



इंडियन ऑयल कॉर्पोरेशन लिमिटेड

बोंगाइगॉव रिफाइनरी

डाकघर : धालीगॉव - 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/2020-21/02

Date: 18.06.2021

To,
The Regional Officer,
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, Guwahati,
4th Floor, Housefed Building, GS Road,
Rukminigaon, Guwahati-781022

Subject: Half yearly Report for the period of 1st October, 2020 to 31st March, 2021 for
MS Quality Improvement Project

Dear Sir,

With reference to above, we are enclosing the Six Monthly Report for the period **1st October, 2020 to 31st March, 2021** 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 "**MS Quality Improvement Project**".

Thanking you,

Yours faithfully,

(Biman Gogoi)
CM (HSE)
Ph: 9435122647

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

Half yearly Report for MS Quality Improvement Project

(1st October, 2020 to 31st March, 2021)



Submitted by:

Indian Oil Corporation Limited

Bongaigaon Refinery

P.O: Dhaligaon District: Chirang. Assam

Compliance Status w.r.t. Env. Clearance of MS Quality Improvement Project

Six Monthly Status Report for the period (1st October, 2020 to 31st March, 2021)

Environmental Clearance for “MS Quality Improvement Project (Light Naphtha Isomerisation using existing Xylene Isomerisation unit)” at Dhaligaon, Chirang, Assam by M/s Bongaigaon Refinery & Petrochemicals Ltd. vide MoEF letter No. J.11011/1171/2007-IA-II (I) dated 5/02/2008.

Project was commissioned in September, 2011

INDEX:

Sl. No	Conditions	Status
1.	General conditions and Compliance status of MS Quality improvement Project.	Annexure- A
2.	Six monthly Stack Monitoring/ Air Quality Data	Furnished in Appendix-A1
3.	Six monthly effluent discharged Quality	Furnished in Appendix-A2
4.	Tree Plantation Data	Furnished in Appendix-A3
5.	Additional Information	Furnished in Appendix-A4
6.	Fugitive Emission Data	Furnished in Appendix-A5
7.	Annual return of hazardous waste	Furnished in Appendix-A6(a)
8.	Authorization from PCBA under Hazardous and Other Waste (Management and Transboundary Movement) Rules 2016	Furnished in Appendix-A6(b)
9.	Details of Waste water treatment and disposal system	Furnished in Appendix-A7
10.	Quarterly Noise Survey Report.	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.	Organ gram 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

SI No	Specific Conditions	Compliance Status
i	The company shall comply with new standards/norms that are being proposed by the CPCB for petrochemical plants and refineries.	Complied. Basic Design Engineering Package / Process Package have been prepared in line with the revised standards / norms for Oil Refinery and implemented in the project.
ii	The company shall comply with all the stipulations of environmental clearance issued vide File No. – 11011/375/2006-IA.II (I) dated 22 nd March, 2007.	BGR had advertised “Public Notice” in three local news papers that are widely circulated in the region namely “The Assam Tribune” English daily, “Asomiya Pratidin” an Assamese daily & “Sanseyari Bodosa” a Bodo daily on 26 th February, 2008.
iii	The process emissions (SO ₂ , NO _x , HC, VOCs and Benzene) from various units shall conform to the standards prescribed by the Assam State Pollution Control Board from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.	Complied. Detailed Engineering for the project was carried out considering the revised standards / norms for Oil Refinery and conditions /guidelines issued by SPCB. Environment Monitoring and control facilities are installed to achieve the stipulated standards. Emission and ambient air (VOC) data attached as Appendix-A1 . HC Fugitive data in Appendix-A5 .
iv	The improvement project shall be through the retrofitting of existing Xylene fractionation, Isomerisation and Parex units and within the existing land.	Complied. The improvement project is only through the retrofitting of existing Xylene Fractionation, Isomerisation and Parex units and within the existing land.
v	Quarterly monitoring of fugitive emissions shall be carried out as per the guidelines of CPCB by fugitive emission detectors (GMI Leak Surveyor) and reports shall be submitted to the Ministry’s regional office at Shillong.	Complied. Quarterly monitoring of fugitive emissions is carried out. Quarterly reports for the period of 1st October, 2020 to 31st March, 2021 are attached as Appendix-A5 .
vi	For control of fugitive emission all unsaturated hydro carbon will be routed to the flare system and the flare system shall be designed for smoke less burning.	Complied. Taken care during implementation of the project.
vii	The company shall strictly follow all the recommendation mentioned in the charter on corporate responsibility for environmental protection (CREP)	Complied. The company followed all the recommendation mentioned in the charter on Corporate Responsibility for Environmental Protection (CREP) prior to coming of the Revised Standards applicable to refinery for Environment Protection.
viii	Occupational health surveillance of worker shall be done on a regular basis and records maintained as per the Factory Act.	Complied. The reports for the period of 1st October, 2020 to 31st March, 2021 attached as Appendix-A13 .

Sl. No.	Specific Conditions	Compliance Status
ix	Greenbelt shall be developed to mitigate the effect of fugitive emission all around the plant in a minimum 30% plant area in consultation with DFO as per CPCB guidelines.	Greenbelt is already existed. More than 30% of plant area is having green cover. Tree Census has been carried out through DFO Chirang District in 2013 where 84545 Nos. of grown up trees were enumerated. Post Indmax & BS-VI project, following plantation done to achieve required greenbelt. In the financial year 2017-18 BGR has planted 29600 nos of Sapling In the financial year 2018-19, BGR has planted 30062 nos. of trees in and around the complex. In financial year 2019-20 BGR has planted 14340 nos. of tree sapling. In current FY 2020-21 BGR has planted 25606 nos. of tree sapling.
x	The Company shall make the suitable arrangement for disposal of catalyst waste and alumina balls. The report of waste disposal shall be submitted to Ministry's Regional Office at Shillong.	Complied. Please refer <u>Appendix-A6(a)</u> .
xi	The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during flaring.	Complied. Necessary measures are in place to prevent fire hazards, containment of oil spill.
xii	To prevent fire and explosion at Oil and Gas facility, potential ignition sources should be kept to a minimum and adequate separation distance between potential ignition sources and flammable material shall be in place.	Complied. All necessary precautions are in place as per OISD Guidelines.

B. General Conditions:

S. No.	General Conditions	Compliance status
i	The project authorities must strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government and any other statutory body.	Complied. Taken care during implementation of the project.
ii	No further expansion or modification in the project shall be carried without prior approval of the Ministry of Environment and Forests. In case of deviations or alternations in the project proposal from those submitted to the Ministry for clearance, a fresh reference shall be made to the Ministry.	Complied. 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. The project aims to enhance expansion of Crude processing from 2.35 to 2.7 MMTP, other associated projects, e.g. DHDT capacity from 1.2 to 1.8 MMTP, HGU from 25 KTPA to 30 KTPA, CRU-MSQ revamp and SDS(SRU) unit. Few units of the Project commissioned successfully.

SL. No.	General Conditions	Compliance status
iii	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system, the respective well site should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved. Provision of adequate height of stack attached to DG sets & flare is to be done.	<p>Complied.</p> <p>Taken care during implementation of the project. Emission data for the period of 1st October, 2020 to 31st March, 2021 are attached as <u>Appendix - A1.</u></p> <p>No DG set was installed for the project.</p>
iv	Wastewater shall be properly collected and treated so as to conform to the standards prescribed under EP Act & Rules and mentioned in the Consents provided by the relevant SPCB.	<p>Complied.</p> <p>Waste water treatment and disposal system is designed to conform to this norm.</p> <p>Detail of Waste water treatment and disposal system is attached as <u>Appendix-A7.</u></p> <p>Treated Effluent and discharge water quality from refinery is attached as <u>Appendix-A2.</u></p>
v	The overall noise levels in and around the premises shall be limited within the prescribed standards (75 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).	<p>Complied.</p> <p>Taken care during implementation of the project.</p> <p>Quarterly Noise Survey is being carried out regularly.</p> <p>Quarterly Reports for the period of 1st October, 2020 to 31st March, 2021 are attached as <u>Appendix-A8.</u></p>
vi	The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2008 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project, if required. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented.	Complied.
vii	Disposal of hazardous wastes shall be as per the Hazardous Wastes (Management and Handling) Rules, 2008. Authorization from the State Pollution Control Board must be obtained for collections / treatment/storage/ disposal of hazardous wastes.	<p>Complied.</p> <p>Authorization under Hazardous and Other Waste (Management, and Transboundary Movement) Rules 2016 obtained from PCBA and valid up to 5th August, 2022.</p> <p>Copy attached as <u>Appendix-A6(b).</u></p>
viii	The project authorities will provide adequate funds as non-recurring and recurring expenditure to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	<p>Complied.</p> <p>Sufficient fund is being made available at the time of implementation and operational phase of the project.</p>

Sr. No.	General Conditions	Compliance status
ix	The company shall develop rain water harvesting structures to harvest the runoff water for recharge of ground water.	<p>Complied.</p> <p>Three more roof top RWH scheme have been commissioned during current FY. Total 22 nos.(19+3) nos. of Rainwater Harvesting Projects has been implemented covering roof area of 21252 SQM and surface area of 32900 SQM, having potential rainwater harvesting volume of 153822 M³.</p> <p>The harvested rainwater for ground water recharge is through recharge pits and recharge trench based on technical details and guidelines from Central Ground Water Board, North Eastern Region, Guwahati.</p> <p>Details attached as <u>Appendix-A9</u>.</p>
x	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 data should be submitted to them regularly. It will also be displayed on the Website of the Company.	Complied.
xi	The Project Proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment & Forests at http://www.envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the concerned Regional office of this Ministry.	<p>Complied.</p> <p>BGR had advertised "Public Notice" in three local news papers that are widely circulated in the region namely "The Assam Tribune" English daily, "Asomiya Pratidin" an Assamese daily & "Sanseyari Bodoso" a Bodo daily on 26th February, 2008. The information is already submitted to statutory agencies.</p> <p>The information is already submitted to statutory agencies.</p>
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 a Senior Executive.	<p>Complied.</p> <p>BGR is having a separate environmental management cell of HSE department and fully fledged laboratory to carry-out environment management and monitoring functions.</p> <p>Organogram of HSE Department is attached as <u>Appendix-A11</u>.</p> <p>BGR Environment Laboratory is accredited by NABL and recognized by CPCB 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 3rd October 2018. (Copy attached as <u>Appendix-A12</u>).</p>
xiii	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project	<p>Complied.</p> <p>Last capitalization date was 08/01/2015.</p>

APPENDIX –A1STACK MONITORING DATA: (1st October, 2020 to 31st March, 2021)A. SO₂ Emission (mg/Nm³):

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 1700 For F.G. = 50	8.99	46.8	133
CDU-II		13.1	16.1	220
DCU-I		4.06	26.3	217
DCU-II		4.43	46.7	199
CPP		0.16	119.5	456
Reformer		5.39	17.7	85.3
HO-1		6.94	24.8	128
HO-2		Shut Down		
Isomerisation		2.52	26.1	136
DHDT		0.61	10.3	54.8
HGU		0.75	9.84	26.3
SRU		90.2	90.3	90.4
GTG		0.41	15.7	40.6

B. NO_x Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 450 For F.G. = 350	11.1	34.3	81
CDU-II		3.62	7.25	55
DCU-I		0.26	1.52	5.1
DCU-II		4.67	48.7	120
CPP		16.3	31.5	41
Reformer		7.19	56.6	102
HO-1		14.7	77.5	161
HO-2		Shut Down		
Isomerisation		1.44	40.3	74
DHDT		0.44	13.7	30
HGU		9.74	14.5	26
SRU		No Analyser		
GTG		26.0	35	63

C. PM Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 100 For F.G. = 10	0.30	1.97	13.2
CDU-II		0.25	7.70	15.9
DCU-I		1.07	6.82	32.3
DCU-II		0.36	0.56	1.02
CPP		0.07	0.11	0.17
Reformer		0.89	0.89	0.91
HO-1		2.80	6.14	23.7
HO-2		Shut Down		
Isomerisation		0.30	0.31	0.31
DHDT		1.20	1.27	1.37
HGU		6.48	6.71	12.6
SRU		5.64	15.5	85.8
GTG		19.1	20.2	21.3

STACK MONITORING DATA: (1st October, 2020 to 31st March, 2021)

D. CO Emission (mg/Nm³)

Stacks	Emission Std.	Observed value		
		Min	Avg.	Max
CDU-I	For F.O. = 200 For F.G. = 150	12.9	24.6	25.9
CDU-II		12.1	34.5	85.4
DCU-I		1.23	14.3	231.1
DCU-II		1.62	3.03	18.3
CPP		0.02	14.6	59.7
Reformer		0.21	4.60	12.8
HO-1		0.43	28.1	98.1
HO-2		Shut Down		
ISOMERISATION		15.2	19.6	31.4
DHDT		0.99	6.40	9.91
HGU		0.14	10.3	21.9
SRU		14.9	14.9	14.9
GTG		3.07	20.2	45.8

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, 2020 to 31st March, 2021)

	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	4.15	7.9	7.9	10.2	8.9	8.9
	Average	4.30	12.8	12.8	13.6	14.1	14.1
	Max	4.33	21.0	21.0	18.0	19.4	19.4
	No. of observation	Continuous	51	51	51	51	51
2	NO₂ (Std. 40/80 µg/m³)						
	Min	5.94	11.2	10.8	10.7	12.8	11.4
	Average	7.52	17.0	17.0	18.2	17.6	16.4
	Max	9.00	24.1	24.8	26.0	24.4	23.0
	No. of observation	Continuous	51	51	51	51	51
3	PM-10 (Std. 60/100 µg/m³)						
	Min	3.75	62.7	63.3	65.3	67.7	62.5
	Average	21.44	73.8	74.4	75.6	75.3	72.1
	Max	66.79	86.1	86.0	86.4	87.3	85.0
	No. of observation	Continuous	51	51	51	51	51
4	PM-2.5 (Std. 40/60 µg/m³)						
	Min	5.21	30.5	30.2	30.4	30.2	29.7
	Average	13.40	39.0	39.1	39.9	38.7	36.2
	Max	37.69	47.6	49.9	49.4	48.2	43.2
	No. of observation	Continuous	51	51	51	51	51
5	Ammonia (Std. 100/400 µg/m³)						
	Min	6.19	11.3	11.5	11.6	9.6	10.1
	Average	7.29	15.4	15.2	15.9	15.9	14.8
	Max	7.42	21.0	19.2	22.7	22.0	21.0
	No. of observation	Continuous	51	51	51	51	51
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		51	51	51	51	51
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		51	51	51	51	51

	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					
8	Ni (Std. 20 ng/m³)											
	Min		1.10	1.30	1.10	1.10	0.70					
	Average		1.69	2.02	2.02	1.90	1.30					
	Max		2.50	2.70	2.80	2.80	2.00					
	No. of observation		51	51	51	51	51					
9	CO (Std. 2/4 mg/m³)											
	Min	0.01	BDL	BDL	BDL	BDL	BDL					
	Average	0.15	BDL	BDL	BDL	BDL	BDL					
	Max	0.94	BDL	BDL	BDL	BDL	BDL					
	No. of observation	Continuous	51	51	51	51	51					
10	Ozone (Std.100/180 µg/m³ for 8 hrs/1 hr)											
	Min	35.93	17.60	20.00	18.30	18.30	20.20					
	Average	46.65	22.43	23.39	22.41	22.69	22.74					
	Max	72.70	26.90	29.10	26.20	28.00	27.40					
	No. of observation	Continuous	51	51	51	51	51					
11	Benzene (Std. 5 µg/m³)											
	Min	0.25	BDL	BDL	BDL	BDL	BDL					
	Average	0.29	BDL	BDL	BDL	BDL	BDL					
	Max	0.33	BDL	BDL	BDL	BDL	BDL					
	No. of observation	Continuous	51	51	51	51	51					
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		51	51	51	51	51					
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	4.15	5.94	3.75	5.21	6.19	BDL	BDL	0.70	BDL	0.01	0.25	17.6
Average	11.6	15.6	65.5	34.4	14.1	BDL	BDL	1.79	BDL	0.15	0.29	26.7
Max	21.0	26.0	87.3	49.9	22.7	BDL	BDL	2.80	BDL	0.94	0.33	72.7

4.0

APPENDIX-A2

Effluent Discharged (Figure in M³/Hr): (1st October, 2020 to 31st Mach, 2021)

A	Industrial Effluent M ³ /Hr 215.3	173.12
B	Domestic Effluent from BGR Township M ³ /Hr	42.18
C	Total Effluent Treated (A + B) M ³ /Hr	215.3
D	Treated Effluent Reused M ³ /Hr	215.07
E	Effluent Discharged M ³ /Hr	0.22
F	M ³ of Effluent discharged for 1000 tons of Crude processed	7.51

1. Treated Effluent Quality

(1st October, 2020 to 31st Mach, 2021)

Sl. No	Parameter	Std,2008	Min	Avg.	Max
1	p ^H value	6.0 - 8.5	6.5	7.1	7.6
2	Oil and Grease, mg/l	5.0	0.4	3.2	5.0
3	Bio-Chemical Oxygen Demand (3 Day at 27°C), mg/l	15.0	0.3	9.9	15.0
4	Chemical Oxygen Demand (COD), mg/l	125.0	9.3	20.9	76.8
5	Suspended solids, mg/l	20.0	6.0	13.6	20.0
6	Phenolic compounds (as C ₆ H ₅ OH), mg/l	0.35	0.03	0.24	0.35
7	Sulphide (as S), mg/l	0.50	0.04	0.26	0.50
8	CN mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N, mg/l	15.0	1.80	2.37	3.70
10	TKN, mg/l	40.0	3.50	4.68	6.80
11	P, mg/l	3.0	0.19	0.28	0.52
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	0.29	0.36	0.41
17	Ni, mg/l	1.0	-	BDL	-
18	Cu, mg/l	1.0	0.11	0.18	0.26
19	V, mg/l	0.20	-	BDL	-
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, 2020 to 31st March, 2021)

Sl. No.	Parameter	Std 2008	Min	Avg.	Max
1	p ^H value	6.0 - 8.5	6.50	6.87	7.50
2	Oil and Grease, mg/l	5.0	0.20	2.97	5.00
3	Bio-Chemical Oxygen Demand (3 Days at 27° C), mg/l	15.0	4.00	8.1	14.00
4	Chemical Oxygen Demand (COD), mg/l	125.0	9.30	14.2	60.00
5	Suspended Solids, mg/l	20.0	0.200	9.6	18.00
6	Phenolic compounds (as C ₆ H ₅ OH), mg/l	0.35	0.040	0.180	0.35
7	Sulphide (as S), mg/l	0.50	0.040	0.208	0.48
8	CN, mg/l	0.20	BDL	BDL	BDL
9	Ammonia as N , mg/l	15.0	2.70	2.80	2.90
10	TKN, mg/l	40.0	3.90	4.00	4.10
11	P, mg/l	3.0	0.26	0.27	0.28
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	0.19	0.205	0.22
17	Ni, mg/l	1.0	0.11	0.13	0.15
18	Cu, mg/l	1.0	0.16	0.175	0.19
19	V, mg/l	0.20	-	BDL	-
20	Benzene, mg/l	0.10	-	BDL	-
21	Benzo (a) pyrene, mg/l	0.20	-	BDL	-

5.0

APPENDIX - A3

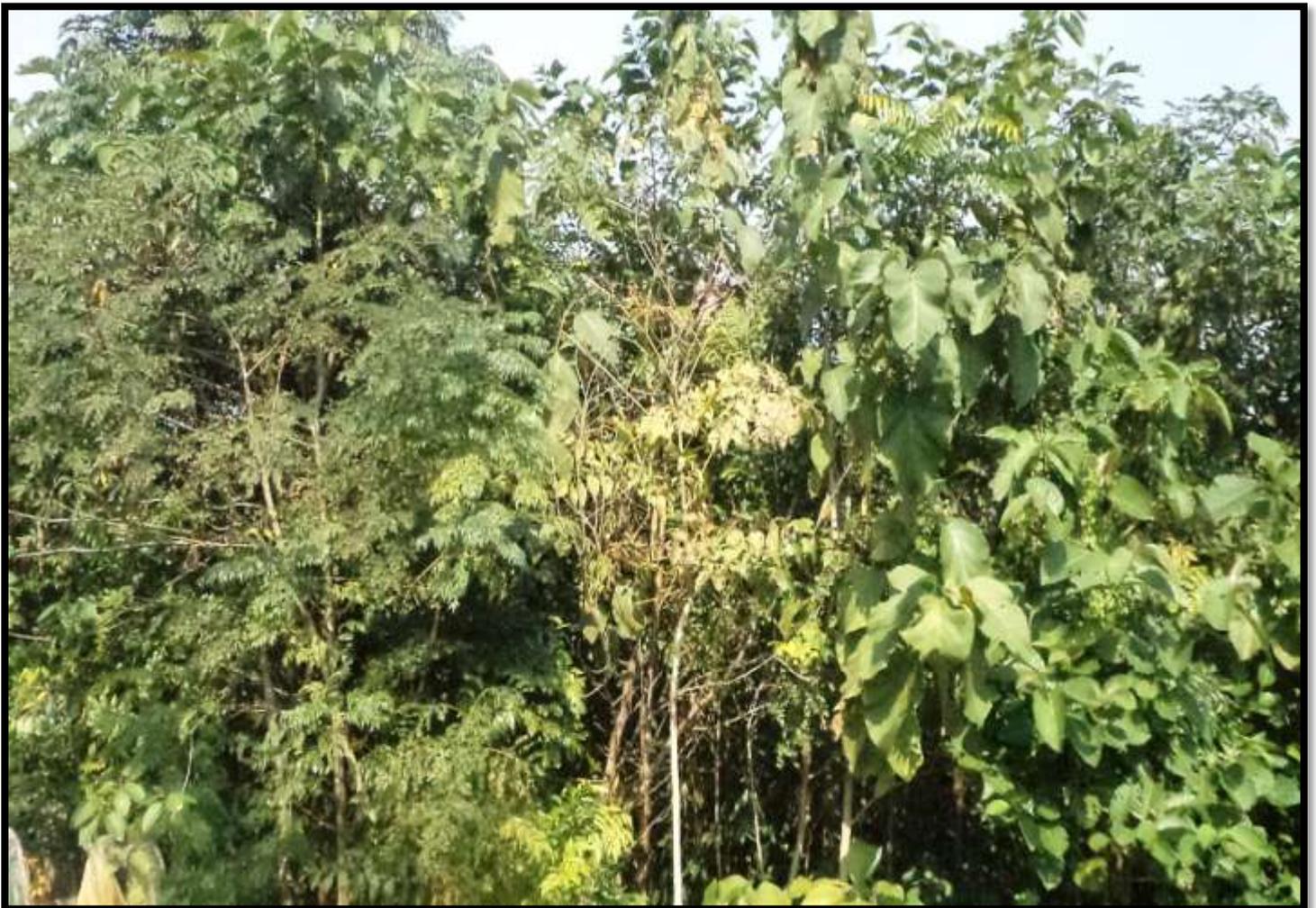
Tree Plantation (1st October, 2020 to 31st March, 2021)

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

BGR has planted 29600 nos of saplings in the FY 2017-18, in FY 2018-19, 30,062 nos and in FY 2019-20 14340 nos. of saplings planted in and around the complex

During, 1st April, 2020 to 31st March, 2021 BGR has planted 25606 nos. of tree saplings

Tree Plantation 2017-18



**COMPLEX OLD DEBRIS YARD DEVELOPED INTO GREEN BELT. Planted in July'17,
GROWTH as on 04.10.19**

Tree Plantation 2017-18



Birhangaon State Dispensary Plantation, 10,000 nos. Sapling Planted by Miyawaki Method in the month of August,2017. Growth as on 30.06.2020

Tree Plantation 2018-19



BGR TOWNSHIP PLANTATION, Planted Van mahotsav 2018, Growth as on 14.10.2020

Tree Plantation 2019-20



North Bongaigaon High School, 5250 Sapling Planted by Miyawaki Method in the month of September,2019

Tree Plantation 2019-20



Birhangaon State Dispensary Plantation, 5375 nos. Sapling Planted by Miyawaki Method in the month of September,2019 Growth as on 10.03.2021.

Tree Plantation 2020-21



On WED'2020, 3740 nos. of sapling planted in BGR Township, Growth as on April,2021.



4810 nos of sapling Planted in the month of August'2020 at Hatipota Brahma Mandir.

Tree Plantation 2020-21



4000 nos of sapling planted at Kashikotra Model Hospital in Nov'2020



5500 nos of sapling planted at Bengtol Community Health Centre in the Month of August,2020

APPENDIX – A 4

Additional Information

(1st October, 2020 to 31st March, 2021)

Effluent reused during the period was around **99.88%** 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, 2020 to 31st March, 2021**, **34839** potential leaky points checked and **125** Leaky points detected and rectified. By following LDAR programme in true spirit, the company could not only avoid potential loss of **133.26** 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, 2020 to 31st March, 2021**, Noise Survey for two quarters of **2020-21** 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 in ETP, 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 **1st October, 2020 to 31st March, 2021**, **226 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 BS-VI project have been implemented during 2019-20 and one more implemented in the FY 2020-21 in Admn. Building.

6.0

APPENDIX –A5

Quarterly Fugitive emission Data
(1st October, 2020 to 31st March, 2021)



FUG EMISSION DATA
3RD QTR 20-21.doc



FUG EMISSION DATA
4TH QTR 20-21.doc

8.0

APPENDIX-A6 (a)



Haz Waste Return
FORM-4 (2020-21).doc

9.0

Annexure –A6 (b)

**Authorization from PCBA for Hazardous Waste
(Management and Transboundary Movement) Rules 2016**

No. WB/BONG/T-748/19-20/109

3.9



HW Authorisation
2019.pdf

10.0

APPENDIX-A7

Detail of Waste water treatment and disposal system.



ETP Description.pdf

ANNEXURE-A8

Quarterly Noise Survey Data

(1st October, 2020 to 31st March, 2021)

HSE (ENVIRONMENT) DEPARTMENT



NOISE SURVEY DATA
3RD QTR 2020-21.do



NOISE SURVEY DATA
4TH QTR 2020-21.do

ANNEXURE-A9
Rain Water Harvesting Data

BGR: Rain Water Harvesting till Sept 2020

Sl.No.	RWH systems	Area in m ²	Recharging, m ³ /Yr	Total Recharging, m ³ /Yr	Status
1	Rainwater Harvesting at Mandir Complex Pond	7125	20748	99239.14	In operation
2	Manjeera Guest House	677	1848		
3	Deoshri Guest House	581	1586		
4	Rainwater Harvesting at Parivesh Udyan Pond	5775	16817		
5	Rainwater Harvesting at Eco-Park Pond	20000	58240		
6	Mandir Complex	833	2274	14697	In operation
7	Manas Guest House	639	1744		
8	BGR HS School, BGR Township	1361	3716		
9	DPS Block-I	704	1922		
10	DPS Block-II	1810	4941		
11	BGR Canteen, CISF Office & Scooter Shed	3134	8556	8556	In operation
12	Champa Club (Officers Club)	1100	3003	10046	In operation
13	Refinery Club cum Community Centre	2580	7043		
14	Employee Union Conference Hall Building	275	751	3003	In operation
15	CISF Quarter Guards Building	825	2252		
16	CISF Conference Hall & Barack	1050	2867	4641	In operation
17	BGR Community Centre	650	1775		
18	Foot Ball Stadium gallery	988	2697	2697	In operation
19	Vollyball Stadium Gallery				
20	Control Room – BS-VI	1372.5	3747	3747	Commissioned in June'2020
21	Substation – BS-VI	942	2572	2572	
22	Admin. Block-B	1730	4723	4723	Commissioned in Aug'2020
	TOTAL	54,152	153821	153821	


 18/11/2020
 P. Ramchiamy
 DGM (TS)

13.0

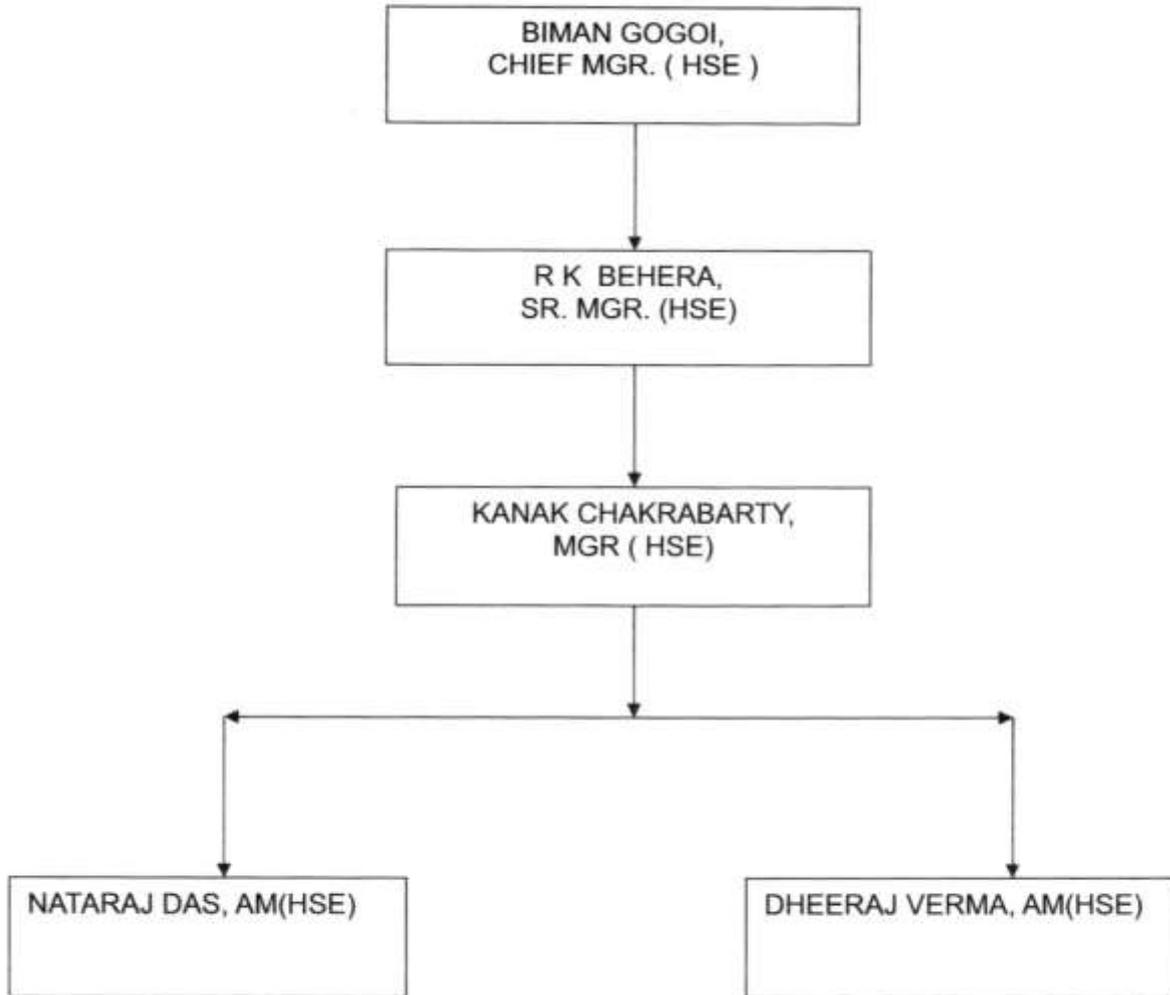
ANNEXURE-A10
Screen Shot of IOCL Website upload of report
Link: <https://iocl.com/Talktous/SNotices.aspx>

The screenshot displays the IOCL website's 'Statutory Notices' page. The header includes the IndianOil logo with the tagline 'The Energy Of India', a toll-free number (1800-2333-555), and a LPG emergency helpline (1906). A navigation menu contains links for Home, About Us, IndianOil For You, IndianOil for Environment, We're Listening, and Tools. The main content area is titled 'Statutory Notices' and lists several notices, each with a 'New!' icon. A black arrow points to the notice: 'Six Monthly Compliance (MS Quality improvement project) 1st half, 2020-21'. To the right, a 'We are Listening' sidebar lists various services like Help, Pa-Hal-Related Queries, and Right To Information. The Windows taskbar at the bottom shows the search bar and system tray with the date 24-Dec-20 and time 8:57 AM.

APPENDIX-A11 HSE Organogram of IOCL-BGR

ORGANOGRAM OF HEALTH, SAFETY & ENVIRONMENT (HSE) DEPARTMENT (2021-22)

IOCL BONGAIGAON REFINERY



 04/05/2021	 01/05/21	 01/05/2021	 01/05/21
B. Gogoi, CM(HSE) HOD	S.S. Bag, GM(TS&HSE)	S B Lahkar, CGM(TS&HSE)	M M CHETRI, CGM I/C (TS & HSE)

एस.बी. लाहकर / S.B. Lahkar
 प्र. प्रबन्धक (अ.स. एवं पर्यावरण) / Chief General Manager (TS, HS & E)
 बongaigaon Refinery, इण्डियन ऑयल कॉर्पोरेशन लिमिटेड
 Bongaigaon Refinery, Indian Oil Corporation Limited
 डाकघर : धालीगाँव P.O. : Dhaligaon - 783385
 जिला : चिरांग (असम) Distt. : Chirang (Assam)

एम.एम. चेत्री / M M Chetri
 प्र. प्रबन्धक, जल, वायुमंडल एवं पर्यावरण / CGM Ic (TS, HS & E)
 बongaigaon Refinery, इण्डियन ऑयल कॉर्पोरेशन लिमिटेड
 Bongaigaon Refinery, Indian Oil Corporation Limited
 डाकघर : धालीगाँव P.O. : Dhaligaon - 783385
 जिला : चिरांग (असम) Distt. : Chirang (Assam)

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-rcg.

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.

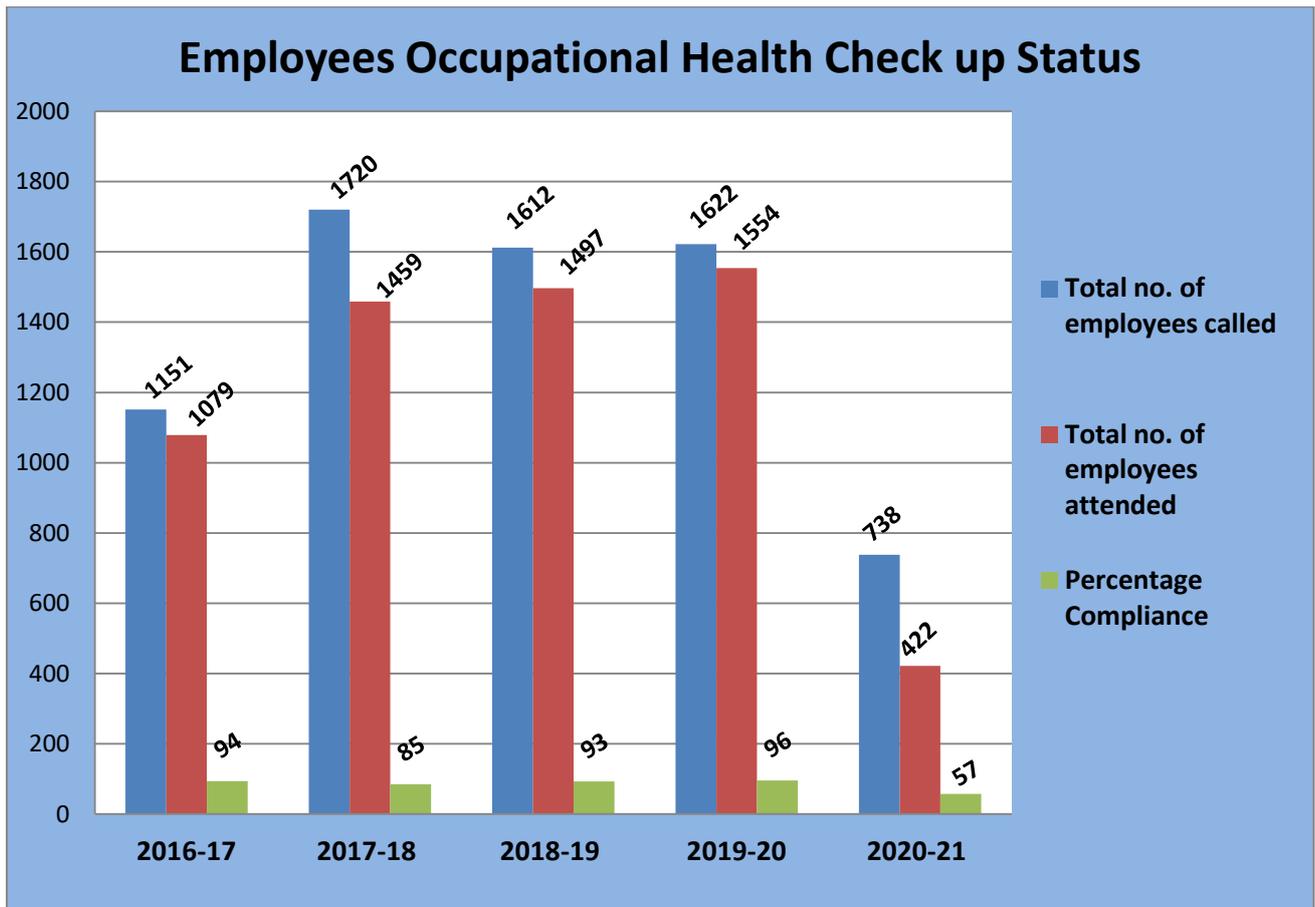
Yours Faithfully


(R.K. Jakhmola)

Scientist-E & Divisional Head
Instrumentation Laboratory

Appendix-A13

Employees Occupational Health Check up Status

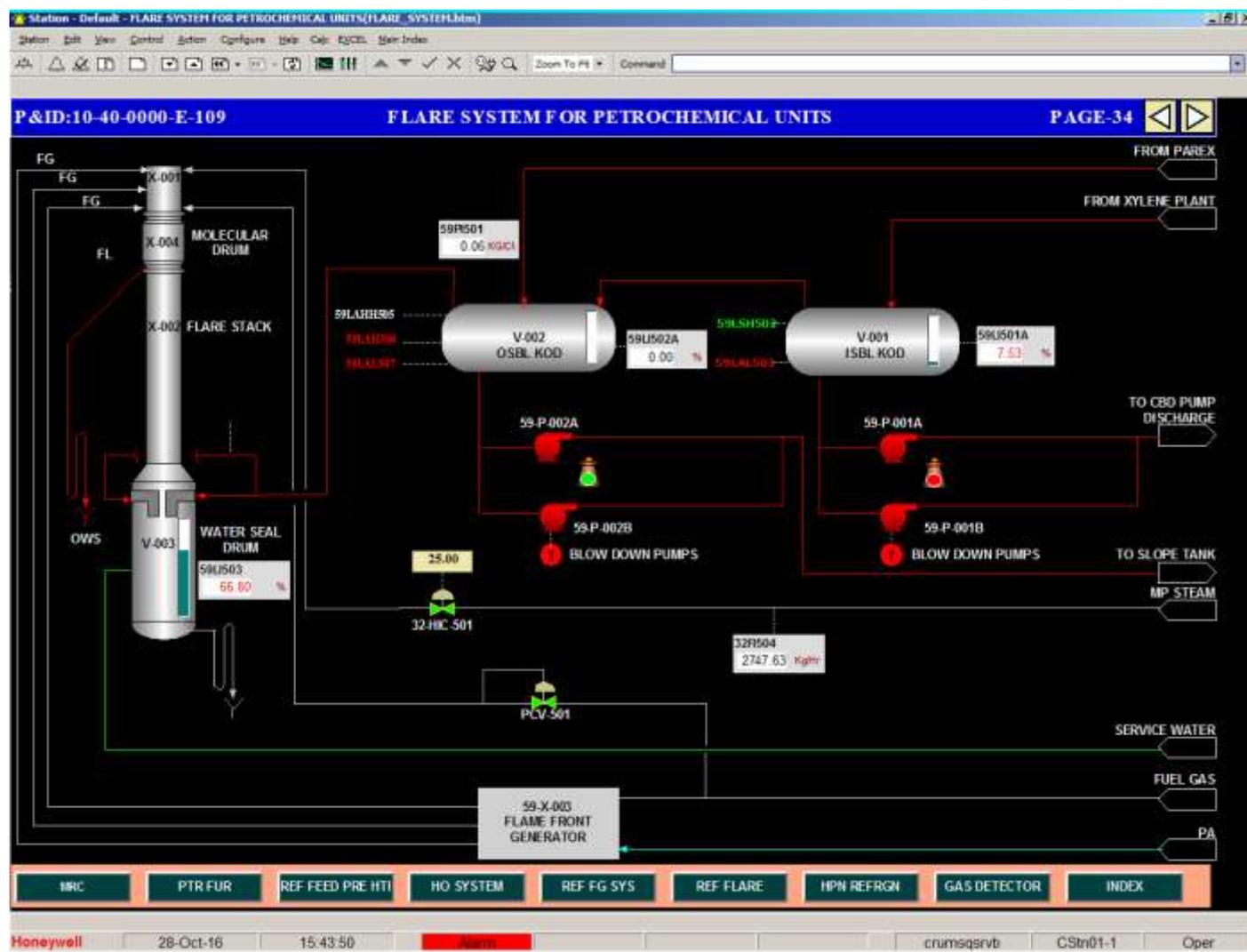


Note: Employees occupational health check up program effected, due to the COVID-2019 pandemic situation.

17.0

Appendix-A14

Flare system.



THANKS