Chandubhai Jadeja of village Vadinar, stated	
		5 The company should give preference in employing people of nearby area so that socio economic status of the nearby area also as upgraded. He further added that company should initiate for an ITI center in coordination with Government, so that youth of the nearby village can take necessary advantage.	They welcome the suggestion for setting up an ITI center and would try to support such institute, if the government proposal is this regard comes to it. <b>Separate budget is allocated for under CSR as shown in table below.</b>
		Shri Kishorsinh Jadeje of Jankhar village, stated	
		6 The company should give employment to people whose land has been acquired.	At present no additional land is going to be acquired. The present land was acquired way back in 1993. However company has taken 300 people of nearby area for greenbelt development purpose.
		Shri Mahesh Pandya from Paryavaran Mitra, stated	
		7 Government GR of 85% local employment should be implemented.	Government GR of 85% local employment has been already implemented.
		8 Nearby villagers should be given preference for new recruitment.	If qualified person are available nearby area, company is giving priority to them.
		The initiatives are strategically designed on the basis of community needs assessment, mapping, participatory planning and considering local feasibility. In all locations, the local Government's effort in development is supplemented with the company's resources and facilitation.	



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		<p>According to this philosophy whatever amount is needed as a part of CSR is spent for surrounding villagers.</p> <p>Local people is being trained for technical skill required for plant operation and maintenance. These local trained people are appointed in plant.</p> <p>CSR activities undertaken during last five years are shown in <b>Table no. 29</b>:</p> <p style="text-align: center;"><b>Table no. 29 CSR activities undertaken during last five years.</b></p> <table border="1" data-bbox="873 737 2011 1375"> <thead> <tr> <th colspan="5" data-bbox="873 737 2011 808">CSR Expenditure in Crores</th> </tr> <tr> <th colspan="5" data-bbox="873 808 2011 880">Essar Oil Limited (April 2014 to March 2018)*</th> </tr> <tr> <th data-bbox="873 880 1417 951">Thematic Area</th> <th data-bbox="1417 880 1568 951">2014-15</th> <th data-bbox="1568 880 1696 951">2015-16</th> <th data-bbox="1696 880 1845 951">2016-17</th> <th data-bbox="1845 880 2011 951">2017-18</th> </tr> </thead> <tbody> <tr> <td data-bbox="873 951 1417 1023">Healthcare &amp; Swachh Bharat</td> <td data-bbox="1417 951 1568 1023">1.20</td> <td data-bbox="1568 951 1696 1023">1.48</td> <td data-bbox="1696 951 1845 1023">1.22</td> <td data-bbox="1845 951 2011 1023">2.68</td> </tr> <tr> <td data-bbox="873 1023 1417 1094">Education, Sport Promotion, Art &amp; Culture</td> <td data-bbox="1417 1023 1568 1094">2.37</td> <td data-bbox="1568 1023 1696 1094">2.78</td> <td data-bbox="1696 1023 1845 1094">1.11</td> <td data-bbox="1845 1023 2011 1094">2.06</td> </tr> <tr> <td data-bbox="873 1094 1417 1166">Environment</td> <td data-bbox="1417 1094 1568 1166">0.33</td> <td data-bbox="1568 1094 1696 1166">1.33</td> <td data-bbox="1696 1094 1845 1166">0.16</td> <td data-bbox="1845 1094 2011 1166">3.60</td> </tr> <tr> <td data-bbox="873 1166 1417 1237">Livelihood &amp; Skill Development</td> <td data-bbox="1417 1166 1568 1237">2.86</td> <td data-bbox="1568 1166 1696 1237">1.29</td> <td data-bbox="1696 1166 1845 1237">1.32</td> <td data-bbox="1845 1166 2011 1237">1.61</td> </tr> <tr> <td data-bbox="873 1237 1417 1308">Rural Development Projects</td> <td data-bbox="1417 1237 1568 1308">1.59</td> <td data-bbox="1568 1237 1696 1308">4.05</td> <td data-bbox="1696 1237 1845 1308">0.92</td> <td data-bbox="1845 1237 2011 1308">3.19</td> </tr> <tr> <td data-bbox="873 1308 1417 1375"><b>Total</b></td> <td data-bbox="1417 1308 1568 1375">8.36</td> <td data-bbox="1568 1308 1696 1375">10.92</td> <td data-bbox="1696 1308 1845 1375">4.73</td> <td data-bbox="1845 1308 2011 1375">13.14</td> </tr> </tbody> </table>	CSR Expenditure in Crores					Essar Oil Limited (April 2014 to March 2018)*					Thematic Area	2014-15	2015-16	2016-17	2017-18	Healthcare & Swachh Bharat	1.20	1.48	1.22	2.68	Education, Sport Promotion, Art & Culture	2.37	2.78	1.11	2.06	Environment	0.33	1.33	0.16	3.60	Livelihood & Skill Development	2.86	1.29	1.32	1.61	Rural Development Projects	1.59	4.05	0.92	3.19	<b>Total</b>	8.36	10.92	4.73	13.14
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## Annexure - 1

## PART – II

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	SPECIFIC CONDITIONS	ACTION TAKEN REPORT			
		<p><b>* Now Nayara Energy Limited</b></p> <p>CSR activities undertaken during Mar'18 to Aug'18 are shown in <b>Table no. 30:</b></p>			
		<b>Table no. 30 Expenditure Nayara Energy limited (Mar'18 to Aug'18)</b>			
	<b>S.No</b>	<b>Thematic Area as per companies' act</b>	<b>Sector</b>	<b>Name of the Project</b>	<b>Expenditure In Cr</b>
1	Eradicating hunger, poverty and malnutrition, promoting health care, Sanitation & safe drinking water	Health	Community Health Project (Curative and Preventive) in Khambhaliya and Lalpur Block	0.86	
		Sanitation	Solid waste Management project in 8 villages	0.25	
			Contribution to India Sanitation Coalition	0.25	
2	Promotion of Education, Special Education & vocational skill	School Education	Rural Education Project (Gram Shiksha Project; ISA British Council Project; Shala Pravehotsav)	0.55	
3	Entrepreneurship and Startup	Social Entrepreneurship	Building Social Entrepreneurs (Acumen Fund partnership)	2.15	
4	Skill Development	Skill Development	ILABSS at ITI Khambhaliya	0.05	
5	Ensuring environmental sustainability, Ecological balance, wildlife & natural resource conservation	Livelihood	Agri and Livestock development Program Livelihood program for women Livelihood program for fishing community	0.56	
		Environment (Water Harvesting, &	Water Resource Development	0.25	

**Annexure - 1**

**PART – II**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	SPECIFIC CONDITIONS		ACTION TAKEN REPORT		
			Promotion of Clean Energy)		
				Total	4.92

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**PART – II & III**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT
I	The project authorities must strictly adhere to the stipulations made by the concerned State pollution Control Board (SPCB) and the State Government.	We are in compliance with the stipulations made by the concerned Gujarat pollution Control Board (GPCB) and the State Government.  CCA compliance report is attached herewith as <b>Annexure 1.12</b> .
II	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	We confirm that No further expansion or modifications in the plant will be carried out without prior approval of the Ministry of Environment and Forests.
III	At no time, the emissions should go beyond the prescribed standards. In the event of failure any pollution control system adopted by the units, the respective until should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	It is ensured that the emission does not go beyond the prescribed standard as per CCA. For the same continuous emission monitoring of stacks (source of emissions) are provided with online monitoring analyzers.  Alarm has been set in each stack for each parameter at the 90% value of emission standards mentioned in CC&A to ensure corrective action in well advance. Operators are 24X7 watching pollutants emission level of all stacks and immediately actions will be taken in case of failure of any pollution control device/ system.
IV	Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the SPCB.	All effluent from plants is being collected in effluent collection tanks provided & required treatment is being given to achieve the norms prescribed in CCA for the Effluent Treatment Plant (ETP). Influent / effluent's quantities & qualities are being monitored on daily basis in the ETP. Monitoring results are given below. Apart from this online effluent quality monitoring systems have been established & hooked up with CPCB server.

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## PART – II &amp; III

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																																																																		
		<p data-bbox="871 402 2022 516">Quality of treated waste water for the month of Mar'18 to Aug'18 is given in table no. 31 (carried out by M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20 ):</p> <p data-bbox="1178 548 1713 574" style="text-align: center;"><b>Table no. 31: Quality of treated wastewater</b></p> <table border="1" data-bbox="888 605 1997 1411"> <thead> <tr> <th data-bbox="894 610 1184 703">Pollutant Parameters</th> <th data-bbox="1184 610 1591 703">Limiting value for concentration (mg/l except for pH)</th> <th data-bbox="1591 610 1990 703">Quality of Treated Effluent(mg/l except for pH)* Min-Max</th> </tr> </thead> <tbody> <tr><td data-bbox="894 703 1184 735">pH</td><td data-bbox="1184 703 1591 735">6.0-8.5</td><td data-bbox="1591 703 1990 735">7.35-7.51</td></tr> <tr><td data-bbox="894 735 1184 768">Oil &amp; Grease</td><td data-bbox="1184 735 1591 768">5.0</td><td data-bbox="1591 735 1990 768">&lt;4</td></tr> <tr><td data-bbox="894 768 1184 800">BOD (3 days, 27 °C)</td><td data-bbox="1184 768 1591 800">15.0</td><td data-bbox="1591 768 1990 800">9.0 - 13.0</td></tr> <tr><td data-bbox="894 800 1184 833">COD</td><td data-bbox="1184 800 1591 833">125.0</td><td data-bbox="1591 800 1990 833">29.40 - 45.7</td></tr> <tr><td data-bbox="894 833 1184 865">Suspended Solids</td><td data-bbox="1184 833 1591 865">20.0</td><td data-bbox="1591 833 1990 865">10.0 - 16.0</td></tr> <tr><td data-bbox="894 865 1184 898">Phenol (as C<sub>6</sub>H<sub>5</sub>OH)</td><td data-bbox="1184 865 1591 898">0.35</td><td data-bbox="1591 865 1990 898">&lt;0.1</td></tr> <tr><td data-bbox="894 898 1184 930">Sulphide (as S)</td><td data-bbox="1184 898 1591 930">0.50</td><td data-bbox="1591 898 1990 930">0.25 - 0.47</td></tr> <tr><td data-bbox="894 930 1184 963">Cyanide (as CN)</td><td data-bbox="1184 930 1591 963">0.2</td><td data-bbox="1591 930 1990 963">&lt;0.05</td></tr> <tr><td data-bbox="894 963 1184 995">Ammonia as N</td><td data-bbox="1184 963 1591 995">15</td><td data-bbox="1591 963 1990 995">&lt;5</td></tr> <tr><td data-bbox="894 995 1184 1027">TKN</td><td data-bbox="1184 995 1591 1027">40</td><td data-bbox="1591 995 1990 1027">&lt;5</td></tr> <tr><td data-bbox="894 1027 1184 1060">P</td><td data-bbox="1184 1027 1591 1060">3</td><td data-bbox="1591 1027 1990 1060">0.22 - 0.56</td></tr> <tr><td data-bbox="894 1060 1184 1092">Cr (Hexavalent)</td><td data-bbox="1184 1060 1591 1092">0.1</td><td data-bbox="1591 1060 1990 1092">&lt;0.1</td></tr> <tr><td data-bbox="894 1092 1184 1125">Cr (Total)</td><td data-bbox="1184 1092 1591 1125">2</td><td data-bbox="1591 1092 1990 1125">&lt;0.001</td></tr> <tr><td data-bbox="894 1125 1184 1157">Pb</td><td data-bbox="1184 1125 1591 1157">0.1</td><td data-bbox="1591 1125 1990 1157">&lt;0.003</td></tr> <tr><td data-bbox="894 1157 1184 1190">Hg</td><td data-bbox="1184 1157 1591 1190">0.01</td><td data-bbox="1591 1157 1990 1190">&lt;0.002</td></tr> <tr><td data-bbox="894 1190 1184 1222">Zn</td><td data-bbox="1184 1190 1591 1222">5</td><td data-bbox="1591 1190 1990 1222">0.04-0.067</td></tr> <tr><td data-bbox="894 1222 1184 1255">Ni</td><td data-bbox="1184 1222 1591 1255">1</td><td data-bbox="1591 1222 1990 1255">0.08-0.12</td></tr> <tr><td data-bbox="894 1255 1184 1287">Cu</td><td data-bbox="1184 1255 1591 1287">1</td><td data-bbox="1591 1255 1990 1287">0.04-0.085</td></tr> <tr><td data-bbox="894 1287 1184 1320">V</td><td data-bbox="1184 1287 1591 1320">0.2</td><td data-bbox="1591 1287 1990 1320">&lt;0.01</td></tr> <tr><td data-bbox="894 1320 1184 1352">Benzene</td><td data-bbox="1184 1320 1591 1352">0.1</td><td data-bbox="1591 1320 1990 1352">&lt;0.001</td></tr> <tr><td data-bbox="894 1352 1184 1385">Benzo(a)- Pyrene</td><td data-bbox="1184 1352 1591 1385">0.2</td><td data-bbox="1591 1352 1990 1385">&lt;0.001</td></tr> </tbody> </table>	Pollutant Parameters	Limiting value for concentration (mg/l except for pH)	Quality of Treated Effluent(mg/l except for pH)* Min-Max	pH	6.0-8.5	7.35-7.51	Oil & Grease	5.0	<4	BOD (3 days, 27 °C)	15.0	9.0 - 13.0	COD	125.0	29.40 - 45.7	Suspended Solids	20.0	10.0 - 16.0	Phenol (as C <sub>6</sub> H <sub>5</sub> OH)	0.35	<0.1	Sulphide (as S)	0.50	0.25 - 0.47	Cyanide (as CN)	0.2	<0.05	Ammonia as N	15	<5	TKN	40	<5	P	3	0.22 - 0.56	Cr (Hexavalent)	0.1	<0.1	Cr (Total)	2	<0.001	Pb	0.1	<0.003	Hg	0.01	<0.002	Zn	5	0.04-0.067	Ni	1	0.08-0.12	Cu	1	0.04-0.085	V	0.2	<0.01	Benzene	0.1	<0.001	Benzo(a)- Pyrene	0.2	<0.001
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## PART – II &amp; III

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008


Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																																																																													
	Regular monitoring shall be carried out for relevant parameters for both surface and ground water.	<p>We have appointed third party consultant for monitoring of Marine area. Gujarat Institute of Desert Ecology (GUIDE) engaged to carry out monthly monitoring of marine area to ensure that marine life is not adversely affected. Apart from GUIDE, we have also appointed National Institute of Oceanography (NIO) for Comprehensive Marine Monitoring of Marine Ecology off Vadinar on yearly basis. <b>Report of the GUIDE &amp; NIO is shown below.</b></p> <p>Ground water quality of the surrounding villages is monitored six-monthly which was monitored in Aug'18, results given in <b>Table no. 32.</b></p>																																																																													
<p><b>Ground water quality of the surrounding villages for the month of Mar'18 to Aug'18:</b></p>																																																																															
<p style="text-align: center;"><b>Table no. 32: Ground water quality of the surrounding villages</b></p>																																																																															
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O & G	mg/l	<4	<4	<4	<4	<4	<4	<4	<4	<4																																																																					

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**PART – II & III**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT
	<p><b>Report of the GUIDE &amp; NIO is shown below:</b></p> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p align="center"><b>MARINE ENVIRONMENTAL MONITORING AT SUB-TIDAL AND INTER-TIDAL LOCATIONS OF VADINAR OIL TERMINAL, VADINAR, GUJARAT</b></p> <p align="center"><b>Annual Report (January 2017– December 2017)</b></p> <p align="center"><b>Submitted to</b></p> <p align="center">Vadinar Oil Terminal Ltd. Refinery Site, 39 KM, Jamnagar-Okha Highway Vadinar - 361305 Gujarat</p> <p align="center"><b>Submitted by</b></p> <p align="center">Gujarat Institute of Desert Ecology Mundra Road Bhuj-370001, Kachchh, Gujarat</p>  <p align="center">July 2018</p> </div>	<div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p align="center"><i>Marine Monitoring Report</i>   2017</p> <p align="center"><b>Project Personnel</b></p> <p align="center"><b>Project Co-ordinator</b> Dr. V. Vijay Kumar, Director</p> <p align="center"><b>Principal Investigator</b> Dr. K. Karthikeyan, Senior Scientist &amp; Laboratory Head</p> <p align="center"><b>Co-Investigators</b> Dr. G. A. Thivakaran, Chief Pr. Scientist Dr. G. Thirumaran, Scientist</p> <p align="center"><b>Water and Sediment Environment</b> Dr. K. Karthikeyan, Senior Scientist &amp; Laboratory Head Dr. Aliya Naz, Project Scientist Mr. T. Dhanarajyan, Scientific Assistant Mr. Hiji, K. Dangar, Jr. Scientific Assistant Ms. Monika Sharma, Jr. Scientific Assistant Ms. Ami Vasani, Jr. Scientific Assistant</p> <p align="center"><b>Biological Environment - Plankton</b> Dr. G. Thirumaran, Scientist Mr. Keyur Modi, Junior Research Fellow</p> <p align="center"><b>Biological Environment – Benthos</b> Dr. G. Thirumaran, Scientist Mr. Viral Barot, Junior Research Fellow</p> <p align="center"><small>Gujarat Institute of Desert Ecology</small>   Page 2</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: 80%;"> <p align="center"><b>Comprehensive Monitoring of Marine Ecology off Vadinar (April 2017)</b></p> <p align="center"><b>Project Leader</b> Surya Sukumaran</p> <p align="center"><b>Associate Project Leaders</b> Anuradh Ram S. Jaiswar Rakesh P. S.</p> <p align="center">JANUARY 2018</p> </div>
V	<p>Industrial wastewater shall be properly collected and treated so to conform to the standards prescribed under GSR 422 (E) dated 1<sup>st</sup> May 1993 and 31<sup>st</sup> December, 1993 or as amended from time. The treated wastewater shall be utilized for plantation purpose.</p>	<p>Industrial wastewater is being collected at effluent treatment plant having primary, secondary and tertiary treatment system for treatment of effluent to meet the standards prescribed. Effluent quality parameter is within the prescribed limit mentioned in GSR 186 (E) dated 18<sup>th</sup> March, 2008</p> <p>Treated water quality for the month of Mar'18 to Aug'18 is given in <b>Table no. 33 A &amp; 33 B.</b></p> <p>The entire Treated Effluent is then reused as Fire Water, Service Water , Cooling Towers, horticulture,RO feed and green belt.</p>

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## PART – II &amp; III

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																																																															
	<p>The results for treated effluent for the month of Mar'18 to Aug'18 (carried out by M/s Unistar Environment &amp; Research Labs Pvt. Ltd. (NABL accreditation no. for Chemical &amp; Biological: TC-7753 in lieu of T-2239, T-2240 valid till 14.09.20 ) table no. 33 A &amp; 33 B</p> <p style="text-align: center;">Table no 33 A: Quality of treated wastewater</p> <table border="1" data-bbox="415 565 1801 1307"> <thead> <tr> <th>Pollutant Parameters</th> <th>Limiting value for concentration (mg/l except for pH)</th> <th>Quality of Treated Effluent(mg/l except for pH)Min-Max</th> </tr> </thead> <tbody> <tr><td>pH</td><td>6.0-8.5</td><td>7.35-7.51</td></tr> <tr><td>Oil &amp; Grease</td><td>5.0</td><td>&lt;4</td></tr> <tr><td>BOD (3 days, 27 °C)</td><td>15.0</td><td>9.0 - 13.0</td></tr> <tr><td>COD</td><td>125.0</td><td>29.40 - 45.7</td></tr> <tr><td>Suspended Solids</td><td>20.0</td><td>10.0 - 16.0</td></tr> <tr><td>Phenol (as C<sub>6</sub>H<sub>5</sub>OH)</td><td>0.35</td><td>&lt;0.1</td></tr> <tr><td>Sulphide (as S)</td><td>0.50</td><td>0.25 - 0.47</td></tr> <tr><td>Cyanide (as CN)</td><td>0.2</td><td>&lt;0.05</td></tr> <tr><td>Ammonia as N</td><td>15</td><td>&lt;5</td></tr> <tr><td>TKN</td><td>40</td><td>&lt;5</td></tr> <tr><td>P</td><td>3</td><td>0.22 - 0.56</td></tr> <tr><td>Cr (Hexavalent)</td><td>0.1</td><td>&lt;0.1</td></tr> <tr><td>Cr (Total)</td><td>2</td><td>&lt;0.001</td></tr> <tr><td>Pb</td><td>0.1</td><td>&lt;0.003</td></tr> <tr><td>Hg</td><td>0.01</td><td>&lt;0.002</td></tr> <tr><td>Zn</td><td>5</td><td>0.04-0.067</td></tr> <tr><td>Ni</td><td>1</td><td>0.08-0.12</td></tr> <tr><td>Cu</td><td>1</td><td>0.04-0.085</td></tr> <tr><td>V</td><td>0.2</td><td>&lt;0.01</td></tr> <tr><td>Benzene</td><td>0.1</td><td>&lt;0.001</td></tr> </tbody> </table>		Pollutant Parameters	Limiting value for concentration (mg/l except for pH)	Quality of Treated Effluent(mg/l except for pH)Min-Max	pH	6.0-8.5	7.35-7.51	Oil & Grease	5.0	<4	BOD (3 days, 27 °C)	15.0	9.0 - 13.0	COD	125.0	29.40 - 45.7	Suspended Solids	20.0	10.0 - 16.0	Phenol (as C <sub>6</sub> H <sub>5</sub> OH)	0.35	<0.1	Sulphide (as S)	0.50	0.25 - 0.47	Cyanide (as CN)	0.2	<0.05	Ammonia as N	15	<5	TKN	40	<5	P	3	0.22 - 0.56	Cr (Hexavalent)	0.1	<0.1	Cr (Total)	2	<0.001	Pb	0.1	<0.003	Hg	0.01	<0.002	Zn	5	0.04-0.067	Ni	1	0.08-0.12	Cu	1	0.04-0.085	V	0.2	<0.01	Benzene	0.1	<0.001
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**Annexure - 1**

**PART – II & III**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																								
	<p><b>Online Monitoring results for effluent quality for the period of Mar'18 to Aug'18:</b></p> <p align="center"><b>Table no. 33 B: Online Monitoring results for effluent quality</b></p> <table border="1" data-bbox="573 524 1642 857"> <thead> <tr> <th>Pollutant Parameters</th> <th>Limiting value for concentration (mg/l except for pH)</th> <th>Quality of Treated Effluent Min-Max</th> </tr> </thead> <tbody> <tr> <td>pH</td> <td>6.0-8.5</td> <td>6.17-8.25</td> </tr> <tr> <td>Oil &amp; Grease</td> <td>5.0</td> <td>0.97-4.36</td> </tr> <tr> <td>BOD</td> <td>15.0</td> <td>2.6-14.9</td> </tr> <tr> <td>COD</td> <td>125.0</td> <td>29.7-90.8</td> </tr> <tr> <td>Suspended Solids</td> <td>20.0</td> <td>5-16.9</td> </tr> <tr> <td>Phenol</td> <td>0.35</td> <td>0.01-0.24</td> </tr> <tr> <td>Ammonia</td> <td>15</td> <td>0.06-5.14</td> </tr> </tbody> </table>	Pollutant Parameters	Limiting value for concentration (mg/l except for pH)	Quality of Treated Effluent Min-Max	pH	6.0-8.5	6.17-8.25	Oil & Grease	5.0	0.97-4.36	BOD	15.0	2.6-14.9	COD	125.0	29.7-90.8	Suspended Solids	20.0	5-16.9	Phenol	0.35	0.01-0.24	Ammonia	15	0.06-5.14	
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VI	<p>The overall noise levels in and around the plant area shall be limited within the prescribed standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.</p>	<p>The design of project is such that the sound pressure level in the work area is not exceeding 90 dB (A). Restricted areas are those locations where it is not reasonably practicable to reduce the noise level below the work area limit. Wherever practicable, attempts have been made to reduce the noise level below 90 dB (A). The noise level is not exceeding 70 dB (A) during day time and 65 dB (A) during night time at the boundary of the project site. The equipment have been chosen in such a way that the above noise limit is never exceeded.</p> <ul style="list-style-type: none"> <li>✚ The major areas of concern for noise generation has been addressed by considering it during procurement of the machinery from vendors, project implementation stage and by giving correct specification during tender floating.</li> <li>✚ Periodic audiometric test is being conducted for employees working close to noise prone areas, such as compressors, DG Sets, the loading and unloading sections.</li> </ul>																								

Annexure - 1

PART – II & III

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT
	<p>The ambient noise level shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).</p>	<ul style="list-style-type: none"><li data-bbox="919 407 2030 477">✚ PPE's are provided to ensure for eardrum protection of the employees, workers as well as visitors.</li><li data-bbox="919 488 2030 558">✚ Acoustic barriers or acoustic enclosures and silencers are provided for the high noise generating equipment.</li><li data-bbox="919 570 2030 639">✚ Sound proofing / glass paneling have been provided at critical operating stations / control rooms.</li></ul> <p>The ambient noise level are monitored during day and night in the periphery of refinery and found to be well within the prescribed standards. The reports of the same are being submitted to GPCB regularly.</p>

## Annexure - 1

## PART – II &amp; III

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																														
		<p>Monitoring results are as given in <b>Table no. 34.</b></p> <p><b>Frequency of monitoring: Monthly</b></p> <p><b>Period: Mar'2018 to August'2018</b></p> <p style="text-align: center;"><b>Table no. 34: Ambient noise level in the periphery</b></p> <table border="1" data-bbox="892 643 1997 1382"> <thead> <tr> <th data-bbox="892 643 1457 834">Locations</th> <th data-bbox="1457 643 1732 834">Noise Level, dB(A) during Day Time 06:00 am to 10:00 pm</th> <th data-bbox="1732 643 1997 834">Noise Level, dB(A) during Night Time 10:00 pm to 06:00 am</th> </tr> </thead> <tbody> <tr> <td data-bbox="892 834 1457 889">Ambient Station at Port A Camp1</td> <td data-bbox="1457 834 1732 889">50 - 53</td> <td data-bbox="1732 834 1997 889">49 - 51</td> </tr> <tr> <td data-bbox="892 889 1457 945">Ambient Station at Labour Gate1</td> <td data-bbox="1457 889 1732 945">52 - 53</td> <td data-bbox="1732 889 1997 945">50 - 52</td> </tr> <tr> <td data-bbox="892 945 1457 1000">Ambient Station at West side of Main Flare1</td> <td data-bbox="1457 945 1732 1000">49 - 52</td> <td data-bbox="1732 945 1997 1000">47 - 50</td> </tr> <tr> <td data-bbox="892 1000 1457 1055">Nr. Batching Plant</td> <td data-bbox="1457 1000 1732 1055">52 - 53</td> <td data-bbox="1732 1000 1997 1055">51</td> </tr> <tr> <td data-bbox="892 1055 1457 1110">Ambient Station at 93 Gate</td> <td data-bbox="1457 1055 1732 1110">50 - 52</td> <td data-bbox="1732 1055 1997 1110">49 - 51</td> </tr> <tr> <td data-bbox="892 1110 1457 1166">Storm water drain outlet</td> <td data-bbox="1457 1110 1732 1166">51 - 54</td> <td data-bbox="1732 1110 1997 1166">50 - 52</td> </tr> <tr> <td data-bbox="892 1166 1457 1221">Ambient Station at Refinery Main Gate1</td> <td data-bbox="1457 1166 1732 1221">51 - 52</td> <td data-bbox="1732 1166 1997 1221">49 - 51</td> </tr> <tr> <td data-bbox="892 1221 1457 1276">Essar Petrol Pump (Near Delhi Darbar)</td> <td data-bbox="1457 1221 1732 1276">51 - 55</td> <td data-bbox="1732 1221 1997 1276">50 - 53</td> </tr> <tr> <td data-bbox="892 1276 1457 1382">Ambient Station at Pet Coke Rail Loading Yard</td> <td data-bbox="1457 1276 1732 1382">51 - 52</td> <td data-bbox="1732 1276 1997 1382">48 - 50</td> </tr> </tbody> </table>	Locations	Noise Level, dB(A) during Day Time 06:00 am to 10:00 pm	Noise Level, dB(A) during Night Time 10:00 pm to 06:00 am	Ambient Station at Port A Camp1	50 - 53	49 - 51	Ambient Station at Labour Gate1	52 - 53	50 - 52	Ambient Station at West side of Main Flare1	49 - 52	47 - 50	Nr. Batching Plant	52 - 53	51	Ambient Station at 93 Gate	50 - 52	49 - 51	Storm water drain outlet	51 - 54	50 - 52	Ambient Station at Refinery Main Gate1	51 - 52	49 - 51	Essar Petrol Pump (Near Delhi Darbar)	51 - 55	50 - 53	Ambient Station at Pet Coke Rail Loading Yard	51 - 52	48 - 50
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## PART – II &amp; III

## COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																																																								
		Ambient Air Quality standards in terms of Noise for industrial area	75 dB(A)	70 dB(A)																																																						
VII	Authorization from the State Pollution Control Board must be obtained for collection / treatment /storage /disposal of Hazardous wastes.	Consolidated Consent & Authorization has been obtained from Gujarat Pollution Control Board vide Ref. No AWH-81987 dated 13.10.2016 which is valid till 16.09.2022.																																																								
VIII	The project authorities will provide RS. 3853.00 Crore to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government. Adequate funds for recurring expenditure shall also be provided. The funds so provided shall not be diverted for any other purposes.	<p>Funds of Rs. 1089 Crores (The cost of 1089 Crores mentioned here as a part of EMP is for 20 MMTPA refinery against the earmarked cost of 3853 Crores for 60 MMTPA refinery.) have been ear-marked and implemented for the identified actions as per the EMP. It will not to be diverted for any other purposes. Details of Year wise expenditure is as given in <b>Table no. 35 A &amp; 35 B.</b></p> <p style="text-align: center;"><b>Table no. 35 A: Year Wise Expenditure incurred in Crores (CAPEX)</b></p> <table border="1"> <thead> <tr> <th rowspan="2">Environment Protection Facilities</th> <th colspan="4">Year Wise Expenditure incurred in Crores (CAPEX)</th> </tr> <tr> <th>2008-09</th> <th>2011-12</th> <th>2013-14</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>Base ETP</td> <td>53.53</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Base SRU</td> <td>443.34</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Expansion ETP</td> <td>-</td> <td>171.40</td> <td>-</td> <td>-</td> </tr> <tr> <td>RO Unit</td> <td>-</td> <td>75.51</td> <td>-</td> <td>-</td> </tr> <tr> <td>Expansion SRU</td> <td>-</td> <td>234.07</td> <td>-</td> <td>-</td> </tr> <tr> <td>Hazardous waste shed &amp; Pit</td> <td>-</td> <td>26.08</td> <td>-</td> <td>-</td> </tr> <tr> <td>Online Ambient Air Quality Monitoring System</td> <td>-</td> <td>-</td> <td>2.00</td> <td>-</td> </tr> <tr> <td>Online emission monitoring analyzers</td> <td>-</td> <td>-</td> <td>-</td> <td>2.00</td> </tr> <tr> <td>Green Belt Development</td> <td>0.6</td> <td>5.4</td> <td>3.9</td> <td>7.9</td> </tr> </tbody> </table>			Environment Protection Facilities	Year Wise Expenditure incurred in Crores (CAPEX)				2008-09	2011-12	2013-14	2018-19	Base ETP	53.53	-	-	-	Base SRU	443.34	-	-	-	Expansion ETP	-	171.40	-	-	RO Unit	-	75.51	-	-	Expansion SRU	-	234.07	-	-	Hazardous waste shed & Pit	-	26.08	-	-	Online Ambient Air Quality Monitoring System	-	-	2.00	-	Online emission monitoring analyzers	-	-	-	2.00	Green Belt Development	0.6	5.4	3.9	7.9
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KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																																																									
		<table border="1"> <tr> <td data-bbox="892 396 1262 440"><b>TOTAL</b></td> <td data-bbox="1262 396 1442 440"><b>497.47</b></td> <td data-bbox="1442 396 1621 440"><b>513</b></td> <td data-bbox="1621 396 1801 440"><b>5.9</b></td> <td data-bbox="1801 396 1992 440"><b>9.9</b></td> </tr> </table>					<b>TOTAL</b>	<b>497.47</b>	<b>513</b>	<b>5.9</b>	<b>9.9</b>																																																
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		<p data-bbox="871 505 2013 659">Adequate funds for recurring expenditure are being provided and utilized as indicated below up to 2017-18. Further for future years the funds will be provided and the same shall not be diverted for any other purposes. The funds for recurring expenditure for the year 2018-19 will not be diverted for any other purposes.</p> <p data-bbox="1052 691 1831 721"><b>Table no. 35 B: Year Wise Expenditure incurred in Crores (OPEX)</b></p> <table border="1" data-bbox="863 748 2018 1198"> <thead> <tr> <th data-bbox="863 748 1253 829" rowspan="2">Environment Protection Facilities</th> <th colspan="5" data-bbox="1253 748 2018 792">Year Wise Expenditure incurred in Crores (OPEX)</th> </tr> <tr> <th data-bbox="1253 792 1396 829">2013-14</th> <th data-bbox="1396 792 1551 829">2014-15</th> <th data-bbox="1551 792 1719 829">2015-16</th> <th data-bbox="1719 792 1875 829">2016-17</th> <th data-bbox="1875 792 2018 829">2017-18</th> </tr> </thead> <tbody> <tr> <td data-bbox="863 829 1253 911">Opex - Environment Cost Centre</td> <td data-bbox="1253 829 1396 911">1.01</td> <td data-bbox="1396 829 1551 911">0.19</td> <td data-bbox="1551 829 1719 911">0.89</td> <td data-bbox="1719 829 1875 911">1.23</td> <td data-bbox="1875 829 2018 911">0.81</td> </tr> <tr> <td data-bbox="863 911 1253 954">O &amp; M EXPANSION SRU</td> <td data-bbox="1253 911 1396 954">0.29</td> <td data-bbox="1396 911 1551 954">0.09</td> <td data-bbox="1551 911 1719 954">0.17</td> <td data-bbox="1719 911 1875 954">6.07</td> <td data-bbox="1875 911 2018 954">4.25</td> </tr> <tr> <td data-bbox="863 954 1253 998">O &amp; M OF BASE SRU</td> <td data-bbox="1253 954 1396 998">0.90</td> <td data-bbox="1396 954 1551 998">0.23</td> <td data-bbox="1551 954 1719 998">0.36</td> <td data-bbox="1719 954 1875 998">3.03</td> <td data-bbox="1875 954 2018 998">0.94</td> </tr> <tr> <td data-bbox="863 998 1253 1073">O &amp; M OF EXPANSION WWTF &amp; RO</td> <td data-bbox="1253 998 1396 1073">10.21</td> <td data-bbox="1396 998 1551 1073">4.31</td> <td data-bbox="1551 998 1719 1073">3.52</td> <td data-bbox="1719 998 1875 1073">5.35</td> <td data-bbox="1875 998 2018 1073">5.06</td> </tr> <tr> <td data-bbox="863 1073 1253 1117">O &amp; M OF BASE WWTF</td> <td data-bbox="1253 1073 1396 1117">0.62</td> <td data-bbox="1396 1073 1551 1117">0.20</td> <td data-bbox="1551 1073 1719 1117">0.15</td> <td data-bbox="1719 1073 1875 1117">0.16</td> <td data-bbox="1875 1073 2018 1117">2.05</td> </tr> <tr> <td data-bbox="863 1117 1253 1161">Green Belt Development</td> <td data-bbox="1253 1117 1396 1161">6.6</td> <td data-bbox="1396 1117 1551 1161">1.72</td> <td data-bbox="1551 1117 1719 1161">1.74</td> <td data-bbox="1719 1117 1875 1161">1.5</td> <td data-bbox="1875 1117 2018 1161">-</td> </tr> <tr> <td data-bbox="863 1161 1253 1198"><b>TOTAL</b></td> <td data-bbox="1253 1161 1396 1198"><b>19.63</b></td> <td data-bbox="1396 1161 1551 1198"><b>6.74</b></td> <td data-bbox="1551 1161 1719 1198"><b>6.83</b></td> <td data-bbox="1719 1161 1875 1198"><b>17.34</b></td> <td data-bbox="1875 1161 2018 1198"><b>13.11</b></td> </tr> </tbody> </table>					Environment Protection Facilities	Year Wise Expenditure incurred in Crores (OPEX)					2013-14	2014-15	2015-16	2016-17	2017-18	Opex - Environment Cost Centre	1.01	0.19	0.89	1.23	0.81	O & M EXPANSION SRU	0.29	0.09	0.17	6.07	4.25	O & M OF BASE SRU	0.90	0.23	0.36	3.03	0.94	O & M OF EXPANSION WWTF & RO	10.21	4.31	3.52	5.35	5.06	O & M OF BASE WWTF	0.62	0.20	0.15	0.16	2.05	Green Belt Development	6.6	1.72	1.74	1.5	-	<b>TOTAL</b>	<b>19.63</b>	<b>6.74</b>	<b>6.83</b>	<b>17.34</b>	<b>13.11</b>
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IX	The stipulated conditions will be monitored by the concerned Regional Office of this Ministry / Central pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored	Six monthly compliance and data monitoring report is regularly submitted to MoEF- Bhopal, CPCB-New Delhi and GPCB - Gandhinagar. Last six monthly EC compliance report has been submitted vide letter no. EOL/ENV/EC compliance report/2018/741 dated 17/05/2018 to The Regional Office-MoEF&CC, Bhopal.																																																									

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## PART – II &amp; III

COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT  
KHAMBHALIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008


Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																												
	data shall be submitted to them regularly. It will also be displayed on the website of the Company.	<p>Reports submitted during last three years are as given in <b>Table no. 36</b>:</p> <p style="text-align: center;"><b>Table no. 36: Details of EC compliance report submitted</b></p> <table border="1" data-bbox="873 524 2011 1032"> <thead> <tr> <th data-bbox="873 524 989 597">Sr. No.</th> <th data-bbox="989 524 1444 597">Period for which EC compliance submitted</th> <th data-bbox="1444 524 1671 597">Date of report submitted</th> <th data-bbox="1671 524 2011 597">Letter reference</th> </tr> </thead> <tbody> <tr> <td data-bbox="873 597 989 670">01</td> <td data-bbox="989 597 1444 670">October'17 to March'18</td> <td data-bbox="1444 597 1671 670">17/05/2018</td> <td data-bbox="1671 597 2011 670">EOL/ENV/EC Compliance Report/2018/741</td> </tr> <tr> <td data-bbox="873 670 989 743">02</td> <td data-bbox="989 670 1444 743">April'17 to September'17</td> <td data-bbox="1444 670 1671 743">22/11/2017</td> <td data-bbox="1671 670 2011 743">EOL/ENV/EC Compliance Report/2018/705</td> </tr> <tr> <td data-bbox="873 743 989 816">03</td> <td data-bbox="989 743 1444 816">October'16 to March'17</td> <td data-bbox="1444 743 1671 816">06/05/2017</td> <td data-bbox="1671 743 2011 816">EOL/ENV/EC Compliance Report/2018/674</td> </tr> <tr> <td data-bbox="873 816 989 889">04</td> <td data-bbox="989 816 1444 889">April'16 to September'16</td> <td data-bbox="1444 816 1671 889">02/11/2016</td> <td data-bbox="1671 816 2011 889">EOL/ENV/EC Compliance Report/2018/642</td> </tr> <tr> <td data-bbox="873 889 989 963">05</td> <td data-bbox="989 889 1444 963">October'15 to March'16</td> <td data-bbox="1444 889 1671 963">02/05/2016</td> <td data-bbox="1671 889 2011 963">EOL/ENV/EC Compliance Report/2018/595</td> </tr> <tr> <td data-bbox="873 963 989 1032">06</td> <td data-bbox="989 963 1444 1032">October'14 to March'15</td> <td data-bbox="1444 963 1671 1032">02/05/2015</td> <td data-bbox="1671 963 2011 1032">EOL/ENV/EC Compliance Report/2018/513</td> </tr> </tbody> </table> <p>Report is also displayed on company website. (Link: <a href="https://www.nayaraenergy.com/corporate-social-responsibility/sustainability">https://www.nayaraenergy.com/corporate-social-responsibility/sustainability</a>)</p>	Sr. No.	Period for which EC compliance submitted	Date of report submitted	Letter reference	01	October'17 to March'18	17/05/2018	EOL/ENV/EC Compliance Report/2018/741	02	April'17 to September'17	22/11/2017	EOL/ENV/EC Compliance Report/2018/705	03	October'16 to March'17	06/05/2017	EOL/ENV/EC Compliance Report/2018/674	04	April'16 to September'16	02/11/2016	EOL/ENV/EC Compliance Report/2018/642	05	October'15 to March'16	02/05/2016	EOL/ENV/EC Compliance Report/2018/595	06	October'14 to March'15	02/05/2015	EOL/ENV/EC Compliance Report/2018/513
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06	October'14 to March'15	02/05/2015	EOL/ENV/EC Compliance Report/2018/513																											
X	The date of financial Closure and final approval of the project by the concerned authorities and the date of commencing the land development work as well as the commissioning of the project will be informed to the Ministry and its regional Office.	<p>The proposed expansion of 60 MMTPA is not yet complete. Presently we are operating our refinery at 20 MMTPA. All the necessary approval for the same are in place.</p> <p>The details of financial closure and final approval of the project at various stages was submitted to the Ministry and its regional office vide letter no. EOL/ENV/EC refinery/2012/334, Dated.25.10.2012.</p>																												

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**PART – II & III**

**COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR**

**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT									
XI	<p>Proper House-keeping and adequate occupational health program shall be taken up.</p> <p>Regular Occupational Health Surveillance program for the relevant diseases shall be carried out and the records shall be maintained properly for at least 30-40 years.</p>	<p>We have implemented 5S work place management systems for continuous improvement in workplace.</p> <div style="text-align: center;">  </div> <p>Occupational Health Center has been established which takes care of surveillance program and maintain the records. Staff details is as shown below.</p> <p><b>1) Details of Doctors and other Staffs</b></p> <p><b>Doctors:</b></p> <table border="1" data-bbox="984 937 1329 1325"> <tr><td>Dr. Maulesh Patel</td></tr> <tr><td>Dr. Krutarth Agravat</td></tr> <tr><td>DR H G SHAH</td></tr> <tr><td>DR H M BADAMIA</td></tr> <tr><td>DR NITIN VINZODA</td></tr> <tr><td>DR ASHOK PATEL</td></tr> <tr><td>DR PARAG DODIA</td></tr> <tr><td>DR NICKY SAHOO</td></tr> <tr><td>DR HARDIK POPAT</td></tr> </table> <p align="center">WE ARE HAVING VISITING PHYSICIAN WITH TWICE A WEEK OPD SERVICES</p>	Dr. Maulesh Patel	Dr. Krutarth Agravat	DR H G SHAH	DR H M BADAMIA	DR NITIN VINZODA	DR ASHOK PATEL	DR PARAG DODIA	DR NICKY SAHOO	DR HARDIK POPAT
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Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																		
		<p data-bbox="968 402 1134 430"><b>Nursing staff:</b></p> <table border="1" data-bbox="982 456 1314 1073"> <tr><td data-bbox="982 456 1314 500">Akash Patel</td></tr> <tr><td data-bbox="982 500 1314 544">Ashwin Ajmeriya</td></tr> <tr><td data-bbox="982 544 1314 587">Dilip Hirapara</td></tr> <tr><td data-bbox="982 587 1314 631">Harish Khatri</td></tr> <tr><td data-bbox="982 631 1314 675">Hiren Damaniya</td></tr> <tr><td data-bbox="982 675 1314 719">Imran Vadher</td></tr> <tr><td data-bbox="982 719 1314 763">Jagadish Parnaliya</td></tr> <tr><td data-bbox="982 763 1314 807">Jashu Bandhiya</td></tr> <tr><td data-bbox="982 807 1314 850">Jyoti Patel</td></tr> <tr><td data-bbox="982 850 1314 894">Mrs.Ramee Bhatiya</td></tr> <tr><td data-bbox="982 894 1314 938">Mrs.Samju Mendpara</td></tr> <tr><td data-bbox="982 938 1314 982">Prashant Punjani</td></tr> <tr><td data-bbox="982 982 1314 1026">Radhika Karangia</td></tr> <tr><td data-bbox="982 1026 1314 1070">S.P.Singh</td></tr> <tr><td data-bbox="982 1070 1314 1073">Radhika Karangia</td></tr> </table> <p data-bbox="968 1117 1171 1144"><b>Lab. Technician :</b></p> <table border="1" data-bbox="968 1144 1278 1222"> <tr><td data-bbox="968 1144 1278 1188">Deepak Lakkad</td></tr> <tr><td data-bbox="968 1188 1278 1222">Divyasha Bhalodiya</td></tr> </table> <p data-bbox="968 1263 1125 1291"><b>Pharmacists:</b></p> <table border="1" data-bbox="968 1291 1278 1334"> <tr><td data-bbox="968 1291 1278 1334">Mr. R K Donga</td></tr> </table> <p data-bbox="919 1393 1856 1421"><b>2) Frequency of Medical Examination of Employees as well as Contract Staff</b></p>	Akash Patel	Ashwin Ajmeriya	Dilip Hirapara	Harish Khatri	Hiren Damaniya	Imran Vadher	Jagadish Parnaliya	Jashu Bandhiya	Jyoti Patel	Mrs.Ramee Bhatiya	Mrs.Samju Mendpara	Prashant Punjani	Radhika Karangia	S.P.Singh	Radhika Karangia	Deepak Lakkad	Divyasha Bhalodiya	Mr. R K Donga
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COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR

EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT
		<p><u>Employees:</u></p> <ul style="list-style-type: none"> <li>• Employees working in hazardous process – Once in six month</li> <li>• Employees not working in hazardous process – &gt;40 once in year, &lt;40 once in two year</li> </ul> <p><b><u>Contract staff:</u></b></p> <ul style="list-style-type: none"> <li>• Person working in hazardous process – Once in six month</li> <li>• Person not working in hazardous process – once in year</li> </ul> <p><b>3) Summary of the Tests Carried out in brief</b></p> <p><b><u>Employees:</u></b></p> <p style="padding-left: 40px;"><b><u>Once in six months</u></b></p> <ol style="list-style-type: none"> <li>1. Physical Examination,</li> <li>2. Vision examination</li> <li>3. PFT,</li> <li>4. Blood investigation {CBC, FBS, kidney profile, Liver profile}</li> <li>5. Urine Routine.</li> </ol> <p style="padding-left: 40px;"><b><u>Once in year</u></b> above + ECG + lipid profile + X ray chest</p> <p><b><u>Contractor staff:</u></b></p> <p style="padding-left: 40px;"><b><u>Once in six months</u></b></p> <ol style="list-style-type: none"> <li>1. Physical Examination,</li> </ol>

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**PART – II & III**

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**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**



Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																					
		<p>2. Vision examination, 3. PFT, 4. Audiometry, 5. Blood investigation {CBC, RBS, S.Creat, SGPT} and Urine Routine 6. X- Ray chest (if required based on examination).</p> <p><b>4) Total Employees in the refinery is – 1747 and Month wise Number of the Employees and Contract Staff for whom the Medical Examination has been carried out (From March'2018 to August'2018 is as given below</b></p> <table border="1" data-bbox="1180 799 1703 1086"> <thead> <tr> <th>Month</th> <th>Employees</th> <th>Contract staff</th> </tr> </thead> <tbody> <tr> <td>March. 18</td> <td align="center">-</td> <td align="center">1517</td> </tr> <tr> <td>April. 18</td> <td align="center">193</td> <td align="center">1574</td> </tr> <tr> <td>May.18</td> <td align="center">230</td> <td align="center">1995</td> </tr> <tr> <td>Jun. 18</td> <td align="center">292</td> <td align="center">1954</td> </tr> <tr> <td>July. 18</td> <td align="center">298</td> <td align="center">1391</td> </tr> <tr> <td>Aug. 18</td> <td align="center">126</td> <td align="center">1465</td> </tr> </tbody> </table> <p><b>5) Sample of Test Report in last six months for both employees and Contractors is given below:</b></p>	Month	Employees	Contract staff	March. 18	-	1517	April. 18	193	1574	May.18	230	1995	Jun. 18	292	1954	July. 18	298	1391	Aug. 18	126	1465
Month	Employees	Contract staff																					
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**EC No. : J-11011/320/2006-IA-II (I) dated 16th September, 2008**

Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																
	<div style="text-align: center;">  <p>OCCUPATIONAL HEALTH CENTER ESSAR OIL LIMITED VADINAR EOL/HSE/OHC/R/004</p> </div> <p align="right">Date : February 22, 2018</p> <p align="center"><b>PME DECLARATION</b></p> <p><b>01. SELF DECLARATION</b></p> <p>Name :- Nunna Prasad      Age / Sex :- 28/Male          Emp. No. :- 20050452      DOB :- June 28, 1990          Date of Joining :- August 24, 2015      Designation :- Deputy Manager          Company / Dept. :- FIELD OPERATIONS      Location :- Vadinar          Essar Email ID :- Prasad.Nunna@essaroil.co.in      CUG No. :- +91 7573030898          Blood Group :- O+      Height :- 172</p> <p>Present (Residential) Address :-</p> <ul style="list-style-type: none"> <li>Diet -Veg/Non veg ✓</li> <li>Allergic to:</li> <li>Past history of - Surgery / accident / Hospitalization/Hypertension/Diabetes/Heart Disease/Epilepsy /Asthma/TB/Backache NO</li> <li>Any Present Medications: NO</li> <li>Family History - Diabetes / Hypertension /Heart Diseases/Cancer/Asthma/TB/Epilepsy NO</li> <li>Present Complaint: Thyroid (M)</li> <li>Personal History:             <ul style="list-style-type: none"> <li>✓ Habits: Smoking/tobacco/alcohol Duration/ frequency:</li> <li>✓ Regular exercise : Yes / No Typed/frequency</li> </ul> </li> <li>Mark of Identification : Mole Below Lower Lip</li> </ul> <p><b>02. OCCUPATIONAL HISTORY (in chronological order - starting from present)</b></p> <table border="1"> <thead> <tr> <th>Name of Organization</th> <th>Type Of Work Office Work / Field Work / Mixed</th> <th>Exposure Noise/Gas/Chemical/Computer/Dust etc.</th> <th>duration</th> </tr> </thead> <tbody> <tr> <td>EOL</td> <td>FIELD</td> <td>ALL</td> <td>2 Year(s), 0 Month (s)</td> </tr> </tbody> </table>	Name of Organization	Type Of Work Office Work / Field Work / Mixed	Exposure Noise/Gas/Chemical/Computer/Dust etc.	duration	EOL	FIELD	ALL	2 Year(s), 0 Month (s)	<div style="text-align: center;">  <p>OCCUPATIONAL HEALTH CENTER NAYARA ENERGY LIMITED VADINAR</p> </div> <p align="right">Date : August 09, 2018</p> <p align="center"><b>PME DECLARATION</b></p> <p><b>01. SELF DECLARATION</b></p> <p>Name :- Nunna Prasad      Age / Sex :- 28/Male          Emp. No. :- 20050452      DOB :- June 28, 1990          Date of Joining :- August 24, 2015      Designation :- Deputy Manager          Company / Dept. :- FIELD OPERATIONS      Location :- Vadinar          Essar Email ID :- Prasad.Nunna@nayarenergy.com      CUG No. :- +91 7573030898          Blood Group :- O+      Height :- 172</p> <p>Present (Residential) Address :-</p> <ul style="list-style-type: none"> <li>Diet -Veg/Non veg ✓</li> <li>Allergic to:</li> <li>Past history of - Surgery / accident / Hospitalization/Hypertension/Diabetes/Heart Disease/Epilepsy /Asthma/TB/Backache</li> <li>Any Present Medications:</li> <li>Family History - Diabetes / Hypertension /Heart Diseases/Cancer/Asthma/TB/Epilepsy</li> <li>Present Complaint:</li> <li>Personal History:             <ul style="list-style-type: none"> <li>✓ Habits: Smoking/tobacco/alcohol Duration/ frequency: occasionally</li> <li>✓ Regular exercise : Yes / No Typed/frequency</li> </ul> </li> <li>Mark of Identification : Mole Below Lower Lip</li> </ul> <p><b>02. OCCUPATIONAL HISTORY (in chronological order - starting from present)</b></p> <table border="1"> <thead> <tr> <th>Name of Organization</th> <th>Type Of Work Office Work / Field Work / Mixed</th> <th>Exposure Noise/Gas/Chemical/Computer/Dust etc.</th> <th>duration</th> </tr> </thead> <tbody> <tr> <td>EOL</td> <td>FIELD</td> <td>ALL</td> <td>2 Year(s), 6 Month (s)</td> </tr> </tbody> </table>	Name of Organization	Type Of Work Office Work / Field Work / Mixed	Exposure Noise/Gas/Chemical/Computer/Dust etc.	duration	EOL	FIELD	ALL	2 Year(s), 6 Month (s)
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	<p>Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other Hydrocarbons etc.</p>	<p>Hydrocarbon and H2S detectors have been installed in strategic locations at all the units. Apart from this it is mandatory to wear respiratory protective equipment when in the unit. Timely H2S and hydrocarbon awareness training is being given to all the contract workman as well as employees.</p>																

## Annexure - 1

## PART – II &amp; III

## COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE FOR EXPANSION OF REFINERY FROM 9 MMTPA TO 60 MMTPA AND PETROCHEMICAL COMPLEX AT KHAMBHALLIA, JAMNAGAR

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Sr. No.	GENERAL CONDITIONS	ACTION TAKEN REPORT																												
XII	A separate environment management cell with full fledged laboratory facilities to carry out various management and monitoring functions shall be set up under the control of Senior Executive.	<p>The Environment Management Cell is in position, headed by senior executive and reports directly to the Director. Technical qualification of staff is as shown in <b>Table no.37</b>.</p> <p>Head HSEF Directly reports to Director Refinery.</p> <p style="text-align: center;"><b>Table no.37: Details Environment Management Cell</b></p> <table border="1" data-bbox="894 618 1990 1243"> <thead> <tr> <th data-bbox="894 618 1010 677">Sr. No.</th> <th data-bbox="1014 618 1331 677">Name of the Person</th> <th data-bbox="1335 618 1593 677">Designation</th> <th data-bbox="1598 618 1990 677">Technical Qualification</th> </tr> </thead> <tbody> <tr> <td data-bbox="894 680 1010 732">1</td> <td data-bbox="1014 680 1331 732">P. R. Dixit</td> <td data-bbox="1335 680 1593 732">VP &amp; Head- HSEF</td> <td data-bbox="1598 680 1990 732">M. Tech Environment</td> </tr> <tr> <td data-bbox="894 735 1010 787">2</td> <td data-bbox="1014 735 1331 787">Asmita Patel</td> <td data-bbox="1335 735 1593 787">Head Environment</td> <td data-bbox="1598 735 1990 787">M. Tech Environment</td> </tr> <tr> <td data-bbox="894 790 1010 885">3</td> <td data-bbox="1014 790 1331 885">Priya Ayengar</td> <td data-bbox="1335 790 1593 885">Sr. Manager Environment</td> <td data-bbox="1598 790 1990 885">B.E Electrical &amp; PG Diploma in Environment &amp; Sustainability</td> </tr> <tr> <td data-bbox="894 888 1010 1015">4</td> <td data-bbox="1014 888 1331 1015">Harshit Shah</td> <td data-bbox="1335 888 1593 1015">Manager Environment</td> <td data-bbox="1598 888 1990 1015">B.E Electrical &amp; PG Diploma in Environment &amp; PG Diploma Safety</td> </tr> <tr> <td data-bbox="894 1018 1010 1128">5</td> <td data-bbox="1014 1018 1331 1128">Ravirajsinh Gohil</td> <td data-bbox="1335 1018 1593 1128">Dy. Manager Environment</td> <td data-bbox="1598 1018 1990 1128">M. Tech Environment</td> </tr> <tr> <td data-bbox="894 1131 1010 1242">6</td> <td data-bbox="1014 1131 1331 1242">Nirav Patel</td> <td data-bbox="1335 1131 1593 1242">Dy. Manager Environment</td> <td data-bbox="1598 1131 1990 1242">M. Tech Chemical &amp; PG Diploma in Industrial Safety</td> </tr> </tbody> </table> <p>We already have well equipped laboratory &amp; with required technical staff. Details attached as <b>Annexure 1.13</b>.</p>	Sr. No.	Name of the Person	Designation	Technical Qualification	1	P. R. Dixit	VP & Head- HSEF	M. Tech Environment	2	Asmita Patel	Head Environment	M. Tech Environment	3	Priya Ayengar	Sr. Manager Environment	B.E Electrical & PG Diploma in Environment & Sustainability	4	Harshit Shah	Manager Environment	B.E Electrical & PG Diploma in Environment & PG Diploma Safety	5	Ravirajsinh Gohil	Dy. Manager Environment	M. Tech Environment	6	Nirav Patel	Dy. Manager Environment	M. Tech Chemical & PG Diploma in Industrial Safety
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