

**COMPLIANCE OF CONDITIONS IN ENVIRONMENTAL CLEARANCE
(COMPLIANCE REPORT)**

Environmental Clearance No. J-11011/431/2011-IA II(I), dt: 25.06.20143

Well Nos.:GNSGD

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	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 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 PM ₁₀ , PM _{2.5} , SO ₂ , NO _x , 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.
3	Mercury shall 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
4	Approach road shall 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 550 m x 4.0 m was constructed.
5	The company shall make the arrangement for control of noise from the drilling activity Acoustic enclosure shall be provided to DG Sets and proper stake height shall be provided as per CPCB guidelines.	Complied. Acoustic 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.
6	Total water requirement shall not exceed 27 M ³ /day and prior permission shall be obtained from the competent authority.	Complied. During the drilling activity the water consumption was approx. 27 m ³ per day on an average.
7	The Company shall construct the garland drain all around the drilling site to prevent run off any oil containing waste to 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 should be confirmed to CPCB standards.	The garland drains are not constructed to prevent run off any oil contaminating waste as all the vulnerable processes 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 accumulate 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 this the condition may be considered as Complied .

8	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 of 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 1 - rule 3 (1) (17) (i) of MOEFCC notification dt: 14.04.2016]. ONGC Ahmedabad is member of TSDF at Bharuch Enviro Infrastructure Limited.
9	Good sanitation facility shall be provided at the drilling sites. Domestic sewage shall be disposed of through septic tank/soak pit.	Complied. Domestic sewage is disposed through adequate septic tanks and soak pits
10	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 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. Recyclable hazardous waste like Spent oil, POL barrels etc. are recycled centrally through authorised re-cyclers.
11	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.	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.
12	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.	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 i.e. "Hot Work Permit" system. As mentioned above in point 12, 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. 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.

13	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.	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 Bharuch district.
14	On completion of drilling, the company shall 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.
15	Blow Out Preventor(BOP) system shall be installed to prevent well blowouts during drilling operations.BOPmeasures during drilling shall 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.
16	Emergency response plan(ERP) shall 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)
17	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.
18	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.
19	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).
20	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.
21	Restoration of the project site shall be carried out satsfactorily and report shall 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.
22	Oil content in the drill cuttings shall be monitored by some Authorised agency and report shall 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)..
23	Under Enterprise Social Commitment (ESC),sufficent budgetary provision shall 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
24	An audit shall be done to ensure that the Environment Management Plan is implemented in totality and report shall 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.

25	All the commitment made regarding issues raised during the public hearing/consultation meeting held on 12th November,2013 and 13th November,2013 and shall be satisfactorily implemented.	Complied. In the Public Hearing conducted at Surat on 12.11.2013, the mostly points raised by the villagers were about the welfare measure such as construction/repair of roads and also about the drilling mud used, it was told that the water base mud is being used by ONGC and it is non hazardous. During the Public Hearing held on 13.11.2013 at village Itola the farmer told about the late payments by ONGC towards the crop compensation. The same was resolved.
26	All personnel including those of contractors shall 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
27	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.
28	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 environment monitoring shall 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.
29	Company should 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 environment monitoring shall 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 consolidated 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. Permission for 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 enviroment management, monitoring and compliance to regularity bodies.
vi	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/Municipal Corporation, Urban Local Body and the local NGO, 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 compliance 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 installation for processing and thus becomes part of that installation. All the Installations are operating under CCA from GPCB and accordingly environmental statement as per prescribed 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 clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same 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.

M.A. Haseeb
18/7/2016



 एम.ए. हसीब / M.A. HASEEB
 महाप्रबंधक (भूभौतिकी) - प्रखंड प्रबंधक-1
 GM (Geol.) - BM - I

GNSGD

- G.P.C.B. Recognized Environmental Auditor (Schedule II)
- Evaluation of Environmental Management System (EMS) And Certification For Adequacy
- Treatability Studies



Shubh Enviro Research Lab

TEST REPORT

REPORT NO. : SERL/ONGC/E-1400-III/AAQM/MARCH/2016/01 Date of issue : 30-03-2016

Client	M/S. OIL AND NATURAL GAS CORPORATION LTD.
Address	Drilling Services, Ankleshwer Asset, Ankleshwer-393 010, Gujarat.
Work Order No. & Date	ANK/DS/P&C-Mech/Contracts/04/2014-15 & 26-02-2015

AMBIENT AIR QUALITY MONITORING REPORT

Sr. No.	DESCRIPTION	DATA
	Particulars of Sample	Station 1
1	Sample ID	366-AQ-05
2	No. of samples	1
3	Date and time of start of sampling	23-03-2016 & 12:10 hrs
4	Date and time of completion of sampling	24-03-2016 & 12:10 hrs
5	Duration of Sampling in hrs	24:00
6	Approx. ht. of sampling point in meter	~ 3.5
7	Sampled by	Mr. Rafik
8	Date of Analysis	28-03-2016

Sampling Procedure : As per IS : 5182 (Part V) - 1975 reaffirmed 2003, IS : 5182 (Part 23) - 2006 and CPCB guidelines

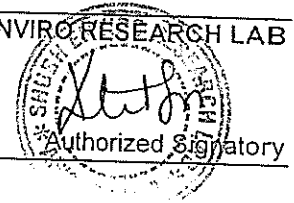
Details of Sampling Station	
1	Location
2	Distance from plant site, km
3	Wind direction
4	Average wind speed, Kmph

	Parameters Analysed	Unit	Test Method	Permissible Limits as per NAAQS 2009 (24 hrs)	Results
1.	PM10	µg/m3	IS 5182 (part 23) 2006	100	75
2.	PM2.5	µg/m3	EPA method- Gravimetric Method	60	28
3.	SO2	µg/m3	IS 5182 (part II) : 2001	80	8
4.	NOx	µg/m3	IS 5182 (part VI 2006)	80	19

Abbreviations: BDL-Below Detection Limit, µg-Microgram,

Chemist : *[Signature]*

For SHUBH ENVIRO RESEARCH LAB



- Note :
1. This result listed refer only to the tested samples and applicable parameters.
 2. Permissible limits are given by customer and included in the report upon request by customer
 3. The opinions and interpretations contained in this report are based upon material and information supplied by customer
 4. Perishable samples will be destroyed after testing, others after 7 days from the date of issue of the report, unless otherwise agreed with the customer or as required by applicable regulations
 5. This report shall not be used as evidence in the court of law and cannot be used in part or full in any media without prior permission.

*** End of Report ***
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- G.P.C.B. Recognized Environmental Auditor (Schedule II)
- Evaluation of Environmental Management System (EMS) And Certification For Adequacy
- Treatability Studies



Shubh Enviro Research Lab

TEST REPORT

REPORT NO. : SERL/ONGC/E-1400-III/NL/MARCH/2016/02

Date of Issue :30-03-2016

Client	M/s. OIL AND NATURAL GAS CORPORATION LTD.
Address	Drilling Services, Ankleshwer Asset, Ankleshwer-393 010, Gujarat.
Work Order No. & Date	ANK/DS/P&C-Mech/Contracts/04/2014-15 & 26-02-2015

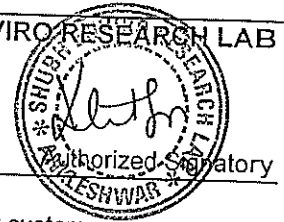
Sample ID	366-NL-05
Location	E - 1400- III (Kalak)
Date & Time of Monitoring	25/03/2016, & 10:20 to 10:50hrs.
Measuring Instrument	Lutron make Noise Level Meter (Model No. SL4001) Frequency Weighing - A Time Weighing - Slow
Measured By	Rafik

Procedure:As per Work Instruction of Instrument and as per IS-9989(1981)RA-2001

SR. NO.	LOCATION	Noise Level, db(A)	
		Permissible Limit Day (6 am to 10 pm)(Note-2)	Day Results (avg.)
1	Near Main Gate	75	57
2	Near D.G. SET Operation (From 3 meter Distance)	75	80
3	Near mud pump Area	75	73
4	Near upper prowler	75	66
5	Near shale shaker	75	62

Chemist :

For SHUBH ENVIRO RESEARCH LAB



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Shubh Enviro Research Lab

TEST REPORT

REPORT NO. : SERL/ONGC/E-1400-III/ST/MARCH/2016/05

Date of Issue: 30-03-2016

Client	M/s. OIL AND NATURAL GAS CORPORATION LTD.		
Address	Drilling Services, Ankleshwer Asset, Ankleshwer-393 010, Gujarat.		
Work Order No. & Date	ANK/DS/P&C-Mech/Contracts/04/2014-15 & 26-02-2015		
Sr. No.	DESCRIPTION	FLUE GAS STACK EMISSION ANALYSIS	
	Monitoring Location	E - 1400 - III (Kaiaak)	
	Particulars of Sample	Stack 5	Stack 6
1	Sample ID No.	366-FS-26	366-FS-27
2	Stack attached to	Mobile Compressor	Emergency Gen Set (250 KVA)
3	Detail of APCM	-	-
4	Diesel Generator Capacity	-	250 KVA
5	Date & Time of sampling	25-03-2016, & 13:10 hrs	25-03-2016, & 13:50 hrs
6	Date of Receipt	26-03-2016	26-03-2016
7	Date of Analysis start	28-03-2016	28-03-2016
8	Date of Completion	28-03-2016	28-03-2016

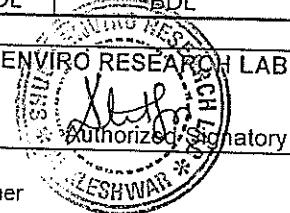
Sampling Procedure : As per IS : 11255 (Part I) - 1985 reaffirmed 2003, IS : 11255 (Part 3) - 2008 and CPCB guidelines

Details of Stack						
1	Stack Height	6 feet	4 m			
2	Stack Diameter	4 Inch	6 Inch			
3	Temperature of Flue gas	85 °C	94 °C			
4	Velocity of Flue gas	8.9 m/sec	8.4 m/sec			
Details of flue gas						
1	Type of Fuel	Diesel	Diesel			
2	Rate of Consumption	10-20 Ltr/h	20-30 Ltr/h			
Parameters Analysed	UNIT	TEST METHOD	Permissible Limit (Note2)	Results	Results	
1	PM	mg/Nm ³	IS 11255(Part-1)-1985 (Gravimetric)	150	65	62
2	SO ₂	ppm	IS 11255(Part-2)-1985	100	21	18
3	NO _x	ppm	IS : 11255 (Part 7) - 2005	50	25	21
4	HC (as CH ₄)	ppm	IS Method	15	7	6
5	CO	ppm	IS Method	23	10	12
6	H ₂ S	ppm	IS Method	100	BDL	BDL

Abbreviation: BDL-Below Detection Limit.

Chemist :

For SHUBH ENVIRO RESEARCH LAB



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TEST REPORT

REPORT NO. : SERL/ONGC/E-1400-III/ST/MARCH/2016/04

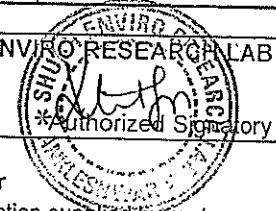
Date of Issue: 30-03-2016

Client		M/s. OIL AND NATURAL GAS CORPORATION LTD.				
Address		Drilling Services, Ankleshwer Asset, Ankleshwer-393 010, Gujarat.				
Work Order No. & Date		ANK/DS/P&C-Mech/Contracts/04/2014-15 & 26-02-2015				
Sr. No.	DESCRIPTION	FLUE GAS STACK EMISSION ANALYSIS				
	Monitoring Location	E - 1400 - III (Kalak)				
	Particulars of Sample	Stack 3	Stack 4			
1	Sample ID No.	366-FS-24	366-FS-25			
2	Stack attached to	Cater Piller Engine- 3 (Power pack -3)	Cater Piller Engine- 4 (Power pack -4)			
3	Detail of APCM	-				
4	Diesel Generator Capacity	-				
5	Date & Time of sampling	25-03-2016, &11:50 hrs	25-03-2016, & 12:30 hrs			
6	Date of Receipt	26-03-2016	26-03-2016			
7	Date of Analysis start	28-03-2016	28-03-2016			
8	Date of Completion	28-03-2016	28-03-2016			
Sampling Procedure : As per IS : 11255 (Part I) - 1985 reaffirmed 2003, IS : 11255 (Part 3) - 2008 and CPCB guidelines						
Details of Stack						
1	Stack Height	15 feet	15 feet			
2	Stack Diameter	15 Inch	15 Inch			
3	Temperature of Flue gas	115 °C	110 °C			
4	Velocity of Flue gas	8.6 m/sec	8.9 m/sec			
Details of flue gas						
1	Type of Fuel	Diesel		Diesel		
2	Rate of Consumption	80-100 Ltr/h		80-100 Ltr/h		
Parameters Analysed	UNIT	TEST METHOD	Permissible Limit (Note2)	Results	Results	
1	PM	mg/Nm ³	IS 11255(Part-1)-1985 (Gravimetric)	150	88	72
2	SO ₂	ppm	IS 11255(Part-2)-1985	100	23	22
3	NO _x	ppm	IS : 11255 (Part 7) - 2005	50	22	25
4	HC (as CH ₄)	ppm	IS Method	15	8	9
5	CO	ppm	IS Method	23	11	13
6	H ₂ S	ppm	IS Method	100	BDL	BDL

Abbreviation: BDL-Below Detection Limit.

Chemist :

For SHUBH ENVIRO RESEARCH LAB



- Note : 1. This result listed refer only to the tested samples and applicable parameters.
 2. Permissible limits are given by customer and included in the report upon request by customer
 3. The opinions and interpretations contained in this report are based upon material and information supplied by customer
 4. Perishable samples will be destroyed after testing, others after 7 days from the date of issue of the report, unless otherwise agreed with the customer or as required by applicable regulations
 5. This report shall not be used as evidence in the court of law and cannot be used in part or full in any media without prior permission.

*** End of Report ***

Page.1 of 1

✓ " Grow More "

- G.P.C.B. Recognized Environmental Auditor (Schedule II)
- Evaluation of Environmental Management System (EMS) And Certification For Adequacy
- Treatability Studies



Shubh Enviro Research Lab

TEST REPORT

REPORT NO. : SERL/ONGC/E-1400-III/ST/MARCH/2016/03

Date of Issue: 30-03-2016

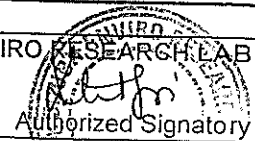
Client		M/s. OIL AND NATURAL GAS CORPORATION LTD.				
Address		Drilling Services, Ankleshwer Asset, Ankleshwer-393 010, Gujarat.				
Work Order No. & Date		ANK/DS/P&C-Mech/Contracts/04/2014-15 & 26-02-2015				
Sr. No.	DESCRIPTION	FLUE GAS STACK EMISSION ANALYSIS				
	Monitoring Location	E - 1400 - III (Kalak)				
	Particulars of Sample	Stack 1	Stack 2			
1	Sample ID No.	366-FS-22	366-FS-23			
2	Stack attached to	Cater Piller Engine -1 (Power pack -1)	Cater Piller Engine - 2 (Power pack -2)			
3	Detail of APCM	-	-			
4	Diesel Generator Capacity	-	-			
5	Date & Time of sampling	25-03-2016, &10:30 hrs	25-03-2016, &11:10 hrs			
6	Date of Receipt	26-03-2016	26-03-2016			
7	Date of Analysis start	28-03-2016	28-03-2016			
8	Date of Completion	28-03-2016	28-03-2016			
Sampling Procedure : As per IS : 11255 (Part I) - 1985 reaffirmed 2003, IS : 11255 (Part 3) - 2008 and CPCB guidelines						
Details of Stack						
1	Stack Height	15 feet	15 feet			
2	Stack Diameter	15 Inch	15 Inch			
3	Temperature of Flue gas	105 °C	111 °C			
4	Velocity of Flue gas	8.4 m/sec	8.8 m/sec			
Details of flue gas						
1	Type of Fuel	Diesel	Diesel			
2	Rate of Consumption	80-100 Ltr/h	80-100 Ltr/h			
Parameters Analysed	UNIT	TEST METHOD	Permissible Limit (Note2)	Results	Results	
1	PM	mg/Nm3	IS 11255(Part-1)-1985 (Gravimetric)	150	91	84
2	SO ₂	ppm	IS 11255(Part-2)-1985	100	26	23
3	NO _x	ppm	IS : 11255 (Part 7) - 2005	50	21	19
4	HC (as CH ₄)	ppm	IS Method	15	12	8
5	CO	ppm	IS Method	23	15	13
6	H ₂ S	ppm	IS Method	100	BDL	BDL

Abbreviation: BDL-Below Detection Limit.

Chemist :

[Signature]

For SHUBH ENVIRO RESEARCH LAB



- Note : 1. This result listed refer only to the tested samples and applicable parameters.
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*** End of Report ***

Page 1 of 1

✓ " Grow More "

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

REF#SNH/LAB/ANALYSIS/ONGC-ANK/10/15

23/11/2015

ANALYSIS REPORT

Name & Address of Industry : Oil & Natural Gas Corporation Ltd.,
Ankleshwar Asset, Ankleshwar, Bharuch, Gujarat.
Analytical Report of : Waste Water Sample of Well No. #GNSGD, Rig No. E-1400-III
Drill Cutting Sample of Well No. #GNSGD, Rig No. E-1400-III
Date/ Time of Sample Collection : 22/10/2015
Location of Collection : Well No. #GNSGD Rig No. . E-1400-III
Sample Collected by : S.N.Hirpara
Date of Receipt of Sample : 16/11/2015

:TEST RESULTS:

Sr.No.	Parameters	GPCB Limit	Unit	Wastewater Sample Of	Drill Cutting Sample C
				Well No. #GNSGD, Rig No. E-1400-III Gandhar Oil Field	Well No. #GNSGD, Rig No. E-1400-III Gandhar Oil Field
Date Of Sample Collection				22/10/2015	22/10/2015
				Results	Results
1.	Temperature	40	°C	35	36
2.	pH	5.5-9.0	--	7.1	7.3
3.	Total Dissolved solid	2100	mg./lit	1530	1445
4.	Suspended Solid	100	mg./lit	90	24
5.	BOD ₅ 27°C	30	mg./lit	23	24
6.	COD	100	mg./lit	89	38
7.	Oil & Grease	10	mg./lit	3.1	2.5
8.	Phenolic Compounds	1.2	mg./lit	ND	ND
9.	Sulphides	2.0	mg./lit	0.5	0.4
10.	Sulphate	1000	mg./lit	978	562
11.	Cr ⁺⁶	0.1	mg./lit	BDL	BDL
12.	Total Chromium	1.0	mg./lit	0.07	ND
13.	Chlorides	600	mg./lit	560	338
14.	% Sodium	60	mg./lit	51	55
15.	Zinc	2.00	mg./lit	BDL	BDL
16.	Copper	0.2	mg./lit	BDL	BDL
17.	Fluorides	1.5	mg./lit	0.04	0.02
18.	Mercury	0.01	mg./lit	ND	NIL
19.	Cyanides	0.2	mg./lit	BDL	BDL
20.	Lead	0.1	mg./lit	BDL	BDL
21.	Nickel	0.3	mg./lit	BDL	BDL

Note: ND = Not Detected, BDL= Below Detectable Limit.

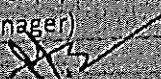
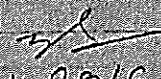

For S. N. Hirpara Pollution Consultants & Engineers Pvt. Ltd.

Sr. Chemist

Env. Engin

EMERGENCY RESPONSE PLAN FOR RIG E-1400-III



Prepared by: Mr. T. Kumar, CE(D) Mr. B. D. Shukla, CE(D) (Installation Manager) Signature:  Date: 12.01.16	Checked by: V/C HSE-DS TRYAMBAK KUMAR CE(D) Signature:  Date: 12.01.2016	Approved by: MR Mr. R.S. Shah, GM(D) Signature:  Date: 12/01/2016
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INDEX

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1.0 FIRE CONTINGENCY PLAN FOR RIG

THE CONTINGENCY PLAN ON FIRE FOR DRILLING RIG E-1400-3 IS PREPARED IN TERM OF THE REQUIREMENT OF OIL MINES REGULATION-72.

FOR THE PURPOSE OF THIS PLAN CONTINGENCY MEANS ANY SITUATION ARISING DUE TO FIRE AT RIG AND WHICH CAN BE TACKLED WITH THE HELP OF RESOURCES AVAILABLE WITH THE INSTALLATION AND FIRE SECTION OF ANKLESHWAR ASSET. ANY SITUATION REQUIRING RESOURCES BEYOND THIS SHALL BE DEALT BY PUTTING DISASTER MANAGEMENT PLAN IN OPERATION.

EMERGENCY TELEPHONE NUMBERS OF RIG E-1400-3

			<u>Office</u>	<u>Residence</u>
1	Nearest Fire Station		Central Fire Stn. Gandhar 2641-221895, 2641-232315	DSA Gandhar 02641-232314
2	Dispensary Ankleshwar		02646-247031	
3	Dispensary Bharuch	*	02642-243684	
4	Dr. A. I. Ahmad, I/C (M.S)		9428332974	02646-236081
5	Ambulance, Ankleshwar	*	02646-247031	-
6	Ambulance, Bharuch		02642-243684	
7	Mines Owner		Director (exploration), ONGC 011-23314549	
8	Mines Agent Shri. DMR Shekhar – GGM Ank. Asset	*	9426613000, 237500	02646-236001
9	Mines Manager Shri. Ahmad javed – HDS Ank .		9426613033 , 02646-237602	02646-236421
10	Location Manager R. S. Shah - LM (DS)	*	9428332344	
11	Operation Manager R. S. Shah, GM (D)		9428333122	
12	Area Manager Kk Arya, DGM (D)		9428332490	
13	Installation Manager T. KUMAR, CE (D) & B. D. Shukla, CE (D)		9428333151 9428333986	Rig Phone No. 9426613051
14	Installation Safety Officer P. K. Sharma CE (D) & A.SINGH ,AEE(D)		9428333716 9428333146	
15	I/C HSE-DS (A. K. Srivastava)	*	9428333982	
16	In charge Fire A. K. Tripathi DGM (Fire Serv.)	*	09428333037	
17	Base Control Room, Ankleshwar	*	02646-237979,237980	
18	Base Control Room, Gandhar	*	02641-232314, 09426613019	
19	Fire control Room, Ankleshwar	r	02646-237333. 237546	
20	Fire control Room, Gandhar	*	02641-232315	
21	Fire station CTF Gandhar	*	9426613007	

*** At every Rig movement DIC / Installation Manager shall inform to the nearest Fire station about the change of Location.**

LIKELY FIRE SITUATIONS AT DRILLING RIG

1. Fire in electrical equipment.
2. Fire in Bunk houses use for office / storage etc.
3. Fire in POL Storage.
4. Fire in HSD Tank.
5. Fire in Diesel Engines
6. Fire due to spillage of oil.
7. Fire due to Gas leakage.
8. Fire in nearby fields.
9. Blow out.
10. Any other.

Except Blow out fire all other cases of fire at Drilling Rig will be of minor / small fire category. However fire in POL storage / HSD tank is to be treated as of medium intensity w.r.t. the fire fighting effort.

This plan covers all likely fire situations except Blow out fire. In case of Blow out fire Disaster Management plan is to be implemented.

A. ORGANISATION PLAN

Sr. No.	Description	Responsibility
1.	Person Noticing fire	<ul style="list-style-type: none"> - Raise the Alarm - Inform Fire Station
2.	Shift Crew	<ul style="list-style-type: none"> - Take shutdown, if require. - Try to extinguish fire with the help of available fire fighting equipment.
3.	Shift In-charge	<ul style="list-style-type: none"> - To supervise the fire fighting operation. - Ensure that the Nearest fire station is informed. - Inform Central Fire Station Gandhar Control Room at 02641-221895 / 232315. - To ensure that all record/ document are moved to safe location.
4.	Control Room (Base Office)	<ul style="list-style-type: none"> - Collect the details about fire from caller. - Rush the fire tender with crew to site. - Inform fire Officer at base office.
5.	In charge Fire crew	<ul style="list-style-type: none"> - Immediate on Arrival take charge of fire fighting operation. - Inform base office for further assistance, if required.
6.	Fire Officer	<ul style="list-style-type: none"> - Rush to site, if require. - Mobilise additional resource if require.
7.	Security personnel	<ul style="list-style-type: none"> - Ensure that No unauthorised person enter the installation. - Road is kept free for movement of fire tender and other emergency vehicle. - Other vehicles are parked at safe distance.
8.	Mines Manager	<ul style="list-style-type: none"> - Mobilise the resources required to control the fire. - Arranging essential supplies to site. - Rush to site, if require.

B. EQUIPMENT PLAN AT RIG E-1400-3

SL. NO.	TYPE OF FIRE EXT.	CAPACITY	QTY.	USE ON TYPE OF FIRE.
1.	DCP Fire Ext.	10 kg	18	B & C
2.	DCP Fire Ext.	75 kg	01	B & C
3.	Mechanical Foam	50 Ltrs	01	
4.	CO2 Fire Ext.	4.5 kg	03	Elect. equip.
5.	CO2 Fire Ext.	6.8 kg	02	Elect. equip.
6.	Fire Bucket	9 litre	05	Class 'A'
7.	Shovel			Oil spills etc.
8.	Fire Pump- Diesel operated		01	Class 'A'
9.	Fire Monitor		01	

For details on operation procedure/ field of operation refer Annexure - I

ACTION PLAN

(1) ALARM & COMMUNICATION

Person noticing the fire shall shout 'FIRE' 'FIRE' 'AAG' and ring the FIRE BELL.

COMMUNICATION -For communication purpose Telephone/ VHF set is available.

Inform the nearest fire station as mentioned on page no. 2 at Telephone No. (REFER PAGE NO. 2) or on VHF inform to nearest fire station or Central Fire Station Control Room for passing message to fire station.

(2) SYSTEM OF NOTIFYING TO AUTHORITIES

The mines manager will assess the situation and in consultation with mines agent & safety Officer shall inform the District Magistrate, Regional Inspector and Chief Inspector.

(3) TERMINATION OF FIRE FIGHTING OPERATION

Fire Officer or I/C. fire crew shall assess the situation when the fire is extinguish to ensure that there is no likely chance of re-occurrence of fire shall call for the termination of fire fighting operation.

(4) TRAINING OF PERSONNEL

- (a) Installation manager in consultation with Fire Officer shall organise training of rig personnel on first aid fire fighting.
- (b) Installation manager should conduct mock drill **once in a month** and record of such drill shall be maintained.

RIG MOVEMENT

With every change of location, it is the responsibility of Installation Manager (DIC) that nearest Fire Station is informed about the location with location map, indicating important land marks and roads from fire station to the rig.

ANNEXURE - ICORRECT METHOD & USE AND AREA OF OPERATION
OF FIRE EXTINGUISHERSA. CLASS OF FIRES :

CLASS - A	:	Fire in ordinary combustible material such as Wood cloth paper etc.
CLASS - B	:	Fire inflammable and combustible liquids.
CLASS - C	:	Fire inflammable Gases.
CLASS - D	:	Fire in metals.

B. AREA OF OPERATION V/S TYPE OF EXTINGUISHER.

	<u>Type of Extinguisher</u>	<u>Class of fires</u>
a)	DCP type	A, B & C
b)	Foam type	B
c)	CO2 type	An electrical / electronic equipment.
d)	Fire Bucket filled with sand	A

METHOD OF OPERATION :DRY CHEMICAL POWDER TYPE EXTINGUISHERS.1) DCP 75 KG/ 50 KG/ 22.5 KG

- Push the extinguisher up to 7-8 m distance from fire.
- Uncoil the discharge hose.
- Remove the safety pin & open the valve of CO2 Cylinder fully.
- Press the squeeze grip or open the discharge valve and apply the powder in sweeping action at the base of fire.
- The powder shall be applied in down wind direction.

2) DCP FIRE EXTINGUISHER 10 KG / 5 KG.

- a) Carry the extinguisher near the fire.
- b) Remove the safety clip and hit the plunger with hard object.
- c) Direct the discharge tube toward the base of fire and apply it in sweeping action by pressing the squeeze grip handle.

3) CHEMICAL FOAM EXTINGUISHER.

- a) Carry the extinguisher near the fire.
- b) Lift the 'T' shape handle and put it in the grove in locking position.
- c) Lift the extinguisher and rotate it up & down to facilitate the mixing of chemicals.
- d) Hold the extinguisher in inverted position (Cap facing the bottom).
- e) Direct the nozzle toward the vertical support near the fire.
- f) Hitting the foam jet towards vertical surface will facilitate the spread of foam layer over burning liquid.

4) CO2 FIRE EXTINGUISHER :

- a) Carry the extinguisher near the fire.
- b) Hold the discharge horn from its handle.
- c) Remove the safety pin and open the discharge valve fully.
- d) Apply the CO2 by moving horn in sweeping action towards the base of fire.
- e) NOTE: Do not afraid of whissing sound.

Kill fire before it kills you.

2.0 KICK / BLOW OUT:

Kick (unintended flow of formation fluid in well bore during drilling or work Over operation) if not handled properly will lead to Blow out (uncontrolled Gushing of Oil & Gas). It is the worst situation, which may arise at oil wells During Drilling, Work over, Perforation, Reservoir Studies, production etc. Blow out may also result into fire and explosion, which may cause immense Loss of life, property & environment.

2.1 PREPARATION:

1. BOP stack to be installed as per GTO/ well plan.
2. BOP stack to be function & pressure tested as per guidelines.
3. BOP drill to be carried out once every week as given in annexure.

2.2 INDICATORS OF A KICK:

2.2.1 WHILE DRILLING :

- a. Sudden increase in drilling rate.
- b. Increase in return flow rate.
- c. Increase in mud tank volume.
- d. Decrease of pump pressure.
- e. Increase of pump SPM.
- f. Self flow with pumps off.
- g. Increase in string weight due to lighter fluids in the hole.
- h. At a quite later stage when the kick comes near surface, a great deal of Surging and splashing of mud occurs.

2.2.2 WHILE PULLING OUT:

- a. Failure of the well to take mud equal to the metallic volume of pipes removed.
- b. The well flows.

2.2.3 WHILE RUNNING IN :

- a. Mud tank level will increase more than the steel volume of the pipe run in.
- b. The well does not stop flowing during time gap between runnings in of one pipe stand and the other.

2.2.4 WHEN OUT OF HOLE:

- a. The well flows.

2.3 RESPONSE:

Close the well as early as possible following the steps given below:

2.3.1 WHILE DRILLING:

- a. Stop rotary.
- b. Pick up Kelly to clear tool joint above rotary table.
- c. Stop mud pump & super charger.
- d. Check for self-flow. If positive, close the well by any of the following Method depending on well situation.

SOFT SHUT - IN

- A. Open Hydraulic Control Valve (HCR) on choke line to give a free passage to Mud. Adjustable choke already kept partially open
- B. Close BOP
- C. Close Choke
- D. Record stabilized SIDPP, SICP & pit gain

HARD SHUT- IN

- A. Close BOP
- B. Open HCR Valve when choke is in fully closed position
- C. Record stabilized SIDPP, SICP & pit gain

POSITION WHILE SOFT SHUT-IN

Top-man (1) at choke manifold

Top-man (2) at pumps

Rig man at standpipe manifold and on derrick floor, keeping in touch with Shift-in charge

Rig mechanic/ Near the Engines awaiting directives from Shift-In-charge (Mechanical)

Pump fitter at pumps

Electrician near BOP control unit

Contractual worker near mud tanks

Mud Chemist On shale shaker tank

Geologist, if present at flow line/ mud logging unit

2.3.3 POSITIONING OF CREW DURING KICK CONTROL:

After hearing alarm, crew will be positioned as follows:

Assistant Shift-in charge - Assist Shift in-charge, shall be ready to handle brake.

2.4 EVACUATION:

In case kick could not be controlled, it will lead to blowout. Follow steps of Blowout Control Procedure.

2.5 ON SCENE CONTROL CENTRE:

Well will be taken over by crisis management team. Procedure as received from Head CMT-Ops is reproduced below:

2.3.2 WHILE TRIPPING:

- a. Position tool joint above rotary table & set pipe in slip.
- b. Install FOSV in open position and close it.

ACTION DETAILS & ACTION TO BE TAKEN BY

01. DECLARATION OF WELL 'OUT OF CONTROL'

If the I/C of the operation of the rig feels the well is out of control and could not be brought under control through normal procedure, emergency should be declared.

DIC OF THE RIG

02. Switch off the Power Immediately after the blowout is declared, switch off the Main power system, which can cause the ignition.

DIC OF THE RIG

03. Ensure personal safety

04. FIRST AID

Call all personnel from the Rig floor area. Ensure whether all the persons reported or not. If anybody is trapped, try to rescue.

If anybody is injured, carry out the first aid and send him to the nearest hospital.

DIC OF THE RIG

05. Communicate with the control room.

Report the emergency to the base control room.

06. Communication to senior officers

Base control room to communicate the emergency to all the key personnel as per prepared list includes Asset Manager, Surface & Sub-Surface Manager, Head Drilling Services/ Well Services/ Engg. Services, Fire, Safety, CMT, HR, Head Security, District Collector, District Police, Nearest Police Station & Nearest Hospital

Note: During the entire process, efforts should be made to keep environmental Impact as low as possible like by containing any spill within installation Boundary, using less damaging means of fire fighting

3.0 NATURAL DISASTER:

3.0 NATURAL DISASTER (CYCLONE, TORNADO, EARTHQUAKE, FLOOD, LIGHTNING ETC.)

3.1 (A) PREPARATION FOR FLOOD: ACTIVITY & ACTION BY INSTALLATION MANAGER

Clean all storm water channels & Oil-Water Sump (OWS)

(Special advance may be provided for the purpose during monsoon)

Keep emergency ration like biscuits, instant noodles, milk powder, sugar, tea-coffee powder, mineral water bottles, rice, dal etc. sufficient for five days for crew.

Drill site accommodations at Muller, Gandhar, and Dabka & North Gandhar to be equipped with extra ration before onset of monsoon for site people entrapped. DG set to be placed on raised platform for uninterrupted power supply.

Purchase of one raft (fixed or inflatable) with life jackets, ropes, life rings, bamboos, powerful torch, first aid kit, walkie-talkie set etc. to be kept at Central Fire station, Gandhar.

Purchase of one emergency rescue van with high chasis all wheel drive equipped with small DG set, oxygen acetylene set for cutting & welding, one inflatable raft,

Ropes of different size & attachments, life jackets/ rings, emergency ration/ drinking water, radio communication facility, stretcher, first aid kit, portable

lights, computer loaded with maps, wells details, contact nos. etc.

Maps of operational areas show our Installations, wells, rivers, streams, channels, roads including village & approach roads. Low lying areas & vulnerable Installation & wells during monsoon to be marked in the map.

While preparing drill sites in low lying area for monsoon period, foundation of DG set, PCR, electrical equipment etc. to be raised to prevent water ingress. Based on past experience of floods, suitable measures on fixed Installations may be taken to raise foundation of DG set, electrical panel room, control room etc. to ensure uninterrupted power supply.

3.1 (B) PREPARATION FOR OTHER NATURAL DISASTERS:

- a. Install all the guy ropes as per OEM recommendation on mobile rigs and check their condition regularly.
- b. Do not keep any loose items on raised platforms which can fall during Earthquake.
- c. Keep all the dip hatches and other openings of storage tanks closed.
- d. All hazardous chemicals/ POL should be stored under shed cover to Protect them & to avoid their mixing with rain & flood water.
- e. Hazardous waste should be stored under shed cover to avoid their mixing With rain & flood water.

3.2 NOTIFICATION:

- a. Anyone hearing of a natural disaster warning or situation will shout & raise the siren.

3.3 RESPONSE:

- a. Installation Manager/ Shift In-charge will intimate concerned Location Manager/ Area Manager with full details.
- b. Other crew members will switch off all engines and generators/ cut off power supply & take shut down, if required.
- c. If situation demands, close the well from surface or by operating sub surface safety valve, if installed.
- d. In case of suspected spillage of crude oil/ chemicals, follow procedure given in oil spill

3.4 EVACUATION:

- a. All personnel in the facility will evacuate to the predetermined assembly point
Control of situation & will:
 - head count the personnel to ensure that every one has evacuated
Safely;
 - keep in contact with control room for latest developments & instructions.

4.0 EARTHQUAKE

WHAT TO DO DURING AN EARTHQUAKE:

Stay as safe as possible during an earthquake. Be aware that some earthquakes are actually fore-shocks and a large earthquake might occur. Minimize your movements to a few steps to a nearby safe place and stay indoors until the shaking has stopped and you are sure exiting is safe.

Work together for safety, it is every body's responsibility.

4.1 IF INDOORS:

DROP to the ground; take COVER by getting under a study table or other piece of furniture and HOLD ON until the shaking stops. If there is not a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building.

Protect yourself by staying under the lintel of an inner door, in the corner of room, under the table or even under the bed.

Stay away from glass, windows out side doors and walls and anything that could fall, such as lighting fixtures or furniture.

Stay in bed if you are there when earthquake strikes. Hold on and protect your head with a pillow, unless you are under a heavy light fixture that could fall. In that case, move to nearest safe place.

Use a doorway for shelter only if it is in close proximity to you and if you know it is strongly supported, load bearing doorway. Stay in side until shaking stops and it is safe to go outside.

Research has shown that most injuries occur when people inside building attempt to move to different location inside the building or try to leave.

Be aware that electricity may go out or the sprinkler system or fire alarms may turn on.

DO NOT use elevators.

4.2 IF OUT DOORS

Stay there.

Move away from building, trees, streetlights, and utility wires.

Once in open, stay there until the shaking stops. The greatest danger exists directly outside buildings, at exits, and alongside exterior walls. Most earthquake-related casualties result from collapsing walls, flying glasses, and falling objects.

4.3 IN A MOVING VEHICLE:

Stop as quickly as safety permits and stay in vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wire. Proceed cautiously once the earthquake has stopped. Avoid roads bridges, or ramps that might have been damaged by the earthquake.

4.4 IF TRAPPED UNDER DEBRIS:

Do not light a match.

Do not move about or kick up dust.

Cover your mouth with handkerchief or clothing.

Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as last resort. Shouting can cause you to inhale dangerous amount of dust.

4.5 AFTER AN EARTHQUAKE

Keep calm, switch on the radio/ TV & obey any instruction you hear on it.

Keep away from beaches & low bank of rivers huge waves may sweep in.

Expect aftershocks. Be prepared.

Turn off the water, gas and electricity.

Do not smoke and do not light matches or use a cigarette lighter. Do not turn on switches.

There may be gas leak or short circuits. Use a torch. If there is a fire, try to put it out. If you cannot try to call fire brigade.

If people are seriously injured, do not move them unless they are in danger.

Immediately clean up any inflammable products that may have spilled (alcohol, paints,etc)

If you know that people have been buried, tell the rescue teams. Do not rush and do not worsen the situation of injured persons or your own situation.

Avoid places where there are loose electric wires and do not touch any metal object in contact with them.

Do not drink water from open containers without having examined it and filtered it through a sieve, a filter or an ordinary clean cloth.

If your home is badly damaged, you will have to leave it. Collect water containers, food ordinary or special medicines(for persons with heart complaints, diabetes etc.)

Do not re-enter badly damaged buildings and do not go near damaged structures.

5.0 OIL SPILLAGE

In case of oil spillage is noticed at any take following actions:

Find the source of oil spillage.

Stop the further oil spillage by closing the valves or restricting the passage.

Clean the surface area affected due to oil spillage.

Spray sand on affected ground area.

Do not walk in hurry or run near spillage area.

Seal the area properly to avoid oil spillage.

Tighten all nuts of sealed area properly.

Replace the damaged valves or hammer union or joints from where spillage is encountered.

Tighten all the joints properly.

Do not carry out any hotwork job near all spillage area.

6. SECURITY THREAT

If a suspected device is encountered, it should not be handled and the area should be secured. Improvised explosive devices are very unstable. They are extremely sensitive to shock, friction, impact and heat and may detonate without warning even the smallest devices can cause serious injury or death.

Always assume that there is more than one device present, whether any other bomb or a device.

Never pick up or open any suspicious package or piece of luggage. Call the police and do not touch the device.

6.1 CHEMICAL ATTACKS

A chemical emergency occurs when a hazardous chemical is released and has the possibility of harming people's health.

6.1.2 Some type of chemical emergency will require evacuation from immediate area. If you are up-wind and in open evacuate up-wind and away from incident.

Cover your mouth and nose with a damp cloth.

6.1.2 SHELTER IN PLACE

Go inside as quickly as possible shut and lock all windows and doors. Turn of fan.

6.2 RADIOLOGICAL ATTACKS

A radiological weapon or "dirty bomb" is a crude device that combines a conventional explosive with highly radioactive materials. When detonated the blast vaporizes the radioactive materials and propels it across a wide area.

There are 2 basic ways to reduce your exposure:

1. Reduce the time near the source of radiation.
2. Increase the distance from the source of radiation.

6.2.1 EVACUATION:

If persons are outside, evacuate up-wind from blast side cover nose and mouth with wet cloth to reduce the risk of inhaling radioactive smokes or dust.

6.3 HANDLING HOSTAGE CRISIS:

A situation may be arise when an ONGC Employee may be taken as hostage by the insurgents/terrorist. In such situations, we need to have a system in place under which effective negotiation could be carried out with the insurgent for release of hostages.

6.4 THREAT BY LOCAL PEOPLE:

Close the security gate.

Deploy maximum security personnel at gate:

Do not allow to anybody in the drill site.

Inform to base office.

Do not go out of drill site till situation is not normal.

Do not hot talk with people call DIC or Area manager for negotiation.

Sl. No.	Installation	Contact Number	
		Installation	Installation Manager
1	E-760-5	9426613052	9428332682 / 2908
2	E-760-8	9426613068	9428333988 / 2843
3	E-760-17	9426613071	9428332403 / 2914
4	E-760-18	9426613073	9428333806
5	E-1400-3	9426613051	9428333151 / 3986
6	E-1400-5	9426613053	9428332682 / 2908
7	E-1400-7	9426613048	9428332761 / 3251
8	F-6100-II	9426613050	9428332537
9	CW-10	9426613047	9428333799 / 3290
10	M-450-I	9426613049	9428333993 / 2876

DGMS DHANBAD

Directorate General of Mines Safety, Vikas Bhawan, Dhanbad-826001 (Jharkhand).
Phone no.: 03262221000

DGMS N.W.ZONE, UDAIPUR RAJASTHAN

Directorate of Mines Safety, Udaipur Region, Jhamar Kotra Main Road, Sector-6, Hiran Magri, Udaipur 313001 (Rajsthan) Phone no 02942465516

REGIONAL DIRECTOR,SURAT REGION

Directorate General of Mines Safety, 3rd Floor, Cross Corner Building,
Block No. 25/A, Plot No.8, Opp. Silicon Shoppers, Udhanar Udhyognagar,
Udhana Main Road, Udhana, Surat – 394210, Ph. - 02612274652.
e-mail: uksahadd@rediffmail.com

Certificate

This Certificate is issued to

Oil and Natural Gas Corporation Limited
Ankleshwar Asset
Drilling Rig: E-1400-III
Gujarat
INDIA

who have implemented a Occupational Health and Safety Management System, which meets the requirements laid down in OHSAS 18001:2007, with the following scope:

Drilling Services for Exploration and Production of Hydrocarbons

Certificate No. : H9120635.18
 Original Issue : 12 September 2014
 Latest Issue : 12 September 2014
 Valid Till : 11 September 2017

The continuing validity of this certificate is subject to timely conduct of surveillance audits

Surveillance 1 due before : 10 September 2015
 Surveillance 2 due on : 10 September 2016

for Vexil Business Process Services Private Limited



OHSAS 18001:2007

To check the validity of the certificate, please call +91 11 2875 5001 or email to info@vexilbps.com
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Certificate

This Certificate is issued to

Oil and Natural Gas Corporation Limited
Ankleshwar Asset
Drilling Rig: E-1400-III
Gujarat
INDIA

who have implemented a Quality Management System, which meets the requirements laid down in ISO 9001:2008, with the following scope:

Drilling Services for Exploration and Production of Hydrocarbons

Certificate No. Q9120616-18
 Original Issue 12 September 2014
 Latest Issue 12 September 2014
 Valid Till 11 September 2017

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Surveillance 1 due before 10 September 2015
 Surveillance 2 due on 10 September 2015

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ISO 9001:2008

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VEXIL BUSINESS PROCESS SERVICES



Certificate

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Oil and Natural Gas Corporation Limited
Ankleshwar Asset
Drilling Rig: E-1400-III
Gujarat
INDIA

who have implemented a Environment Management System, which meets the requirements laid down in ISO 14001:2004, with the following scope:

Drilling Services for Exploration and Production of Hydrocarbons

Certificate No : E9120621/18
Original Issue : 12 September 2014
Latest Issue : 12 September 2014
Valid Till : 11 September 2017

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Surveillance 1 due before : 10 September 2015
Surveillance 2 due on : 10 September 2016

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ISO 14001:2004

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