COMPLIANCE OF CONDITIONS IN ENVIRONMENTAL CLEARANCE

(COMPLIANCE REPORT)

Environmental Clearance No. J-11011/1/2011-IA II(I) dated 25.09.2013

Well Nos.: CRAG **Drilling Status: Drilled**

Sl.No.	Conditions	Compliance status as on 01.07.2016
1	This EC is only for Exploratory Drilling.In case Development drilling is to be done in future,prior clearance must be obtained from the Ministry.	**Complied.** This EC and conditions prescribed therein are only for drilling exploratory wells whereas for drilling development wells separate EC will be taken.
2	Gas produced during testing shall be flared with appropriate flaring booms. The flare system shall be desinged as per good oil field pratices and Oil Industry Safety Directorate(OISD) guidelines. The stack height shall be provided as per the regulatory requirements emission from stacks will meet the MOEF/CPCB guidelines.	**Complied.** If any quantity of gas is produced during testing there is a provision of flaring in place which is in accordance to OISD guidelines and as prescribed by CPCB vide its letter dt: 27.04.2016. All the quantity of gas come across testing is flared through elevated flare equipped with separator and knock out drum. No ground flaring is resorted to.
3	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 PM_{10}, $PM_{2.5}$, SO_2,NO_X, CO,methane & Non-methane HC etc.	**Complied.** Ambient air quality was monitored through 3rd party for PM10, PM 2.5, SO2,NOX, CO,methane & Non-methane HC, within and upto the premises of drill site. Henceforth, monitoring of AAQM shall also be carried out near the closest human settlement. It is evident from the monitoring reports placed as Annexure - I, that the concentration of all parameters are within prescribed limits.
4	Mercury should also be analyzed in air, water and drill cuttings twice during drilling period.	**Complied.** Mercury was analysed in waste water & drill cuttings during drilling period. For Testing of mercury in air the program is underway. Report placed as Annexure - II
5	Approach road should be made pucca to minimise generation of suspended dust.	**Complied.** Approach road to drill site are made of metals to minimise generation of suspended dust during transportation of rig equipment, etc..In case of this well approach road of dimension 1000 m x 4.0 m was constructed.
6	The company shall make the arrangement for control of noise from the drilling activity Acoustic enclosure should be provided to DG Sets and proper stake height should be provided as per CPCB guidelines.	**Complied.** Accoustic enclosure have been provided to DG sets to reduce noise within permissible limits (Noise level monitoring divulge the efficiency of the acoustic enclosures when the noise levels were monitored within the perimeters of the drill site. However, the noise levels are slightly higher near the engine house and mud pump area and personnel working in these areas are always using ear muff/plug, pl refer reports placed as Annexure-III). The height of Stack of 3 nos. of DG sets ranges from 7-8-ft . Though as per formula referred by CPCB guidelines the stack height of gen sets should be approx. 5 metre. However, the GLC of various parameters prescribed in NAAQM are within the permissible limit which qualifies the spirit under which stack height standards has been set by CPCB. Please refer to AAQM report placed at Annexure - IV. It is notable that the increase in the present height of stacks of DG sets, shall reduce the efficiency of DG sets, as assessed internally. In light of this present stack height of the DG sets should be considered as appropriate.
7	Total water requirement should not exceed 50 M3/day and prior permission should be obtained from the competent authority.	During the drilling activity the water consumption was approx. 50 m3 per day on an average.

8	The Company should construct the garland drain all around the drilling site to prevent run off any oil containing waste it to the nearby water bodies. Separate drainage system should be created for oil contaminated and non-oil contaminated. Effluent should be properly treated and treated waste water should confirmed to CPCB standards.	The garland drains are not constructed to prevent run off any oil contaminating waste as all the vulnerable processess like diesel storage tank, POL shed have their dedicated containment whereas Drains are constructed through out the drill site near mud pumps, cellar pit, mud tanks which drain waste water in HDPE lined waste pit. No garland drains are constructed around drill sites as these are not required since the waste pits have enough volume to accummulate waste water and prevent any run off. The drilled cuttings and other wastes are collected in HDPE lined waste pits and solar dried. It is notable that Gujarat is rain deficient area and chance of run off from drill site area is very remote. As the drill site effluent is a soft effluent , the suspended particles like bentonitic clay are settled leaving clear supernatant water which at times is recycled for washing purpose. Please refer to Annexure-II. In view of above the may be considered as **Complied.**
9	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 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 design approved by the CPCB and obtain Authorization from the SPCB. Copy of authorization or membership od TSDF should be submitted to Ministry's Regional Office at Bhopal.	**Complied**. Drilling waste water including drill cuttings wash water is collected in disposal pit lined with HDPE lining and solar dried. Drill cuttings from water based mud have been removed from the category of hazardous waste [Schedule I - rule 3 (1) (17) (i) of MOEFCC notification dt: 14.04.2016]. ONGC Ahmedabad is member of TSDF at Bharuch Enviro Infrastructure Limited.
10	Good sanitation facility should be provided at the drilling sites. Domestic sewage should be disposed of through septic tank/soft pit.	**Complied**. Domestic sewage is disposed through adequate septic tanks and soak pits
11	Oil spillage prevention schme should be prepared. In case of oil spillage/contamination, action plan should be prepared to clean the site by adopting proven technology. The recyclabale waste(oily sludge) and spent oil should be disposed of to the authorized recycler.	**Complied**. Oil spillage prevention plan like containments of diesel storage tank, POL shed and testing tank(during production testing) and drainage leading to waste pit are in place. However, in case of oil spill and contamination of soil thereof, ONGC is equipped with the technology of bio remediation to address such eventualities. It is notable that ONGC has a step down company M/S ONGC TERI BIO REMEDIATION LIMITED (OTBL) which has developed a consortium of bacteria capable of digesting entire range of hydrocarbon. Recylable hazardous waste like Spent oil, POL barrels etc. are recycled centrally through authorised re-cyclers.
12	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.	**Complied**. Solid waste like drill cuttings and left over drilling fluids are collected in HDPE lined waste pits which is eventually back filled and covered with local soil after the drilling operations are over. Other solid wastes like oil contaminated hand gloves, cotton waste, filters, chemical sack, etc. are deposited at TSDF site.
13	The company should 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 knockout drums should be installed to minimize gaseous emissions during operation.	**Complied**. Each drilling rig in ONGC has fixed fire fighting system and portable extinguishers in accordance to OISD 189. All personnel posted at Drill site are trained in fire fighting. Hot jobs are controlled through a permit system ie.e "Hot Work Permit" system. As mentioned above in point 12, in case of oil spill and contamination of soil thereof, ONGC is equpped with the technology of bio remediation to address such eventualities. It is notable that ONGC has a step down company M/S ONGC TERI BIO REMEDIATION LIMITED (OTBL) which has developed a consortium of bacteria capable of digesting entire range of hydrocarbon. All the quantity of gas come across testing is flared through elevated flare equipped with separator and knock out drum. No ground flaring is resorted to.

14	The company should develop a contingency plan for H2S release including all necessary aspects from evacuation to resumption of normal operations. The workers should be provided with personal H2S detectors in locations of high risk of exposure along with self containing breathing apparatus.	**Complied**. Emergency response plans for H2S release is available. H2S detector are available at drilling rigs. However, it is pertinent to mention that H2S is usually not encountered during drilling operations in oil fields of Gandhinagar district.
15	On completion of drilling, the company have to plug the drill wells safely and obtain certificate from the enviroment safety angle from the concerned authority.	**Complied**. On completeion of drilling the well is equipped with a christmas tree which safely regulates the flow of oil & gas. However, if any well is abandoned, it is plugged with a cement coloumn as prescribed in OMR 1984 and the same is communicated to DGMS.
16	Blow Out Preventor(BOP) system should be installed to prevent well blowouts during drilling operations.BOPmeasures during should focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.	**Complied**. Appropriate Blow Out Preventor(BOP) systems having a set of Annular and RAM BOPs is installed to prevent well blowouts during drilling operations. Function test of BOPs are carried out frequently and care is taken to maintaing proper hydrostatic pressure in the well bore during drilling, logging and other well operations by maintaining mud weight.
17	Emergency response plan(ERP) should be based on the guidelines prepared by OISD, DGMS and Government of India	**Complied**. ONGC has Site Specific Emergency Plan (ERP) and Contingency Plans and Disaster management Plan (DMP) based on relevant and realistic emergency scenarios. ERP and contingency plan are duly approved by DGMS whereas offsite DMP is approved by local district authorities. (copy enclosed)
18	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 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.	**Complied**. ONGC has formulated a well defined and plausible abandonment and restoration procedure which is being followed in the event of decision taken to abandon the well. The procedure is Annexed as V.
19	All the commitment made to the public during public hearing/consultation meeting held on 22nd January,2013 for Gandhinagar District shall be satisfactorily implemented and adequate budget provision shall be made accordingly.	During the Public Hearing held on 22.01.2013 at Ajol village the main points raised by the villagers were about the delay in compensation payment.The same were resorted and told them the every Thursday is the Farmer day at ONGC if somebody has any problem for delay in payments, he can contact on phone to the dealing officer and the phone no of dealing officer was also provided.
20	Abandoned well inventory and remediation plan shall be submitted with in six month from the date of issue of letter.	**Complied**. Remediation plan is already adressed at point no 12 above. This well has been abandoned and restoration of land by inviting tender and as per SOP for restoration, is in progress.
21	Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.	**Complied**. PME of all employees is carried out as per company policy (Annexure-VI).
22	In case 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.	**Complied**. In case of commercial viability of oil/gas, fresh EC is obtained for the entire block.
23	Restoration of the project site should be carried out satsfactorily and report should be sent to Minstry's Regional Office at Bhopal.	**Complied**. After the restoration job in this well is over, the report shall be sent to Ministry's regional office Bhopal.
24	Oil content in the drill cuttings should be monitored by some Authorised agency and report should be sent to the Ministry's Regional Office at Bhopal.	**Complied**. Cuttings are analysed for oil content through a reputed laboratory in the area. The analysis shows that the parameters are within permissible limits(Copy of Monitoring Report enclosed - Annexure-II).
25	Under Enterprise Social Commitment (ESC),sufficent budgetary provision should be made for health improvement,education,water and electricity supply etc. in and around the project.	**Complied**. 2% of average net profit of ONGC is earmarked for CSR(Corporate Social Responsibility) projects which includes components of health, education, water, solar lights, ecological development in an around operational area, as directed by GOI
26	An audit should be done to ensure that the Environment Management Plan is implemented in totality and report should be submitted to Ministry's Regional Office	**Complied**. An annual environment audit is carried out through schedule auditors and the reports are submitted to Gujarat Pollution control Board, apart from it annual internal audit and surveillance audit of Environment Management system is carried out in accordance to the protocol of ISO 14001. It is notable that all drilling rigs are maintaining 3rd party certified EMS based on ISO 14001.

27	A social audit shall be carried out for the whole operatio area with the help of reputed institute like Madras Institute of Social Science etc.	**Complied**. CSR shemes for social areas around the work centers of ONGC are usually rendered through reputed 3rd parties which keep on auditing on the progress of the CSR project.
28	All personnel including those of contractors should be trained and made fully aware of the hazards,risks and controls in place.	**Complied**. MVT(Mines Vocational Training) are imparted to all contractual workers before deployment at site. MVT trainings are specially designed to develop competence and skill of employees including contractual employees w .r.t risk management
29	Company shall have own Environment Management Cell having qualified persons with proper background.	**Complied**. EM Cell is atCorporate HSE of ONGC, New Delhi. HSE set up at unit level are also having qualified safety & environment officers.
30	Company should prepare operating manual in respect of all activities.It should cover all safety & environment related issues and system.Measures to be taken for protection.One set of environment manual should be made available at the drilling site/project site.Awareness should be created at each level of the management.All the schedules and results of environment monitoring should be available at the project site office.	**Complied**. Standard Operating Procedures for drilling operations covering safety and environmental aspects of operations and management thereof, have been given to supervisors and concerned persons at all drilling rigs. Safe Work Practices is also made available at all rigs. Regular safety and environment training is being provided to the employees by our various in- house training institutes like IPSHEM Goa,IDT and ONGC Academy, Dehradun and RTI Vadodara etc. Ambient/stack, noise level and potable water report is available at rigs.

'B	GENERAL CONDITIONS	
i	The project authorities must strictly adhere to the stipulations made by the Gujarat State Pollution Control Board (GPCB) State Government and any other statutory authority.	**Complied**. Consent to Establish (CTE)for exploratory drilling is taken from Gujarat Pollution Control Board prior to commencement of drilling. Conditions stipulated in CTE are complied to. Apart from it all the oil and gas processing installations wherein the oil and gas produced during exploratory and development drilling is processed are operating under concolidated consent and authorisation (CCA) from GPCB. Monthly and annual returns are filed online on XGN site as per the conditions stipulated in CCA
ii	No further expansion or modification in the project shall be carried out without prior approval of the Ministry of Environment & Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, afresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	**Complied**. So far no expansion or modification in the project has been carried out. In future if any expansion and modification happens the stipulated condition shall be complied.
iii	The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and import of Hazardous chemicals Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.	**Complied**. During drilling water base mud is used and no hazardous /toxic chemicals are used. All the mud systems got tested through National Institute of Oceanography (NIO), Goa and found non-hazardous and non-toxic. Hence this point is not applicable. However as precautionary measure MSDS of chemicals are displayed at site. Permissionfor storage ,transportation and use of explosives for perforation of well are taken from controller of explosive.
iv	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).	**Complied**. The overall noise levels in and around the rig area is kept well within the standards by keeping provision of aquostic enclosures and regular condition monitoring of equipment. The ambient noise levels are monitored during day and night time (Recent monitoring reports are annexed) which reveals that the ambient noise level is with in prescribed standards.
v	A separate Environmental Management Cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	**Complied**. Environment Management cell is functional under Head HSE which is responsible for envirroment management, monitoring and compliance to regularity bodies.
vi	Acopy of clearance letter shall be sent by the proponent to concerned Panchayat,ZilaParishad/Municipal Corporation,Urban Local Body and the localNGO,if any,from whom suggestions/representations,if any,were received while processing the proposal.The clearance letter shall also be put on the web site of the company by the proponent.	**Complied**. The communication of the enviromental clearance has been made to all the relevant stake holders by way of publishing the same in the leading news papers. The EC is also posted on the Web Site of ONGC as well as communicated to concerned panchayat and local authorities
vii	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions,including results of monitored data on their website and shall update the same periodically.It shall simultaneously be sent to the Regional Office of the MOEF, the respective Zonal Office of CPCB and the GPCB.The criteria pollutant levels namely;PM10,SO2,NOx,HC(Methane & Non-methane),VOCs(ambient levels as well as stack emissions)or critical sectoral parameters,indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain	**Complied**. The compliance of the stipulated environment clearance conditions,including results of monitored data are uploaded on our website (link - http://www.ongcindia.com/wps/wcm/connect/ongcindia/Home/Initiatives/HSE/Environmental_Clearance/) and updated periodically.It is sent to the Regional Office of the MOEF.The criteria pollutant levels namely;PM10,SO2,NOx,HC(Methane & Non-methane),indicated for the projects are monitored and displayed at the main gate of the rig.

viii	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and GPCB.The Regional Office of the this Ministry/CPCB/GPCB shall monitor the stipulated conditions.Environment Clearance and six monthly compliance status reports shall be posted on the website of the company.	**Complied**. The compliance of the stipulated environment clearance conditions,including results of monitored data are uploaded on our website (link - http://www.ongcindia.com/wps/wcm/connect/ongcindia/Home/Initiatives/HSE/Environmental_Clearance/) and updated periodically.It is sent to the Regional Office of the MOEF.The criteria pollutant levels namely;PM10,SO2,NOx,HC(Methane & Non-methane),indicated for the projects are monitored and displayed at the main gate of the rig.
ix	The environment statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules,1986,as amended subsequently,shall also be put on the website of the company alongwith the status of comliance of environment conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.	**Complied**. After completion of exploratory drilling and if any oil and gas produced through it is subjected to the nearby production installion for processing and thus becomes part of that installation. All the Installations are operating under CCA from GPCB and accordingly environmental statement as per precribed form-V is filed annually. if no oil is found the well is abandoned and land restored as per company policy.
x	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the GPCB and may also be seen at Website of the Ministry of Environment and Forests at http./www.envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearnance 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 shall be forwarded to the Regional office.	**Complied**. Information regarding grant EC for the project was passed on to all stake holders and the same was advertised in two newspapers.
xi	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 commencing the land development work.	**Complied**. The details prescribed in condition regarding commencement of exploratory drilling are furnished in six monthly compliance to Regional Office MOEFCC, Bhopal.

18-02-16

के.विश्वनाथ / K. VISWANATH
प्रखड प्र.-III / GM-BM-III
प.अ.द्रोणी, वडोडरा-9
WON,Vadodara-9

Analysis Report of Ambient Air during Drilling of CRNL#03 (CRAG)

NOA NO:MHN/MM/HSE/CONTRACT/206/2013-14/NOA

Analysis Report Of Ambient Air Monitoring For The Month of March-2016

To,

M/s Oil & Natural Gas Corporation Ltd.

Forwad Base,Mehsana,

Rig IPS 901 Well No: CRNL-3(CRAG), Dist: Mehsana.

Report Date: 21/03/2016

Report No.: 47/16/03/01

Sample location	:	Rig IPS - 901 Well No CRNL-3 (CRAG)	Ambient Tem(Max) °C	:	37.0
Sample collected Date	:	10/03/2016 to 11/03/2016	Ambient Tem(Min) °C	:	25.0
Lab ID Code	:	47/LB/16/AM	Humidity (%)	:	43.0
Sampling Time	:	24 hr	Average Wind Speed (km/hr)	:	12.0
Purpose	:	Environment Monitoring	Wind Direction	:	WNW

RESULT TABLE

SR. NO.	PARAMETER	UNIT	GPCB LIMIT	RESULT			Average	TEST METHOD
				I	II	III		
1.	Particulate Matter PM_{10}	$\mu g/m^3$	100	58.1	52.7	53.8	54.8	IS 5182 (PART 23): 2006
2.	Particulate Matter $PM_{2.5}$	$\mu g/m^3$	60	22.3	20.1	25.6	22.7	As per GPCB Guideline
3.	Sulphur Dioxide (SO_2)	$\mu g/m^3$	80	14.1	13.8	17.4	15.1	IS 5182 (PART-2):2001
4	Oxides of Nitrogen (NOx)	$\mu g/m^3$	80	9.5	10.4	15.2	11.7	IS 5182 (PART-6):2006
5.	Hydrocarbon (HC AsCH4)	$\mu g/m^3$	160	8.3	8.7	8.5	8.5	IS 5182 (PART-10):1999
6	Carbon Monoxide (CO)	$\mu g/m^3$	5000	1651	1409	1583	1548	IS 5182 (PART-17):1979
7.	Hydrogen Sulphide (H_2S)	ppm	0.36*	BDL	BDL	BDL	BDL	IS 5182 (PART 7):1973

* Indicates as per GPCB norms, #BDL Below Detection Limit, BDL Limit For H_2S: 0.007 ppm

Location I: Nr.D. G. Set (Date: 10/03/2016Time: 08:00 a.m. to 04:00 p.m.)

Location II: Opp. Engine Room (Date: 10/03/2016Time: 04:15 p.m. to 12:15 p.m.)

Location III: Nr. Incharge Office (Date: 11/03/2016Time: 12:30 p.m. to 08:30 a.m.)

Authorized Signatory

Prepared By

ALLOWABLE EXPOSURE TO VARIOUS SOUND LEVELS; CRNL#03 (CRAG)

OIL AND NATURAL GAS CORPORATION LIMITED
ASSET WORKHSOP
MEHSANA

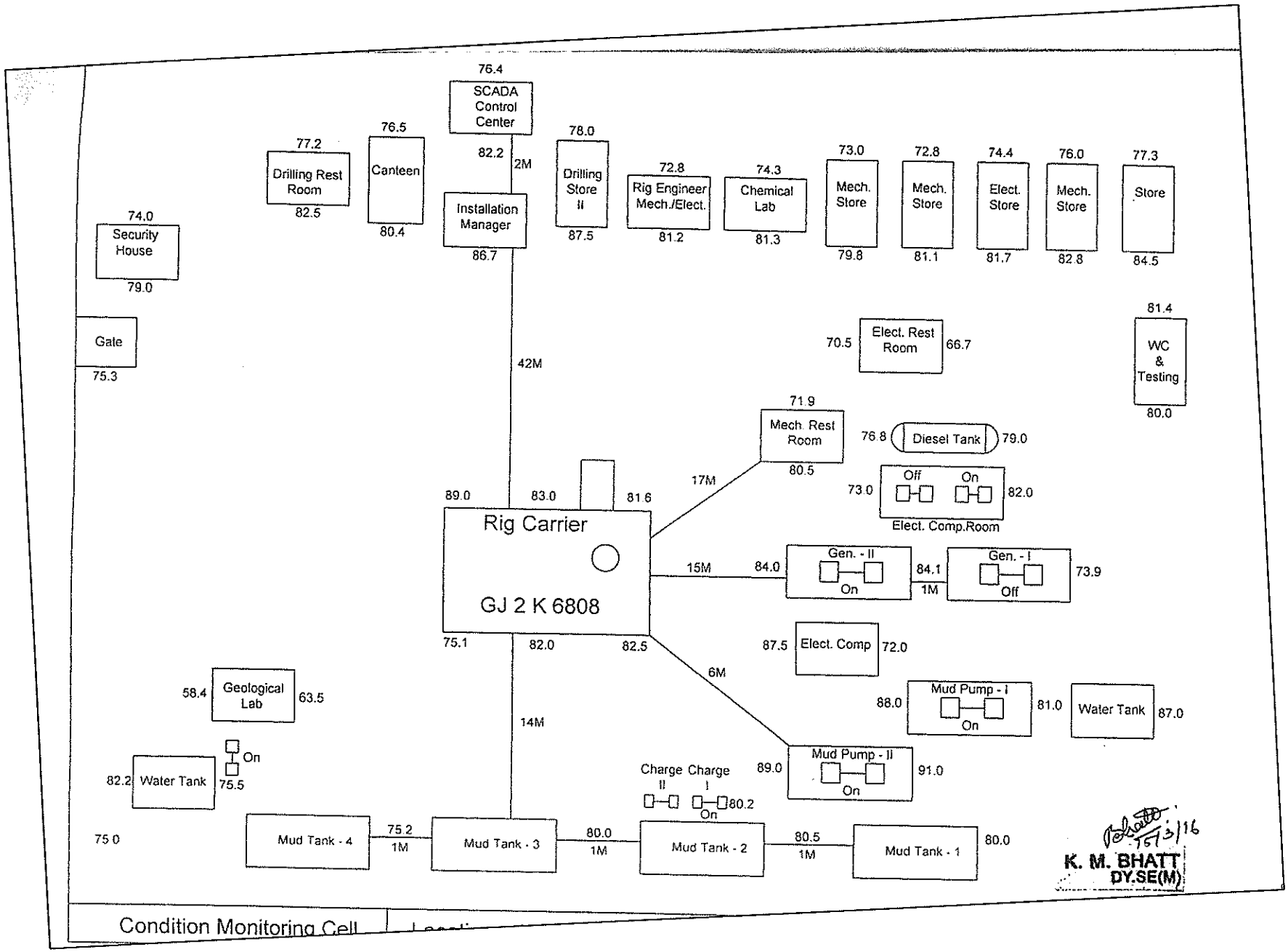
CONDITION MONITORING CELL

ALLOWABLE EXPOSURE TO VARIOUS SOUND LEVELS

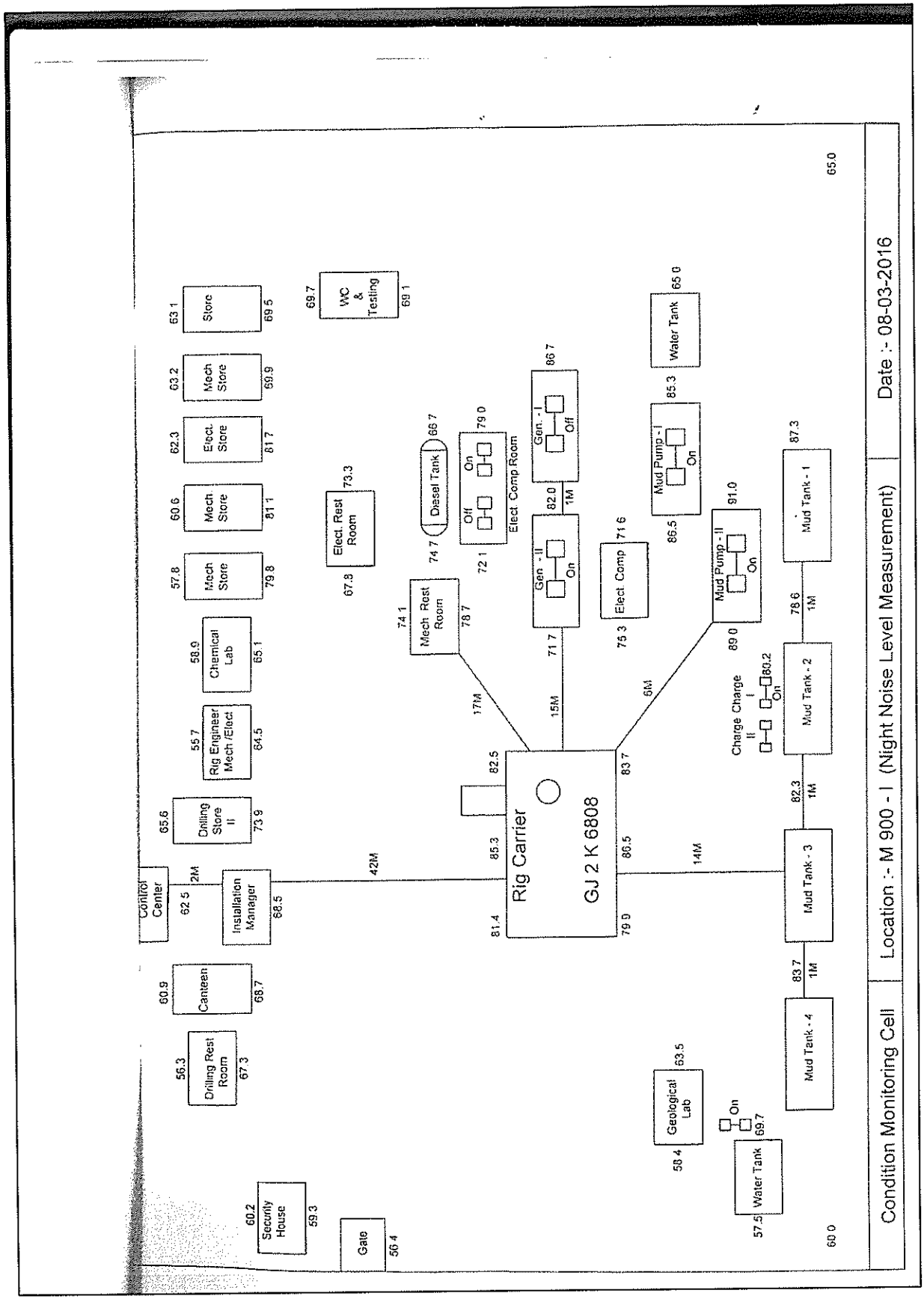
Sr. No.	SOUND LEVEL IN Db	EXPOSURE PER DAY IN HOURS
1.	90	8
2.	92	6
3.	95	4
4.	97	3
5.	100	2
6.	102	1.5
7.	105	1
8.	110	0.5
9.	115	0.5 OR LESS

Note: Submit one extra set of photographs with names on the reverse for issuing of medical booklet

CRNL#03 (CRAG)


76.4
SCADA Control Center
82.2
2M
77.2
Drilling Rest Room
82.5
76.5
Canteen
80.4
Installation Manager
86.7
78.0
Drilling Store II
87.5
72.8
Rig Engineer Mech./Elect.
81.2
74.3
Chemical Lab
81.3
73.0
Mech. Store
79.8
72.8
Mech. Store
81.1
74.4
Elect. Store
81.7
76.0
Mech. Store
82.8
77.3
Store
84.5
74.0
Security House
79.0
Gate
75.3
42M
70.5
Elect. Rest Room
66.7
81.4
WC & Testing
80.0
71.9
Mech. Rest Room
80.5
76.8
Diesel Tank
79.0
17M
73.0
Off
On
82.0
Elect. Comp.Room
89.0
83.0
81.6
Rig Carrier
GJ 2 K 6808
75.1
82.0
82.5
15M
84.0
Gen. - II
On
84.1
1M
Gen. - I
Off
73.9
87.5
Elect. Comp
72.0
6M
58.4
Geological Lab
63.5
14M
88.0
Mud Pump - I
On
81.0
Water Tank
87.0
On
82.2
Water Tank
75.5
Charge
II
Charge
I
On
80.2
89.0
Mud Pump - II
On
91.0
75.0
Mud Tank - 4
75.2
1M
Mud Tank - 3
80.0
1M
Mud Tank - 2
80.5
1M
Mud Tank - 1
80.0
Condition Monitoring Cell
15/3/16
K. M. BHATT
DY.SE(M)

CRNL#03 (CRAG)


Rig Carrier
GJ 2 K 6808
Control Center
Installation Manager
Drilling Store II
Rig Engineer Mech /Elect
Chemical Lab
Mech Store
Mech Store
Mech Store
Elect. Store
Mech Store
Store
WC & Testing
Elect. Rest Room
Mech Rest Room
Diesel Tank
Elect Comp Room
Gen. - I
Gen. - II
Elect Comp
Mud Pump - I
Mud Pump - II
Water Tank
Mud Tank - 1
Mud Tank - 2
Mud Tank - 3
Mud Tank - 4
Charge Charge I II
Canteen
Drilling Rest Room
Geological Lab
Water Tank
Security House
Gate
42M
17M
15M
6M
14M
1M
2M
Condition Monitoring Cell
Location :- M 900 - I (Night Noise Level Measurement)
Date :- 08-03-2016

Analysis Report of Waste Pit Water Sample of CRNL#03 (CRAG)

S.N. HIRPARA POLLUTION CONSULTANTS & ENGINEERS (P) LTD.

(LABORATORY DIVISION)

Regd. Office & Lab.: 706/A, 406/B, Center Point Building, New Civil Hospital Char Rasta,
Ring Road, Surat – 395 002. Gujarat, India. Email : sureshhirpara@yahoo.co.in
Tele fax : 0261 – 2460493-0261 – 2721401 M.: 98251 28836

31/05/2016

ANALYSIS REPORT

Name & Address of Industry	:	**Oil & Natural Gas Corporation Ltd., MUD Services, Mehsana.**
Analytical Report of	:	Waste Pit Water Sample
Location of Collection	:	M-900-I /CRAG
Date/Time of Collection	:	16/03/2016
Date of Sample Spudding	:	29/02/2016 Date of Analysis : 24/05/2016
Date of Release	:	15/03/2016
Sample Collected by	:	A K GAUR

TEST RESULTS:

Sr. No	PARAMETERS	GPCB LIMITS	RESULTS	UNIT
1.	pH	5.5-9.0	7.7	---
2.	Temperature	40	35	^{o}C
3.	Zinc	2.0	0.06	ppm
4.	Suspended Solids	100	85	ppm
5.	Oil & Grease	10	4.1	ppm
6.	Total Dissolved Solids	2100	2099	ppm
7.	BOD	30	25	ppm
8.	COD	100	84	ppm
9.	Chlorides (as Cl^-)	600	526	ppm
10.	Sulphates (as SO_4^{-2})	1000	684	ppm
11.	Sodium	60	51	ppm
12.	Phenolic	1.2	0.7	ppm
13.	Sulphide	2.0	0.8	ppm
14.	Chromium	0.1	0.01	ppm
15.	Total Chromium	1.0	0.02	ppm
16.	Copper	0.2	0.04	ppm
17.	Lead	0.1	0.03	ppm
18.	Mercury	0.01	0.007	ppm
19.	Nickel	0.3	0.05	ppm
20.	Fluoride	1.5	0.01	ppm
21.	Cyanide	0.2	0.02	ppm

Note: ND = Not Detected

Tested By:

(Chemist)
Name: Arti Singh

Approved By

(Authorized Signatory)
Name: Suresh Hirpara

Analysis Report of Waste Pit Soil/Cutting Sample of CRNL#03 (CRAG)

S.N. HIRPARA POLLUTION CONSULTANTS & ENGINEERS (P) LTD.
(LABORATORY DIVISION)

Regd. Office & Lab.: 706/A, 406/B, Center Point Building, New Civil Hospital Char Rasta,
Ring Road, Surat – 395 002. Gujarat, India. Email : sureshhirpara@yahoo.co.in
Tele fax : 0261 – 2460493-0261 – 2721401 M.: 98251 28836

31/05/2016

ANALYSIS REPORT

Name & Address of Industry	:	**Oil & Natural Gas Corporation Ltd., MUD Services, Mehsana.**
Analytical Report of	:	Waste Pit Soil/ Cutting Sample
Location of Collection	:	**M-900-I /CRAG**
Date/ Time of Sample Collection	:	16/03/2016
Date of Spudding	:	29/02/2016 Date of Analysis : 24/05/2016
Date of Release	:	15/03/2016
Sample Collected by	:	A K GAUR

TEST RESULTS:

Sr. No	PARAMETERS	RESULTS	UNIT
1.	pH	7.5	pH Unit
2.	Oil & Grease	5.2	mg/kg
3.	Phenolic compounds	0.4	mg/kg
4.	Chromium	0.3	mg/kg
5.	Chloride	4.6	mg/kg
6.	Fluoride	0.06	mg/kg
7.	Mercury	0.009	mg/kg

Note: ND = Not Detected

Tested By:

(Chemist)
Name: Arti singh

Approved By:

(Authorized Signatory)
Name: Suresh Hirpara

Analysis Report of Waste Pit Soil/Cutting Sample of CRNL#03 (CRAG)

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31/05/2016

ANALYSIS REPORT

Name & Address of Industry	:	**Oil & Natural Gas Corporation Ltd., MUD Services, Mehsana.**
Analytical Report of	:	Waste Pit Soil/ Cutting Sample
Location of Collection	:	**M-900-I /CRAG**
Date/ Time of Sample Collection	:	16/03/2016
Date of Spudding	:	29/02/2016 Date of Analysis : 24/05/2016
Date of Release	:	15/03/2016
Sample Collected by	:	A K GAUR

TEST RESULTS:

Sr. No	PARAMETERS	RESULTS	UNIT
1.	pH	7.5	pH Unit
2.	Oil & Grease	5.2	mg/kg
3.	Phenolic compounds	0.4	mg/kg
4.	Chromium	0.3	mg/kg
5.	Chloride	4.6	mg/kg
6.	Fluoride	0.06	mg/kg
7.	Mercury	0.009	mg/kg

Note: ND = Not Detected

Tested By:

(Chemist)
Name: Arti singh

Approved By:

(Authorized Signatory)
Name: Suresh Hirpara

Waste Pit Soil/Cutting Sample Report of Well CRNL#03#8 (CRAG)

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Tele fax : 0261 – 2460493-0261 – 2721401 M.: 98251 28836

31/05/2016

ANALYSIS REPORT

Name & Address of Industry	:	**Oil & Natural Gas Corporation Ltd., MUD Services, Mehsana.**
Analytical Report of	:	Waste Pit Soil/ Cutting Sample
Location of Collection	:	M-900-I /CRAG
Date/ Time of Sample Collection	:	16/03/2016
Date of Spudding	:	29/02/2016 Date of Analysis : 24/05/2016
Date of Release	:	15/03/2016
Sample Collected by	:	A K GAUR

TEST RESULTS:

Sr. No	PARAMETERS	RESULTS	UNIT
1.	pH	7.5	pH Unit
2.	Oil & Grease	5.2	mg/kg
3.	Phenolic compounds	0.4	mg/kg
4.	Chromium	0.3	mg/kg
5.	Chloride	4.6	mg/kg
6.	Fluoride	0.06	mg/kg
7.	Mercury	0.009	mg/kg

Note: ND = Not Detected

Tested By:

(Chemist)
Name: Arti singh

Approved By:

(Authorized Signatory)
Name: Suresh Hirpara

Waste Pit WATER Sample Report of Well CRNL#03 (CRAG)

S.N. HIRPARA POLLUTION CONSULTANTS & ENGINEERS (P) LTD.

(LABORATORY DIVISION)

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Tele fax : 0261 – 2460493-0261 – 2721401 M.: 98251 28836

31/05/2016

ANALYSIS REPORT

Name & Address of Industry	:	Oil & Natural Gas Corporation Ltd., MUD Services, Mehsana.
Analytical Report of	:	Waste Pit Water Sample
Location of Collection	:	Well: M-900-I / CRAG
Date/ Time of Sample Collection	:	05/03/2016 Date of Analysis: 24/05/2016
Date of Spudding	:	29/02/2016
Date of Release	:	15/03/2016
Sample Collected by	:	A.K. GAUR

TEST RESULTS:

Sr.No	PARAMETERS	GPCB LIMITS	RESULTS	UNIT
1.	Mercury	0.02	0.004	ppm

Note: ND = Not Detected

Tested By:

(Chemist)
Name: Arti Singh

Approved By:

(Authorized Signatory)
Name: Suresh Hirpara

Stack Analysis Report of Rig M 900-I(This rig drilled CRNL#03(CRAG) & CRNL#04(CRAI)

NOA NO:MHN/MM/HSE/CONTRACT/206/2013-14/NOA

Analysis Report Of Stack Monitoring For The Month of December-2015

To,
M/s Oil & Natural Gas Corporation Ltd.
Rig M-900-I Well No-LWKG, Dist: Mehsana.

Report Date: 01/01/2016
Report No.: 96/15/12//02

GENERAL DESCRIPTION

Sample Location	:	Rig M-900-I Well No-LWKG
Sample collected Date	:	26/12/2015
Lab ID Code	:	96/LB/15/ST
Sampling Time	:	20 Min
Purpose	:	Environment Monitoring

RESULT TABLE

SR. NO.	PARAMETER	UNIT	GPCB PERMISSIBLE LIMIT	RESULT Location 1	TEST METHOD
1.	Suspended Particulate Matter (SPM)	mg/Nm^3	150	73.6	IS:11255:(P-1):1985
2.	Sulphur Dioxide (SO_2)	ppm	100	9.1	IS:11255:(P-2):1985
3.	Oxides of Nitrogen (NO_x)	ppm	50	6.5	IS:11255: (P-7):2005
4.	Hydrocarbon as CH_4	mg/Nm^3	15	4.1	Digital Gas Analyzer
6.	Carbon Monoxide (CO)	mg/Nm^3	150	1.3	Digital CO Analyzer
7.	Hydrogen Sulphide (H_2S)	mg/Nm^3	45	BDL	IS:11255: (P-4):2006

BDL: Below Detectable Limit . BDL Limit of H_2S: 0.01 mg/Nm^3

Location 1: D. G. set

Authorized Signatory

Prepared By