



OFFICE OF INCHARGE HSE-CAUVERY BASIN
Oil and Natural Gas Corporation Ltd.
11th Floor (W), CMDA Tower-I,
1, Gandhi-Irwin Road, Egmore, Chennai-8.

No: CHN/CB/HSE/11/2019-20

Dated: 25th May 2020

From: General Manager (Civil), Incharge HSE – Cauvery Basin, ONGC, Chennai

To: Additional Principal chief Conservator of Forests (C)
Ministry of Environment and Forests and Climate Change
Regional Office, No 34, Cathedral Garden road,
Nungambakkam, Chennai.

Sir,

Sub: Six Monthly Compliance Report for the period from 01.10.2019 to 31.03.2020

Ref: EC (Deemed) dated 24.05.2016 in line with EAC MOM dated 18-19 Jan 2016
For drilling of 23 exploratory wells in Onshore PEL, Block L II Block of Cauvery
Basin Tamil Nadu.

In this regard we are submitting herewith the following document pertaining to Six
Monthly Compliance Report for the period from 01.10.2019 to 31.03.2020.

1. Compliance Status of Environment Clearance (Deemed) dated 24th May 2016 in
Onshore PEL, Block-II of Cauvery Basin.
2. Copy of EC (Deemed) dated 24 th May 2016 in line with EAC MoM Dated 18-19
Jan 2016 for drilling of 23 exploratory wells in Onshore PEL Block L II of Cauvery
Basin, Tamil Nadu.

Thanking You.

Enclosures: As Above.

K.P.KESAVAN
General Manager (Civil)
Incharge HSE – Cauvery Basin
ONGC, Chennai

Compliance to the Environment Clearance (Deemed) Dated 24.5.2016 in line with the EAC MoM dated 18-19 Jan. 2016 for Drilling of 23 Exploratory Wells in PEL Block L-II, in Cauvery Basin for the Period 01.10.2019-31.03.2020 (Well Drilled NLAK)

Conditions

S. No.	Conditions	Remarks
1	Ambient Air Quality shall be monitored near the closest Human Settlements as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R.No.826(E) Dated 16 th November, 2009 for PM ₁₀ , PM ₂₅ , SO ₂ , NO _x , CO, CH ₄ , HC, Non-Methane HC etc.	Ambient Air Quality around the Drill Site was monitored for PM ₁₀ , PM ₂₅ , SO ₂ , NO _x , CO, Methane and Non-Methane HC, etc., by M/s. Hubert Enviro Care Systems (P) Ltd., Chennai (NABL Accredited and Recognised by MoEFCC) near the closest Human Settlements. (Annexure-1)
2	Mercury shall also be analysed in Air, Water and Drill Cuttings twice during drilling period.	Chemicals used for Drilling Mud were tested, No traces of Mercury were found. However, Air, Water and Drill Cuttings were analysed for the presence of Mercury. In ONGC operations there is no source of Hg emissions. (Annexure – 2)
3	Approach Road shall be made pucca to minimise generation of suspended dust.	Approach Road was made from the nearest Main Road to the Drill Site and the distance varies from 200 m to 1 KM having a width of 4 m on an average
4	The Company shall make the arrangement for Control of Noise from the Drilling Activity and DG sets and meet DG set and proper stack height should be provided as per CPCB Guidelines.	Noise level monitored by M/s. Hubert Enviro Care Systems (P) Ltd., Chennai (NABL Accredited and Recognised by MoEFCC) and the Report is enclosed Acoustic enclosures are provided in DG sets; The stack height meets the regulatory requirements. 11.17 M height stack have been provided and the stack emission has been monitored by the above Third Party. As per the reports, the levels are within the limits. (Annexure- 3)
5	Total water requirement shall not exceed 25 m ³ /day/well and prior permission shall be obtained from the concerned agency. .	Drill Water is supplied by Contractor to ONGC by Road Tankers. The Contractor informed that water was from surface sources.
6	The company shall construct the garland drain all around the drilling site to prevent runoff of any oil containing waste into, the nearby water bodies. Separate drainage system shall be created for oil contaminated and non-oil contaminated. Effluent shall be properly treated and treated wastewater shall conform to CPCB standards.	Garland Drain is constructed all around the Drill Site and the Drainage System is designed to prevent mixing of oil contaminated and non-oil contaminated waste.
7	Drilling Waste Water including Drill Cuttings Wash Water shall be collected in Disposal Pit lined with	Drilling Waste Water including Drill Cuttings, wash water are collected in Disposal Pit lined with

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	HDPE lining evaporated or treated and shall comply with the notified standards for onshore disposal. The Membership of Common TSDF shall be obtained for the disposal of drill cuttings and hazardous waste. Otherwise, Secured Land Fill shall be created at the site as per the design approved by the CPCB and obtain Authorisation from the SPCB. Copy of Authorization or Membership of TSDF shall be submitted to Ministry's Regional Office at Chennai.	HDPE to avoid percolation to soil. The liquid is allowed for solar evaporation and the solid component is covered with a layer of local excavated soil. The Membership of TSDF obtained. Copy attached (Annexure-4)
8	Good sanitation facility shall be provided at the drilling site. Domestic Sewage shall be disposed off through Septic Tank / Soak Pit	Sanitation facility are provided to Personnel at the Drill-Site and a separate Septic Tank / Soak Pit is constructed to collect the Domestic Sewage.
9	Oil Spillage Prevention Scheme shall be prepared. In case of oil spillage / contamination, Action Plan shall be prepared to clean the Site by adopting Proven Technology. The Recyclable Waste (Oily Sludge) and Spent Oil shall be disposed off to the Authorised Recyclers.	Oil Spillage Contingency Plan is in place and Waste Oil disposed to MSTC Ltd., (Govt. of India Enterprise)--TNPCB Authorised Waste Oil Recycler through Central Store at Karaikal.
10	The company shall comply with the guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR.546 (E) Dated 30 th August, 2005.	Drill Cuttings, Drilling Fluids and Washings are collected in HDPE lined Waste Pits to avoid percolation into soil. The liquid is allowed for Solar Evaporation and the solid component is covered with a layer of local excavated soil. (Annexure – 2)
11	The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. Possibility of using ground flare shall be explored. At the place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during operation.	Fire protection equipment and Oil Spill Contingency Plan is kept in place. Production Testing is carried out only for few days and the flaring is restricted to few hours only
12	The company shall develop a contingency plan for H ₂ S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H ₂ S detectors in locations of high risk of exposure along with self- containing breathing apparatus	There is no Hydrogen Sulphide presence in the Block. However, Hydrogen Sulphide Contingency Plan is in place and all Personnel operating in H ₂ S environment are provided with Detectors and SCBA.
13	On completion of drilling, the company have to plug the drilled wells safely and obtain certificate from environment safety angle from the concerned authority.	On completion of drilling the drilled wells are plugged safely. Certificate will be obtained once the well is declared abandoned.
14	Blow Out Preventer (BOP) system shall be installed to prevent well blowouts during drilling operations. BOP measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.	Blow-Out Preventer (BOP) is installed and Primary Well Control is achieved through proper Well Planning and Drilling Fluid, Logging etc.

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15	Emergency Response Plan (ERP) shall be based on the guidelines prepared by OISD, DGMS and Government of India	ERP as per Guidelines of OISD, DGMS and Govt. of India is in place
16	The company shall take measures after completion of drilling process by well plugging and secured encloses, decommissioning of rig upon abandonment of the well and drilling site shall be restored in original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment plan shall be implemented for the drilling site in accordance with the applicable Indian Petroleum Regulations.	Drilling work has been completed at one well TVAX and is declared Dry & Abandoned. The Restoration shall be taken up.
17	Abandoned well inventory and remediation plan shall be within six months from the date of issue of this letter.	Drilling work has been completed at one well TVAX and is declared Dry & Abandoned. The Remediation shall be taken up.
18	Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.	Occupational Health Policy is in place as per the Mines Act.
19	In case the commercial viability of the project is established the Company shall prepare a detailed plan for development of oil and gas fields and obtain fresh environmental clearance from the Ministry.	In case of Commercial availability of Hydrocarbon, Environment Clearance will be obtained from MoEFCC
20	Restoration of the project site shall be carried out satisfactorily and report shall be sent to the Ministry's Regional Office at Chennai.	Drilling work has been completed at one well TVAX and is declared Dry & Abandoned. The Restoration shall be taken up.
21	Oil content in the drill cuttings shall be monitored by some Authorized agency and report shall be sent to the Ministries Regional Office at Chennai.	Oil Content in Drill Cuttings was monitored by M/s. Hubert Enviro Care Systems (P) Ltd., Chennai (NABL Accredited and Recognised by MoEFCC) (Annexure – 2)
22	Under Corporate Social Responsibility sufficient provision shall be made for health improvement education and electric supply in and around the project.	Under Corporate Social Responsibility (CSR) sufficient budgetary provision has been made for Health Improvement, Education, Water and Electricity Supply etc., in and around the Project.
23	An audit should be done to ensure the Environment management plan is implemented in totality and the report shall be submitted to the Ministry's Regional Office.	Complied. Environment Management Plan audit has been conducted at #TVAX. Copy of the Report is enclosed (Annexure – 5)
24	All personnel including those of contractors shall be trained and made fully aware of hazards and risks and controls in place.	Safety Briefings are conducted at the Drill-Site regularly; all personnel are well trained at ONGC's Institute of Drilling Technology to undergo training like IADC Rig Pass course, Well Control Programme, etc. The Contract Workers are trained in Mines Vocational Training (MVT) at the Base Office in Karaikal.
25	Company shall have Own Environment Management Cell having qualified persons with proper background.	The Company has a dedicated Environment Management Cell (Basin HSE Section) duly manned with qualified and experienced persons.


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26	Company shall prepare operating manual in respect of all activities. It shall cover all safety and environment related issues and system. Measures taken for protection of Environment shall be made available at the drilling/project site Awareness shall be created at each level of management.	The company has SOP (Standard Operating Procedures) in place for all Onshore Operations covering all aspects of the operations. In addition, the Personnel are trained at ONGC's Institute of Petroleum Safety, Health and Environment Management, Goa. SOP are available at Drill-Sites. All the results of Environmental Monitoring will be available at the Project Site Office / Uploaded In Company's Public Domain.
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TEST REPORT

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Sample Description : DG Stack Emission
 Sampling Mark : DG- II – 1430 KVA
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No	Parameters	Units	Results	Test Method	CPCB Standards G.S.R.54(E) dated 23 rd January-2015
1	Stack Diameter ^a	meter	0.5	-	-
2	Temperature ^a	°C	310	IS 11255 (Part-3) 2008	-
3	Velocity	m/sec	12.0	IS 11255 (P-3)2008	-
4	Flow rate	Nm ³ /hr	3934	IS 11255 (Part-3) 2008	-
5	Particulate Matter	mg/Nm ³	50.89	IS 11255 (Part-1) 1985	75
6	Sulphur Dioxide	mg/Nm ³	21.54	IS 11255 (Part-2) :1985	-
7	Oxides of Nitrogen	ppm	244.93	IS 11255 (Part-7) 2005	710
9	Carbon monoxide ^a	mg/Nm ³	BLQ(LOQ 1)	IS 13270 - 1992	150
10	Carbon dioxide	%V/V	12.4	IS 13270:1992	-
11	Total Volatile Organic Compound ^a	ppm	3.7	PID Gas Detector	-
12	Total Hydrocarbon ^a	ppm	5.6	S 5182 (Part-17)1979	-
13	Moisture ^a	%	2.30	IS 11255 (P-3) 2003	-
14	Mercury	mg/Nm ³	BLQ(LOQ 0.01)	USEPA method 29	-

Note:-BLQ -Below the limits of Quantification, LOQ- Limit of Quantification, m/sec -Meter per second, Nm³/hr-Normal cubic meter per hour, mg/Nm³-Milligrams per Normal cubic meter, °C -Celsius, ppm-Parts per million, %V/V-Percentage Volume per Volume.

Remarks: The tested as above parameters are within the Limits of CPCB stack emission CPCB Standards.

End of Report

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TEST REPORT

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Sample Description : DG Stack Emission
 Sampling Mark : DG- I 1430 KVA
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	Results	Test Method	CPCB Standards G.S.R.54(E) dated 23 rd January-2015
1	Stack Diameter ^a	meter	0.5	-	-
2	Temperature ^a	°C	296	IS 11255 (Part-3) 2008	-
3	Velocity	m/sec	12.5	IS 11255 (P-3)2008	-
4	Flow rate	Nm ³ /hr	4199	IS 11255 (Part-3) 2008	-
5	Particulate Matter	mg/Nm ³	46.39	IS 11255 (Part-1) 1983	75
6	Sulphur Dioxide	mg/Nm ³	18.70	IS 11255 (Part-2) :1983	-
7	Oxides of Nitrogen	ppm	265.83	IS 11255 (Part-7) 2003	710
9	Carbon monoxide ^a	mg/Nm ³	BLQ(LOQ 1)	IS 13270 - 1992	150
10	Carbon dioxide	%V/V	11.7	IS 13270:1992	-
11	Total Volatile Organic Compound ^a	ppm	2.4	PID Gas Detector	-
12	Total Hydrocarbon ^a	ppm	8.2	S 5182 (Part-17)1979	-
13	Moisture ^a	%	2.0	IS 11255 (P-3) 2003	-
14	Mercury	mg/Nm ³	BLQ(LOQ 0.01)	USEPA method 29	-

Note:-BLQ -Below the limits of Quantification, LOQ- Limit of Quantification, m/sec -Meter per second, Nm³/hr-Normal cubic meter per hour, mg/Nm³-Milligrams per Normal cubic meter, °C -Celsius, ppm-Parts per million, %V/V-Percentage Volume per Volume.

Remarks: The tested as above parameters are within the Limits of CPCB stack emission CPCB Standards.

End of Report

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TEST REPORT

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Sample Description : Water
Sample Drawn By : Hubert Enviro Care Systems Private Limited
Sampling / Received Date : 17.12.2019 / 19.12.2019
Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	GW1 (ONGC Site)	GW2 (Neelanur Village)	SW1 (Simirhi Village)	SW2 (Neelanur Village)	Test Method
1	Total Coliform Bacteria	per100ml	Absent	Absent	10	12	IS 1622-1981
2	F- Coli	per100ml	Absent	Absent	6	8	IS 1622-1981
3	E. Coli	per100ml	Absent	Absent	4	4	IS 1622-1981

Note: GW -Ground water, SW- Surface Water, E-Coli – Escherichia Coli, F.-Coli – Fecal Coli form.

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Sample Description : Water
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 17.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	GW1 (ONGC Site)	GW2 (Neelanur Village)	SW1 (Simizhi Village)	SW2 (Neelanur Village)	Test Method
28	Selenium as Se	mg/l	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	IS 3025 Part (56):2003
29	Arsenic as As	mg/l	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	IS 3025 (Part-37):1988
30	Mercury as Hg	mg/l	BLQ(LOQ0.0005)	BLQ(LOQ0.0005)	BLQ(LOQ0.0005)	BLQ(LOQ0.0005)	IS 3025 (Part-48):1994
31	Mineral Oil	mg/l	BLQ(LOQ 0.5)	BLQ(LOQ 0.5)	BLQ(LOQ 0.5)	BLQ(LOQ 0.5)	IS 3025 (Part-39):1991
32	Sulphide as S ²⁻	mg/l	BLQ(LOQ:0.025)	BLQ(LOQ:0.025)	BLQ(LOQ:0.025)	BLQ(LOQ:0.025)	IS3025 (Part - 29):1986
33	PAH	mg/l	BLQ(LOQ:0.00001)	BLQ(LOQ:0.00001)	BLQ(LOQ:0.00001)	BLQ(LOQ:0.00001)	HECS/TNS/SOP/072
34	Nickel	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Part-54):2003
35	Ammonia as NH ₃	mg/l	0.42	BLQ(LOQ 0.02)	1.43	1.16	IS 3025 (Part - 34):1982
36	Barium as Ba	mg/l	0.045	0.072	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	HECS/W&WW/SOP/066
37	Silver as Ag	mg/l	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	HECS/W&WW/SOP/066
38	Chloramines	mg/l	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	IS 3025 (Part - 26):1986
39	Molybdenum	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	HECS/W&WW/SOP/066
40	Polychlorinated Biphenyls	mg/l	BLQ(LOQ 0.00001)	BLQ(LOQ 0.00001)	BLQ(LOQ 0.00001)	BLQ(LOQ 0.00001)	HECS/W&WW/SOP/066
41	Chemical oxygen demand as O ₂	mg/l	4.0	BLQ(LOQ 4)	136.0	124.0	IS 3025 (Part - 38):2006
42	Phenols	mg/l	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	IS 3025 (Part 43):1992
43	Sodium as Na	mg/l	230.0	186.0	59.0	47.0	IS3025 (Part - 45):1993
44	Total Kjeldahl Nitrogen	mg/l	0.54	0.26	BLQ(LOQ 0.02)	1.48	IS 3025 (Part - 34):1988
45	Free Ammonia	mg/l	0.05	0.2	BLQ(LOQ 0.02)	BLQ(LOQ 0.02)	IS 3025 Part (34):1982
46	Toxicity Factor (TF)	-	1	1	1	2	IS-6582 (Part 2):2001
47	Total suspended solid	mg/l	BLQ(LOQ 1)	9.0	28.0	41.0	IS 3025 (Part - 17):1984
48	Dissolved Phosphate as PO ₄	mg/l	0.07	1.48	2.24	2.74	IS 3025 (Part - 31):1988
49	Oil and Grease	mg/l	BLQ(LOQ 4)	BLQ(LOQ 4)	BLQ(LOQ 4)	BLQ(LOQ 4)	IS 3025 (Part - 39):1991
50	Percent Sodium as Na	mg/l	50.32	59.23	34.92	39.69	HECS/W&WW/SOP/067
51	Hexavalent Chromium as Cr ⁶⁺	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Part - 52):2003
52	Ammonical Nitrogen as NH ₃ -N	mg/l	0.35	0.168	1.18	0.96	IS 3025 (Part - 34):1988
53	BOD, 3 days @ 27°C as O ₂	mg/l	BLQ(LOQ 1)	BLQ(LOQ 1)	21.0	19.0	IS-3025 (Pt 44):1993
54	Temperature	°C	29.2	29.1	29.2	29.1	IS 3025 (Pt 9): 1983

Note:- BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, NTU-Nephelometric Turbidity Unit, mg/l-Milligram per liter. GW-Ground water, SW - Surface Water.

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TEST REPORT

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Sample Description : Water
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 17.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No	Parameters	Units	GW1 (ONGC Site)	GW2 (Neelanur Village)	SW1 (Simirchi Village)	SW2 (Neelanur Village)	Test Method
1	pH (at 25 °C)	-	7.87	7.49	6.98	6.79	IS 3025 (Part - 11):1983
2	Colour	Hazen	BLQ(LOQ:1.0)	BLQ(LOQ:1.0)	BLQ(LOQ:1.0)	BLQ(LOQ:1.0)	IS 3025(Part - 4):1983
3	Turbidity	NTU	BLQ(LOQ:0.1)	4.0	12.0	18.0	IS 3025(Part - 10):1984
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (Part - 5):1983
5	Taste	-	Agreeable	Agreeable	Disagreeable	Disagreeable	IS 3025 (Part - 8):1984
6	Total Hardness as CaCO ₃	mg/l	470.0	260.0	180.0	150.0	IS 3025 (Part - 21):1983
7	Calcium as Ca	mg/l	92.18	56.11	40.8	32.06	IS 3025 (Part - 40):1991
8	Total Alkalinity as CaCO ₃	mg/l	480.0	460.0	260.0	220.0	IS 3025 (Part - 23):1986
9	Chloride as Cl	mg/l	480.12	387.03	122.47	97.98	IS 3025 (Part - 32):1988
10	Residual free Chlorine	mg/l	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	IS 3025 (Part - 26):1986
11	Cyanide as CN	mg/l	BLQ(LOQ:0.01)	BLQ(LOQ:0.01)	BLQ(LOQ:0.01)	BLQ(LOQ:0.01)	IS 3025 (Part - 27):1986
12	Magnesium as Mg	mg/l	58.32	29.16	32.06	17.01	IS 3025 (Part - 46):1994
13	Total Dissolved Solids	mg/l	1519.0	1173	498.0	384.0	IS 3025(Part - 16):1984
14	Sulphate as SO ₄	mg/l	327.9	410.04	42.07	38.01	IS 3025(Part - 24):1986
15	Fluoride	mg/l	0.41	0.32	0.34	0.22	IS 3025 (Part - 60):2008
16	Nitrate as NO ₃	mg/l	5.2	9.8	3.9	1.4	ASTM(Part - 31):1978
17	Iron as Fe	mg/l	0.04	0.05	1.07	0.91	IS 3025 (Part - 53):2003
18	Aluminium as Al	mg/l	BLQ(LOQ:0.03)	BLQ(LOQ:0.03)	BLQ(LOQ:0.03)	BLQ(LOQ:0.03)	IS 3025 (Part - 55):2003
19	Boron as B	mg/l	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	IS 3025 (Part - 57):2003
20	Phenolic Compounds	mg/l	BLQ(LOQ:0.001)	BLQ(LOQ:0.001)	BLQ(LOQ:0.001)	BLQ(LOQ:0.001)	IS 3025 (Part - 43):1992
21	Anionic Detergents as MBAS	mg/l	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	Annex K of IS 13428-2005
22	Zinc as Zn	mg/l	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	IS 3025 (Part 49):1994
23	Chromium as Cr	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Part - 52):2003
24	Copper as Cu	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Pt 42)-1992
25	Manganese as Mn	mg/l	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	IS 3025 (Part - 59):2006
26	Cadmium as Cd	mg/l	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	IS 3025 (Part - 41):1991
27	Lead as Pb	mg/l	BLQ(LOQ 0.005)	BLQ(LOQ 0.005)	BLQ(LOQ 0.005)	BLQ(LOQ 0.005)	IS 3025(Part - 47):1994

Note:- BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, NTU-Nephelometric Turbidity Unit, mg/l -Milligram per liter. GW-Ground water, SW -Surface Water.

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Signature
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TEST REPORT

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Sample Description : Drill Cuttings Analysis
 Sampling Mark : Drill Cutting- (2835metres to 2840 metres)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 05.02.2020/ 06.02.2020
 Analysis Commenced On : 06.02.2020

S.No.	Parameters	Units	Results	Test Method
1	Zinc	mg/kg	6.81	EPA 3050 B
2	Manganese	mg/kg	39.37	APHA-3030D, APHA-3111B
3	Lead	mg/kg	3.44	EPA 3050 B
4	Cadmium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
5	Copper as Cu	mg/kg	11.69	EPA 3050 B
6	Iron	mg/kg	2939.0	USEPA Method 3050B&EPA 2008
7	Mercury	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
8	Nickel	mg/kg	4.95	EPA 3050 B
9	Oil & Grease	mg/kg	BLQ(LOQ 4)	USEPA Method 9071B
10	Alkalinity	mg/kg	3324.6	USEPA Method 310.2
11	Total Chromium	mg/kg	34.60	USEPA Method 3050B,AAS Method.
12	Hexavalent Chromium	mg/kg	BLQ(LOQ 0.1)	USEPA Method 3050B,AAS Method.
13	Arsenic	mg/kg	0.042	EPA 7062
14	Acidity	mg/kg	BLQ (LOQ 1)	HECS/SO/SOP/016
15	Vanadium	mg/kg	3.78	HECS/SO/SOP/016
16	Cobalt	mg/kg	2.60	USEPA 3050 B
17	Inorganic Solids	%	65.52	APHA 2540 - C
18	Barium	mg/kg	13.37	EPA 3050 B
19	Thallium	mg/kg	0.245	EPA 3050 B
20	Selenium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B

Note:-BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, mg/kg -Milligrams per kilogram.

Hubert Enviro Care Systems (P) Ltd.

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 25.05.2020

TEST REPORT

Page 1 of 1

Sample Description : Drill Cuttings Analysis
 Sampling Mark : Drill Cutting- (2780m to 2785 meter)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 25.01.2020/ 27.01.2020
 Analysis Commenced On : 27.01.2020

S.No.	Parameters	Units	Results	Test Method
1	Zinc	mg/kg	35.11	EPA 3050 B
2	Manganese	mg/kg	592.66	APHA-3030D, APHA-3111B
3	Lead	mg/kg	4.61	EPA 3050 B
4	Cadmium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
5	Copper as Cu	mg/kg	27.48	EPA 3050 B
6	Iron	mg/kg	16254.99	USEPA Method 3050B&EPA 2008
7	Mercury	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
8	Nickel	mg/kg	18.86	EPA 3050 B
9	Oil & Grease	mg/kg	BLQ(LOQ 4)	USEPA Method 9071B
10	Alkalinity	mg/kg	3642.3	USEPA Method 310.2
11	Total Chromium	mg/kg	211.08	USEPA Method 3050B,AAS Method.
12	Hexavalent Chromium	mg/kg	BLQ(LOQ 0.1)	USEPA Method 3050B,AAS Method.
13	Arsenic	mg/kg	0.039	EPA 7062
14	Acidity	mg/kg	BLQ (LOQ 1)	HECS/SO/SOP/016
15	Vanadium	mg/kg	76.89	HECS/SO/SOP/016
16	Cobalt	mg/kg	7.60	USEPA 3050 B
17	Inorganic Solids	%	77.17	APHA 2540 - C
18	Barium	mg/kg	56.22	EPA 3050 B
19	Thallium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
20	Selenium	mg/kg	1.04	EPA 3050 B

Note:-BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, mg/kg -Milligram per kilogram.

Hubert Enviro Care Systems (P) Ltd.

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 25.05.2020

TEST REPORT – AAQ2

Page 1 of 1

Sample Description : Ambient Air
 Sampling Mark : Down Wind (Near Electrical Room)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	Results Obtained			Test Method	NAAQ Standards : 2009	
			06.00 - 14.00	14.00 - 22.00	22.00 - 06.00			
1	Sulphur Dioxide	$\mu\text{g}/\text{m}^3$	12.86	11.89	12.26	CPCB guide lines Volume 1:2012	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	$\mu\text{g}/\text{m}^3$	24.52	23.16	24.81	IS: 5182 (P-6):2006	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 μm	$\mu\text{g}/\text{m}^3$	55.19	52.86	54.96	IS: 5182 (P-23):2006	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 μm	$\mu\text{g}/\text{m}^3$	28.30	27.50	26.94	HECS/AIR/SOP/003 : 2017	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	mg/m^3	BLQ(LOQ 0.05)	BLQ(LOQ 0.05)	BLQ (LOQ0.05)	IS : 5182 (P-10) 1999	4 (1 hours)	2 (8 hours)
6	Lead	$\mu\text{g}/\text{m}^3$	BLQ(LOQ0.05)	BLQ(LOQ0.05)	BLQ (LOQ 0.05)	IS: 5182 (P-22): 2004	1 (24 hours)	0.5 (Annual)
7	Ozone	$\mu\text{g}/\text{m}^3$	14.18	13.65	13.97	HECS/AIR/AMBIENT/SOP/007	180 (1 hours)	100 (8 hours)
8	Ammonia	$\mu\text{g}/\text{m}^3$	7.59	7.66	7.84	HECS/AIR/AMBIENT/SOP/006	400 (24 hours)	100 (Annual)
9	Benzene	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS: 5182 (P-11):2006	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	ng/m^3	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS: 5182 (P-12): 2004	1 (Annual)	1 (Annual)
11	Arsenic	ng/m^3	BLQ(LOQ 2)	BLQ(LOQ 2)	BLQ(LOQ 2)	HECS/AIR/AMBIENT/ 009	6 (Annual)	6 (Annual)
12	Nickel	ng/m^3	BLQ(LOQ 10)	BLQ(LOQ 10)	BLQ(LOQ 10)	HECS/AIR/AMBIENT/ 009	20 (Annual)	20 (Annual)
13	Hydrocarbons	ppb	846.0	852.0	862.0	IS 5182 Part 17 :1979	NA	NA
14	Non Methane Hydrocarbons	ppb	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	IS 5182 Part 21 : 2001	NA	NA
15	Hydrogen Sulphide	$\mu\text{g}/\text{m}^3$	BLQ(LOQ 6)	BLQ(LOQ 6)	BLQ(LOQ 6)	IS 5182 Part 7 : 1973	NA	NA
16	Mercury	ng/m^3	BLQ(LOQ0.05)	BLQ(LOQ0.05)	BLQ(LOQ0.05)	NIOSH 6009	NA	NA
17	TVOC	ppm	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	PID Method	NA	NA
18	SPM	$\mu\text{g}/\text{m}^3$	83.49	85.23	84.75	IS 5182 Part 4 1999	NA	NA

Note:-BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, $\mu\text{g}/\text{m}^3$ - Micrograms per cubic meter, mg/m^3 - Milligrams per cubic meter, ng/m^3 - Nanograms per cubic meter.

Remarks:-The Tested Parameters as above were within the limits of NAAQ Standard 2009.

End of Report

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TEST REPORT- AAQ1

Page 1 of 1

Sample Description : Ambient Air
 Sampling Mark : UP Wind (Near Main Gate)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	Results Obtained			Test Method	NAAQ Standards : 2009	
			06.00 - 14.00	14.00 - 22.00	22.00 - 06.00			
1	Sulphur Dioxide	µg/m³	10.18	11.52	10.85	CPCB guide lines Volume 1:2012	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	µg/m³	20.46	21.41	22.64	IS: 5182 (P-6):2006	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 µm	µg/m³	51.35	52.64	53.47	IS: 5182 (P-23):2006	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 µm	µg/m³	22.65	23.98	22.98	HECS/AIR/SOP/003 : 2017	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	mg/m³	BLQ(LOQ 0.05)	BLQ(LOQ 0.05)	BLQ (LOQ0.05)	IS : 5182 (P-10) 1999	4 (1 hours)	2 (8 hours)
6	Lead	µg/m³	BLQ(LOQ0.05)	BLQ(LOQ0.05)	BLQ (LOQ 0.05)	IS: 5182 (P-22): 2004	1 (24 hours)	0.5 (Annual)
7	Ozone	µg/m³	11.30	10.98	11.10	HECS/AIR/AMBIENT/ISO P/007	180 (1 hours)	100 (8 hours)
8	Ammonia	µg/m³	6.12	6.95	7.15	HECS/AIR/AMBIENT/ISO P/006	400 (24 hours)	100 (Annual)
9	Benzene	µg/m³	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS: 5182 (P-11):2006	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	ng/m³	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS: 5182 (P-12): 2004	1 (Annual)	1 (Annual)
11	Arsenic	ng/m³	BLQ(LOQ 2)	BLQ(LOQ 2)	BLQ(LOQ 2)	HECS/AIR/AMBIENT/009	6 (Annual)	6 (Annual)
12	Nickel	ng/m³	BLQ(LOQ 10)	BLQ(LOQ 10)	BLQ(LOQ 10)	HECS/AIR/AMBIENT/009	20 (Annual)	20 (Annual)
13	Hydrocarbons	ppb	728	740	710	IS 5182 Part 17 :1979	NA	NA
14	Non Methane Hydrocarbons	ppb	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	IS 5182 Part 21 : 2001	NA	NA
15	Hydrogen Sulphide	µg/m³	BLQ(LOQ 6)	BLQ(LOQ 6)	BLQ(LOQ 6)	IS 5182 Part 7 : 1973	NA	NA
16	Mercury	ng/m³	BLQ(LOQ0.05)	BLQ(LOQ0.05)	BLQ(LOQ0.05)	NIOSH 6009	NA	NA
17	TVOC	Ppm	2.10	2.32	2.56	PID Method	NA	NA
18	SPM	µg/m³	73.99	80.12	78.60	IS 5182 Part 4 1999	NA	NA

Note:BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, µg/m³-Micrograms per cubic meter, mg/m³- Milligrams per cubic meter, ng/m³- Nanograms per cubic meter.

Remarks:-The Tested Parameters as above were within the limits of NAAQ Standard 2009.

End of Report


 25052020

MINUTES FOR 3rd EXPERT APPRAISAL COMMITTEE (INDUSTRY-2) MEETING HELD DURING 18th - 19th January, 2016

VENUE: Teesta Hall, Vayu Wing, 1st Floor, Ministry of Environment, Forests and Climate Change, Indira Paryavaran Bhawan, Aliganj, Jorbagh Road, New Delhi -110003.

Time : Meeting held at 10: 00 AM

- 3.1** In Opening Remarks, the Chairman emphasized the need of expert in the field of distillery and a member from the CFCB who may guide latest norms issued w.r.t. Chemical Sector. The Chairman urged Member Secretary to take up the matter for nomination in the Committee.

Time : 10: 00 - 10: 15 AM

- 3.2** Confirmation of the Minutes of the 2nd Expert Appraisal Committee (Industry-2) held during 16th -17th December, 2015.
- 3.2** The following modifications/correction in the minutes of the 46th Reconstituted Expert Appraisal Committee (Industry) held during 20-21st August 2015 were confirmed:

Agenda No.: 46.4.7 project titled 'Proposed 45 KLPD molasses based distillery cum ethanol plant at Village Kechirayanpalayam, Taluka Chinnasalem, District Vilupuram, Tamilnadu by M/s Kallakurchi II Cooperative Sugar Mills Ltd.- reg TOR' the following may be substituted with product:

S.No	Name of product	Quantity
1	Fuel Ethanol (99.8% v/v) Or Extra Neutral Alcohol (96% v/v) rectified spirit	45 KLPD
2	Impure Spirit	2.25 KLPD

- 3.3** The following modifications/correction in the minutes of the 46th Reconstituted Expert Appraisal Committee (Industry) held during 20-21st August 2015 were confirmed:

Agenda Item no. 46.4.4 : project titled "Setting up of 45KLPD Molasses Based Distillery Cum Ethanol Plant at village Gopalapuram, Alapuram Post, Taluka Pappireddipatti, District Dharmapuri, TamilNadu by M/s Subramaniya Siva Cooperative-reg TOR" the following may be substituted with products:

S.No.	Name of product	Quantity
1	Fuel Ethanol (99.8% v/v) Or Extra Neutral Alcohol (96% v/v) rectified spirit	45 KLPD
2	Impure Spirit	2.25 KLPD

G. Anand
25052020

ANNEXURE 4 (1 of 1)

25/5/20

ANNEXURE 4



Industrial Waste Management Association

Regd. No. 255/2002

No. 154, 1st Floor, Colony Road, Sector 10, Gurgaon, Haryana (India) - 122 002

This is to certify that M/S. Oil & Natural Gas Corporation
Ltd. located at 10th floor, West Wing / Wing C, CMDA
Tower - I, 1st Ground Floor, Road, Gurgaon, Haryana
Management Association. The membership no. is 1162.

25.05.20

25/5/20

G. Anand
25/5/2020

Compliance to the Environment Clearance for Deemed EC Letter dated 24-05-2016

Well :NLAK

Rig # E-1400-19

Date 20.02.2020

Sl. No.	Conditions	Remarks
1	Total water requirement shall not exceed 25 Cu. M/Day and prior permission shall be obtained from the concerned Agency.	Drill water is supplied by contractor to ONGC by road tankers. The contractor informed that water was from surface sources.
2	The company shall construct the garland drain all around the drilling site to prevent run off of any oil containing waste into the nearby water bodies. Separate drainage system shall be created for oil-contaminated and non-oil contaminated. Effluent shall be properly treated and treated waste water shall confirm to CPCB standards.	Garland canal is constructed all around the drill site and the drainage system is designed to prevent mixing of oil contaminated and non-oil contaminated waste.
3	Drilling waste water including drill cuttings wash water shall be collected in disposal pit lined with HDPE lining evaporated or treated and shall comply with the notified standards for onshore disposal. The membership of common TSDF should be obtained for the disposal of drill-cuttings and hazardous waste. Otherwise secured landfill shall be created at the site as per the design approved by CPCB and obtain authorization from the SPCB. Copy of authorization or membership of TSDF shall be submitted to Ministry's Regional Office at Bangalore.	Drilling wastewater including drill cuttings, wash water are collected in disposal pit lined with HDPE to avoid percolation to soil. The liquid is allowed for solar evaporation and the solid component is covered with a layer of local excavated soil. The membership of TSDF obtained Copy attached
4	Good sanitation facility shall be provided at the drilling site. Domestic sewage shall be disposed off through septic tank/soak pit.	Sanitation facility are provided to personnel at the drill-site and a separate septic tank/soak pit is constructed to collect the domestic sewage.
5	Oil spillage prevention scheme shall be prepared. In case of oil spillage/contamination, action shall be prepared to clean the site by adopting proven technology. The recyclable waste (oily sludge) and spent oil shall be disposed of to the Authorised recyclers.	Oil spillage contingency plan is in place and waste oil disposed to Mega Petro Products-- TNPCC authorised waste oil recycler through central store at Karaikal.


25.05.2020

TEST REPORT- AAQ1

Page 1 of 1

Sample Description : Ambient Air
 Sampling Mark : UP Wind (Near Main Gate)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	Results Obtained			Test Method	NAAQ Standards : 2009	
			06.00 - 14.00	14.00 - 22.00	22.00 - 06.00			
1	Sulphur Dioxide	µg/m³	10.18	11.52	10.85	CPCB guide lines Volume 1, 2012	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	µg/m³	20.46	21.41	22.64	IS : 5182 (P-6):2006	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 µm	µg/m³	51.35	52.64	53.47	IS : 5182 (P-23):2006	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 µm	µg/m³	22.65	23.98	22.98	HECS/AIR/SOP/003 : 2017	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	mg/m³	BLQ(LOQ 0.05)	BLQ(LOQ 0.05)	BLQ (LOQ 0.05)	IS : 5182 (P-10) 1999	4 (1 hours)	2 (8 hours)
6	Lead	µg/m³	BLQ(LOQ 0.05)	BLQ(LOQ 0.05)	BLQ (LOQ 0.05)	IS : 5182 (P-22): 2004	1 (24 hours)	0.5 (Annual)
7	Ozone	µg/m³	11.30	10.98	11.10	HECS/AIR/AMBIENT/ISO P/007	180 (1 hours)	100 (8 hours)
8	Ammonia	µg/m³	6.12	6.95	7.15	HECS/AIR/AMBIENT/ISO P/006	400 (24 hours)	100 (Annual)
9	Benzene	µg/m³	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS : 5182 (P-11):2006	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	ng/m³	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS : 5182 (P-12): 2004	1 (Annual)	1 (Annual)
11	Arsenic	ng/m³	BLQ(LOQ 2)	BLQ(LOQ 2)	BLQ(LOQ 2)	HECS/AIR/AMBIENT/009	6 (Annual)	6 (Annual)
12	Nickel	ng/m³	BLQ(LOQ 10)	BLQ(LOQ 10)	BLQ(LOQ 10)	HECS/AIR/AMBIENT/009	20 (Annual)	20 (Annual)
13	Hydrocarbons	ppb	728	740	710	IS 5182 Part 17 :1979	NA	NA
14	Non Methane Hydrocarbons	ppb	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	IS 5182 Part 21 : 2001	NA	NA
15	Hydrogen Sulphide	µg/m³	BLQ(LOQ 6)	BLQ(LOQ 6)	BLQ(LOQ 6)	IS 5182 Part 7 : 1973	NA	NA
16	Mercury	ng/m³	BLQ(LOQ 0.05)	BLQ(LOQ 0.05)	BLQ(LOQ 0.05)	NIOSH 6009	NA	NA
17	TVOC	Ppm	2.10	2.32	2.56	PID Method	NA	NA
18	SPM	µg/m³	73.99	80.12	78.60	IS 5182 Part 4 1999	NA	NA

Note:-BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, µg/m³-Micrograms per cubic meter, mg/m³- Milligrams per cubic meter, ng/m³- Nanograms per cubic meter.

Remarks:-The Tested Parameters as above were within the limits of NAAQ Standard 2009.

End of Report


 25.05.2020

TEST REPORT – AAQ2

Page 1 of 1

Sample Description : Ambient Air
 Sampling Mark : Down Wind (Near Electrical Room)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	Results Obtained			Test Method	NAAQ Standards : 2009	
			06.00 - 14.00	14.00 - 22.00	22.00 - 06.00			
1	Sulphur Dioxide	µg/m³	12.86	11.89	12.26	CPCB guide lines Volume 1:2012	80 (24 hours)	50 (Annual)
2	Nitrogen Dioxide	µg/m³	24.52	23.16	24.81	IS: 5182 (P-6):2006	80 (24 hours)	40 (Annual)
3	Particulate Matter Size Less than 10 µm	µg/m³	55.19	52.86	54.96	IS: 5182 (P-23):2006	100 (24 hours)	60 (Annual)
4	Particulate Matter Size Less than 2.5 µm	µg/m³	28.30	27.50	26.94	HECS/AIR/SOP/003 : 2017	60 (24 hours)	40 (Annual)
5	Carbon Monoxide	mg/m³	BLQ(LOQ 0.05)	BLQ(LOQ 0.05)	BLQ (LOQ0.05)	IS : 5182 (P-10) 1999	4 (1 hours)	2 (8 hours)
6	Lead	µg/m³	BLQ(LOQ0.05)	BLQ(LOQ0.05)	BLQ (LOQ 0.05)	IS: 5182 (P-22): 2004	1 (24 hours)	0.5 (Annual)
7	Ozone	µg/m³	14.18	13.65	13.97	HECS/AIR/AMBIENT/SOP/007	180 (1 hours)	100 (8 hours)
8	Ammonia	µg/m³	7.59	7.66	7.84	HECS/AIR/AMBIENT/SOP/006	400 (24 hours)	100 (Annual)
9	Benzene	µg/m³	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS: 5182 (P-11):2006	5 (Annual)	5 (Annual)
10	Benzo(a)pyrene	ng/m³	BLQ(LOQ 1)	BLQ(LOQ 1)	BLQ(LOQ 1)	IS: 5182 (P-12): 2004	1 (Annual)	1 (Annual)
11	Arsenic	ng/m³	BLQ(LOQ 2)	BLQ(LOQ 2)	BLQ(LOQ 2)	HECS/AIR/AMBIENT/ 009	6 (Annual)	6 (Annual)
12	Nickel	ng/m³	BLQ(LOQ 10)	BLQ(LOQ 10)	BLQ(LOQ 10)	HECS/AIR/AMBIENT/ 009	20 (Annual)	20 (Annual)
13	Hydrocarbons	ppb	846.0	852.0	862.0	IS 5182 Part 17 :1979	NA	NA
14	Non Methane Hydrocarbons	ppb	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	IS 5182 Part 21 : 2001	NA	NA
15	Hydrogen Sulphide	µg/m³	BLQ(LOQ 6)	BLQ(LOQ 6)	BLQ(LOQ 6)	IS 5182 Part 7 : 1973	NA	NA
16	Mercury	ng/m³	BLQ(LOQ0.05)	BLQ(LOQ0.05)	BLQ(LOQ0.05)	NIOSH 6009	NA	NA
17	TVOC	ppm	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	PID Method	NA	NA
18	SPM	µg/m³	83.49	85.23	84.75	IS 5182 Part 4 1999	NA	NA

Note:-BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, µg/m³ - Micrograms per cubic meter, mg/m³- Milligrams per cubic meter, ng/m³- Nanograms per cubic meter.

Remarks:-The Tested Parameters as above were within the limits of NAAQ Standard 2009.

End of Report

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TEST REPORT

Page 1 of 1

Sample Description : Drill Cuttings Analysis
 Sampling Mark : Drill Cutting- (2780m to 2785 meter)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 25.01.2020/ 27.01.2020
 Analysis Commenced On : 27.01.2020

S.No.	Parameters	Units	Results	Test Method
1	Zinc	mg/kg	35.11	EPA 3050 B
2	Manganese	mg/kg	592.66	APHA-3030D, APHA-3111B
3	Lead	mg/kg	4.61	EPA 3050 B
4	Cadmium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
5	Copper as Cu	mg/kg	27.48	EPA 3050 B
6	Iron	mg/kg	16254.99	USEPA Method 3050B&EPA 2008
7	Mercury	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
8	Nickel	mg/kg	18.86	EPA 3050 B
9	Oil & Grease	mg/kg	BLQ(LOQ 4)	USEPA Method 9071B
10	Alkalinity	mg/kg	3642.3	USEPA Method 310.2
11	Total Chromium	mg/kg	211.08	USEPA Method 3050B,AAS Method.
12	Hexavalent Chromium	mg/kg	BLQ(LOQ 0.1)	USEPA Method 3050B,AAS Method.
13	Arsenic	mg/kg	0.039	EPA 7062
14	Acidity	mg/kg	BLQ (LOQ 1)	HECS/SO/SOP/016
15	Vanadium	mg/kg	76.89	HECS/SO/SOP/016
16	Cobalt	mg/kg	7.60	USEPA 3050 B
17	Inorganic Solids	%	77.17	APHA 2540 - C
18	Barium	mg/kg	56.22	EPA 3050 B
19	Thallium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
20	Selenium	mg/kg	1.04	EPA 3050 B

Note:- BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, mg/kg -Milligram per kilogram.

Hubert Enviro Care Systems (P) Ltd.

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 25.05.2020

TEST REPORT

Page 1 of 1

Sample Description : Drill Cuttings Analysis
 Sampling Mark : Drill Cutting- (2835metres to 2840 metres)
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 05.02.2020/ 06.02.2020
 Analysis Commenced On : 06.02.2020

S.No.	Parameters	Units	Results	Test Method
1	Zinc	mg/kg	6.81	EPA 3050 B
2	Manganese	mg/kg	39.37	APHA-3030D, APHA-3111B
3	Lead	mg/kg	3.44	EPA 3050 B
4	Cadmium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
5	Copper as Cu	mg/kg	11.69	EPA 3050 B
6	Iron	mg/kg	2939.0	USEPA Method 3050B&EPA 2006
7	Mercury	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B
8	Nickel	mg/kg	4.95	EPA 3050 B
9	Oil & Grease	mg/kg	BLQ(LOQ 4)	USEPA Method 9071B
10	Alkalinity	mg/kg	3324.6	USEPA Method 310.2
11	Total Chromium	mg/kg	34.60	USEPA Method 3050B,AAS Method.
12	Hexavalent Chromium	mg/kg	BLQ(LOQ 0.1)	USEPA Method 3050B,AAS Method.
13	Arsenic	mg/kg	0.042	EPA 7062
14	Acidity	mg/kg	BLQ (LOQ 1)	HECS/SO/SOP/016
15	Vanadium	mg/kg	3.78	HECS/SO/SOP/016
16	Cobalt	mg/kg	2.60	USEPA 3050 B
17	Inorganic Solids	%	65.52	APHA 2540 - C
18	Barium	mg/kg	13.37	EPA 3050 B
19	Thallium	mg/kg	0.245	EPA 3050 B
20	Selenium	mg/kg	BLQ(LOQ 0.1)	EPA 3050 B

Note:-BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, mg/kg -Milligram per kilogram.

Hubert Enviro Care Systems (P) Ltd.

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 25.05.2020

TEST REPORT

Page 1 of 3

Sample Description : Water
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 17.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No	Parameters	Units	GW1 (ONGC Site)	GW2 (Neelanur Village)	SW1 (Simirhi Village)	SW2 (Neelanur Village)	Test Method
1	pH (at 25 °C)	-	7.87	7.49	6.98	6.79	IS 3025 (Part - 11):1983
2	Colour	Hazen	BLQ(LOQ:1.0)	BLQ(LOQ:1.0)	BLQ(LOQ:1.0)	BLQ(LOQ:1.0)	IS 3025(Part - 4):1983
3	Turbidity	NTU	BLQ(LOQ:0.1)	4.0	12.0	18.0	IS 3025(Part - 10):1984
4	Odour	-	Agreeable	Agreeable	Agreeable	Agreeable	IS 3025 (Part - 5):1983
5	Taste	-	Agreeable	Agreeable	Disagreeable	Disagreeable	IS 3025 (Part - 8):1984
6	Total Hardness as CaCO ₃	mg/l	470.0	260.0	180.0	150.0	IS 3025 (Part - 21):1983
7	Calcium as Ca	mg/l	92.18	56.11	40.8	32.06	IS 3025 (Part - 40):1991
8	Total Alkalinity as CaCO ₃	mg/l	480.0	460.0	260.0	220.0	IS 3025 (Part - 23):1986
9	Chloride as Cl	mg/l	480.12	387.03	122.47	97.98	IS 3025 (Part - 32):1988
10	Residual free Chlorine	mg/l	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	IS 3025 (Part - 26):1986
11	Cyanide as CN	mg/l	BLQ(LOQ:0.01)	BLQ(LOQ:0.01)	BLQ(LOQ:0.01)	BLQ(LOQ:0.01)	IS 3025 (Part - 27):1986
12	Magnesium as Mg	mg/l	58.32	29.16	32.06	17.01	IS 3025 (Part - 46):1994
13	Total Dissolved Solids	mg/l	1519.0	1173	498.0	384.0	IS 3025(Part - 16):1984
14	Sulphate as SO ₄	mg/l	327.9	410.04	42.07	38.01	IS 3025(Part - 24):1986
15	Fluoride	mg/l	0.41	0.32	0.34	0.22	IS 3025 (Part - 60):2008
16	Nitrate as NO ₃	mg/l	5.2	9.8	3.9	1.4	ASTM(Part - 31):1978
17	Iron as Fe	mg/l	0.04	0.05	1.07	0.91	IS 3025 (Part - 53):2003
18	Aluminium as Al	mg/l	BLQ(LOQ:0.03)	BLQ(LOQ:0.03)	BLQ(LOQ:0.03)	BLQ(LOQ:0.03)	IS 3025 (Part - 55):2003
19	Boron as B	mg/l	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	IS 3025 (Part - 57):2003
20	Phenolic Compounds	mg/l	BLQ(LOQ:0.001)	BLQ(LOQ:0.001)	BLQ(LOQ:0.001)	BLQ(LOQ:0.001)	IS 3025 (Part - 43):1992
21	Anionic Detergents as MBAS	mg/l	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	Annex K of IS 13428-2005
22	Zinc as Zn	mg/l	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	BLQ(LOQ:0.1)	IS 3025 (Part 49):1994
23	Chromium as Cr	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Part - 52):2003
24	Copper as Cu	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Pt 42)-1992
25	Manganese as Mn	mg/l	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	BLQ(LOQ:0.05)	IS 3025(Part - 59):2006
26	Cadmium as Cd	mg/l	BLQ(LOQ:0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	IS 3025 (Part - 41):1991
27	Lead as Pb	mg/l	BLQ(LOQ 0.005)	BLQ(LOQ 0.005)	BLQ(LOQ 0.005)	BLQ(LOQ 0.005)	IS 3025(Part - 47):1994

Note:- BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, NTU-Nephelometric Turbidity Unit, mg/l -Milligram per liter. GW-Ground water, SW -Surface Water.

Hubert Enviro Care Systems (P) Ltd.

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Signature
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TEST REPORT

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Sample Description : Water
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 17.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	GW1 (ONGC Site)	GW2 (Neelanur Village)	SW1 (Simizhi Village)	SW2 (Neelanur Village)	Test Method
28	Selenium as Se	mg/l	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	IS 3025 Part (56):2003
29	Arsenic as As	mg/l	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	BLQ(LOQ0.005)	IS 3025 (Part-37):1988
30	Mercury as Hg	mg/l	BLQ(LOQ0.0005)	BLQ(LOQ0.0005)	BLQ(LOQ0.0005)	BLQ(LOQ0.0005)	IS 3025 (Part-48):1994
31	Mineral Oil	mg/l	BLQ(LOQ 0.5)	BLQ(LOQ 0.5)	BLQ(LOQ 0.5)	BLQ(LOQ 0.5)	IS 3025 (Part-39):1991
32	Sulphide as S ²⁻	mg/l	BLQ(LOQ:0.025)	BLQ(LOQ:0.025)	BLQ(LOQ:0.025)	BLQ(LOQ:0.025)	IS3025 (Part - 29):1986
33	PAH	mg/l	BLQ(LOQ:0.00001)	BLQ(LOQ:0.00001)	BLQ(LOQ:0.00001)	BLQ(LOQ:0.00001)	HECS/TNS/SOP/072
34	Nickel	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Part-54):2003
35	Ammonia as NH ₃	mg/l	0.42	BLQ(LOQ 0.02)	1.43	1.16	IS 3025 (Part - 34):1982
36	Barium as Ba	mg/l	0.045	0.072	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	HECS/W&WW/SOP/066
37	Silver as Ag	mg/l	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	HECS/W&WW/SOP/066
38	Chloramines	mg/l	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	BLQ(LOQ 0.1)	IS 3025 (Part - 26):1986
39	Molybdenum	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	HECS/W&WW/SOP/066
40	Polychlorinated Biphenyls	mg/l	BLQ(LOQ 0.00001)	BLQ(LOQ 0.00001)	BLQ(LOQ 0.00001)	BLQ(LOQ 0.00001)	HECS/W&WW/SOP/066
41	Chemical oxygen demand as O ₂	mg/l	4.0	BLQ(LOQ 4)	136.0	124.0	IS 3025 (Part - 38):2006
42	Phenols	mg/l	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	BLQ(LOQ 0.001)	IS 3025 (Part 43):1992
43	Sodium as Na	mg/l	230.0	186.0	59.0	47.0	IS3025 (Part - 45):1993
44	Total Kjeldahl Nitrogen	mg/l	0.54	0.26	BLQ(LOQ 0.02)	1.48	IS 3025 (Part - 34):1988
45	Free Ammonia	mg/l	0.05	0.2	BLQ(LOQ 0.02)	BLQ(LOQ 0.02)	IS 3025 Part (34):1982
46	Toxicity Factor (TF)	-	1	1	1	2	IS-6582 (Part 2):2001
47	Total suspended solid	mg/l	BLQ(LOQ 1)	9.0	28.0	41.0	IS 3025 (Part - 17):1984
48	Dissolved Phosphate as PO ₄	mg/l	0.07	1.48	2.24	2.74	IS 3025 (Part - 31):1988
49	Oil and Grease	mg/l	BLQ(LOQ 4)	BLQ(LOQ 4)	BLQ(LOQ 4)	BLQ(LOQ 4)	IS 3025 (Part - 39):1991
50	Percent Sodium as Na	mg/l	50.32	59.23	34.92	39.69	HECS/W&WW/SOP/067
51	Hexavalent Chromium as Cr ⁶⁺	mg/l	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	BLQ(LOQ 0.01)	IS 3025 (Part - 52):2003
52	Ammonical Nitrogen as NH ₃ -N	mg/l	0.35	0.168	1.18	0.96	IS 3025 (Part - 34):1988
53	BOD, 3 days @ 27°C as O ₂	mg/l	BLQ(LOQ 1)	BLQ(LOQ 1)	21.0	19.0	IS-3025 (Pt 44):1993
54	Temperature	°C	29.2	29.1	29.2	29.1	IS 3025 (Pt 9): 1983

Note:- BLQ - Below Limit of Quantification, LOQ- Limit of Quantification, NTU-Nephelometric Turbidity Unit, mg/l-Milligram per liter. GW-Ground water, SW - Surface Water.

Hubert Enviro Care Systems (P) Ltd.

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TEST REPORT

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Sample Description : Water
Sample Drawn By : Hubert Enviro Care Systems Private Limited
Sampling / Received Date : 17.12.2019 / 19.12.2019
Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	GW1 (ONGC Site)	GW2 (Neelanur Village)	SW1 (Sinnirhi Village)	SW2 (Neelanur Village)	Test Method
1	Total Coliform Bacteria	per100ml	Absent	Absent	10	12	IS 1622-1981
2	F- Coli	per100ml	Absent	Absent	6	8	IS 1622-1981
3	E. Coli	per100ml	Absent	Absent	4	4	IS 1622-1981

Note: GW -Ground water, SW- Surface Water, E-Coli – Escherichia Coli, F.-Coli – Fecal Coli form.

Hubert Enviro Care Systems (P) Ltd.

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TEST REPORT

Page 1 of 1

Sample Description : DG Stack Emission
 Sampling Mark : DG- I 1430 KVA
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No.	Parameters	Units	Results	Test Method	CPCB Standards G.S.R.54(E) dated 23 rd January-2015
1	Stack Diameter ^a	meter	0.5	-	-
2	Temperature ^a	°C	296	IS 11255 (Part-3) 2008	-
3	Velocity	m/sec	12.5	IS 11255 (P-3)2008	-
4	Flow rate	Nm ³ /hr	4199	IS 11255 (Part-3) 2008	-
5	Particulate Matter	mg/Nm ³	46.39	IS 11255 (Part-1) 1983	75
6	Sulphur Dioxide	mg/Nm ³	18.70	IS 11255 (Part-2) :1983	-
7	Oxides of Nitrogen	ppm	265.83	IS 11255 (Part-7) 2003	710
9	Carbon monoxide ^a	mg/Nm ³	BLQ(LOQ 1)	IS 13270 - 1992	150
10	Carbon dioxide	%V/V	11.7	IS 13270:1992	-
11	Total Volatile Organic Compound ^a	ppm	2.4	PID Gas Detector	-
12	Total Hydrocarbon ^a	ppm	8.2	S 5182 (Part-17)1979	-
13	Moisture ^a	%	2.0	IS 11255 (P-3) 2003	-
14	Mercury	mg/Nm ³	BLQ(LOQ 0.01)	USEPA method 29	-

Note:-BLQ -Below the limits of Quantification, LOQ- Limit of Quantification, m/sec -Meter per second, Nm³/hr-Normal cubic meter per hour, mg/Nm³-Milligrams per Normal cubic meter, °C -Celsius, ppm-Parts per million, %V/V-Percentage Volume per Volume.

Remarks: The tested as above parameters are within the Limits of CPCB stack emission CPCB Standards.

End of Report

G. Anand
25.05.2020

TEST REPORT

Page 1 of 1

Sample Description : DG Stack Emission
 Sampling Mark : DG- II – 1430 KVA
 Sample Drawn By : Hubert Enviro Care Systems Private Limited
 Sampling / Received Date : 18.12.2019 / 19.12.2019
 Analysis Commenced On : 19.12.2019

S.No	Parameters	Units	Results	Test Method	CPCB Standards G.S.R.54(E) dated 23 rd January-2015
1	Stack Diameter*	meter	0.5	-	-
2	Temperature*	°C	310	IS 11255 (Part-3) 2008	-
3	Velocity	m/sec	12.0	IS 11255 (P-3)2008	-
4	Flow rate	Nm ³ /hr	3934	IS 11255 (Part-3) 2008	-
5	Particulate Matter	mg/Nm ³	50.89	IS 11255 (Part-1) 1985	75
6	Sulphur Dioxide	mg/Nm ³	21.54	IS 11255 (Part-2) :1985	-
7	Oxides of Nitrogen	ppm	244.93	IS 11255 (Part-7) 2005	710
9	Carbon monoxide*	mg/Nm ³	BLQ(LOQ 1)	IS 13270 - 1992	150
10	Carbon dioxide	%V/V	12.4	IS 13270:1992	-
11	Total Volatile Organic Compound*	ppm	3.7	PID Gas Detector	-
12	Total Hydrocarbon*	ppm	5.6	S 5182 (Part-17)1979	-
13	Moisture*	%	2.30	IS 11255 (P-3) 2003	-
14	Mercury	mg/Nm ³	BLQ(LOQ 0.01)	USEPA method 29	-

Note:-BLQ -Below the limits of Quantification, LOQ- Limit of Quantification, m/sec -Meter per second, Nm³/hr-Normal cubic meter per hour, mg/Nm³-Milligrams per Normal cubic meter, °C -Celsius, ppm-Parts per million, %V/V-Percentage Volume per Volume.

Remarks: The tested as above parameters are within the Limits of CPCB stack emission CPCB Standards.

End of Report

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ANNEXURE 4



Industrial Waste Management Association

Regd No 256 / 2002

No 134, Indira Colony, First Street, First Avenue, Ashok Nagar, Chennai - 600 063

This is to certify that M/s. Rel. x. Natural Gas Corporation
Ltd located at 10th floor, Next Wing Longs, CMDA
Lower I, to Gandhi Park road, Egmore Chennai
is a member of the Industrial Waste
Management Association. The membership no. is 3362

on 28.01.12

[Signature]

[Signature]
25052020

Environment Clearance for Deemed EC Letter dated 24-05-2016

Well :NLAK

Rig # E-1400-19

Date 20.02.2020

Sl. No.	Conditions	Remarks
1	Total water requirement shall not exceed 25 Cu. M/Day and prior permission shall be obtained from the concerned Agency.	Drill water is supplied by contractor to ONGC by road tankers. The contractor informed that water was from surface sources.
2	The company shall construct the garland drain all around the drilling site to prevent run off of any oil containing waste into the nearby water bodies. Separate drainage system shall be created for oil-contaminated and non-oil contaminated. Effluent shall be properly treated and treated waste water shall confirm to CPCB standards.	Garland canal is constructed all around the drill site and the drainage system is designed to prevent mixing of oil contaminated and non-oil contaminated waste.
3	Drilling waste water including drill cuttings wash water shall be collected in disposal pit lined with HDPE lining evaporated or treated and shall comply with the notified standards for onshore disposal. The membership of common TSDF should be obtained for the disposal of drill-cuttings and hazardous waste. Otherwise secured landfill shall be created at the site as per the design approved by CPCB and obtain authorization from the SPCB. Copy of authorization or membership of TSDF shall be submitted to Ministry's Regional Office at Bangalore.	Drilling wastewater including drill cuttings, wash water are collected in disposal pit lined with HDPE to avoid percolation to soil. The liquid is allowed for solar evaporation and the solid component is covered with a layer of local excavated soil. The membership of TSDF obtained Copy attached
4	Good sanitation facility shall be provided at the drilling site. Domestic sewage shall be disposed off through septic tank/soak pit.	Sanitation facility are provided to personnel at the drill-site and a separate septic tank/soak pit is constructed to collect the domestic sewage.
5	Oil spillage prevention scheme shall be prepared. In case of oil spillage/contamination, action shall be prepared to clean the site by adopting proven technology. The recyclable waste (oily sludge) and spent oil shall be disposed of to the Authorised recyclers.	Oil spillage contingency plan is in place and waste oil disposed to Mega Petro Products--TNPCC authorised waste oil recycler through central store at Karaikal.


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6	The company shall comply with the guidelines for disposal of solid waste, drill-cutting and drilling fluids for onshore drilling operation notified vide GSR 546 (E) dated 30.8.2005.	Drill cuttings, drilling fluids and washings are collected in HDPE lined waste pits to avoid percolation into soil. The liquid is allowed for solar evaporation and the solid component is covered with a layer of local excavated soil.
7	The company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. Possibility of using ground flare should be explored. At the place of ground flaring, the overhead flaring stack with knock out drums shall be installed to minimise gaseous emissions during operation.	Fire protection equipment and Oil spill contingency plan is kept in place. Production testing is carried out only for few days and the flaring is restricted to few hours only
8	On completion of drilling the company have to plug the drilled wells safely and obtain certificate from environment safety angle from the concerned authority.	On completion of drilling the drilled wells are plugged safely. Certificate will be obtained once the well is declared abandoned.
9	Blow out Preventer (BOP) system shall be installed to prevent well blowouts during drilling operations. BOP measures during drilling should focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.	Blowout preventer (BOP) is installed and Primary well control is achieved through proper well planning and drilling fluid, logging etc.
10	Emergency Response Plan (ERP) shall be based on the guidelines prepared by OISD, DGMS and Govt. of India	ERP as per Guidelines of OISD,DGMS and Govt. of India is in place
11	The company shall take measures after completion of drilling process by well plugging and secured enclosures, decommissioning of rig upon abandonment of the well and drilling site shall be restored to the original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment plan shall be implemented for the drilling site in accordance with the applicable Indian Petroleum Regulations.	Drilling work has been completed at two wells. The remediation shall be done after they are declared abandoned.
12	Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules	Occupational Health policy is in place as per the Mines Act.


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13	All personnel including those of contractors shall be trained and made fully aware of the hazards risks and controls in place.	Safety briefings are conducted at the drill-site regularly; all personnel are well trained at ONGC's Institute of Drilling Technology to undergo training like IADC Rig Pass course, Well Control Programme, etc. Details already submitted to RMoEFCC office along with last compliance report.
14	Company shall prepare operating manual in respect of all activities. It shall cover all safety & environment related issues and system. Measures to be taken for protection. One set of environment manual shall be made available at the drilling site/project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office.	The company has SOP (Standard Operating Procedures) in place for all onshore operations covering all aspects of the operations. In addition, the personnel are trained at ONGC's Institute of Petroleum Safety, Health and Environment Management, Goa. SOP are available at drill-sites. All the results of environmental monitoring will be available at the project site office.


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EMP Compliance Inspections

Rig E-1400-19 #NLAK

Date 20/02/2020.

1. Plastic debris scattered in the drill site are advised to remove

Sd /=

(M.Muruganandan)

C.G (S)-CB-Chennai HSE


25052020



एम० सी० दास
कार्पोरेट हेल्थ, सैफ्टी एंड एनवायरनमेंट
M. C. Das
Executive Director, Chief HSE

ऑयल एण्ड नेचुरल गैस कॉर्पोरेशन लिमिटेड
8 वीं मंजिल, स्कोप मीनार, लक्ष्मी नगर, दिल्ली-110 092
Oil and Natural Gas Corporation Limited
Corporate Health, Safety and Environment
8th Floor, Core-4, SCOPE Minar, Laxmi Nagar, Delhi-110092
Phone : +91- 11-22406020 Fax : +91-11-22406681
E-mail : das_mc12@ongc.co.in

सं०: OHS/ENV/TC/TP/2016/17

24th May, 2016

To
The Secretary,
Ministry of Environment, Forests and Climate Change
Indira Paryavarn Bhawan, Jor Bagh, New Delhi -110003

Sub: Environmental Clearance for Exploratory and Development Drilling in Tamil Nadu.

Respected Sir,

This is to most humbly submit that the following project proposals have been recommended by the Expert Appraisal Committee (Industry Projects-2) as per the details given:

1. Grant of EC for 23 exploratory wells in Onshore PEL block L-II of Cauvery Basin, District Nagapattinam, Tamil Nadu (Agenda No. 3.8.4)

The EAC recommended the proposal for grant of Environmental Clearance in the meeting held during 18th - 19th January, 2016. The Minutes of Meeting are enclosed for reference (Lapse of 126 days till date after the EAC recommendations against the prescribed timeline of 45 days from the EAC recommendation).

2. Amendment of EC for 24 wells of L-II Block Cauvery Basin (Agenda Item no. 3.6.6.4)

The EAC recommended the proposal for amendment of Environmental Clearance with respect to Taluk changes for 3 wells in the meeting held during 16th - 17th March, 2015. The Minutes of Meeting are enclosed for reference (Lapse of more than a year after the EAC recommendations against the prescribed timeline of 45 days from the EAC recommendation).

3. Development Drilling of 66 wells in 7ML/NELP Blocks in Cuddalore, Nagapattinam, Thiruvavur and Thanjavur District of Tamil Nadu (Agenda Item No. 3.8.2)

The EAC recommended the proposal for grant of Environmental Clearance in the meeting held during 18th - 19th January, 2016. The Minutes of Meeting are enclosed for reference (Lapse of 126 days till date after the EAC recommendations against the prescribed timeline of 45 days from the EAC recommendation).

Contd

for info

TO: GM (CE), HSE, CA.

Regd. Office: Jeevan Bharti Bldg., Tower-II, 9th Floor, 124, Indira Chowk, New Delhi-110 001 (India)
Phone : +91-11-23310156/0157 Fax : +91-11-23316413

G. Anand
25052020

Sir, we would like to bring to your kind notice that inspite of EAC recommendations for EC, letters have not been issued even after lapse of more than 105 days after the EAC recommendations.

Sir, it is also pertinent to mention that the above mentioned projects are of National importance for energy security and ONGC is not in position to drill any wells in these locations.

Sir, as per the EIA notification, 2006 clause 8-Grant or Rejection of Prior Environmental Clearance, it is stipulated that "In the event that the decision of the regulatory authority is not communicated to the applicant within the period specified, the applicant may proceed as if the environment clearance sought for has been granted or denied by the regulatory authority in terms of the final recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned."

Therefore, in the above circumstances having waited for more than 105 days, as per the EIA notification, 2006 it may be deemed that ONGC will now proceed as if the Environmental Clearance sought for has been granted in terms of the final recommendations of the Expert Appraisal Committee.

With warm regards,

Encl. as above

Yours sincerely,

Manindran C.A. Das

(M.C. Das)

Copy for kind information:

1. Dr. K. Karthikeyan,
Member Secretary, Tamil Nadu Pollution Control Board,
76, Mount Salai, Guindy, Chennai - 600032
2. Dr. MRG Reddy, IFS
Additional Principal Chief Conservator of Forests (C),
Ministry of Environment, Forest and Climate Change,
Regional Office (SEZ),
1st and 11nd Floor, Handloom Export Promotion Council,
34, Cathedral Garden Road, Nungambakkam,
Chennai - 600034
3. Director (Exploration)-I/c HSE, ONGC, Delhi

G. Anand
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G. Anand
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**MINUTES FOR 3rd EXPERT APPRAISAL COMMITTEE (INDUSTRY-2) MEETING HELD
DURING 18th- 19th January, 2016**

VENUE: Teesta Hall, Vayu Wing, 1st Floor, Ministry of Environment, Forests and Climate Change, Indira Paryavaran Bhawan Aliganj, Jorbagh Road, New Delhi -110003.

Time : Meeting held at 10: 00 AM

- 3.1** In Opening Remarks, the Chairman emphasized the need of expert in the field of distillery and a member from the CPCB who may guide latest norms issued w.r.t. Chemical Sector. The Chairman urged Member Secretary to take up the matter for nomination in the Committee.

Time : 10: 00 - 10: 15 AM

- 3.2** Confirmation of the Minutes of the 2nd Expert Appraisal Committee (Industry-2) held during 16th -17th December, 2015.
- 3.2** The following modifications/correction in the minutes of the 46th Reconstituted Expert Appraisal Committee (Industry) held during 20-21st August 2015 were confirmed:

Agenda No.: 46.4.7 project titled "Proposed 45 KLPD molasses based distillery cum ethanol plant at Village Kachirayapalayam, Taluka Chinnasalem, District Villupuram, Tamilnadu by M/s Kallakurichi-II Cooperative Sugar Mills Ltd.- reg TOR" the following may be substituted with product:

S.No.	Name of product	Quantity
1	Fuel Ethanol (99.8% v/v) Or Extra Neutral Alcohol (96% v/v) rectified spirit	45 KLPD
2	Impure Spirit	2.25 KLPD

- 3.3** The following modifications/correction in the minutes of the 46th Reconstituted Expert Appraisal Committee (Industry) held during 20-21st August 2015 were confirmed:

Agenda Item no. 46.4.4 : project titled "Setting up of 45KLPD Molasses Based Distillery Cum Ethanol Plant at village Gopalapuram, Alapuram Post, Taluka Pappireddipatti, District Dharmapuri, TamilNadu by M/s Subramaniya Siva Cooperative-reg TOR" the following may be substituted with products:

S.No.	Name of product	Quantity
1	Fuel Ethanol (99.8% v/v) Or Extra Neutral Alcohol (96% v/v) rectified spirit	45 KLPD
2	Impure Spirit	2.25 KLPD


25.05.2020

- xxiii. Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.
- xxiv. Company shall adopt Corporate Environment Policy as per the Ministry's O.M. No. J-11013/41/2006-IA.II(I) dated 26th April, 2011 and implemented.
- xxv. Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

3.8.4 Exploratory Drilling of 23 wells in onshore Block of L-II of Cauvery Basin, Tamil Nadu by M/s Oil and Natural Gas Corporation- Environment Clearance.

The project authorities and their consultant gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken as per Draft Terms of References (TORs) awarded during 12th and 13th reconstituted Expert Appraisal Committee (Industry) held during 26th -27th August, 2013 (20 wells), 18th -20th Nov, 2013 (2 wells) and 22nd EAC Meeting dated 28-29th Aug 2014 for one well viz. B-CY-EOT-1 for preparation of EIA/EMP report. All the projects related to offshore and onshore Oil and Gas exploration, development and production are listed in para 1(b) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.

The block is located in Tiruvarur, Nagapattinam and Thanjavur Districts of Tamil Nadu. The total area of block is 1545.02 Sq.Km. Eleven(11) proposed exploratory wells fall in Tiruvarur District, Nine(9) of proposed wells fall in Thanjavur District and 3 of proposed wells fall in Nagapattinam District. Following wells will be drilled.

Sl.No.	No. of Wells	Location Name	Target Depth in M	District
1	11	NL-5, NL-6, NL-7, NL-8, NL-9, NL-10, NL-11, NL-15, NL-16, NL-17, NL-18	1750-6000/Basement	Tiruvarur
2	9	NL-1, NL-2, NL-3, NL-4, NL-19, NL-20, NL-21, NL-22, NL-23		Thanjavur
3	3	NL-12, NL-13, NL-14		Nagapattinam

It is reported that no wild life sanctuary, National Park or eco sensitive area exists in the proposed exploratory area of the block. No forest land exists in the block. ONGC proposes drilling of 23 exploratory wells with target depths around 1750-6000m. Cost of project is INR 460 crores for 23 new additional wells. About ~25m³/day of water will be required for drilling operation of a single well. Water for drilling operation will be sourced

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through tankers. The water requirement for domestic and wash use is very less 4kld. Three DG sets of 1250 KVA each (one stand by) will be used during drilling operation. Consumption of fuel (HSD) during drilling operation will be 3-6kl/day. Non-hazardous waste of drill cuttings of around ~225m³/well will be generated. Used oil - 100 lit/well. Use of water based mud system has been planned. The mud will be recycled and reused to maximum extent. Drill Cuttings (DC) will be tested for presence of oil and grease by an approved laboratory under EP Act. Drill cuttings generated in the drilling process are naturally occurring earth materials comprising of chips and sandstone, shale, sand and lumps of clay. Drill cuttings, thoroughly washed and separated from WBM and shall be collected in a HDPE lined pit and shall be treated as per GSR 546(E) for disposal. Used oil will be collected and sent to central stores for disposal to TNPCB authorised waste oil recyclers.

ONGC has conducted the Public Hearing for development wells covering following districts.

- i. Thanjavur (PH conducted 10.07.2014)
- ii. Nagapattinam (PH conducted 20.06.2014)
- iii. Tiruvarur (PH Conducted 27.06.2014)

In the second Expert Appraisal Committee (Industry-2) meeting held during 16th -17th December 2015, the committee recommended for exemption of PH for the above 23 wells.

Now after detailed deliberation, the committee recommended the proposal of drilling 23 exploratory wells for Environmental Clearance.

After detailed deliberations, the Committee found the final EIA/EMP report adequate and suggested to stipulate following specific conditions alongwith other environmental conditions while considering for accord of environmental clearance:

- i. Ambient air quality should be monitored near the closest human settlements as per the National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 for PM₁₀, PM_{2.5}, SO₂, NO_x, CO, methane & Non-methane HC etc.
- ii. Mercury shall also be analyzed in air, water and drill cuttings twice during drilling period.
- iii. Approach road shall be made pucca to minimize generation of suspended dust.
- iv. The company shall make the arrangement for control of noise from the drilling activity. Acoustic enclosure shall be provided to DG sets and proper stack height should be provided as per CPCB guidelines.
- v. Total water requirement shall not exceed 25 m³/day and prior permission shall be obtained from the concerned agency.
- vi. The company shall construct the garland drain all around the drilling site to prevent runoff of any oil containing waste into the nearby water bodies and land. Separate drainage system shall be created for oil contaminated and non-oil contaminated water. Effluent shall be properly treated and treated wastewater shall conform to CPCB standards.



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- vii. Drilling wastewater including drill cuttings wash water shall be collected in disposal pit lined with HDPE lining evaporated or treated and shall comply with the notified standards for on-shore disposal. The membership of common TSDF shall be obtained for the disposal of drill cuttings and hazardous waste. Otherwise, secured land fill shall be created at the site as per the design approved by the CPCB and obtain authorization from the SPCB. Copy of authorization or membership of TSDF shall be submitted to Ministry's Regional Office at Chennai.
- viii. Good sanitation facility shall be provided at the drilling site. Domestic sewage shall be disposed off through septic tank/ soak pit.
- ix. Oil spillage prevention scheme shall be prepared. In case of oil spillage/contamination, action plan shall be prepared to clean the site by adopting proven technology. The recyclable waste (oily sludge) and spent oil shall be disposed of to the authorized recyclers.
- x. The company shall comply with the guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR.546(E) dated 30th August, 2005.
- xi. The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. Possibility of using ground flare shall be explored. At the place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during operation.
- xii. The company shall develop a contingency plan for H₂S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H₂S detectors in locations of high risk of exposure along with self containing breathing apparatus.
- xiii. On completion of drilling, the company have to plug the drilled wells safely and obtain certificate from environment safety angle from the concerned authority.
- xiv. Blow Out Preventer (BOP) system shall be installed to prevent well blowouts during drilling operations. BOP measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.
- xv. Emergency Response Plan (ERP) shall be based on the guidelines prepared by OISD, DGMS and Govt. of India.
- xvi. The company shall take measures after completion of drilling process by well plugging and secured enclosures, decommissioning of rig upon abandonment of the well and drilling site shall be restored to the original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment plan shall be implemented for the drilling site in accordance with the applicable Indian Petroleum Regulations.
- xvii. Abandoned well inventory and remediation plan shall be submitted within six months from the date of issue of letter.



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- xviii. Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.
- xix. In case the commercial viability of the project is established, the Company shall prepare a detailed plan for development of oil and gas fields and obtain fresh environmental clearance from the Ministry.
- xx. Restoration of the project site shall be carried out satisfactorily and report shall be sent to the Ministry's Regional Office at Chennai.
- xxi. Oil content in the drill cuttings shall be monitored by some Authorized agency and report shall be sent to the Ministry's Regional Office at Chennai.
- xxii. Under Enterprise Social Commitment (ESC), sufficient budgetary provision shall be made for health improvement, education, water and electricity supply etc. in and around the project.
- xxiii. An audit shall be done to ensure that the Environment Management Plan is implemented in totality and report shall be submitted to the Ministry's Regional Office.
- xxiv. All personnel including those of contractors should be trained and made fully aware of the hazards, risks and controls in place.
- xxv. Company shall have own Environment Management Cell having qualified persons with proper background.
- xxvi. Company shall prepare operating manual in respect of all activities. It shall cover all safety & environment related issues and system. Measures to be taken for protection. One set of environmental manual shall be made available at the drilling site/ project site. Awareness shall be created at each level of the management. All the schedules and results of environmental monitoring shall be available at the project site office.

3.8.5 Exploratory Drilling of 35 Wells in L-1 PML, Kuthalam PML, Kali & Greater Kali PML, Bhuvangiri PML and Neyveli PML in Cauvery Basin, Tamilnadu by M/s ONGCF- reg EC.

The project proponent and their consultant (M/s ONGC Ltd.) gave a detailed presentation on the salient features of the project and proposed environmental protection measures to be undertaken as per Draft Terms of References (TORs) awarded during the 12th Meeting of the Expert Appraisal Committee (Industry) held during 30th September, 2013 to 1st October, 2013 for preparation of EIA-EMP report. All the projects related to offshore and onshore Oil and Gas exploration, development and production are listed in para 1(b) of schedule of EIA Notification, 2006 covered under category 'A' and appraised at central level.

M/s ONGC vide letter no. ONGC/CHSE/TOR-EC /2015 dated 19th May, 2015 has requested for exemption of public hearings as PH has been already conducted

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