



इंडियन ऑयल कॉर्पोरेशन लिमिटेड

बोंगाइगाँव रिफाइनरी

डाकघर : धालीगाँव - 783 385

जिला : चिरांग (असम)

Indian Oil Corporation Limited

Bongaigaon Refinery

P.O. : Dhaligaon, Dist. : Chirang, Assam-783385

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रिफाइनरी प्रभाग

Refineries Division

REF: IOC/BGR/ENV/MSQ/MoEF&CC/2018-19/02

Date: 20.06.2019

The Chief Conservator of Forests
Regional Office, North East Region
Ministry of Environment & Forests & Climate Change
Law-U-SIB, Lumbatngen, Near M.T.C. Workshop,
Shillong – 793021

Subject: Half yearly Report for the period of (1st October, 2018 to 31st March, 2019) for
Diesel Hydro Treatment Plant

Dear Sir,

With reference to above, we are enclosing the Six Monthly Report for the period of 1st October, 2018 to 31st March, 2019 for your kind perusal. The reports are being sent as per EIA Rules'2006 on the "Environmental Clearances" issued by MoEF&CC to Bongaigaon Refinery (BGR), for "Diesel Hydro Treatment Project".

Thanking you,

Yours faithfully,

(A. Basumatary)
DGM (HSE)

Copy to:

1. Member Secretary, Pollution Control Board, Assam
Bamunimaidam, Guwahati - 781 021
2. Zonal Officer, Central Pollution Control Board
Eastern Zonal Office, 'TUM-SIR', Lower Motinagar,
Near Fire Brigade H.Q., Shillong – 793014

रजिस्टर्ड ऑफिस : जी-9, अली यावर जंग मार्ग, बान्द्रा (पूर्व) मुम्बई - 400 051

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“Half yearly Report for “Diesel Hydro Treatment Plant”

For the period (1st October, 2018 to 31st March, 2019)



Submitted by:

Indian Oil Corporation Limited

Bongaigaon Refinery

PO: Dhaligaon. District: Chirang. Assam

Diesel Hydro-treatment Project,

MoEF letter No. J.11011/78/2001-IA-II (I) dated 25/06/2002.
Renewal of "Environment Clearance" by MoEF on 01.05.2006

Six Monthly Status Report for the period: (1st October, 2018 to 31st March, 2019)

INDEX:

Sl. No	Conditions	Status
1.	Specific & General conditions Compliance status of Diesel Hydrotreatment Project.	Annexure- A
2.	Six monthly Stack Monitoring/ Air Quality Data	Furnished in Appendix-A1
3.	Six monthly effluent discharged quantity, Quality	Furnished in Appendix-A2
4.	Tree Plantation Data	Furnished in Appendix-A3
5.	Additional Information	Furnished in Appendix-A4
6.	Quarterly Fugitive Emission Reports.	Furnished in Appendix-A5
7.	Annual return of hazardous waste	Furnished in Appendix-A6(a)
8.	Authorization from PCBA under Hazardous Waste (Management , Handling and Transboundary Movement Rules 2008)	Furnished in Appendix-A6(b)
9.	Details of Waste water treatment and disposal system	Furnished in Appendix-A7
10.	Quarterly Noise Survey Reports.	Furnished in Appendix-A8
11.	Status of Rainwater Harvesting	Furnished in Appendix-A9
12.	Screen Shot of IOCL Website upload of report	Furnished in Appendix-A10
13.	Organogram of HSE Department	Furnished in Appendix-A11
14.	Gazette Notification of BGR Quality Control laboratory (QC Lab) approval under Environment (Protection) Act	Furnished in Appendix-A12
15.	Employees Occupational Health Check up Status	Furnished in Appendix-A13
16.	Flare system.	Furnished in Appendix-A14

ANNEXURE-A:

Sr. No	Specific Conditions	Compliance Status
i	The company must comply with conditions and safeguards stipulated by the Ministry while granting environmental clearance to the refinery expansion project expansion project vide Ministry's OM No. J-11011/24/90-IA II (I) dated 3 rd June 1991	All conditions of the clearance are complied and verified by statutory agencies time to time. (Please Refer to compliance report of Refinery Expansion Project.)
ii	A comprehensive risk assessment study for the complex must be undertaken and report submitted to the Ministry before commissioning of the Diesel hydro-treatment project.	<ol style="list-style-type: none"> 1. Rapid Risk Analysis (RRA) was carried by M/s EIL in September'2006, and a copy of the report was also submitted to your good office vide our letter No. BRPL/ENV/MS-MAX/06-07/03 dated 08.11.2006. 2. Comprehensive Risk Assessment was conducted by M/s Chilworth Technology Pvt. Ltd. was submitted on 11.10.2010. 3. Post commissioning, fresh CRA was carried out by M/S CGC Converse Technologies in 2016.
iii	The company must formulate and firm up a scheme/action plan for handling the oily sludge which is presently being disposed off into the oil sludge lagoon. The firmed up plan must be submitted to the Ministry within one year.	<p>A third party is engaged for processing of the oily sludge & recovery of oil from the oily sludge stored in the sludge lagoon. During Oct'18- March'19, 2135.08 MT of oily sludge has been processed by mechanised processing.</p> <p>A confined bio reactor was commissioned in July 2017 in association with IOCL R&D for bio-remediation of residual oily sludge.</p> <p>During Oct'18- March'19, 84 MT of oily sludge has been processed in the Bio- reactor.</p>
iv	The project proponent shall also comply with all the environmental protection measures to mitigate the risks including the following:	Taken care of all the environmental protection measures and safeguards recommended in the EMP and risk analysis report and also revised CPCB guidelines etc. in design stage itself.
v	<p>a. Provision of double mechanical seal for the pumps handling H₂S to reduce the frequency of failure</p> <p>b. Provision of adequate no. of H₂S detector (s) in appropriate locations of the plant for early detection of the leak so that the release duration and hence the hazardous consequence is reduced.</p> <p>c. Provision of emergency stop button for rich amine group in the control room to stop the pump.</p>	<p>Taken care of in design stage & available in process data sheets of respective pumps in BDEPs.</p> <p>Following no. of H₂S detectors along with HC/H₂ detectors provided in various process units under DHDT project as on 31st Dec'2018.</p> <p>DHDT : (HC = 7, H₂S = 5, H₂ = 9)</p> <p>HGU : (HC = 10, CO = 4, H₂ = 4)</p> <p>ARU : (H₂S = 7 & HC=1)</p> <p>SWSU : (H₂S=6 & HC=1)</p> <p>SRU : (H₂S=14, HC=3 & H₂ =2)</p> <p>DHDT-Utility Area: (H₂S=3, HC=8, H₂= 3)</p> <p>Taken care of in design stage & indicated in respective P&IDs.</p>

Sr. No.	Specific Conditions	Compliance Status
vi	Government of Assam (Dept. of Forest and Wildlife), must prepare a contingency plan to mitigate the adverse impact of the increased human activities on the wildlife habitat around the refinery, mainly w.r.t. Golden Langur. Funds for implementing mitigation strategies should be provided by the company. The refinery should also arrange to provide free gas to the villagers residing within Kakoijana reserved forests as well as residents of Hapachara, Garegaon, Gorapara, Rabhapura and Chitkagaon, so that felling of trees for fuel wood is reduced .A comprehensive Action Taken Repot should be submitted within one year.	BGR requested to MoEF for exemption of these conditions vide letter no. ENV/STAT/01/01 dated 31.07.2002. However, BGR has planted 3000 sapling near Rabhapara in the Golden Langur reserved forest. A awareness program was also arranged by IOCL, BGR, among the villagers of Kakoijana, in the month of Jan'2019 with the forest men of Assam, PADMA Shree Dr. Jadav Payang as a guest speaker.

SL.	General Conditions	Compliance Status
i	The project authority must adhere to the stipulations made by Assam State Pollution Control Board and State Government.	Stipulations made in the environmental clearance of the project are being addressed during detailed engineering also. The same has been addressed in the Basic Engineering Design Package, wherever applicable.
ii	No expansion or modification of the plant should be carried out without prior approval of this Ministry.	EC was granted by MoEF&CC to BGR for IndMax & BS-VI projects vide letter F. no.J11011/48/2016-IA-II (I), Dated 19 th Apr'2017. The project aims to enhance expansion of Crude processing from 2.35 to 2.7 MMTP, DHDT capacity from 1.2 to 1.8 MMTP, HGU from 25 KTPA to 30 KTPA, CRU-MSQ revamp and SDS(SRU) unit. More than 85% job for the project is completed.
iii	Handling, manufacturing, storage and transportation of hazardous chemicals should be carried out in accordance with the Manufacturing, storage and transportation of hazardous chemicals Rules, 1989, as amended in 1991. Permission from State and Central nodal agencies in this regard must be obtained.	Complied. Authorization under Hazardous Waste (Management, Handling & Trans-boundary Movement Rules 2008) obtained from PCBA and valid up to 28th February 2019. Annual Return of Hazardous waste is attached as Appendix - A6(a) . Authorization from PCBA is attached as Appendix - A6(b) . Application for renewal of authorisation is submitted to PCBA on 29.12.2018. Authorisation certificate is awaited from PCBA.
iv	Hazardous wastes, if any, must be handled and disposed as per Hazardous waste (Management and handling) Rules, 2008. Authorization from State Pollution Control Board in this regard must be obtained.	Complied. Authorization from PCBA for Hazardous and Other Waste (Management, Handling and Trans-boundary Movement Rules 2008) is attached as Appendix – A6 (b) .
v	Adequate provisions for infrastructure facilities such as water supply, fuel, sanitation etc. should be ensured for construction workers during the construction phase so as to avoid felling of trees and pollution of water and the surrounding.	Infrastructure facilities like water supply, canteen facility, sanitation were provided during the project construction period to the workers.
vi	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc, on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	(a) Taken care of in design stage and mentioned in process data sheets for various equipments wherever applicable in BDEPs. (b) All precautionary measures are taken at the construction site to control the noise level & present activities do not generate noise of high db (c) Taken care during implementation of the project. Quarterly Noise Survey is being carried out regularly. Quarterly Reports for the period of 1st October 2018 to 31st March 2019 are attached as Appendix A8.

Sr.No.	General Conditions	Compliance Status
vii	Occupational health Surveillance of the workers should be done on a regular basis and records maintained.	Complied. Attached as Appendix A13
viii	A separate environmental management cell with full fledged laboratory facilities to carry out various management and monitoring functions should be set up under the control of Senior Executive.	BGR is having a separate environmental management cell of HSE department and full-fledged laboratory to carry-out environment management and monitoring functions. Organogram of HSE Department is attached as Appendix-A11. BGR Environment Laboratory is accredited by NABL and recognized by C.P.C.B. as under Section 12&13 of Environment (Protection) Act 1986 and notified in the Govt. of India Gazette no. 439 dated November 4, 2018 vide notification number Legal 42(3)/ 87 dated 3 rd October 2018. (Copy attached as <u>Appendix-A12</u>)
ix	The funds earmarked for the environmental protection measures should be reported to this Ministry and SPCB.	Expenditure for the financial year 2018-19 was Rs.1066.6 Lacks
x	Six monthly status reports on the project vis-a-vis Implementation of environmental measures should be submitted to this Ministry (Regional Office, Shillong/ CPCB/ SPCB).	Complied. Last six monthly compliance report along with soft copy was submitted vide, IOC/BGR/ENV/DHDT/MoEF&CC/2018-19/01, Date: 20.12.2018. The six monthly compliance reports were also displayed on the Website of the Company. Screen shot attached as Appendix A10
xi	The project proponent should advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned informing that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with State Pollution Control Board/Committee and may also be seen at Website of the Ministry and Forests at http://envfor.nic.in The advertisement should be made within 7 days from the date of issue of the clearance letter and a copy of the same should forwarded to Ministry's Regional Office at Shillong.	Complied.
xii	The Project Authorities should inform the Regional Office as well as the Ministry the date of financial closer and final approval of the project by the concerned authorities and the date of land development work.	Board of Directors of the Company has approved revised cost estimate of Rs.1701.52 Crore. Last capitalization date is 06.06.2015. The initial capitalization date is 13.08.2011 (Original approved cost is Rs. 1431.91 crore) for this project on 28th May, 2008. Financial closure of DHDT Project is not complete because of some pending issues of GTG package, which is part of DHDT Project, financial closure of DHDT Project is not yet completed.

Sr. No	CONDITIONS (As given in concurrence to changes in Env. Clearance dated May 1, 2006)	
i	The total SO ₂ emission level from the unit after the proposed up gradation shall not exceed 40 kg/MT of the feed.	Taken care in design stage itself.
ii	The company shall comply with the revised standards of NO _x emission.	
iii	The total effluent generation shall not exceed 7.9 m ³ /hr The fresh water consumption shall not exceed 275 m ³ /hr.	
iv	No further modernization of project shall be carried out without prior permission of this Ministry.	<p>EC was granted by MoEF&CC to BGR for IndMax & BS-VI projects vide letter F. no.J11011/48/2016-IA-II (I), Dated 19th Apr'2017.</p> <p>The project aims to enhance expansion of Crude processing from 2.35 to 2.7 MMTP, DHDT capacity from 1.2 to 1.8 MMTP, HGU from 25 KTPA to 30 KTPA, CRU-MSQ revamp and SDS unit.</p> <p>Around 85% jobs for the project is completed.</p>
v	The company shall comply with the conditions stipulated in the clearance order of even no. dated 25 th June, 2002.	Complied.
vi	The company shall carry out a comprehensive risk assessment study and a copy submitted to the Ministry before commissioning of the Diesel Hydro Treatment Project.	<p>M/s. Chilworth Technology Pvt. Ltd., New Delhi submitted Final report of Comprehensive Risk Assessment (CRA) on 11.10.2010.</p> <p>Fresh CRA study has also been conducted thru' outsourced M/s. CGC Techno Lab Pvt. Ltd, Hyderabad.</p> <p>Final Report received in June, 2016.</p>

Status of Diesel Hydro-Treatment Project

(1st April 2018 to 30th September 2018)

**Environmental Clearance for Diesel Hydro-treatment Project,
MoEF's Letter No. J.1101/78/ 2001- IA- II (I) dated 25/06/2002**

Status:

Following are some of the important mile stones towards implementing of the project:

1. Renewal of “Environment Clearance” from the Ministry of Environment & Forests:

The Ministry of Environment & Forests had conveyed its 'No Objection' to the proposed revised Diesel up gradation project at Indian Oil - Bongaigaon Refinery vide their letter No.J-II01/78 /2001- IA 11(1) dated 01.05.2006.

2. Renewal of “NOC” from State Pollution Control Board:

Pollution Control Board of Assam had renewed the NOC vide their letter No. WB/Z-II/T-1 345/2000-2001/138 Dated Guwahati, the 8th May, 2006

3. Board approval for Project:

Board of Directors of IOCL has approved revised cost estimate of **Rs.1701.52** Crore (original approved cost is Rs. 1431.91 crore) for this project.

4. Fresh REIA & RRA Study:

REIA & RRA study for the project was carried out by M/s EIL, New Delhi. Final report was submitted in September, 2006.

Further, HAZOP study for DHDT unit (13.12.06 to 22.12.06), Sulfur Block (15.01.07 to 24.01.07), HGU (08.10.07 to 12.10.07) and OSBL Utilities & Off sites (16.10.07 to 17.10.07) completed and reports submitted by EIL on 04.01.07, 17.02.07, 27.10.07 & 31.10.07 respectively.

Fresh HAZOP study completed by **Asia Pacific Risk Management Services Pvt. Ltd in February 2014**

Further, Fresh EIA & RRA for New Projects conducted in 2015-16 by M/s ABC Techno Lab Pvt. Ltd, Chennai

1. Commissioning of various units under DHDT project:

- a) All the utilities & off sites viz. LP steam, MP steam, VHP steam, Service Water, DM water, Drinking water, Nitrogen, Process Air, Inst. Air, CK, Slop, GO, FG lines commissioned
- b) H₂ unloading & Storage facility along with H₂ unloading Compressor commissioned
- c) All the Seven Feed tanks commissioned
- d) Nitrogen Plant & Flare System commissioned
- e) Hydrogen Generation Unit (HGU) commissioned in March, 2011
- f) Diesel Hydro Treatment (DHDT) Unit has been commissioned in August, 2011.
- g) Amine Absorption Unit & Sour Water Stripping Unit commissioned
- h) Sulfur Recovery Unit (SRU) commissioned in December, 2012.
- i) Gas Turbine Generator (GTG) with Heat Recovery Steam Generator (HRSG) commissioned in May, 2013.

APPENDIX –A1STACK MONITORING DATA: (1st October 2018 to 31st March 2019)**A. SO₂ Emission (mg/Nm³):**

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 1700 For F.G. = 50	60	179	333
CDU-II		59	270	319
DCU-I		37	147	280
DCU-II		6	79	256
CPP		7	76	357
Reformer		6	27	144
HO-1/2		2	23	159
Isomerisation		6	24	265
DHDT		1	11	102
HGU		1	13	65
SRU		40	90	333
GTG		3	12	27

B. NO_x Emission (mg/Nm³):

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 450 For F.G. = 350	84	85	86
CDU-II		56	136	216
DCU-I		42	51	74
DCU-II		9	43	82
CPP		80	84	92
Reformer		6	37	71
HO-1/2		4	24	93
Isomerisation		11	55	79
DHDT		2	30	50
HGU		2	26	127
SRU		No Analyser		
GTG		10	89	154

C. PM Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 100 For F.G. = 10	2.1	3.6	4.9
CDU-II		1.4	1.5	1.5
DCU-I		3.4	4.1	5.0
DCU-II		0.2	0.2	0.3
CPP		3.0	3.6	3.7
Reformer		0.2	1.1	11.3
HO-1/2		0.3	1.1	12.8
Isomerisation		0.3	2.8	6.1
DHDT		0.8	1.8	4.0
HGU		0.6	9.9	55.5
SRU				
GTG		2.53	3.85	6.71

STACK MONITORING DATA: (1st October 2018 to 31st March 2019)

D. CO Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 200 For F.G. = 150	1.9	33.4	64.4
CDU-II		8.0	30.7	70.1
DCU-I		2.8	25.9	90.4
DCU-II		14.7	76.4	107.5
CPP		1.2	8.4	42.4
Reformer		0.7	24.8	77.3
HO-1/2		0.7	30.8	198.1
ISOMERISATION		0.7	21.1	33.0
DHDT		9.8	9.9	10.3
HGU		5.4	8.1	18.4
SRU		1.4	2.0	2.0
GTG		0.03	2.92	14.93

E. Ni + V Emission (mg/Nm³):

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 5	BDL	BDL	BDL
CDU-II		BDL	BDL	BDL
DCU-I		BDL	BDL	BDL
DCU-II		BDL	BDL	BDL
CPP		BDL	BDL	BDL
Reformer		BDL	BDL	BDL
HO-1/2		BDL	BDL	BDL
ISOMERISATION		BDL	BDL	BDL
DHDT		BDL	BDL	BDL
HGU		BDL	BDL	BDL
SRU		BDL	BDL	BDL
GTG		BDL	BDL	BDL

AMBIENT AIR QUALITY AROUND BGR COMPLEX
(Average of monthly sample Schedule – VII)
(1st October 2018 to 31st March 2019)

	Station	Continuous Monitoring Station	Near Tube Well No.14	Near LPG Bottling plant	Rural Health Centre	Bartala Rail Gate	Near TW No.7 in Township
1	SO₂ (Std. 50/80 µg/m³)						
	Min	0.8	5.2	5.8	5.2	5.2	5.2
	Average	7.2	7.2	7.6	8.2	7.5	6.0
	Max	37.4	9.5	8.8	10.8	9.5	7.5
	No. of observation	Continuous	52	56	56	56	56
2	NO₂ (Std. 40/80 µg/m³)						
	Min	5.0	9.2	9.8	9.2	9.8	9.2
	Average	8.1	11.1	12.9	13.1	12.2	10.2
	Max	10.3	14.2	15.5	16.8	15.8	11.8
	No. of observation	Continuous	52	56	56	56	56
3	PM-10 (Std. 60/100 µg/m³)						
	Min	20.7	46.0	44.0	50.0	46.0	38.0
	Average	51.4	65.4	68.1	74.9	70.9	58.6
	Max	83.0	86.0	84.0	94.0	88.0	74.0
	No. of observation	Continuous	52	56	56	56	56
4	PM-2.5 (Std. 40/60 µg/m³)						
	Min	3.2	22.0	21.0	24.0	22.0	18.0
	Average	9.5	31.8	32.8	36.7	34.1	28.2
	Max	36.6	42.0	40.0	48.0	45.0	36.0
	No. of observation	Continuous	52	56	56	56	56
5	Ammonia (Std. 100/400 µg/m³)						
	Min	4.2	6.5	6.8	7.5	6.2	5.8
	Average	6.0	9.2	9.9	10.5	8.2	6.9
	Max	7.7	12.2	12.8	13.2	11.8	8.2
	No. of observation	Continuous	52	56	56	56	56
6	Pb (Std. 0.5/1.0 µg/m³)						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		52	56	56	56	56

7	Arsenic (As) (Std. 6 ng/m³)						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		52	56	56	56	56
8	Ni (Std. 20 ng/m³)						
	Min		1.80	1.80	1.80	1.50	BDL
	Average		2.87	2.68	3.00	2.40	BDL
	Max		3.80	3.50	4.20	3.80	BDL
	No. of observation		52	56	56	56	56
9	CO (Std. 2/4 mg/m³)						
	Min	0.1	BDL	BDL	0.12	0.16	BDL
	Average	0.6	BDL	BDL	0.21	0.22	BDL
	Max	1.3	BDL	BDL	0.32	0.28	BDL
	No. of observation	Continuous	52	56	56	56	56
10	Ozone (Std.100/180 µg/m³ for 8 hrs/1 hr)						
	Min	30.9	8.0	8.0	8.0	8.0	8.0
	Average	45.1	12.6	12.7	13.0	12.9	11.9
	Max	68.9	20.0	20.0	20.0	20.0	18.0
	No. of observation	Continuous	52	55	55	55	55
11	Benzene (Std. 5 µg/m³)						
	Min	0.30	BDL	BDL	BDL	BDL	BDL
	Average	0.32	BDL	BDL	BDL	BDL	BDL
	Max	0.35	BDL	BDL	BDL	BDL	BDL
	No. of observation	Continuous	52	56	56	56	56
12	Benzo (a) Pyrene (Std. 1 ng/m³)						
	Min		BDL	BDL	BDL	BDL	BDL
	Average		BDL	BDL	BDL	BDL	BDL
	Max		BDL	BDL	BDL	BDL	BDL
	No. of observation		52	56	56	56	56

Average of Six Stations												
Parameter	SO ₂	NO ₂	PM-10	PM-2.5	NH ₃	Pb	As	Ni	Benzo (a) Pyrene	CO	C ₆ H ₆	O ₃
Unit	µg/m ³					ng/m ³			mg/m ³	µg/m ³		
NAAQ Std. 2009	50/80	40/80	60/100	40/60	100/400	0.5/1.0	Max 6	Max 20	Max 1	2/4	Max 5	100/180
Min	0.8	5.0	20.7	3.2	4.2	BDL	BDL	1.5	0.3	0.1	BDL	8.0
Average	7.3	11.3	64.9	28.8	8.4	BDL	BDL	2.7	0.3	0.3	BDL	18.0
Max	37.4	16.8	94.0	48.0	13.2	BDL	BDL	4.2	0.4	1.3	BDL	68.9

4.0

APPENDIX-A2

Effluent Discharged (Figure in M³/Hr):(1st October 2018 to 31st March 2019)

A	Industrial Effluent M ³ /Hr	201.9
B	Domestic Effluent from BGR Township M ³ /Hr	46.7
C	Total Effluent Treated (A + B) M ³ /Hr	248.6
D	Treated Effluent Reused M ³ /Hr	245.95
E	Effluent Discharged M ³ /Hr	2.7
F	M ³ of Effluent discharged for 1000 tons of Crude processed	9.15

1. Treated Effluent Quality(1st October 2018 to 31st March 2019)

Sl. No	Parameter	Std,2008	Min	Avg.	Max
1	p ^H value	6.0 - 8.5	7.0	7.4	8.5
2	Oil and Grease, mg/l	5.0	1.2	2.6	5.0
3	Bio-Chemical Oxygen Demand (3 Day at 27°C), mg/l	15.0	1.2	6.9	15.0
4	Chemical Oxygen Demand (COD), mg/l	125.0	10.8	51.1	125.0
5	Suspended solids, mg/l	20.0	3.0	13.1	20.0
6	Phenolic compounds (as C ₆ H ₅ OH), mg/l	0.35	0.010	0.084	0.350
7	Sulphide (as S), mg/l	0.50	0.02	0.10	0.50
8	CN mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N, mg/l	15.0	1.05	1.19	1.28
10	TKN, mg/l	40.0	1.24	3.81	4.80
11	P, mg/l	3.0	0.22	1.09	4.50
12	Cr (Hexavalent), mg/l	0.10	0.25	0.250	0.250
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	0.2	0.25	0.28
17	Ni, mg/l	1.0	0.24	0.24	0.24
18	Cu, mg/l	1.0	0.03	0.04	0.06
19	V, mg/l	0.20	0.05	0.05	0.05
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

EFFLUENT QUALITY

2. Final Outlet (From the Complex) Effluent Quality

(1st October 2018 to 31st March 2019)

Sl. No.	Parameter	Std 2008	Min	Avg.	Max
1	p ^H value	6.0 - 8.5	6.50	7.11	8.00
2	Oil and Grease, mg/l	5.0	1.40	2.93	3.80
3	Bio-Chemical Oxygen Demand (3 Days at 27° C), mg/l	15.0	3.00	7.2	11.60
4	Chemical Oxygen Demand (COD), mg/l	125.0	35.00	52.4	76.80
5	Suspended Solids, mg/l	20.0	4.000	10.5	18.00
6	Phenolic compounds (as C ₆ H ₅ OH), mg/l	0.35	0.020	0.075	0.28
7	Sulphide (as S), mg/l	0.50	0.060	0.117	0.30
8	CN, mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N , mg/l	15.0	1.90	2.52	2.80
10	TKN, mg/l	40.0	3.80	4.72	5.20
11	P, mg/l	3.0	0.15	0.17	0.20
12	Cr (Hexavalent), mg/l	0.10	-	BDL	-
13	Cr (Total), mg/l	2.0	-	BDL	-
14	Pb, mg/l	0.10	-	BDL	-
15	Hg, mg/l	0.01	-	BDL	-
16	Zn, mg/l	5.0	0.22	0.284	0.34
17	Ni, mg/l	1.0	-	BDL	-
18	Cu, mg/l	1.0	0.02	0.034	0.04
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

**Tree Plantation
(1st October 2018 to 31st March 2019)**

The entire area inside BGR covered with greenery through massive plantation activities. Through massive plantation work and by giving protection to natural forest growth in side BGR premises, the entire area has become green. The entire plant area where processing plant facilities do not exist has a green cover. This helps in reduction of noise and air pollution level in one hand while on the other hand provides protection to ecological features of the area. The refinery has an excellent quality environment around its complex. Natural greenery can be seen all around the complex and in all seasons of the year.

Tree Census was done by Divisional Forest Office, Chirang. As per census, 84545 numbers of plants which include trees including shrubs, ocular estimated 33000 numbers bamboos in 1150 no. bamboo culms and also trees planted by BGR during 2003 to 2012.

During, 1st October 2018 to 31st March 2019 BGR has planted 15555 nos. of trees



COMPLEX OLD DEBRIS YARD DEVELOPED INTO A GREEN BELT. Planted in July'17, GROWTH as on 15.06.19



IOCL, BGR TOWNSHIP PLANTATION. Planted on April'17 Growth as on 03.06.2019

Tree Plantation 2018-19



BGR TOWNSHIP PLANTATION, Planted Van mahotsav 2018, Growth as on 15.06.19



J N V, BIJNI PLANTATION, 3500 SAPLING PLANTED in the month of October,2018

APPENDIX – A 4

Additional Information

(1st October 2018 to 31st March 2019)

Effluent reused during the period was around **98.64 %** of the total effluent treated which includes plant effluent as well as BGR Township sewer.

Under the Leak Detection and Repair programme (LDAR), BGR is conducting quarterly Fugitive Emission Survey. During the period from **1st October 2018 to 31st March 2019**, **23158** potential leaky points checked and **157** Leaky points detected and rectified. By following LDAR programme in true spirit, the company could not only avoid potential loss of **44.184** MTA (approx.) of light Hydrocarbon to the atmosphere through fugitive sources but also able to keep healthy work environment in the plants.

To ensure work area quality and health of equipments, quarterly noise survey was conducted covering all the operating plants, control rooms and ambient surrounding the BGR. During **1st October 2018 to 31st March 2019**, Noise Survey for the two quarters of 2018 -19 has been completed and no abnormality was reported.

As a measure of Hazardous Waste Management, A third party has been engaged for processing tank bottom sludge through mechanized treatment. Another third party is engaged for processing of the oily sludge & recovery of oil from the oily sludge stored in the concrete lagoon. Melting pit facility is available for recovering oil from oily sludge.

One old slurry thickener from Petrochemical section was converted to confined space bio-remediation reactor to treat oily sludge with help from IOCL-R&D. The process of bio-remediation started from July 2017 and at present per batch approximately 35 m3 of oily sludge is being processed. . From October'18 to March'19, 84 MT of oily sludge has been processed in the Bio-reactor.



Bio-remediation facility of BGR

Further two more Rain Water Harvesting (Ground Water Recharging) schemes in BGR Township have been implemented during 2016-17.

APPENDIX –A5

Quarterly Fugitive emission Data (1st October 2018 to 31st March 2019)



FUG EMISSION DATA
3RD QTR 18-19.pdf



FUG EMISSION DATA
4TH QTR 18-19.pdf

8.0

APPENDIX-A6 (a)



Haz Waste Return
FORM-4 (2017-18).doc

Annexure –A6 (b)

**Authorization from PCBA for Hazardous Waste
(Management, Handling and Transboundary Movement Rules 2008)**



Consent under HW
Rules 2008.pdf

10.0

APPENDIX-A7

Detail of Waste water treatment and disposal system.



ETP Description.pdf

ANNEXURE-A8

Quarterly Noise Survey Data

(1st October 2018 to 31st March 2019)

HSE (ENVIRONMENT) DEPARTMENT



**NOISE SURVEY DATA
3RD QTR 18-19.pdf**




**NOISE SURVEY DATA
4TH QTR 18-19.pdf**

ANNEXURE-A9

Rain Water Harvesting Data

Rain Water Harvesting Schemes implemented: BGR Status

Sl.No.	RWH systems	Area In M ²	Recharging Capacity M3/Yr	Total Recharging Capacity M3/Yr	Status
1	Rainwater Harvesting at Mandir Complex	7125	19950	96642.4	Implemented
2	Rainwater Harvesting at Manjeera Guest House	677	1895.6		
3	Rainwater Harvesting at Deoshri Guest House	581	1626.8		
4	Rainwater Harvesting at Parivesh Udyan	5775	16170		
5	Rainwater Harvesting at Eco-Park Pond	20000	56000		
6	Mandir Complex	833	2332.4	14972	Implemented
7	Manas Guest House	639	1789.2		
8	BRPL Vidyalaya	1361	3810.8		
9	DPS Block-I	704	1971.2		
10	DPS Block-II	1810	5068		
11	BGR HS School, BGR Township	1361	3810.8	12586	Implemented
12	BGR Canteen, CISF Office & Scooter Shed	3134	8775.2	10304	Implemented
13	Champa Club (Officers Club)	1100	3080		
14	Refinery Club cum Community Centre	2580	7224		
15	Employee Union Conference Hall Building	275	770		
16	CISF Quarter Guards Building	825	2310		
17	CISF Conference Hall & Barack	1050	2940	4760	Implemented
18	BGR Community Centre	650	1820	2766	Implemented
19	Foot Ball Stadium gallery	988	2766.4		
20	Volleyball Stadium Gallery				
TOTAL		51,468	144110.4	144,110	


 Dy. General Manager (PSD)
 Regional Engineer, In-charge of Corporation Unit
 Corporation Engineer, P.O. : Chhaganpur - 785305
 Parvati (Sewer) Dept., Chirang (Assam)

13.0

ANNEXURE-A10

Screen Shot of IOCL Website upload of report

Link: <https://iocl.com/Talktous/SNotices.aspx>

The image displays two screenshots of the IOCL website's 'Statutory Notices' page. The top screenshot shows the header with the IOCL logo and navigation menu. Below the header, the 'Statutory Notices' section lists several notices, including 'Half yearly EC compliance report of Gujarat Refinery' and 'Environment Clearance of BS IV-VI of Gujarat Refinery'. A 'We are Listening' sidebar is visible on the right. The bottom screenshot shows a more detailed list of notices, with a black arrow pointing to the fourth item: 'Half yearly Report for the period of (1st April 2018 to 30th September 2018) for "General Hydro Treatment Plant"'. The Windows taskbar at the bottom shows the date as 17-Apr-19.

Statutory Notices

- Half yearly EC compliance report of Gujarat Refinery 01.06.2018
- Half yearly EC compliance report of Gujarat Refinery 01.12.2017
- Half yearly EC compliance report of Gujarat Refinery 01.06.2018
- Half yearly EC compliance report of Gujarat Refinery 01.12.2018
- Environment Clearance of BS IV-VI of Gujarat Refinery 26.03.2017
- Correction in Environment Clearance of BS IV-VI of Gujarat Refinery 29.01.2018
- Environment Clearance of GT-6 of Gujarat Refinery 22.06.2015
- Environment Clearance of SRP of Gujarat Refinery 27.04.2006
- Environment Clearance of BS IV of Gujarat Refinery 01.06.2018

We are Listening

- Help
- Partial-Related Queries
- Other LPG Queries
- Queries on Fuel Stations
- Vigilance Queries
- Right To Information
- Citizen Charter

Statutory Notices (Detailed List)

- Half yearly Compliance Report on Environmental Stipulations pertaining to Projects at Durgam Refinery
- Half yearly Report for the period of (1st April 2018 to 30th September 2018) for MS Quality Improvement Project - Durgam Refinery
- Half yearly Report for the period of (1st April 2018 to 30th September 2018) for "Railway Expansion, De-bottlenecking of Refinery and LPG facility" - Durgam Refinery
- Half yearly Report for the period of (1st April 2018 to 30th September 2018) for "General Hydro Treatment Plant" - Durgam Refinery
- Half yearly Report for the period of (1st April 2018 to 30th September 2018) for "MS Maximisation Project" - Durgam Refinery
- Compliance of EC for MSD project (Apr'18-Sept'18) - Barauni Refinery
- Compliance of EC for Augmentation of Crude Processing Capacity (Apr'18-Sept'18) - Barauni Refinery
- Compliance of EC for BS-IV MS & HSD quality upgradation (Apr'18-Sept'18) - Barauni Refinery
- Compliance of EC for DXP (Apr'18-Sept'18) - Barauni Refinery
- Compliance of EC for CRU project (Apr'18-Sept'18) - Barauni Refinery
- CRZ Clearance for laying of common corridor pipeline (R-LNG spur pipeline) from Enters to Maxati District, Tiruvalla, Tamil Nadu
- Six-Monthly Environmental Compliance Report (October, 2017 to March, 2018) for 2 X 600 MT rounded storage vessels at Indira LPG Refilling Plant, Near Mahameya Sryaga, CSDC, Siliguri Phase-I, District Jalpaiguri, CHhattisgarh
- Notice: Parallel Marketing System of LPG (issued in public interest by Ministry of Petroleum and Natural Gas, Government of India)
- Latest Environmental Statement - Barauni Refinery
- Half Yearly Compliance Report of Environmental Stipulations pertaining to Digital Marketing Terminal Project of Gopal

APPENDIX-A11

HSE Organogram of IOCL-BGR

MANPOWER SUMMARY, 1st Apr/2019				
GRADE	ASSIGNED	ACT.	SHORT / EXCESS	
F	8	3	(5)	
SN	2	1	1	
MNC	4	2	(2)	
TOTAL	14	6	(8)	

ORGANOGRAM OF HSE Dept.

DGM (HSE), A Basumatary
HOD

SM (HSE), RS Vyas

HE WILL BE INCHARGE OF ENVIRONMENT AND PROCESS SAFETY RELATED JOBS OF THE DEPARTMENT (EXCLUDING STATUTORY COMPLIANCE OF PCL, CPCB AND MINISTRY, IIT) ONLY AND OTHER NON SPECIFIED JOBS.

Environment and Process Safety

1. Inspection of collected data required for generation & submission of reports & applications (Statutory, RHQ & Internal).
2. Coordinating with different departments relating to compliance of the stipulated environmental standards.
3. Preparation of Monthly MIS to RHQ, Monthly internal detailed MIS on Environment, Quarterly Performance Report other statutory reports etc.
4. Supervising the upstream activities under regular contract, making of Service Entry Sheets and also intimating HR about different contractual information.
5. Coordinating with Auditors during different audits.
6. Coordination of WED activities.
7. Environment related training.
8. Attending PLS/DHC meetings.
9. Making events carbon neutral.
10. Collection of data required for Statutory Reports like Monthly Water Return, Six monthly Battery Return, Six monthly Compliance Report, Yearly Environment Statement, Application for Consent & Authorization, Bio-Medical Wastes etc.
11. Supervision of Parivash Udyan, Eco Park & Herbal garden.
12. WCR updation.
13. Monitoring of Environmental facilities.
14. Updating and laboring of Statutory books.
15. Half yearly EC compliance report to Regional office, CPCB, SPCB.
16. EISA/SC/ISA coordination & compliance reports to RHQ.
17. PSP, List of Critical parameters, SOL excursion reports to RHQ.
18. System Audit coordination & reports to RHQ.
19. H-Po Measures reporting to RHQ.
20. Reply to RTI queries of external bodies.

K Chakrabarti, AM (HSE)

Environment

1. Collection of Environmental data required for Monthly, Quarterly, Half yearly, annually internal MIS, Statutory Reports and compiling up.
2. Demonstration of Herbs during VIP visits in Herbal Garden.
3. Coordination of WED activities.
4. Compliance of data from Environmental facilities.
5. Monitoring of Environmental facilities and generation & submission of internal & external daily MIS.
6. Supervision of Parivash Udyan, Eco park & Herbal Garden.
7. Preparation of bills for contractual jobs and supervising contractual activities.
8. Application for various awards.
9. Tree Plantation in plant, Township and neighbouring areas.
10. Co ordination with CFO and other statutory body.
11. Half yearly EC compliance report compilation & submission.
12. Environmental related trainings in house.
13. Attend PLS/DHC meetings.
14. Monitoring of Environmental facilities.
15. Renewal of applications from Statutory bodies.
16. Reply to queries of RTI/external statutory agencies.
17. Awareness program on environment in neighbouring areas.
18. Facilitate visits of officials from various Statutory bodies.

B Verma, Officer, AM (HSE)

Environment

1. Daily monitoring of Environment parameters & generating daily MIS (Monitoring of all Oil Trap, Storm Water channel, Final outlet, Stack Stations etc).
2. Correspondence with concerned dept. for information and corrective action as and when required.
3. Monitoring of Stack & Ambient air Stations, LED Display Boards including.
4. Maintenance and upkeep of Stack Station & related instruments like AC.
5. Quarterly SO, Carbon foot print report compilation & submission to RHQ.
6. Monthly MIS submission to RHQ.
7. Environmental expenditure compilation & submission to RHQ.
8. Fire water consumption study.
9. ETP performance study.
10. Fugitive emission & Noise survey study, compilation of Quarterly report.
11. Quarterly Environment performance report to RHQ.
12. Works related with Celebration of World Environment Day.
13. Attend PLS/DHC meetings.
14. Facilitate visits of officials from Statutory bodies.
15. Monitoring of ambient air, stack & effluent parameters - generation of DCR.
16. Monitoring of excursions of various environmental parameters & action for its control.

NOTE: * After suspension of SN A Suresha, AM (HSE) in Mar'18, shortage of total manpower is 1.

Prepared by <i>[Signature]</i> SM (HSE)	Checked by SM (TS & HSE)	Approved by DGM (TS & HSE)	For record w/1. Agreement as per organogram by HR
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ANNEXURE-A12

**Gazette Notification of BGR Quality Control laboratory (QC Lab)
Approval under Environment (Protection) Act 1986**



केन्द्रीय प्रदूषण नियंत्रण बोर्ड
CENTRAL POLLUTION CONTROL BOARD
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय भारत सरकार
MINISTRY OF ENVIRONMENT, FOREST & CLIMATE CHANGE GOVT. OF INDIA

C-11012/90/1998-Tech/

13209

November 29, 2018

Speed Post

To

✓ Sh H.K.Sarma
Quality Control Manager
Quality Control Laboratory
Indian Oil Corporation Limited
Bangaigaon
P.O. Dhaligaon-783385
Dist. Chirang Assam

Sub: Notification of Government Analysts of Quality Control Laboratory of Indian Oil Corporation Limited Bangaigaon P.O. Dhaligaon-783385 Dist. Chirang Assam, in Govt. of India Gazette-reg.

Ref: Your letter no. Dated 23.04.2018
Our letter no.: C-11012/90/1998 Tech/3256 Dated 20.07.2016

Sir,

Apropos above, it is to inform that the proposal of substitution of superannuated/transferred Government Analysts of Quality Control Laboratory of Indian Oil Corporation Limited Bangaigaon P.O. Dhaligaon-783385 Dist. Chirang Assam was approved in the 181st Board Meeting held on June 19, 2018 and afterward notified in the Govt. of India Gazette No. 439 Dated November 20, 2018 vide notification number Lega: 42(3)/87 dated October 3, 2018. The copy of Gazette Notification is enclosed herewith for your reference and record please.

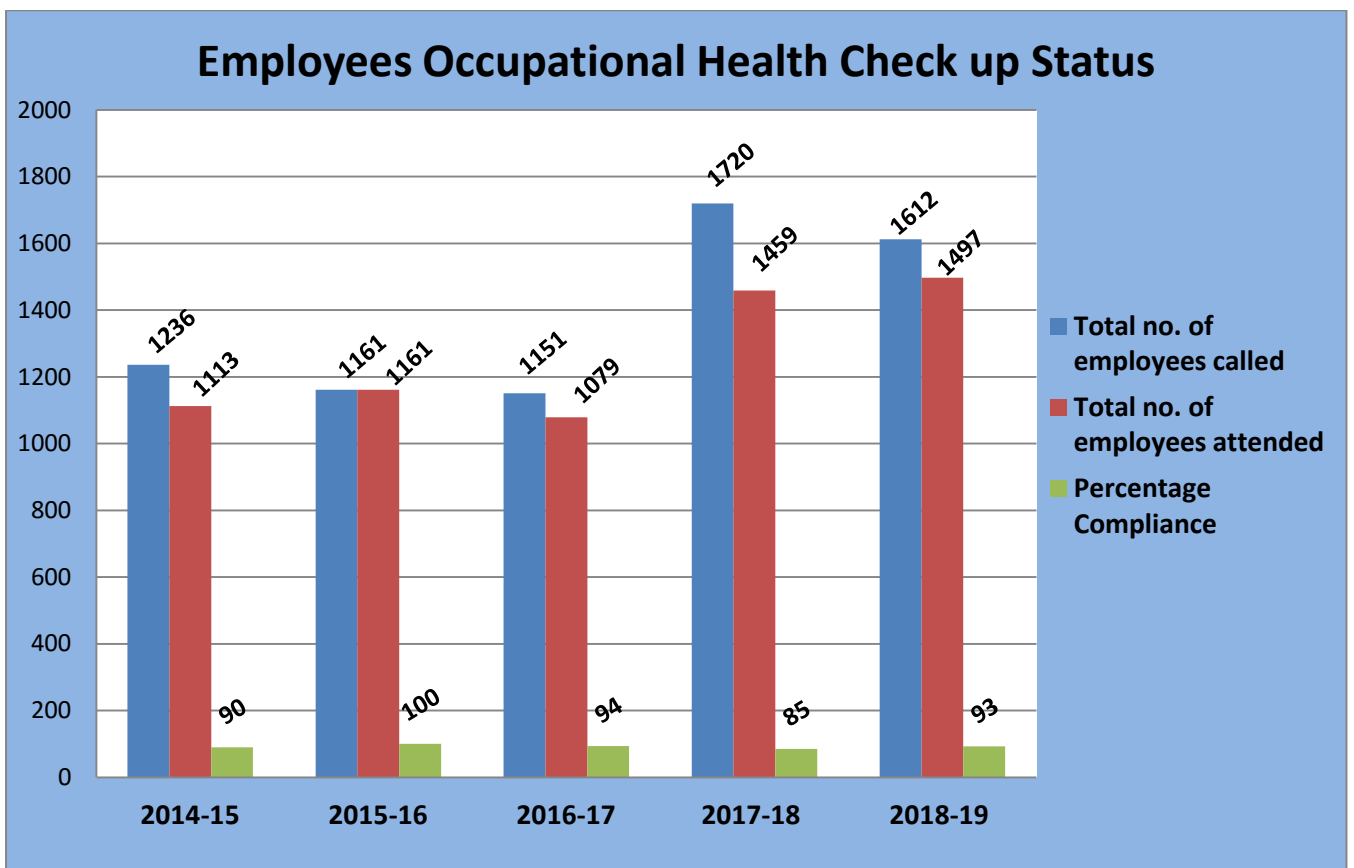
Yours Faithfully

(B.K. Jakhmola)

Scientist-E & Divisional Head
Instrumentation Laboratory

Appendix-A13

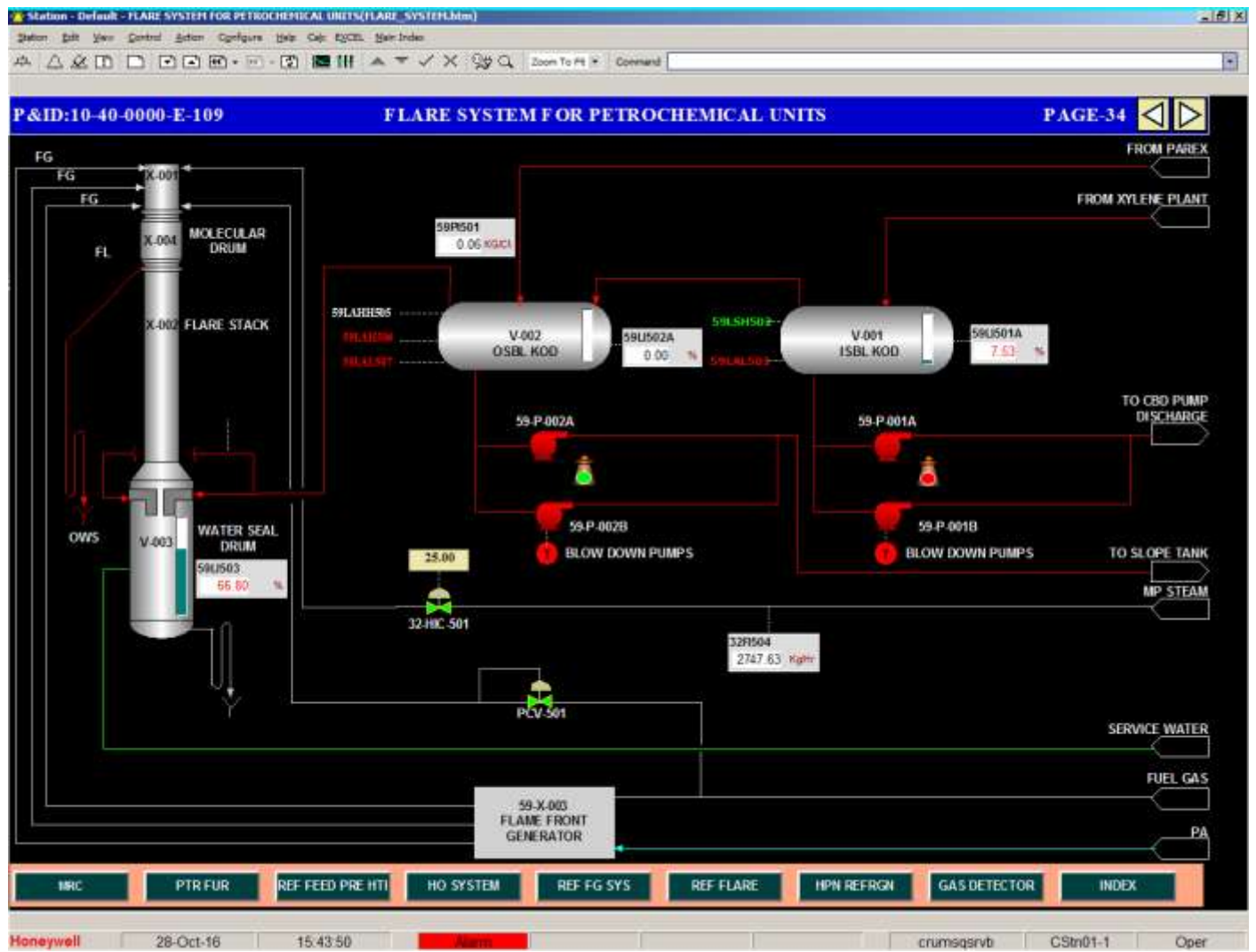
Employees Occupational Health Check up Status



17.0

Appendix-A14

Flare system.



THANKS