

EOGEPL/ CBM-RG (E)/ HSE/2022/3884
Date 31st May 2022

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To
The Regional Director
Ministry of Environment, Forests and Climate Change
Integrated Regional Office
IB-194, Sector III, Salt Lake
Kolkata-700106
West Bengal

Sub: Submission Half-Yearly Compliance Report of the Environmental Clearance (Phase-II and Amendment)) by Essar Oil Gas Exploration and Production Limited reg.

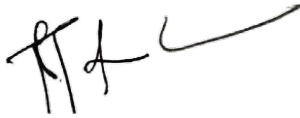
Ref: Environmental Clearance of Phase-II granted by MoEF vide letter no. J-11011/351/2009- IA II (I) dated 23.09.2011; Amendment dated 18.06.2012; Transfer of EC from EOL to EOGEPL dated 06.11.2017

Dear Sir

We are enclosing herewith the half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions for the Pilot cum Production Phase (Phase-II) and its amendment of CBM project activities for the period of October' 2021 to March' 2022.

Thank you for your continued support.

Warm Regards,
For Essar Oil and Gas Exploration and Production Limited



Kannan Rajendran
Chief Operating Officer
Raniganj East, CBM Project-Durgapur

Enclosed: Phase-II and Amendment Compliance Report

Copy to:

1. The Environmental Engineer, Durgapur Regional Office, WBPCB, Durgapur-713216

Essar Oil and Gas Exploration and Production Limited
RG (East)-CBM-2001/1 (Phase-II) Half Yearly Environment Clearance Compliance Report
(October'21 to March'22)

Ref: Environment Clearance no. F. No. J-11011/351/2009- IA II (I) dated 23.09.2011

S. No.	EC Conditions	Compliance Status
A. Specific Conditions		
i.	As proposed, Only 58 pilot-cum-production wells shall be drilled up to a depth of 1000 m. No additional wells shall be drilled without prior permission from this Ministry.	Number of pilot-cum-production wells has been drilled are as per the permission. Amendment in Environmental Clearance has been granted by MoEF & CC for drilling 4 additional supporting wells at each pilot cum production site to augment the production.
ii	As proposed, no drilling of well and any construction work shall be carried out in forest land. No forest land shall be used for installation of Group Gathering Stations (GGSs) and pipeline laying in the proposed location.	All the facilities including well sites & Gas Gathering Stations are located outside the forest area.
iii	Recommendations of the State Forest Department shall be obtained regarding likely impact of the proposed plant on the surrounding protected forests viz. Durgapur PF & Ukhra PF and implemented.	The Conservator of Forests (South East Circle), Forest Department, West Bengal has carried out site Survey. The Additional PCCF, West Bengal forwarded his recommendations to the Additional PCCF, MoEF (Eastern Regional Office). (A copy of the letter has already been submitted along with compliance report after that).
iv	Compensation for the land acquisition to the land oustees, if any, and also for standing crop shall be paid as per the National Resettlement and Rehabilitation Policy (NRRP) 2007 or State Government norms. It may be ensured that compensation provided shall not be less than the norms of the NRRP, 2007.	Land acquisition is being directly done with the land owners and the compensation is paid as per the prevailing market rate. There is no involvement of Rehabilitation and Resettlement.
v	Prior permission from the Ministry of Defense shall be obtained regarding impact of proposed plant on Panagarh air base, if any.	Three (3) nos. of Gas Gathering Station (GGS) and One Main Compressor Station (MCS) was constructed as per the condition of the NOC of Ministry of Defense

S. No.	EC Conditions	Compliance Status
		(MoD). One GGS 4 not in Operation at the Moment.
vi	The surface facilities shall be installed as per the applicable codes and standards, international practices and applicable local regulations.	Surface facilities have been designed as per applicable Code and Standard.
vii	Ambient air quality shall be monitored near the closest human settlements as per the National Ambient Air Quality Emission Standards (NAAQES) 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, CH ₄ , VOCs, HC, Non-methane HC etc. Efforts shall be made to improve the ambient air quality of the area.	Ambient Air Quality Monitoring has been carried out at well sites near to the closest human settlements as per the Ambient Air Quality Emission Standards (NAAQES) 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, CH ₄ , VOCs, HC, Non-methane HC. Monitoring activity has been carried out from October'21 to March'22 through a recognized laboratory based in Kolkata. Please find the ambient air quality monitoring results with this report as Annexure I .
viii	The company shall monitor data on methane and non-methane hydrocarbon at the drilling site, GGS, CGS and at the SV station from where the gas is supplied to the customers.	Methane hydrocarbons are monitored as part of Ambient Air Quality Monitoring plan at major facilities (GGS, MCS) and villages. Monitoring activity has been carried out from Oct'21 to Mar'22 through a recognized laboratory based in Kolkata. Please find the ambient air quality monitoring results with this report as Annexure I .
ix	Mercury shall also be analyzed in air, water and drill cuttings twice during drilling period.	The drilling operation has been temporarily suspended from April, 2017 till date.
x	The flare system shall be designed as per good oil field practices and Oil Industry Safety Directorate (OISD) guidelines. The company shall take necessary measures to prevent fire hazards and soil remediation as needed. At the place of ground flaring, the flare pit shall be lined with refractory bricks and efficient burning system. In case of overhead flare stacks, the stack height shall be provided as per the	Elevated flare system has been designed as per OISD guidelines. Measures delineated in the EIA/EMP have been taken to prevent fire hazards. The overhead flaring has been installed at a height of 30 m. The following measures have been implemented to prevent fire hazards: <ul style="list-style-type: none">• Installation of electrical equipment as per approved hazardous zone classification as communicated to DGMS.

S. No.	EC Conditions	Compliance Status
	regulatory requirements and emissions from stacks shall meet the MOEF/CPCB guidelines.	<ul style="list-style-type: none"> • Dry chemical fire extinguishers are available at site. • Online methane gas analyzers (CH₄) are available. • Flame proof type lighting fixtures, push buttons and switches at the drill site facilities are used.
xi	The company shall make the arrangement for control of noise from the drilling activity and DG sets by providing necessary mitigation measures such as proper acoustic enclosures to DG sets and meet the norms notified by the MoEF. Height of all the stacks/vents shall be as per the CPCB guidelines.	CPCB approved models of silent generator sets have been installed with acoustic enclosures. Noise monitoring has been carried out in the activity area and surrounding habitat. Please find the results of noise monitoring attached with this report as Annexure II .
xii	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'August, 2005.	The drilling operation has been temporarily suspended from April, 2017 till date.
xiii	Total fresh water requirement from local approved water suppliers shall not exceed 75 m ³ /day/well and prior permission shall be obtained from the concerned Authority and a copy submitted to the Ministry's Regional Office at Bhubaneswar. No ground water shall be used without permission of CGWA.	<p>The drilling operation has been temporarily suspended from April, 2017 till date.</p> <p>However, The treated RO water is reused in work over operations and other utilities.</p> <p>Ground water is not used & withdrawn for Industrial water consumption.</p>
xiv	The produced water during drilling operations shall be collected in HDPE lined waste pit to prevent ground water contamination. Effluent shall be properly treated and treated effluent shall conform to CPCB standards. As proposed, produced water may also be used in operational coal mines of Eastern Coal Fields for dust suppression, slurry activities and post-mining restoration efforts etc. Domestic effluent shall be disposed through septic tank followed by soak pit. No effluent shall be discharged outside the	Produced water is collected & stored in over surface Zn-Al tanks installed at all sites. In case of excess water volume, the extra water is stored HDPE lined pits. Produced water is then transported by pipelines to Reverse Osmosis (RO) plant for treatment. Currently RO treatment plants of total capacity 5900 m ³ / day are installed. The treated water is used for the projects internal operations (work over & site preparation activities). Excess treated water is discharged to nearby stream only after complying with the discharge

S. No.	EC Conditions	Compliance Status
	premises and 'zero' discharge shall be adopted	standards. Domestic effluent is treated in septic tank followed by soak pits. There is no discharge of effluent from the facilities.
xv	Water produced during drilling shall be reused in drilling of other core/test wells.	Produced water has been collected & stored in over surface Zn-Al tanks installed at all sites also directly send to RO Plant using high pressure pump System. Water meeting the standards set by CPCB is reused in the construction & work over activities of adjoining wells. Excess water is discharged only after meeting the discharge standards after treatment.
xvi	Reverse Osmosis plant shall be installed for further treatment of the wastewater in case the TDS is > 2000 mg/l and treated wastewater shall be reused or discharge on the land after meeting the norms.	Currently, Reverse Osmosis (RO) plants with total capacity of 5900 m ³ / day are installed to treat the produced water generated from production wells. Please find the produced water analysis result attached with this report as Annexure III . Please find the RO water quality monitoring results attached with this report as Annexure IV . The treated water is reused in HF, work over and other construction activities. Excess water is discharged to nearby streams only after meeting the discharges standards. Please find the analysis results of surface water monitoring attached with this report as Annexure IV A . Monitoring activity has been carried out from Oct'21 to Mar'22 through a recognized laboratory based in Kolkata.
Xvii	Ground water quality monitoring shall be done to assess if produced water storage or disposal has any effect.	The ground water monitoring carried out in Post-Monsoon (November) month. The Ground water Analysis reports attached with report as Annexure V .
xviii	Drilling wastewater including drill cuttings wash water shall be collected in disposal pit lined with	The drilling operation has been temporarily suspended from April 2017 till date.

S. No.	EC Conditions	Compliance Status
	<p>HDPE lining and evaporated or treated and shall comply with the notified standards for on-shore disposal. The treated waste water should be reused in other wells during drilling operations. The membership of common TSDF shall be obtained for the disposal of drill cuttings and hazardous waste. Otherwise secured land fill shall be created at the site as per the design of the secured shall be approved by the CPCB and obtain the authorization of the WBPCB. Copy of authorization or membership of TSDF shall be submitted to Ministry's Regional Office at Bhubaneswar.</p>	
xix	<p>Only water based drilling mud shall be used. The drilling mud shall be recycled. Hazardous waste shall be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008. The recyclable waste (oily sludge) and spent oil shall be disposed of to the authorized recyclers/re-processors.</p>	<p>The drilling operation has been temporarily suspended from April 2017 till date.</p> <p>Used Oil is sent to authorize recycler.</p> <p>We had disposal of hazardous waste on Dec'21 and Jan' 22. The copy of the FORM 10 is enclosed as Annexure VI.</p>
xx	<p>The Company shall carry out long term subsidence study by collecting base line data before initiating drilling operation till the project lasts. The data so collected shall be submitted six monthly to the Ministry and its Regional Office at Bhubaneswar.</p>	<p>Land Subsidence Study is carried has been started from year 2012 and has been carried out regularly as condition Amendment 4 (viii). In the last 7 years, no significant land subsidence has been observed. . NIT Durgapur already carried out the survey in the month of May' 22 and report is awaiting.</p>
xxi	<p>The Company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during operation.</p>	<p>The necessary measures have been taken to prevent fire hazards and soil remediation as follows.</p> <ul style="list-style-type: none"> • Installation of electrical equipment as per approved hazardous zone classification as communicated to DGMS • Dry chemical fire extinguishers are available at all well site.

S. No.	EC Conditions	Compliance Status
		<ul style="list-style-type: none"> • Portable methane gas analyzers (CH4) are available. • Flame proof type lighting fixtures, push buttons and switches in the drill site facilities are used. • Impervious surface, secondary containment and spill kits are provided whenever there is a possibility of soil contamination.
xxii	<p>The project authorities shall install SCADA system with dedicated optical fiber based telecommunication link for safe operation of pipeline and Leak Detection System. Additional sectionalizing valves in the residential area and sensitive installations shall be provided to prevent the amount of gas going to the atmosphere in the event of pipeline failure. Intelligent pigging facility shall be provided for the entire pipeline system for internal corrosion monitoring. Coating and impressed current cathodic protection system shall be provided to prevent external corrosion.</p>	<p>SCADA System is installed for monitoring of wells and Gas Gathering Station. Safe Operation of the pipeline is ensured through continuous motoring of parameter at the Control Room and through regular patrolling. Sectionalizing valves are in Place. Cathodic Ray Protection system has been installed along the length of pipeline to prevent the corrosion. The design and laying of surface facilities have been confirmed to the standards of OISD 141.</p>
xxiii	<p>All the surface facilities including GGS, CGS and SV station shall be as per applicable codes and standards, international practices and applicable local regulations.</p>	<p>All the surface facilities including GGS, CGS and SV stations have been laid as per applicable code and standards.</p>
xxiv	<p>The design, material of construction, assembly, inspection, testing and safety recommendations of operation and maintenance of pipeline and transporting the natural gas/oil shall be governed by ASME/ANSI B 31.8/B31.4 and OISD standard 141. Pipeline wall thickness and minimum depth of burial at river crossing and casings at rails, major road crossings should be in conformity with ANSI/ASME requirements.</p>	<p>All surface facilities have been installed as per the ASME/ANSI B 31.8 standards. Pipelines design and laying is also confirms to the ANSI/ASME standards.</p>

S. No.	EC Conditions	Compliance Status
xxv	Annual safety audit should be carried out for the initial three years by an independent agency and report submitted to this Ministry for ensuring the strict compliance of safety regulations on operations and maintenance.	Safety audits are conducted by third party to maintain the safety standards.
xxvi	The project authorities shall patrol and inspect the pipeline regularly for detection of faults as per OISD guidelines and continuous monitoring of pipeline operation by adopting non-destructive method (s) of testing as envisaged in the EMP. Pearson survey and continuous potential survey should be carried out at regular intervals to ensure the adequacy of cathodic protection system.	Regular patrolling and inspection of laid pipeline has been carried out for detection of faults as per OISD guidelines. Pipeline operations shall be continuously monitored by adopting non-destructive methods of testing as envisaged in the EIA/EMP. Pearson survey and continuous potential survey shall be carried out at regular intervals to ensure the adequacy of cathodic protection system.
xxvii	The company shall develop a contingency plan for H ₂ S release including all necessary recommendations from evacuation to resumption of normal operations. The workers shall be provided with personal H ₂ S detectors in locations of high risk of exposure along with self-containing breathing apparatus.	H ₂ S is not present as per the analysis of gas tapped from the test wells. However all the necessary safety measures are delineated as per the emergency response plan. Gas detectors are kept at the drilling and production sites to check any presence of gases which are beyond threshold values. All workers have been provided with standard PPEs according to the job requirement.
xxviii	Adequate well protection system shall be provided like BoP or diverter systems as required based on the geological formation of the blocks.	Adequate well control measures along with BOP have been adopted to ensure necessary level of safety.
xxix	Blow Out PreventerP (BOP) system shall be installed to prevent well blowouts during drilling operations. BOP measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drilling fluid logging etc.	CBM well hydrostatic pressures are normally less than 2psi. However considering the hydrostatic pressures and sensitivity of well, Blow Out Preventers or diverter systems have been provided at the well head during drilling along with other well control measures such as proper pre-well planning and drilling fluid logging to maintain the hydrostatic pressure.

S. No.	EC Conditions	Compliance Status
xxx	The top soil removed shall be stacked separately for reuse during restoration process	The top soil is being spread at the designated area for green belt development at the project's facilities.
xxxii	Emergency Response Plan shall be based on the guidelines prepared by OISO, DGMS and Govt. of India. Recommendations mentioned in the Risk Assessment & Consequence Analysis and Disaster Management Plan shall be strictly followed.	Emergency response plan has been prepared as per the OISD & DGMS guidelines. Recommendations mentioned in risk assessment and consequence analysis are being duly implemented.
xxxiii	Project proponent shall comply with the environment protection measures and safeguards recommended in the EIA/EMP/risk analysis report/disaster management plan.	Environmental protection measures and safeguards recommended in EMP/risk analysis report/disaster management plan have been implemented.
xxxiv	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 in original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment plan shall be implemented for the drilling site in accordance with the applicable Indian Petroleum Regulations.	Wells will be abandoned and restored to natural position if found unsuitable for hydrocarbon extraction. Wells will be fully abandoned in compliance with Indian Petroleum Regulations in the event of no economic quantity of hydrocarbon is found.
xxxv	Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.	All employees have undergone pre-employment medical examination. Periodical occupational health surveillance is conducted and records are maintained.
xxxvi	In case the commercial viability of the project is established, the Company shall prepare a detailed plan for development of gas fields and obtain fresh environmental clearance from the Ministry.	MoEF granted amendment in phase II EC for drilling 4 nos. of additional supporting wells at each well site to meet the production capacity over and above 5 lakh m3 per day.
xxxvii	All the commitments made to the public during the Public Hearing / Public Consultation meeting held on 26th March, 2010 shall be satisfactorily	Commitments made during the public hearing are being implemented.

S. No.	EC Conditions	Compliance Status
	implemented.	
xxxvii	Company shall adopt Corporate Environment Policy as per the Ministry's O.M. No. J-11 013/41/2006-1A.II (1) dated 26th April, 2011 and implemented.	Corporate Environmental Policy is in place and being implemented. The copy of the same was already enclosed in the earlier Compliance report.
xxxviii	Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, creche etc. The housing may be in the form of temporary structures to be removed after the completion of the project	We do not intend to bring labor from outside; hence construction of colony is not envisaged. We have been hiring local labour for all construction work. Nonetheless, we are providing all the necessary infrastructure and facilities like porta- cabins, mobile toilets, soak pit & septic tank, safe drinking water, medical health care etc.
General Condition		
i	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.	We comply with the stipulations made by the State Pollution Control Board (SPCB), State Government and statutory bodies.
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, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any	For any further expansion and modification in project configuration, we would approach MoEF for the prior Environmental Clearance.
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,	We comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approvals will be obtained from appropriate authority.

S. No.	EC Conditions	Compliance Status
	Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.	
iv	The project authorities must strictly comply with the rules and regulation with regarding to handling and disposal of Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 wherever applicable. Authorization from the State Pollution Control Board must be obtained for collections/ treatment/ storage/disposal of hazardous wastes	We comply with the rules and regulations with regard to handling and disposal of Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008. Authorization from the West Bengal Pollution Control Board has been obtained and valid till 2023. The copy of the same was already enclosed with earlier report.
v	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).	Acoustic hoods, silencers, enclosures will be provided to high noise generating equipment. Noise levels will be restricted to the standards prescribed under EPA Rules, 1989. Regular noise monitoring has been carried out. Please find the noise monitoring results attached with this report as Annexure II .
vi	A separate Environmental Management Cell equipped with full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	A dedicated environment management is currently in operation and functioning for implementation of environment management plan at large. The sampling and analysis of environmental parameters is been carried out by Scientific Research laboratory, Kolkata (MoEF recognized).
vii	As proposed, Rs. 7.80 Crores earmarked for environment protection and pollution control measures shall be used to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for	The environment expenditure for the environment activities is attached as Annexure VII .

S. No.	EC Conditions	Compliance Status
	any other purposes.	
viii	The Regional Office of this Ministry/Central Pollution Control Board/State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Support has been and will be extended to the Regional office of this Ministry/Central Pollution Control Board/State Pollution Control Board for monitoring the stipulated conditions. Six monthly compliance reports of environmental clearances are regularly submitted to Regional office of MoEF.
ix	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	A copy of Environmental Clearance (EC) has been circulated to the local administration and was uploaded on the Company's website.
x	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 WBPCB. The criteria pollutant levels namely; SPM, RSPM, SO ₂ , NO _x , 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.	Compliance reports have been uploaded on company's website & sent to Regional Office of the MOEF, the respective Zonal Office of CPCB and the WBPCB. The Ambient air quality monitoring has been carried out as per revised NAAQM criteria. The criteria pollutant levels namely; SPM, RSPM, SO ₂ , NO _x , HC (Methane & Non-methane), VOCs has been monitored periodically and displayed at the main entrance of the Gas Gathering Station.
xi	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	We are submitting the six monthly compliance 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

S. No.	EC Conditions	Compliance Status
	copies as well as by e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the WBPCB. The Regional Office of this Ministry /CPCB / WBPCB shall monitor the stipulated conditions.	Regional Office of MOEF, the respective Zonal Office of CPCB and the WBPCB.
xii	The environmental 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 along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF by e-mail.	The environmental statement for each financial year ending 31st March as Form-V is being regularly submitted to West Bengal Pollution Control Board and the same is uploaded on the company's website along with the status of compliance report. The copy of the last statement has already submitted with previous report.
xiii	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 WBPCB and may also be seen at Website of the Ministry of Environment and Forests at http://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.	The advertisement was published in The Telegraph, Calcutta and Anand Bazaar Pathrika on 30th September, 2011. A copy of the same has been submitted in the compliance report during the period Apr'11-Sep'11.
xiv	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	Financial closure has been prepared in the year of 2010. The development work was commenced on 7th Dec, 2011 after obtaining consent to establish from WBPCB.

S. No.	EC Conditions	Compliance Status
	commencing the land development work	

Essar Oil and Gas Exploration and Production Limited
RG (East)-CBM-2001/1 (Phase-IIA) Half Yearly Environment Clearance Compliance Report
(October'20 to March' 21)

Ref: Environment Clearance no. F. No. J-11011/351/2009- IA II (I) dated 18.06.2012

S. No.	EC Conditions	Compliance Status
4(i)	As proposed, supporting wells (4 nos.) on each pilot-cum-production wells (58 nos.) shall be drilled up to a depth of 1000m. No additional wells/support well shall be drilled without prior permission of this Ministry.	4 supporting wells will be drilled at each pilot-cum-production wells (58x4=232 wells). No additional wells will be drilled without prior approval from MoEF. Total 158 wells drilled till date under this clearance.
4(ii)	Unit shall monitor ground water table within one Km radius of each well during pre-monsoon (i.e. May) and winter season (November). Trend analysis shall be carried out and report shall be submitted to the Ministry's regional office at Bhubaneswar.	Monitoring of ground water table was not been carried out in pre-monsoon. Please find the monitoring results attached with this report as Annexure VIII .
4(iii)	Permission from CGWA for dewatering shall be obtained and submitted to the Ministry's Regional Office at Bhubaneswar.	Dewatering is an inherent process of CBM extraction & carried at much deeper depths (>500 m) which does not disturb the usable drinking water aquifers located at the shallow depths. "No Objection Certificate" regarding the same has been obtained from State Water Investigation Directorate (SWID), Water Resources Investigation & Development Department, Govt. of West Bengal. (A copy of the letter is attached with previous compliance

S. No.	EC Conditions	Compliance Status
		report). In west Bengal, SWID is the approved local authority of CGWA for giving permission for water withdrawal.
4(iv)	Smokeless flare shall be installed	Smokeless flares will be installed for complete combustion of CBM. Flaring will be carried out only during process upsets.
4(v)	All measures shall be taken to control noise pollution during drilling process. Acoustic enclosure/barrier shall be installed.	Only silent generator sets that meets the specifications of CPCB are used. Acoustic enclosures have been provided to major noise generating equipment. Earplugs have been provided to the working personnel at the site.
4(vi)	Any produced water shall be treated and recycled/reused within the project area. Any excess water shall be discharged after treatment and meeting the standards prescribed by the CPCB/SPCB. Regular water quality monitoring shall be carried out and monitoring report shall be submitted to the respective Regional Office of the MoEF.	Produced water is treated by Reverse Osmosis (RO) system. Treated water is being reused for work-over & construction activities of other wells. Excess water is discharged to the nearby streams only after complying with the discharge standards. Please find the RO treated water monitoring results attached with this report as Annexure IV . Also, please find the surface water monitoring results attached with this report as Annexure IV A .
4(vii)	Approach road shall be constructed prior to the drilling	Approach roads are being constructed wherever the access is not available.
4(viii)	Land subsidence shall be monitored regularly and monitoring report shall be submitted to CPCB, SPCB and respective Ministry's regional office	Land Subsidence Study is carried has been started from year 2012 and has been carried out regularly as condition Amendment 4 (viii). In the last 7 years, no significant land subsidence has been observed. NIT Durgapur already carried out the survey in the month of May' 22 and report is awaiting.
5	All the specific conditions and general conditions specified in the environmental clearance accorded vide Ministry's letter no.J-11011/351/2009-IA II (I)	All the specific and general conditions of the Phase-II Environmental Clearance are being implemented.

S. No.	EC Conditions	Compliance Status
	dated 23rd September, 2011 shall be implemented	
6	Consent to Establish & Operate for the revised proposal shall be obtained from the W.B. Pollution Control Board	Regular CTE & CTO will be obtained from Pollution Control Board and will be submitted to MoEF.
7	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures if required, if any.	No further expansion or modification will be done in the project configuration without prior approval from the MoEF.

Name of Location			MCS						GGS- 01					
Month			Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m ³	60	30.22	35.92	39.66	41.57	40.81	45.06	26.34	35.71	38.79	38.72	37.67	39.04
PM 10	µg/m ³	100	84.74	89.95	88.91	82.08	82.80	89.52	79.85	80.48	85.64	79.44	80.87	80.35
Nitrogen Dioxide	µg/m ³	80	35.04	41.98	38.65	42.91	43.82	42.70	32.94	43.08	39.89	43.05	43.35	43.72
Sulphur Dioxide	µg/m ³	80	5.03	6.00	5.78	6.09	6.23	6.01	5.33	5.97	5.40	5.97	6.03	6.13
Carbon Monoxide	mg/m ³	2	0.470	0.484	0.478	0.484	0.498	0.568	0.456	0.466	0.482	0.498	0.488	0.588
Hydrocarbon	mg/m ³	NIL	1.71	1.78	1.92	2.02	1.77	1.91	1.62	1.64	1.82	1.92	1.67	1.82
Mercury	mg/m ³		-	-	-	-	< 0.002	-	-	-	-	-	< 0.002	-
Hydrocarbon as Non Methane	mg/m ³	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m ³		-	-	-	-	3.07	-	-	-	-	-	2.89	-
Benzo(a)Pyrene	ng/m ³	1	-	-	-	-	0.37	-	-	-	-	-	0.36	-
Ammonia	µg/m ³	400	-	-	-	-	34.06	-	-	-	-	-	30.55	-
Ozone	µg/m ³	180	-	-	-	-	42.35	-	-	-	-	-	40.51	-
Lead	µg/m ³	1	-	-	-	-	0.13	-	-	-	-	-	0.13	-
Nickel	ng/m ³	20	-	-	-	-	15.33	-	-	-	-	-	14.88	-
Arsenic	ng/m ³	6	-	-	-	-	1.78	-	-	-	-	-	1.75	-
Benzene	µg/m ³	5	-	-	-	-	1.73	-	-	-	-	-	1.64	-

Name of Location			GGs- 02						PARULIA					
Month			Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m ³	60	24.16	38.08	37.98	41.90	43.31	37.04	27.78	37.85	32.50	37.12	39.88	45.34
PM 10	µg/m ³	100	71.68	86.46	83.20	84.48	87.25	78.88	75.46	82.34	71.19	79.96	81.20	91.90
Nitrogen Dioxide	µg/m ³	80	36.03	42.85	38.15	42.65	45.04	41.63	33.33	44.34	35.43	41.93	43.69	41.74
Sulphur Dioxide	µg/m ³	80	5.89	5.97	5.93	5.94	6.17	5.84	5.21	5.95	5.66	6.00	6.08	5.98
Carbon Monoxide	mg/m ³	2	0.456	0.468	0.472	0.468	0.504	0.526	0.408	0.464	0.464	0.508	0.488	0.574
Hydrocarbon	mg/m ³	NIL	1.45	1.86	1.84	2.02	1.95	1.68	1.56	1.92	1.68	2.08	1.72	1.95
Mercury	mg/m ³		-	-	-	-	< 0.002	-	-	-	-	-	< 0.002	-
Hydrocarbon as Non Methane	mg/m ³	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m ³		-	-	-	-	3.29	-	-	-	-	-	2.97	-
Benzo(a)Pyrene	ng/m ³	1	-	-	-	-	0.43	-	-	-	-	-	0.39	-
Ammonia	µg/m ³	400	-	-	-	-	35.66	-	-	-	-	-	32.39	-
Ozone	µg/m ³	180	-	-	-	-	45.04	-	-	-	-	-	43.56	-
Lead	µg/m ³	1	-	-	-	-	0.18	-	-	-	-	-	0.16	-
Nickel	ng/m ³	20	-	-	-	-	17.32	-	-	-	-	-	15.89	-
Arsenic	ng/m ³	6	-	-	-	-	1.93	-	-	-	-	-	1.71	-
Benzene	µg/m ³	5	-	-	-	-	1.89	-	-	-	-	-	1.69	-

Name of Location			SARASWATIGUNJ						PRATPPUR					
Month			Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m ³	60	31.82	35.63	43.01	34.62	37.04	35.08	28.01	35.34	34.83	38.63	41.96	31.97
PM 10	µg/m ³	100	89.62	82.49	91.86	72.33	79.03	76.09	83.46	79.40	81.14	84.86	82.90	74.39
Nitrogen Dioxide	µg/m ³	80	35.16	42.08	41.17	42.04	43.44	43.23	32.85	41.89	39.52	42.53	42.81	41.22
Sulphur Dioxide	µg/m ³	80	5.61	6.01	5.69	5.88	6.24	5.97	5.17	5.89	5.13	6.03	6.30	5.99
Carbon Monoxide	mg/m ³	2	0.462	0.494	0.476	0.506	0.506	0.454	0.462	0.498	0.482	0.496	0.512	0.534
Hydrocarbon	mg/m ³	NIL	1.74	1.92	1.88	2.04	1.63	1.65	1.69	1.64	1.82	1.88	1.79	1.63
Mercury	mg/m ³		-	-	-	-	< 0.002	-	-	-	-	-	< 0.002	-
Hydrocarbon as Non Methane	mg/m ³	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m ³		-	-	-	-	2.72	-	-	-	-	-	3.16	-
Benzo(a)Pyrene	ng/m ³	1	-	-	-	-	0.32	-	-	-	-	-	0.44	-
Ammonia	µg/m ³	400	-	-	-	-	28.42	-	-	-	-	-	33.76	-
Ozone	µg/m ³	180	-	-	-	-	39.68	-	-	-	-	-	42.77	-
Lead	µg/m ³	1	-	-	-	-	0.12	-	-	-	-	-	0.14	-
Nickel	ng/m ³	20	-	-	-	-	13.81	-	-	-	-	-	15.88	-
Arsenic	ng/m ³	6	-	-	-	-	1.64	-	-	-	-	-	1.73	-
Benzene	µg/m ³	5	-	-	-	-	1.58	-	-	-	-	-	1.76	-

Name of Location			BANSIA						JAMGORA					
Month			Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m ³	60	26.83	34.45	38.44	43.63	49.74	32.45	26.42	36.76	36.17	41.14	42.06	32.93
PM 10	µg/m ³	100	74.28	82.91	84.98	86.02	90.59	68.79	74.58	80.68	77.48	80.23	88.50	68.04
Nitrogen Dioxide	µg/m ³	80	35.13	41.87	38.15	41.38	43.84	41.83	33.50	41.22	37.09	43.03	44.04	42.97
Sulphur Dioxide	µg/m ³	80	5.32	5.76	5.33	5.91	5.91	5.86	5.03	5.78	6.15	6.14	6.22	5.88
Carbon Monoxide	mg/m ³	2	0.418	0.468	0.456	0.524	0.492	0.442	0.474	0.488	0.470	0.502	0.502	0.423
Hydrocarbon	mg/m ³	NIL	1.38	1.78	1.72	1.84	2.07	1.52	1.52	1.84	1.78	1.98	1.99	1.59
Mercury	mg/m ³		-	-	-	-	< 0.002	-	-	-	-	-	< 0.002	-
Hydrocarbon as Non Methane	mg/m ³	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m ³		-	-	-	-	3.38	-	-	-	-	-	3.23	-
Benzo(a)Pyrene	ng/m ³	1	-	-	-	-	0.53	-	-	-	-	-	0.46	-
Ammonia	µg/m ³	400	-	-	-	-	35.24	-	-	-	-	-	32.21	-
Ozone	µg/m ³	180	-	-	-	-	47.05	-	-	-	-	-	44.81	-
Lead	µg/m ³	1	-	-	-	-	0.22	-	-	-	-	-	0.19	-
Nickel	ng/m ³	20	-	-	-	-	19.54	-	-	-	-	-	17.96	-
Arsenic	ng/m ³	6	-	-	-	-	2.01	-	-	-	-	-	1.94	-
Benzene	µg/m ³	5	-	-	-	-	2.03	-	-	-	-	-	1.93	-

Name of Location			KULDIHA						JATGORIA					
			Month			Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21
Parameter	UoM	NAAQS LIMIT	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
PM 2.5	µg/m ³	60	29.25	37.05	38.98	38.93	47.43	33.82	27.35	36.37	31.88	37.95	37.20	41.83
PM 10	µg/m ³	100	78.44	87.48	89.80	84.36	89.36	70.87	80.21	78.65	73.66	76.71	81.88	82.62
Nitrogen Dioxide	µg/m ³	80	35.47	41.55	37.43	42.50	43.27	41.38	34.29	42.43	36.39	41.92	43.64	42.23
Sulphur Dioxide	µg/m ³	80	5.76	6.07	5.93	5.88	6.14	5.77	5.72	5.86	5.85	5.86	6.15	6.11
Carbon Monoxide	mg/m ³	2	0.452	0.478	0.468	0.524	0.498	0.462	0.466	0.484	0.466	0.518	0.502	0.518
Hydrocarbon	mg/m ³	NIL	1.58	1.84	1.76	1.88	1.88	1.54	1.63	1.76	1.72	1.92	1.78	1.86
Mercury	mg/m ³		-	-	-	-	< 0.002	-	-	-	-	-	< 0.002	-
Hydrocarbon as Non Methane	mg/m ³	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m ³		-	-	-	-	3.34	-	-	-	-	-	3.05	-
Benzo(a)Pyrene	ng/m ³	1	-	-	-	-	0.48	-	-	-	-	-	0.39	-
Ammonia	µg/m ³	400	-	-	-	-	33.27	-	-	-	-	-	31.78	-
Ozone	µg/m ³	180	-	-	-	-	45.23	-	-	-	-	-	42.05	-
Lead	µg/m ³	1	-	-	-	-	0.21	-	-	-	-	-	0.15	-
Nickel	ng/m ³	20	-	-	-	-	18.02	-	-	-	-	-	14.81	-
Arsenic	ng/m ³	6	-	-	-	-	1.96	-	-	-	-	-	1.88	-
Benzene	µg/m ³	5	-	-	-	-	1.98	-	-	-	-	-	1.72	-

Name of Location			Gopalpur Warehouse						KANTABERIA					
Month			Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m ³	60	32.51	39.89	36.06	38.86	41.59	43.18	29.80	35.65	39.17	40.69	45.12	43.16
PM 10	µg/m ³	100	90.24	91.29	83.64	74.93	81.65	87.37	79.65	81.14	85.01	86.98	90.81	86.77
Nitrogen Dioxide	µg/m ³	80	35.19	41.22	38.20	43.40	44.60	42.82	33.05	42.75	38.87	42.59	43.31	43.35
Sulphur Dioxide	µg/m ³	80	5.47	6.10	5.93	6.06	6.12	5.85	5.69	6.09	5.02	5.75	6.09	5.99
Carbon Monoxide	mg/m ³	2	0.458	0.488	0.470	0.512	0.498	0.524	0.452	0.478	0.480	0.522	0.498	0.562
Hydrocarbon	mg/m ³	NIL	1.79	1.88	1.94	2.02	1.71	1.75	1.61	1.77	1.84	1.96	2.12	1.88
Mercury	mg/m ³		-	-	-	-	< 0.002	-	-	-	-	-	< 0.002	-
Hydrocarbon as Non Methane	mg/m ³	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m ³		-	-	-	-	2.78	-	-	-	-	-	3.48	-
Benzo(a)Pyrene	ng/m ³	1	-	-	-	-	0.35	-	-	-	-	-	0.51	-
Ammonia	µg/m ³	400	-	-	-	-	29.84	-	-	-	-	-	34.92	-
Ozone	µg/m ³	180	-	-	-	-	41.89	-	-	-	-	-	46.74	-
Lead	µg/m ³	1	-	-	-	-	0.14	-	-	-	-	-	0.23	-
Nickel	ng/m ³	20	-	-	-	-	14.17	-	-	-	-	-	18.87	-
Arsenic	ng/m ³	6	-	-	-	-	1.70	-	-	-	-	-	2.05	-
Benzene	µg/m ³	5	-	-	-	-	1.69	-	-	-	-	-	2.08	-

Name of Location			NACHAN						SARENGA					
Month			Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22	Oct'21	Nov'21	Dec'21	Jan'22	Feb'22	Mar'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m ³	60	25.56	35.56	32.72	40.76	43.42	39.21	28.61	39.79	39.78	37.29	42.04	33.79
PM 10	µg/m ³	100	74.93	79.62	70.96	82.52	83.71	73.50	81.65	88.54	86.23	81.75	81.74	74.60
Nitrogen Dioxide	µg/m ³	80	35.61	44.40	36.17	42.04	42.67	42.19	34.42	43.29	38.88	42.13	43.43	42.98
Sulphur Dioxide	µg/m ³	80	5.58	6.06	5.80	6.03	6.01	5.80	5.22	5.53	5.16	6.15	6.08	6.00
Carbon Monoxide	mg/m ³	2	0.450	0.474	0.462	0.512	0.502	0.538	0.438	0.458	0.482	0.496	0.502	0.534
Hydrocarbon	mg/m ³	NIL	1.48	1.90	1.70	1.94	1.81	1.57	1.66	192.00	1.88	1.96	1.75	1.61
Mercury	mg/m ³		-	-	-	-	< 0.002	-	-	-	-	-	< 0.002	-
Hydrocarbon as Non Methane	mg/m ³	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m ³		-	-	-	-	3.21	-	-	-	-	-	3.02	-
Benzo(a)Pyrene	ng/m ³	1	-	-	-	-	0.41	-	-	-	-	-	0.34	-
Ammonia	µg/m ³	400	-	-	-	-	35.18	-	-	-	-	-	31.45	-
Ozone	µg/m ³	180	-	-	-	-	43.22	-	-	-	-	-	41.18	-
Lead	µg/m ³	1	-	-	-	-	0.15	-	-	-	-	-	0.12	-
Nickel	ng/m ³	20	-	-	-	-	16.17	-	-	-	-	-	16.78	-
Arsenic	ng/m ³	6	-	-	-	-	1.82	-	-	-	-	-	1.77	-
Benzene	µg/m ³	5	-	-	-	-	1.79	-	-	-	-	-	1.70	-

Ambient Noise Monitoring Result				
LOCATION	DAY TIME		NIGHT TIME	
	Permissible Limit as per CPCB dB(A)	Noise Level dB(A)	Permissible Limit as per CPCB dB(A)	Noise Level dB(A)
Jatgoria Village	75	60.04	70	57.3
Saraswatigunj Village	75	58.45	70	56.33
Kantaberia Village	75	57.19	70	55.68
Jamgora Village	75	54.8	70	50.65
Kuldiha Village	75	64.13	70	63.7
Pratappur Village	75	59.24	70	42.71
Bansia Village	75	58.05	70	55.15
Parulia Village	75	55.32	70	50.03
Nachan Village	75	55.31	70	53.22
Sarenga Village	75	52.53	70	43.76
Akandara Village (GGs 2)	75	65.82	70	64.12
Khatgoria Village (GGs 1)	75	68.34	70	68.13
Gopalpur Warehouse	75	65.11	70	60.91
Malandighi (MCS)	75	66.15	70	62.34
Akandara Village (RO Plant)	75	65.89	70	63.89

MONTH					Mar'22				
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDG-075-V1 (Parulia)	EDD-053-D5 (Nachan)	EDD-052-D5 (Nachan)	EDD-049-D2 (Pratappur)	EDG-077-D1 (Kamalpur)
1	pH		5.5 to 9.0	5.5-9.0	6.89	7.25	6.97	7.30	6.86
2	Temperature			40 deg	39.5°C	37.5°C	39.1°C	34.5°C	36.2°C
3	Total Suspended Solids	mg/l	100	100	<2	<2	<2	12	4
4	Total Dissolved Solids	mg/l	---	2100	1824	3024	2560	3024	856
5	Chloride	mg/l	---	600	740.00	1245.00	1024	1161	315
6	Total Hardness	mg/l	---	1000	49	45	52	49	38
7	Sulphate	mg/l	---	1000	3.6	6.4	4.3	5.7	4.0
8	Calcium	mg/l	---	100	11.0	10.0	12	11	8
9	Magnesium	mg/l	---	10	5	5	5	5	4
10	Dissolved Oxygen	mg/l		1.2	5.9	4.3	5.5	3.8	4.6
11	BOD, 3 Days at 27°C	mg/l	30	30	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphide	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluoride	mg/l	2	1.5	0.95	1.15	1.9	2.15	0.75
17	Total Chromium	mg/l	2	0.1	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	0.1	0.022	0.014	0.018	0.017	0.011
19	Copper	mg/l	---	0.2	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l		3	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l		0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			525	891	744	1074	256
24	Sodium	mg/l	---		795	1310	1080	1285	390
25	Cyanide	mg/l	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02
26	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminium	mg/l	---		---	---	---	---	---
28	Lithium	mg/l			---	---	---	---	---
29	Molybdenum	mg/l	---		---	---	---	---	---
30	Palladium	mg/l	---		---	---	---	---	---
31	Selenium	mg/l			---	---	---	---	---
32	Cadmium	mg/l			---	---	---	---	---
33	Cobalt	mg/l			---	---	---	---	---

R.O. water analysis report of CBM Raniganj Project of EDGEPL
(Compliance period: Oct'21 to Mar'22)

ANNEXURE IV

Date					Mar'22					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDH-64 RO			EDN-99 RO		
					Inlet	Outlet	Reject	Inlet	Outlet	Reject
1	pH		5.5 to 9.0	5.5-9.0	7.52	7.91	8.12	6.85	7.60	7.25
2	Temperature	deg C			30.5°C	31.1°C	32.6°C	31.8°C	32.3°C	32.4°C
3	Total Suspended Solids	mg/l	100	100	<2	<2	<2	13	<2	21
4	Total Dissolved Solids	mg/l	---	2100	6244	1134	11918	4738	1046	11382
5	Chlorides	mg/l	---	600	2315	465	4436	1930	325	4730
6	Total Hardness	mg/l	---	---	122	24	216	250.0	70.0	623.0
7	Sulphates	mg/l	---	1000	5.7	4.8	7.0	6.2	4.1	7.5
8	Calcium	mg/l			31.0	5.0	54.0	65.0	17.0	166.0
9	Magnesium	mg/l	---	---	11.0	2.0	19	21.0	7.0	51.0
10	Dissolved Oxygen	mg/l			4.6	5.5	3.7	4.7	5.8	4.0
11	BOD	mg/l	30	30	<2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphides	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluorides	mg/l	2	1.5	2.3	1.05	2.6	2.21	1.3	2.85
17	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	---	0.033	0.019	0.039	0.025	0.018	0.032
19	Copper	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			2038	214	2745	1074	354	2507
24	Sodium	mg/l	---	---	2870	540	6015	2150	490	5075
25	Hexavalent Chromium	mg/l	0.1		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Cyanide	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminum	mg/l	---	---	-	-	-	-	-	-
28	Lithium	mg/l			-	-	-	-	-	-
29	Molybednum	mg/l	---	---	-	-	-	-	-	-
30	Palladium	mg/l	---	---	-	-	-	-	-	-
31	Selenium	mg/l			-	-	-	-	-	-
32	Vanadium	mg/l	---	---	-	-	-	-	-	-
33	Cadmium	mg/l			-	-	-	-	-	-
34	Cobalt	mg/l			-	-	-	-	-	-

Surface Water Analysis Report of CBM Raniganj Project of EOGEPL
(Compliance Period: Apr'21 to Sep'21)

ANNEXURE IV A

Date					Oct'21					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	Kunur Nala Upstream Near GGS#1	GG-1(R.O Discharge)	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64	Kunur Nala Downstream Near Kuldiha Bridge	EDH-64(Discharge)
1	pH at 27°C		5.5 to 9.0	5.5-9.0	7.7	7.62	7.55	7.75	7.4	7.83
2	Temperature	Deg C	---	40 deg C	31.8°C	32.3°C	30.5°C	33.4°C	32.9°C	31.6°C
3	Total Suspended Solids	mg/l	100	100	18	<2	14	12	31	2
4	Total Dissolved Solids	mg/l	---	2100	168	844	794	368	354	820
5	Acidity as CaCO3	mg/l	---		22	26	24	22	28	18
6	Total Alkalinity as CaCO3	mg/l	---		32	270	180	72	79	140
7	Total Hardness	mg/l	---		61	27	38	69	96	27
8	Calcium	mg/l	---		14	6	9.0	17	23.0	8
9	Magnesium	mg/l	---		6	3	4	6	9.0	2
10	Biochemical Oxygen Demand	mg/l	30	30	<2	<2	<2	<2	<2	<2
11	Chemical Oxygen Demand	mg/l	250	100	<8	<8	<8	<8	<8	<8
12	Oil & Grease	mg/l	10	10	<5	<5	<5	<5	<5	<5
13	Phenolic Compounds (as C6H5OH)	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
14	Sulphides (as S2) in mg/l	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15	Fluoride	mg/l	2	1.5	0.25	0.43	0.37	0.33	0.2	0.65
16	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Zinc	mg/l	5	2	<0.01	0.019	0.015	<0.01	0.012	0.018
18	Copper	mg/l	3	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Nickel	mg/l	3	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Lead	mg/l	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cyanide	mg/l	---	0.2	3.6	28.9	23.7	8.9	7.2	32.3
23	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Nitrate Nitrogen(as N),mg/L		0.5		0.41	0.24	0.16	0.62	1.78	0.3
25	Vanadium	mg/l	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Date					Oct'21					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	Kunur Nala Upstream Near GGS#1	GG-1(R.O Discharge)	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64	Kunur Nala Downstream Near Kuldiha Bridge	EDH-64(Discharge)
26	Iron		3		0.86	0.24	0.72	0.63	1.04	0.35
27	Manganese	mg/l	2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Dissolved Phosphate	mg/l	5		0.06	0.17	0.21	0.11	0.11	0.09
29	Selenium		0.05		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30	Cadmium	mg/l	2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31	Arsenic	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Free Amonia	mg/l	5		0.09	0.04	0.04	0.18	0.09	0.12
33	Ammonical Nitrogen	mg/l	50		3.1	2	1.8	4.4	4.7	2.9
34	Total residual chlorine	mg/l	1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
35	colour	Hazen Units	Colourless		<5	<5	<5	<5	<5	<5
36	Odor		Odourless		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

Surface Water Analysis Report of CBM Raniganj Project of EOGEPL
(Compliance Period: Apr'21 to Sep'21)

ANNEXURE IV A

Date					Nov'21					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	GG-1(R.O Discharge)	Kunur Nala Upstream Near GGS#1	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O-Discharge)
1	pH at 27°C		5.5 to 9.0	5.5-9.0	6.75	6.90	6.62	7.4	6.85	6.98
2	Temperature	Deg C	---	40 deg C	30.5°C	29.1°C	28.9°C	25.6°C	27.4°C	28.2°C
3	Total Suspended Solids	mg/l	100	100	<2	13	<2	14	10	3
4	Total Dissolved Solids	mg/l	---	2100	772	180	1774	454	614	1860
5	Acidity as CaCO3	mg/l	---		28	26	28	12	26	23
6	Total Alkalinity as CaCO3	mg/l	---		175	45	370	95	110	440
7	Total Hardness	mg/l	---		17	70	63	76	109	196
8	Calcium	mg/l	---		4	16	15.0	19	28.0	52
9	Magnesium	mg/l	---		<2	7	6	7	10.0	16
10	Biochemical Oxygen Demand	mg/l	30	30	<2	<2	<2	<2	<2	<2
11	Chemical Oxygen Demand	mg/l	250	100	<8	<8	<8	<8	<8	<8
12	Oil & Grease	mg/l	10	10	<5	<5	<5	<5	<5	<5
13	Phenolic Compounds (as C6H5OH)	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
14	Sulphides (as S2) in mg/l	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15	Fluoride	mg/l	2	1.5	0.40	0.25	0.63	0.51	0.39	0.7
16	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Zinc	mg/l	5	2	0.019	<0.01	0.022	0.014	0.012	0.018
18	Copper	mg/l	3	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Nickel	mg/l	3	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Lead	mg/l	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cyanide	mg/l	---	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Nitrate Nitrogen(as N),mg/L		0.5		0.14	0.41	1.26	0.93	3.67	9.4
25	Vanadium	mg/l	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Date					Nov'21					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	GG-1(R.O Discharge)	Kunur Nala Upstream Near GGS#1	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O-Discharge)
26	Iron		3		0.24	0.95	0.19	1.05	0.75	0.39
27	Manganese	mg/l	2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Dissolved Phosphate	mg/l	5		0.15	0.08	0.19	1.05	0.08	0.15
29	Selenium		0.05		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30	Cadmium	mg/l	2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31	Arsenic	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Free Amonia	mg/l	5		<0.01	<0.01	<0.01	0.04	<0.01	<0.01
33	Ammonical Nitrogen	mg/l	50		2.7	3.3	3	4.1	2.8	3.9
34	Total residual chlorine	mg/l	1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
35	colour	Hazen Units	Colourless		<5	<5	<5	<5	<5	<5
36	Odor		Odourless		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

Surface Water Analysis Report of CBM Raniganj Project of EOGEPL
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ANNEXURE IV A

Date					Nov'21	Dec'20				
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDH-64(Discharge)	EDH-64(Discharge)	Kunur Nala Downstream between EDH 58 & 64	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O- Discharge)	GG-1(R.O Discharge)
1	pH at 27°C		5.5 to 9.0	5.5-9.0	6.8	6.69	6.58	6.75	6.53	6.8
2	Temperature	Deg C	---	40 deg C	26.8°C	25.9°C	25.4°C	25.7°C	24.6°C	25.9°C
3	Total Suspended Solids	mg/l	100	100	<2	2	51	41	26	5
4	Total Dissolved Solids	mg/l	---	2100	764	726	702	412	1856	952
5	Acidity as CaCO3	mg/l	---		28	24	26	24	26	20
6	Total Alkalinity as CaCO3	mg/l	---		125	135	162	85	355	190
7	Total Hardness	mg/l	---		23	23	90	123	130	47
8	Calcium	mg/l	---		5.0	5	23	32.0	32	11.0
9	Magnesium	mg/l	---		3	2	8	10	12	5.0
10	Biochemical Oxygen Demand	mg/l	30	30	<2	<2	<2	<2	<2	<2
11	Chemical Oxygen Demand	mg/l	250	100	<8	<8	<8	<8	<8	<8
12	Oil & Grease	mg/l	10	10	<5	<5	<5	<5	<5	<5
13	Phenolic Compounds (as C6H5OH)	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
14	Sulphides (as S2) in mg/l	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15	Fluoride	mg/l	2	1.5	0.53	0.71	0.6	0.35	1.15	0.95
16	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Zinc	mg/l	5	2	0.016	0.018	0.013	0.011	0.022	0.017
18	Copper	mg/l	3	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Nickel	mg/l	3	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Lead	mg/l	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cyanide	mg/l	---	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Nitrate Nitrogen(as N),mg/L		0.5		0.81	1.86	1.13	4.33	2.8	2.16
25	Vanadium	mg/l	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Date					Nov'21	Dec'20				
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDH-64(Discharge)	EDH-64(Discharge)	Kunur Nala Downstream between EDH 58 & 64	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O-Discharge)	GG-1(R.O Discharge)
26	Iron		3		0.22	0.14	1.43	0.98	0.76	0.33
27	Manganese	mg/l	2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Dissolved Phosphate	mg/l	5		0.10	0.15	0.12	0.09	0.22	0.11
29	Selenium		0.05		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30	Cadmium	mg/l	2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31	Arsenic	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Free Amonia	mg/l	5		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
33	Ammonical Nitrogen	mg/l	50		2.2	2.1	2.8	1.7	3.3	2.1
34	Total residual chlorine	mg/l	1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
35	colour	Hazen Units	Colourless		<5	<5	<5	<5	<5	<5
36	Odor		Odourless		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

Surface Water Analysis Report of CBM Raniganj Project of EOGEPL
(Compliance Period: Apr'21 to Sep'21)

ANNEXURE IV A

Date					Dec'20		Jan'22			
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	Kunur Nala Upstream Near GGS#1	EDD-50 (R.O-Discharge)	Kunur Nala Upstream Near GGS#1	GGs-1(R.O Discharge)	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64
1	pH at 27°C		5.5 to 9.0	5.5-9.0	6.65	6.59	7.65	7.80	7.58	8.01
2	Temperature	Deg C	---	40 deg C	27.3°C	25.4°C	24.0°C	24.4°C	21.8°C	25.6°C
3	Total Suspended Solids	mg/l	100	100	18	12	22	3	35	19
4	Total Dissolved Solids	mg/l	---	2100	304	842	488	902	1152	622
5	Acidity as CaCO3	mg/l	---		25	26	16	13	18	8
6	Total Alkalinity as CaCO3	mg/l	---		68	205	112	190	305	120
7	Total Hardness	mg/l	---		86	83	109	26	126	90
8	Calcium	mg/l	---		21	19	28	5	31.0	23
9	Magnesium	mg/l	---		8	9	10	3	12	8
10	Biochemical Oxygen Demand	mg/l	30	30	<2	<2	2	<2	3	2
11	Chemical Oxygen Demand	mg/l	250	100	<8	<8	8	<8	9	8
12	Oil & Grease	mg/l	10	10	<5	<5	<5	<5	<5	<5
13	Phenolic Compounds (as C6H5OH)	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
14	Sulphides (as S2) in mg/l	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15	Fluoride	mg/l	2	1.5	0.26	0.88	0.51	1.1	1.6	0.89
16	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Zinc	mg/l	5	2	0.012	0.021	0.017	0.022	0.015	0.013
18	Copper	mg/l	3	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Nickel	mg/l	3	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Lead	mg/l	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cyanide	mg/l	---	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Nitrate Nitrogen(as N),mg/L		0.5		0.42	8.54	0.29	2.04	0.16	1.19
25	Vanadium	mg/l	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

**Surface Water Analysis Report of CBM Raniganj Project of EOGEP
(Compliance Period: Apr'21 to Sep'21)**

ANNEXURE IV A

Date					Dec'20		Jan'22			
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	Kunur Nala Upstream Near GGS#1	EDD-50 (R.O-Discharge)	Kunur Nala Upstream Near GGS#1	GG-1(R.O Discharge)	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64
26	Iron		3		0.81	0.23	1.9	0.51	2.4	0.95
27	Manganese	mg/l	2		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
28	Dissolved Phosphate	mg/l	5		0.07	0.14	0.15	0.21	0.16	0.11
29	Selenium		0.05		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30	Cadmium	mg/l	2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31	Arsenic	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Free Amonia	mg/l	5		<0.01	<0.01	0.09	0.11	0.09	0.16
33	Ammonical Nitrogen	mg/l	50		3	2	2.9	3.6	4.3	3.1
34	Total residual chlorine	mg/l	1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
35	colour	Hazen Units	Colourless		<5	<5	<5	<5	<5	<5
36	Odor		Odourless		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

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ANNEXURE IV A

Date					Jan'22			Feb'22		
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDH-64(M.S.R.O Discharge)	Kunur Nala Downstream Near Kuldaha Bridge	EDN-99 (R.O-Discharge)	GG-1(R.O Discharge)	Kunur Nala Upstream Near GGS#1	EDD-50 (R.O-Discharge)
1	pH at 27°C		5.5 to 9.0	5.5-9.0	7.63	8.11	7.48	6.7	6.87	6.58
2	Temperature	Deg C	---	40 deg C	22.8°C	23.4°C	22.4°C	28.4°C	24.1°C	27.7°C
3	Total Suspended Solids	mg/l	100	100	<2	7	<2	2	4	52
4	Total Dissolved Solids	mg/l	---	2100	1120	516	1936	1224	294	1182
5	Acidity as CaCO3	mg/l	---		16	8	18	30	24	41
6	Total Alkalinity as CaCO3	mg/l	---		265	105	350	280	80	402
7	Total Hardness	mg/l	---		20	139	176	24	86	135
8	Calcium	mg/l	---		4.0	34	44	5	20	33.0
9	Magnesium	mg/l	---		2.0	13	16	3	9	13
10	Biochemical Oxygen Demand	mg/l	30	30	<2	<2	<2	<2	<2	3
11	Chemical Oxygen Demand	mg/l	250	100	<8	<8	<8	<8	<8	15
12	Oil & Grease	mg/l	10	10	<5	<5	<5	<5	<5	<5
13	Phenolic Compounds (as C6H5OH)	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
14	Sulphides (as S2) in mg/l	mg/l	2	2	<0.5	<0.5	<0.5	0.98	0.25	0.72
15	Fluoride	mg/l	2	1.5	0.75	0.51	1.35	540	102	510
16	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Zinc	mg/l	5	2	0.022	0.012	0.18	0.018	<0.01	0.022
18	Copper	mg/l	3	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Nickel	mg/l	3	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Lead	mg/l	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cyanide	mg/l	---	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Nitrate Nitrogen(as N),mg/L		0.5		0.12	1.68	0.13	2.64	0.32	1.82
25	Vanadium	mg/l	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Date					Jan'22			Feb'22		
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDH-64(M.S.R.O Discharge)	Kunur Nala Downstream Near Kuldaha Bridge	EDN-99 (R.O-Discharge)	GG-1(R.O Discharge)	Kunur Nala Upstream Near GGS#1	EDD-50 (R.O-Discharge)
26	Iron		3		0.25	0.45	0.33	0.33	0.48	4.6
27	Manganese	mg/l	2		<0.05	<0.05	<0.05	<0.05	<0.05	0.086
28	Dissolved Phosphate	mg/l	5		0.11	0.15	0.09	0.21	0.09	0.18
29	Selenium		0.05		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30	Cadmium	mg/l	2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31	Arsenic	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Free Amonia	mg/l	5		0.04	0.11	0.05	<0.01	<0.01	<0.01
33	Ammonical Nitrogen	mg/l	50		2.1	1.8	2.6	4.5	3.2	5.2
34	Total residual chlorine	mg/l	1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
35	colour	Hazen Units	Colourless		<5	<5	<5	<5	<5	<5
36	Odor		Odourless		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

Surface Water Analysis Report of CBM Raniganj Project of EOGEP
(Compliance Period: Apr'21 to Sep'21)

ANNEXURE IV A

Date					Feb'22				Mar'22	
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	Kunur Nala Downstream between EDH 58 & 64	EDH-64(M.S.R.O Discharge)	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O-Discharge)	GGs-1(R.O Discharge)	Kunur Nala Upstream Near GGS#1
1	pH at 27°C		5.5 to 9.0	5.5-9.0	6.9	7.1	7.95	7.58	8.4	8.21
2	Temperature	Deg C	---	40 deg C	28.4°C	29.6°C	29.5°C	29.1°C	33.5°C	32°C
3	Total Suspended Solids	mg/l	100	100	8	<2	15	2	<2	<2
4	Total Dissolved Solids	mg/l	---	2100	914	966	382	1672	1120	528
5	Acidity as CaCO3	mg/l	---		24	22	10	20	Nil	Nil
6	Total Alkalinity as CaCO3	mg/l	---		195	215	92	415	285	115
7	Total Hardness	mg/l	---		65	24	130	167	21	115
8	Calcium	mg/l	---		15	5.0	31	42	4	29
9	Magnesium	mg/l	---		7	3.0	13	15	2	10
10	Biochemical Oxygen Demand	mg/l	30	30	<2	<2	2	<2	<2	<2
11	Chemical Oxygen Demand	mg/l	250	100	<8	<8	8	<8	<8	<8
12	Oil & Grease	mg/l	10	10	<5	<5	<5	<5	<5	<5
13	Phenolic Compounds (as C6H5OH)	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
14	Sulphides (as S2) in mg/l	mg/l	2	2	0.64	0.8	0.55	1.01	0.87	0.53
15	Fluoride	mg/l	2	1.5	435	448	135	705	515	230
16	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
17	Zinc	mg/l	5	2	0.013	0.018	0.022	0.031	0.019	0.012
18	Copper	mg/l	3	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Nickel	mg/l	3	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Lead	mg/l	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cyanide	mg/l	---	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
23	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Nitrate Nitrogen(as N),mg/L		0.5		1.34	<0.2	5.36	1.87	1.92	<0.1
25	Vanadium	mg/l	0.2		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

**Surface Water Analysis Report of CBM Raniganj Project of EOGEP
(Compliance Period: Apr'21 to Sep'21)**

ANNEXURE IV A

Date					Feb'22				Mar'22	
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	Kunur Nala Downstream between EDH 58 & 64	EDH-64(M.S.R.O Discharge)	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O-Discharge)	GG-1(R.O Discharge)	Kunur Nala Upstream Near GGS#1
26	Iron		3		1.25	0.27	0.92	0.51	0.18	0.26
27	Manganese	mg/l	2		0.053	<0.05	<0.05	<0.05	<0.05	<0.05
28	Dissolved Phosphate	mg/l	5		0.12	0.15	0.11	0.26	0.16	0.09
29	Selenium		0.05		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
30	Cadmium	mg/l	2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
31	Arsenic	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
32	Free Amonia	mg/l	5		<0.01	0.05	0.23	0.08	0.52	0.27
33	Ammonical Nitrogen	mg/l	50		2.8	3.1	4.3	2.2	4.3	3.9
34	Total residual chlorine	mg/l	1		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
35	colour	Hazen Units	Colourless		<5	<5	<5	<5	<5	<5
36	Odor		Odourless		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

Surface Water Analysis Report of CBM Raniganj Project of EOGPL
(Compliance Period: Apr'21 to Sep'21)

ANNEXURE IV A

Date					Mar'22				
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64	EDH-64(M.S.R.O Discharge)	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O-Discharge)
1	pH at 27°C		5.5 to 9.0	5.5-9.0	8.37	8.62	8.19	8.45	8.28
2	Temperature	Deg C	---	40 deg C	32.4°C	32.5°C	31.6°C	32.7°C	31.4°C
3	Total Suspended Solids	mg/l	100	100	5	16	<2	9	<2
4	Total Dissolved Solids	mg/l	---	2100	1292	1488	1228	674	1878
5	Acidity as CaCO3	mg/l	---		Nil	Nil	Nil	Nil	Nil
6	Total Alkalinity as CaCO3	mg/l	---		345	412	310	175	425
7	Total Hardness	mg/l	---		31	42	24	132	122
8	Calcium	mg/l	---		7	10	5	33	31
9	Magnesium	mg/l	---		3	4	2	12	11
10	Biochemical Oxygen Demand	mg/l	30	30	<2	2	<2	<2	<2
11	Chemical Oxygen Demand	mg/l	250	100	<8	9	<8	8	<8
12	Oil & Grease	mg/l	10	10	<5	<5	<5	<5	<5
13	Phenolic Compounds (as C6H5OH)	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002
14	Sulphides (as S2) in mg/l	mg/l	2	2	0.98	1.25	1.89	1.55	2.8
15	Fluoride	mg/l	2	1.5	570	625	535	260	620
16	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05
17	Zinc	mg/l	5	2	0.025	0.018	0.015	0.01	0.02
18	Copper	mg/l	3	0.2	<0.05	<0.05	<0.05	<0.05	<0.05
19	Nickel	mg/l	3	3	<0.05	<0.05	<0.05	<0.05	<0.05
20	Lead	mg/l	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
21	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001
22	Cyanide	mg/l	---	0.2	<0.02	<0.02	<0.02	<0.02	<0.02
23	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01
24	Nitrate Nitrogen(as N),mg/L		0.5		2.01	0.58	<0.1	1.31	<0.1
25	Vanadium	mg/l	0.2		<0.1	<0.1	<0.1	<0.1	<0.1

**Surface Water Analysis Report of CBM Raniganj Project of EOGEP
(Compliance Period: Apr'21 to Sep'21)**

ANNEXURE IV A

Date					Mar'22				
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-50 (R.O-Discharge)	Kunur Nala Downstream between EDH 58 & 64	EDH-64(M.S.R.O Discharge)	Kunur Nala Downstream Near Kuldiha Bridge	EDN-99 (R.O-Discharge)
26	Iron		3		1.1	2.45	0.11	0.93	0.35
27	Manganese	mg/l	2		<0.05	<0.05	<0.05	<0.05	<0.05
28	Dissolved Phosphate	mg/l	5		0.21	0.15	0.12	0.09	0.22
29	Selenium		0.05		<0.005	<0.005	<0.005	<0.005	<0.005
30	Cadmium	mg/l	2		<0.02	<0.02	<0.02	<0.02	<0.02
31	Arsenic	mg/l	0.2		<0.01	<0.01	<0.01	<0.01	<0.01
32	Free Amonia	mg/l	5		0.48	0.45	0.27	0.34	0.43
33	Ammonical Nitrogen	mg/l	50		4	2.5	3.8	2.4	4.3
34	Total residual chlorine	mg/l	1		<0.1	<0.1	<0.1	<0.1	<0.1
35	colour	Hazen Units	Colourless		<5	<5	<5	<5	<5
36	Odor		Odourless		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable

Ground Water Analysis of Surrounding Areas of CBM Raniganj Project of EOGEP

Compliance Period: Oct'21 to Mar'22

S. No.	Parameter	Unit	S:10500 -1991		Bansia Village	Kalikapur Village	Nachan Village	Bargoria Village	Jatgoria Village	Kantaberia Village	Dhabani Village	Akandara Village
			Desirable limit	Permissible limit								
1	Colour	Hazen	5	15	<5	<5	<5	<5	<5	<5	<5	<5
2	pH Value		6.5-8.5	No relaxation	7.12	7.05	6.9	6.85	6.9	6.8	6.85	6.9
3	Turbidity, NTU	NTU	1	5	9.2	56.8	182	9.5	1.7	30.9	13.3	4.1
4	Total Dissolved Solids	mg/l	500	2000	384	524	486	32	86	208	86	108
5	Total Suspended Solids,	mg/l	---	---	4	21	62	4	<2	12	4	<2
6	Total Alkalinity as CaCO ₃	mg/l	200	600	294	200	347	16	57	33	65	69
7	Total Hardness	mg/l	200	600	149	319	272	23	60	56	73	76
8	Aluminium (as Al)	NTU	0.03	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9	Ammonia (as total ammonia -N)	mg/l	0.5	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
10	Anionic Detergents (as MBAS)	mg/l	0.2	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
11	Barium (as Ba)	mg/l	0.7	No relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
12	Boron (as B)	mg/l	0.5	1	<1	<1	<1	<1	<1	<1	<1	<1
13	Calcium (as Ca)	mg/l	75	200	38	84	72	5	15	13	17	19
14	Chloride (as Cl)	mg/l	250	1000	11	127	18	6	16	101	12	21
15	Copper (as Cu)	mg/l	0.05	1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
16	Fluoride (as F)	mg/l	1	1.5	0.21	0.30	0.5	<0.05	<0.05	<0.05	<0.05	<0.05
17	Free Residual Chlorine	mg/l	0.2	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
18	Iron (as Fe)	mg/l	0.3	No relaxation	0.49	1.5	4.55	0.35	0.11	2.15	0.95	0.48
19	Magnesium (as Mg)	mg/l	30	100	13	27	22	2	6	6	7	8
20	Manganese (as Mn)	mg/l	0.1	0.3	<0.05	<0.05	0.083	<0.05	0.286	<0.05	<0.05	<0.05
21	Mineral Oil	mg/l	0.5	No relaxation	<1	<1	<1	<1	<1	<1	<1	<1
22	Nitrate (as NO ₃)	mg/l	45	No relaxation	<0.5	9.88	<0.5	3.54	3.94	14.49	2.3	3.94
23	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	0.001	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
24	Sulphate (as SO ₄)	mg/l	200	400	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
25	Silver (as Ag)	mg/l	0.1	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
26	Sodium (as Na)	mg/l	---	---	152	163	155	8	14	52	9	15
27	Selenium (as Se)	mg/l	0.01	No relaxation	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
28	Cadmium (as Cd)	mg/l	0.003	No relaxation	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
29	Cyanide (as CN)	mg/l	0.05	No relaxation	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
30	Lead (as Pb)	mg/l	0.01	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
31	Mercury (as Hg)	mg/l	0.001	No relaxation	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
32	Total Arsenic (as As)	mg/l	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
33	Polynuclear aromatic hydrocarbons (as PAH)	mg/l	0.0001	No relaxation	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
34	Pesticide Residues	mg/l	0.01	No relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
35	Total Coliform Count,	MPN/100 mL	Shall not be detectable in any 100 ml sample		<1	2	<1	<1	<1	<1	<1	<1
36	Odour		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
37	Polychlorinated Biphenyls	mg/l	0.0005	No Relaxation	ND	ND	ND	ND	ND	ND	ND	ND
38	Chloramines	us/cm	4	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
39	Molybdenum	mg/l	0.07	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

**Ground Water Analysis of Surrounding Areas of CBM Raniganj Project of EOGEP
Compliance Period: Oct'21 to Mar'22**

S. No.	Parameter	Unit	S:10500 -1991		Bansia Village	Kalikapur Village	Nachan Village	Bargoria Village	Jatgoria Village	Kantaberia Village	Dhabani Village	Akandara Village
			Desirable limit	Permissible limit								
40	Sulphide,mg/L	mg/l	0.05	No Relaxation	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
41	Electrical Conductivity at 25° C,	µmhos/cm	---	---	640	860	775	58	156	380	160	195
42	Phosphorus(as P)	mg/l	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
43	Nickel	mg/l	0.02	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
44	Total Chromium	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
45	Zinc	mg/l	5	15	<0.01	0.012	0.029	<0.01	<0.01	0.015	<0.01	<0.01

Note: ND = Not Detectable

Ground Water Analysis of Surrounding Areas of CBM Raniganj Project of EOGPL
Compliance Period: Oct'21 to Mar'22

ANNEXURE V

S. No.	Parameter	Unit	S:10500 -1991		Labnapara village	Saraswatiganj village	Ghatakadanga Village	Sarenga Village	Gopalpur Village
			Desirable limit	Permissible limit					
1	Colour	Hazen	5	15	<5	<5	<5	<5	<5
2	pH Value		6.5-8.5	No relaxation	6.7	6.98	7.06	7.15	6.82
3	Turbidity, NTU	NTU	1	5	2.5	2.2	6.2	1.9	101.1
4	Total Dissolved Solids	mg/l	500	2000	198	256	46	376	170
5	Total Suspended Solids,	mg/l	---	---	<2	<2	2	<2	42
6	Total Alkalinity as CaCO ₃	mg/l	200	600	16	33	28	224	33
7	Total Hardness	mg/l	200	600	83	136	23	222	83
8	Aluminium (as Al)	NTU	0.03	0.2	<0.01	<0.01	<0.01	<0.01	<0.01
9	Ammonia (as total ammonia -N)	mg/l	0.5	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1
10	Anionic Detergents (as MBAS)	mg/l	0.2	1	<0.1	<0.1	<0.1	<0.1	<0.1
11	Barium (as Ba)	mg/l	0.7	No relaxation	<0.05	<0.05	<0.05	<0.05	<0.05
12	Boron (as B)	mg/l	0.5	1	<1	<1	<1	<1	<1
13	Calcium (as Ca)	mg/l	75	200	20	34	5	58	20
14	Chloride (as Cl)	mg/l	250	1000	88	114	7	22	63
15	Copper (as Cu)	mg/l	0.05	1.5	<0.05	<0.05	<0.05	<0.05	<0.05
16	Fluoride (as F)	mg/l	1	1.5	<0.05	<0.05	<0.05	0.3	<0.05
17	Free Residual Chlorine	mg/l	0.2	1	<0.1	<0.1	<0.1	<0.1	<0.1
18	Iron (as Fe)	mg/l	0.3	No relaxation	0.22	0.22	0.4	0.19	4.9
19	Magnesium (as Mg)	mg/l	30	100	8	12	2	18	8
20	Manganese (as Mn)	mg/l	0.1	0.3	<0.05	<0.05	<0.05	<0.05	<0.05
21	Mineral Oil	mg/l	0.5	No relaxation	<1	<1	<1	<1	<1
22	Nitrate (as NO ₃)	mg/l	45	No relaxation	9.75	4.47	<0.5	5.54	3.68
23	Phenolic Compounds (as C ₆ H ₅ OH)	mg/l	0.001	0.002	<0.002	<0.002	<0.002	<0.002	<0.002
24	Sulphate (as SO ₄)	mg/l	200	400	<2.5	<2.5	<2.5	<2.5	3.5
25	Silver (as Ag)	mg/l	0.1	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1
26	Sodium (as Na)	mg/l	---	---	64	65	10	138	52
27	Selenium (as Se)	mg/l	0.01	No relaxation	<0.005	<0.005	<0.005	<0.005	<0.005
28	Cadmium (as Cd)	mg/l	0.003	No relaxation	<0.02	<0.02	<0.02	<0.02	<0.02
29	Cyanide (as CN)	mg/l	0.05	No relaxation	<0.02	<0.02	<0.02	<0.02	<0.02
30	Lead (as Pb)	mg/l	0.01	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1
31	Mercury (as Hg)	mg/l	0.001	No relaxation	<0.001	<0.001	<0.001	<0.001	<0.001
32	Total Arsenic (as As)	mg/l	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01
33	Polynuclear aromatic hydrocarbons (as PAH)	mg/l	0.0001	No relaxation	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
34	Pesticide Residues	mg/l	0.01	No relaxation	<0.01	<0.01	<0.01	<0.01	<0.01
35	Total Coliform Count,	MPN/100 mL	Shall not be detectable in any 100 ml sample		<1	<1	<1	<1	<1
36	Odour		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
37	Polychlorinated Biphenyls	mg/l	0.0005	No Relaxation	ND	ND	ND	ND	ND
38	Chloramines	us/cm	4	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05
39	Molybdenum	mg/l	0.07	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05

**Ground Water Analysis of Surrounding Areas of CBM Raniganj Project of EOGEP
Compliance Period: Oct'21 to Mar'22**

S. No.	Parameter	Unit	S:10500 -1991		Labnapara village	Saraswatiganj village	Ghatakdanga Village	Sarenga Village	Gopalpur Village
			Desirable limit	Permissible limit					
40	Sulphide,mg/L	mg/l	0.05	No Relaxation	<0.5	<0.5	<0.5	<0.5	<0.5
41	Electrical Conductivity at 25° C,	µmhos/cm	---	---	365	465	85	670	330
42	Phosphorus(as P)	mg/l	---	---	<0.01	<0.01	<0.01	<0.01	<0.01
43	Nickel	mg/l	0.02	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05
44	Total Chromium	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05
45	Zinc	mg/l	5	15	<0.01	0.012	<0.01	0.016	0.019

Note: ND = Not Detectable

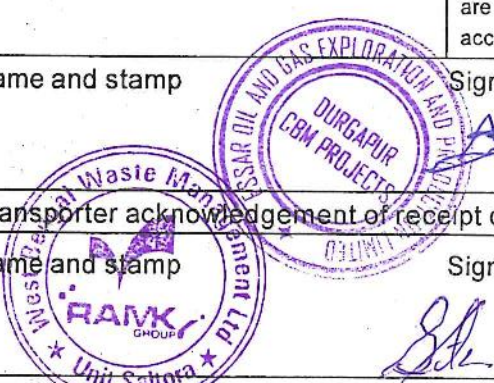
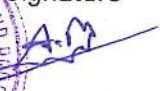
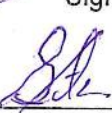
FORM 10

1st Copy

WEST BENGAL WASTE MANAGEMENT LIMITED

J.L. No. – 80, Vill. : Pabayan, P.O. : Bishjore, P.S. : Saltora, Bankura, W.B. 722158

MANIFEST FOR HAZARDOUS AND OTHER WASTE

1	Sender's name and mailing address (including Phone No. and e-mail) :	ESSAR OIL AND GAS EXPLORATION AND PRODUCTION LIMITED AN 518, SECTOR-2, MARTIN LUTHER KING SARANI, BIDHANANAR, DURHAPUR - 713212			
2	Sender's authorization No. :	15/25 (HW) - 244912008			
3	Manifest Document No. :	1 082			
4	Transporter's name and address (including Phone No. and e-mail) :	West Bengal Waste Management Limited J.L. No. – 80, Mouza : Pabayan, P.S. : Saltora, Dist. : Bankura West Bengal, Pin- 722158			
5	Type of vehicle :	(Truck/Tanker/Special Vehicle)			
6	Transporter's registration No. :	1-MD(E)/X/06			
7	Vehicle registration No. :	WB 31N 00 98			
8	Receiver's name and mailing address (including Phone No. and e-mail) :	West Bengal Waste Management Limited J.L. No. – 80, Mouza : Pabayan, P.S. : Saltora, Dist. : Bankura West Bengal, Pin- 722158			
9	Receiver's authorization No. :				
10	Waste description :	OIL (contaminated waste, filter, silica, Battery)			
11	Total quantity No. of Containers :	2.650 m3 or MT Nos.			
12	Physical form :	(Solid/Semi-Solid/Sludge/Oily/Tarry/Slurry/Liquid)			
13	Special handling instructions and additional information	Safety shoe, Hand gloves, google, Helmets			
14	Sender's Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping categorized, packed, marked and name and are labeled and are in all respects in proper conditions for transport by road according to applicable National Government Regulations.			
	Name and stamp	Signature	Day	Month	Year
			0	7	01 2022
15	Transporter acknowledgement of receipt of Wastes :	Signature	Day	Month	Year
	Name and stamp		0	7	01 2022
16	Receiver's certification for receipt of hazardous and other waste :	Signature	Day	Month	Year
	Name and stamp				

1. White Colour forwarded to WBPCB by HzW Sender
 3. Pink Colour retained by HzW Receiver
 5. Green Colour forwarded to WBPCP after disposal by HzW Receiver

2. Yellow Colour retained by HzW sender
 4. Orange Colour retained by transporter
 6. Blue Colour returned to sender after disposal by HzW Receiver

FORM 10

1st Copy

WEST BENGAL WASTE MANAGEMENT LIMITED

J.L. No. – 80, Vill. : Pabayan, P.O. : Bishjore, P.S. : Saltora, Bankura, W.B. 722158

MANIFEST FOR HAZARDOUS AND OTHER WASTE

1	Sender's name and mailing address (including Phone No. and e-mail) :	ESSAR OIL AND GAS EXPLORATION AND PRODUCTION LIMITED AN 518, SECTOR-2, MARTIN LUTHER KING SARANI, BIDHAN NAGAR, DURHAPUR - 713212					
2	Sender's authorization No. :	15/25 (HW) - 244912008					
3	Manifest Document No. :	1 017					
4	Transporter's name and address (including Phone No. and e-mail) :	West Bengal Waste Management Limited J.L. No. – 80, Mouza : Pabayan, P.S. : Saltora, Dist. : Bankura West Bengal, Pin- 722158					
5	Type of vehicle :	(Truck/Tanker/Special Vehicle)					
6	Transporter's registration No. :	1-MD(E)/X/06					
7	Vehicle registration No. :	WB31N 0062					
8	Receiver's name and mailing address (including Phone No. and e-mail) :	West Bengal Waste Management Limited J.L. No. – 80, Mouza : Pabayan, P.S. : Saltora, Dist. : Bankura West Bengal, Pin- 722158					
9	Receiver's authorization No. :						
10	Waste description :	OIL (CONTAMINATED WASTE, FILTER, RO MEMBRANE)					
11	Total quantity No. of Containers :	5.260 m3 or MT Nos.					
12	Physical form :	(Soild/Semi-Solid/Sludge/Oily/Tarry/Slurry/Liquid)					
13	Special handling instructions and additional information	Safety shoe, Hand gloves, Google, Helmets					
14	Sender's Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping categorized, packed, marked and name and are labeled and are in all respects in proper conditions for transport by road according to applicable National Government Regulations.					
	Name and stamp	Signature	Day	Month	Year		
			0	7	12	20	21
15	Transporter acknowledgement of receipt of Wastes :						
	Name and stamp	Signature	Day	Month	Year		
			0	7	12	20	21
16	Receiver's certification for receipt of hazardous and other waste :						
	Name and stamp	Signature	Day	Month	Year		




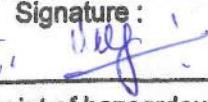
- 1. White Colour forwarded to WBPCB by HzW Sender
- 3. Pink Colour retained by HzW Receiver
- 5. Green Colour forwarded to WBPCP offer disposal by HzW Receiver

- 2. Yellow Colour retained by HzW sender
- 4. Orange Colour retained by transporter
- 6. Blue Colour returned to sender after disposal by HzW Receiver

FORM 10

[See rule 19 (1)]

MANIFEST FOR HAZARDOUS AND OTHER WASTE

1.	Sender's name and mailing address (including Phone No. and e-mail)	ESSAR OIL AND GAS Exploration and Production Ltd. AN 81B Sec-2B, Marhiv Lather King Sarani, Pochharage, Durgam Cheruvu = 243202			
2.	Sender's authorisation No.	:	15/25 (HW) - 2449 / 2008		
3.	Manifest Document No.	:			
4.	Transporter's name and address : (including Phone No. and e-mail)	Inspec Oils Limited - A/122, phase-III - Block-A - Kalyani			
5.	Type of vehicle	:	(Truck / Tanker / Special Vehicle)		
6.	Transporter's registration No.	:	182/25 (HW) - 2545 / 2009		
7.	Vehicle registration No.	:	WB-23C-2929		
8.	Receiver's name and mailing address (including Phone No. and e-mail)	Inspec Oils Limited - A/122, phase-III - Block-A - Kalyani, Nadia			
9.	Receiver's authorisation No.	:	182/25 (HW) - 2545 / 2009		
10.	Waste description	:	Used oil		
11.	Total quantity No. of Containers	:	13,860 m ³ or MT / 2205 66 drum Nos.		
12.	Physical form	:	(Solid / Semi-Solid / Sludge / Oily / Tarry / Slurry / Liquid)		
13.	Special handling instructions and additional information	:	Handle with care		
14.	Sender's Certificate	I hereby declare that the contents of the consignment are fully and accurately described above by proper shipping name and are categorised, packed, marked, and labelled, and are in all respects in proper conditions for transport by road according to applicable national government regulations.			
	Name and stamp : 	Signature : 	Month 12	Day 01	Year 2021
15.	Transporter acknowledgement of receipt of Wastes				
	Name and stamp : 	Signature : 	Month 12	Day 01	Year 2021
16.	Receiver's certification for receipt of hazardous and other waste				
	Name and stamp :	Signature :	Month	Day	Year 2021

**Expenditure towards Environmental Protection Measures at EOGPL CBM Project,
Raniganj
(October' 21 to March' 22)**

S. No.	Particular	Expenses (INR)
1	Installation of Reverse Osmosis Treatment System for Produced Water Treatment (Recurring)	Rs. 1,77,67,508.00
2	Environmental Monitoring Activities (Recurring)	Rs. 5,03,315.00
3	HDPE liners for produced water storage at site when needed (Capital)	Rs. 2,90,820.00
4	Non Hazardous Waste Disposal (Recurring)	Rs. 3,98,709.00
5	Hazardous Waste Disposal (Recurring)	Rs. 2,65,448.00
6	Green Belt	Rs. 80,000.00
TOTAL		Rs. 1,93,05,800.00

S. No.	Location	Latitude	Longitude	Parapet Height (m)	Well Diameter (m)	Depth to Water from Parapet top (m)	Depth to Water below ground level (m)
1	Nachan	23°36'42.4"N	87°19'58.9"E	0.68	1	1.95	1.27
2	Bansia	23°37.464"N	87°20.151"E	0.76	0.97	1.8	1.04
3	Kalikapur	23°37.464"N	87°20.151"E	0.8	1.85	1.26	0.46
4	Bargoria	23°37'580"N	87°21'397"E	0.7	2.5	1.82	1.12
5	Jatgoria	23°36'973"N	87°23'432"E	0.6	1.8	2.03	1.43
7	Dhabani	23°35'519"N	87°22.085"E	0.95	1.8	2	1.05
8	Labnapara	23°35'05.36N	87°22'15.8"E	1.2	1.5	1.95	0.75
9	Akandara	23°34'461"N	87°23'013"E	0.65	1.85	1.93	1.28
10	Sarenga	23°31'665"N	87°24'400"E	0	0.6	2.33	1.32
11	Saraswatigunj	23°35'226"N	87°24'784"E	0.6	1.75	1.87	1.27
12	Ghatakdanga	23°34'147"N	87°24'308"E	1	2.4	2.13	1.13
13	Kantaberia	23°36'829"N	87°22'242"E	0.6	1.3	2.38	1.78
14	Gopalpur	23°30'639"N	87°23'408"E	0.5	1.53	2.48	1.98