Essar Oil and Gas Exploration and Production Ltd
Essar House - Durgapur
Village & Post Office – Molandighi
Block - Kanksa
Durgapur Sub-Division
Dist. - Paschim Bardhhaman
Durgapur – 713212
West Bengal
India

CIN: U11203GJ2016PLC091903

E eogepl@essarenp.co.in
www.essar.com

EOGEPL/ CBM-RG (E)/ HSE/2024/5880

28th June, 2024

The Regional Director
Ministry of Environment, Forest and Climate Change,
Integrated Regional Office, Kolkata
IB – 198, Sector-III, Salt Lake City, Kolkata – 700106.

Sub: Submission of the Six-monthly Compliance Report of Environment Clearance, Phase-I by Essar Oil Gas Exploration and Production Limited (EOGEPL) reg.

Ref: Environmental Clearance, Phase-I vide F. No. J-11011/660/2007- IA II (I) dated 6th May, 2008.

Respected Sir/Madam,

We submit herewith the six-monthly compliance report w.r.t. the stipulated conditions of prior Environment Clearance, Phase I vide F. No. J-11011/660/2007- IA II (I) dated 6th May, 2008.

The six-monthly compliance report is considered for the period of October'23 to March'24.

Thanking you for your continued support.

For Essar Oil and Gas Exploration and Production Limited

Warm Regards,

Vikram Goday
Vice President & Head- Facilities
Raniganj East, CBM Project-Durgapur

Enclosed: Annexure I, II

Sl. No.	EC Conditions	Compliance Status
2	The Ministry of Environment and Forests has examined your application. It is noted that proposal is for environment clearance for coal bed methane exploration in CBM Block, RG (east)-CBM-2001/1, Raniganj, West Bengal. Total area of the block is 500 sq. km. The block is located in three districts of Burdwan< Birbhum and Bankura in west Bengal. About 50% of the block area is located in the Burdwan district. It is proposed to drill 12 numbers of core holes and 15 number of test wells. About 100m X 100m of land will be acquired on temporary lease basis. Total land requirement for 12 core holes and 15 test wells drilling is about 3.0 and 15.0 ha respectively. Depth of each well would be 900m – 1100m. About 25 m3/d of water will be required for each well which will be met from the local water suppliers. Power requirement of 1500 HP will be met from the two nos. of 250 KVA each of DG Set. Water based mud will be used as drilling fluid in core hole. Drill cuttings comprising of shale, sands clays will be stored in the HDPE lined pits at the well site. No National Park/ Wildlife Sanctuary/ Biosphere Reserve, etc. is located within the 10 km radius of the proposed location. The unspent oil will be sold to the registered recyclers. Public hearing of the project was held on 05.02.2008. The total cost of the project is Rs. 40 crores.	Noted. Complied with.
3	The Ministry of Environment and Forest hereby accords environmental clearance to the above project under the provisions of EIA Notification, 2006 subject to strict compliance of the following Specific and General Conditions.	Noted

A. Specific Conditions		
i	The Company shall comply with the guidelines for disposal of solid waste, drill cuttings and drilling fluids for onshore drilling operation notified vide GSR 546(E) dated 30th August, 2005.	Complied with during drilling, presently the wells are in production wells.
ii	The Company shall pay Compensation for acquisition of private land as per the Central Government/State Govt Norms. The compensation to be paid to the land losers shall not be less than the norms/package as per the policy on National resettlement and rehabilitation Rules, 2007.	Compensation paid with respect to the prevailing market rate directly with the land owners.
iii	The Company shall monitor data on methane and non-methane hydrocarbon and data submitted to ministry.	Methane and non-methane Hydrocarbon data is monitored as a part of ambient air quality monitoring. AAQ report refers ***Annexure I.***
iv	The drilling shall be restricted to the mines free area. The company shall use (Water Based Mud) WBM.	Complied with.
v	The surface facilities shall be installed as per applicable codes and standards, international practices and applicable local regulations.	Surface facilities have been designed and installed as per applicable Code and Standard, i.e. OISD guidelines.
vi	The Top soil removed wherever suitable shall be stacked separately for reuse during restoration process.	Top soil has been reused for the restoration of core holes and green belt development also at the project facilities.
vii	Drilling waste water including drill cutting 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.	Complied with.
viii	The company shall take necessary measures to prevent fire hazards and soil remediation as	The necessary preventive measures have taken in place to prevent fire hazards and

	needed. At place of ground flaring the flare pit shall be lined with refractory bricks and efficient burning systems shall be provided. In case of overhead flare stacks the stack height shall be provided as per the norms to minimize the gaseous emissions and heating load during flaring.	soil remediation as follows. ▪ Installation of electrical equipment has been done as per the approved hazardous zone classification of DGMS. ▪ Major facilities like GGS, MCS, Ware House etc. are well equipped with fire hydrant system ▪ DCP type fire extinguishers are available at all well sites. ▪ Fixed and Portable type multi gas detectors are in used for work zone monitoring. Detectable gases are, CH_4, O_2, CO, H_2S. ▪ Flame proof type lighting fixtures, push buttons and switches are used at drill site and facilities. ▪ Impervious lining, secondary containment and spill kits are ensured, whenever there is a possibility of soil contamination. ▪ The overhead flaring stack with knockout drums have been installed to minimize gaseous emissions during operation.
ix	The produced water during drilling operations shall be collected in the lined waste pits to prevent ground water contamination. The water shall be treated to the prescribed standards before disposal. The treated produced water shall be used for irrigation, pisci-culture and ground water recharge etc.	Produced water is collected & stored in adequate designed over surface Zn-Al tanks installed at all sites. In case of excess volume of water is stored HDPE lined pits. The produced water is transported through pipelines to Reverse Osmosis (RO) plant for further treatment. Presently, RO plants having the capacity 8100 m^3/ day. The treated water is used in project and other activities and the balance treated water is discharged to nearby stream. The discharge water is conforming to the specified discharge limit.

x	To prevent underground coal fire, preventive measures shall be taken for ingress of ambient air during water withdrawal inside the coal seams by adopting technologies including vacuum suction. Gas detectors for detection of CH_4 and H_2S shall be installed	There is no chance of ingress of ambient air, as the well is arrested with drive head and operational through Progressive Cavity Pump. Fixed and Portable type multi gas detector is used for the detection of CH_4, H_2S, O_2 and CO at Gas Gathering Station and production sites.
xi	The company shall take necessary measures to reduce noise levels at the drill site by providing mitigation measures such as proper acoustic enclosures to the DG Set and meet the norms notified by the MoEF. Height of all stacks/vents shall be provided as per the CPCB guidelines	Complied with.
xii	Proper Infrastructure and sanitation facilities shall be provided for the construction workers during construction. All the construction waste shall be managed so that there is no impact on the surrounding environment	Complied with.
xiii	The company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed	The necessary preventive measures have taken in place to prevent fire hazards, oil spill and soil remediation as follows. • Installation of electrical equipment has been done as per the approved hazardous zone classification of DGMS. • Major facilities like GGS, MCS, Ware House etc. are well equipped with fire hydrant system • Dry chemical fire extinguishers are available at all well sites. • Fixed and Portable type multi gas detectors are in used for work zone monitoring. Detectable gases are, CH_4, O_2, CO, H_2S. • Flame proof type lighting fixtures, push buttons and switches are used at

		drill site and facilities. • Impervious lining, secondary containment and spill kits are ensured, whenever there is a possibility of soil contamination.
xiv	The project proponent shall also comply with the Environmental protection measures and safeguards recommended in the EIA/EMP/risk analysis report as well as the recommendations of public hearing	As implemented with.
xv	To prevent well blowouts during drilling operations, Blow Out Preventer (BOP) system shall be installed. Blow out prevention measures during drilling shall focus on maintaining well bore hydrostatic pressure by proper pre-well planning and drill rig fluid	Complied with.
xvi	Occupational health surveillance of 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 as per the approved schedule of Directorate- General of Mine Safety (DGMS).
xvii	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 near 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.	Till now no such full abandonment is done for any of the well site, however standard practices as per OISD and Indian Petroleum regulations are being followed for plugging and securing the drilled wells and it is taken into production process. It is noted that upon full abandonment/closure of wells/site, the site shall be restored to its original condition. Whereas, Core holes have been abandoned and restored as per the well closure plan.

xviii	In case the commercial viability of the project is established, the company will prepare a detailed plan for the development of CBM block to obtain a fresh clearance from Ministry.	Regarding to the commercial viability of the project, EOGEPL having approved FDP for the development of CBM block. Phase II & Phase III ECs have been obtained on 23rd September 2011 and 26th February, 2013 respectively. Along with EC, Phase IV is in process, ToR has been granted by the Ministry for 400 CBM wells, surface facilities and pipelines.
B. General Condition		
i	No further expansion or modification in the project 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 required, if any.	Apart from EC- Phase I, the CBM block [RG (East)-CBM-2001/1] is operational with EC-Phase II and EC- Phase III. Along with EC, Phase IV is in process, ToR has been granted by the Ministry for 400 CBM wells, surface facilities and pipelines.
ii	The Project authorities must strictly comply with the rules and regulations under Manufacture, storage and import of hazardous chemical rules, 1989 as amended in 2000. Prior approval from chief inspector of factories, Chief controller of explosives, Fire Safety Inspectorate etc must be obtained, wherever applicable.	We comply the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Also, we are in compliance with the directions/guidelines/approval of Oil Mines Regulations 2017, Oil Industry Safety Directorate, Directorate General of Mine Safety and Petroleum and Explosives Safety Organization for CBM operation.
iii	The Project authorities must strictly comply with the rules and regulations with regarding to handling and disposal of Hazardous Wastes (Management and Handling) Rules, 1989/2003 wherever applicable. Authorization from the state pollution control board must be obtained	We are in compliance with the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and obtained Hazardous Waste Authorization vide Memo No. - 190/2S (HW)-2449/2008, date- 28/12/2023.

	for collection/treatment/storage/disposal of hazardous wastes.	Annual return of the hazardous waste is submitted to WBPCB through online portal every year within the schedule time frame.
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, enclosure 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(Night).	DG sets, Gas Generator Sets are in used confirming to CPCB guidelines of acoustic enclosure and providing adequate stack height. Regular noise monitoring is carried out at nearby localities. The results of noise monitoring refer to ***Annexure II***.
v	A separate Environmental Management Cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring function	A dedicated Environment Management Cell is functional for implementing the environment management plan at large. We conduct environmental monitoring by M/s Scientific Research laboratory, Kolkata (MoEF&CC recognized and NABL accredited).
vi	The Project Authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the MoEF as well as state Government along with the implementation schedule for all the conditions stipulated herein. The fund so provided shall not be diverted for any other purposes	Complied with.
vii	The Regional Office of the Ministry of Bhubaneswar/CPCB/SPCB will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Noted.
viii	The Project proponent shall inform the public that the project has been accorded environmental clearance by the ministry and copies of letter are available with the	Complied with.

	SPCB/Committee and may also be seen at website of the Ministry and Forest at http:/www.envfor.nic.in. This shall be advertised within seven days of issue of this letter in at least two local news papers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned.	
ix	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.	The project was funded internally without any external funding. Project was commenced on 20th June, 2008 after obtaining consent to establish from WBPCB.

ANNEXURE I

Ambient Air Quality Monitoring Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Ltd.
(Period: October'23 - March'24)

Name of Location			MCS						GGS- 01					
Month			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Parameter	UoM	NAAQS LIMIT												
$PM_{2.5}$	$\mu g/m^3$	60	27.34	31.52	35.15	46.65	52.61	56.98	32.77	41.40	46.25	47.82	49.62	49.17
PM_{10}	$\mu g/m^3$	100	59.30	69.19	77.80	88.03	96.77	95.43	76.80	75.37	85.63	96.64	87.92	94.57
Nitrogen Dioxide	$\mu g/m^3$	80	24.71	24.82	29.30	29.74	31.55	33.36	24.54	25.54	28.58	29.30	31.20	33.12
Sulphur Dioxide	$\mu g/m^3$	80	4.61	4.28	4.65	4.92	4.59	4.95	4.84	4.26	4.94	4.77	4.82	4.71
Carbon Monoxide	mg/m^3	2	0.42	0.44	0.45	0.46	0.46	0.47	0.44	0.44	0.45	0.46	0.45	0.47
Hydrocarbon	mg/m^3	NIL	1.12	1.59	1.84	1.92	1.96	2.04	1.54	1.80	2.07	2.08	1.73	2.08
Mercury	mg/m^3			< 0.002			< 0.002			< 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	$\mu g/m^3$			2.85			3.53			3.17			3.20	
Benzo(a)Pyrene	ng/m^3	1		0.30			0.45			0.44			0.36	
Ammonia	$\mu g/m^3$	400		29.08			30.04			32.03			28.13	
Ozone	$\mu g/m^3$	180		33.13			34.97			36.28			32.17	
Lead	$\mu g/m^3$	1		0.08			0.12			0.13			0.08	
Nickel	ng/m^3	20		9.63			10.45			11.04			8.19	
Arsenic	ng/m^3	6		1.38			1.93			1.62			1.62	
Benzene	$\mu g/m^3$	5		1.57			2.02			1.83			1.74	

Name of Location			GGS- 02						PARULIA					
Month			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Parameter	UoM	NAAQS LIMIT												
$PM_{2.5}$	$\mu g/m^3$	60	27.12	41.39	42.55	49.96	44.64	52.47	41.45	33.88	34.92	42.92	47.82	50.83
PM_{10}	$\mu g/m^3$	100	50.78	72.32	79.13	92.33	84.97	97.17	80.47	70.87	79.03	90.64	94.33	94.72
Nitrogen Dioxide	$\mu g/m^3$	80	24.76	24.06	29.29	31.68	32.49	32.50	26.93	25.48	28.11	29.86	30.75	31.33
Sulphur Dioxide	$\mu g/m^3$	80	4.46	4.23	4.68	4.61	4.54	4.46	4.47	4.22	4.67	4.86	4.87	4.84
Carbon Monoxide	mg/m^3	2	0.40	0.43	0.44	0.46	0.46	0.46	0.44	0.44	0.45	0.44	0.44	0.47
Hydrocarbon	mg/m^3	NIL	1.04	1.70	1.91	1.94	1.69	1.92	1.54	1.68	1.88	1.82	1.82	2.24
Mercury	mg/m^3			< 0.002			< 0.002			< 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	$\mu g/m^3$			2.97			2.98			2.93			3.29	
Benzo(a)Pyrene	ng/m^3	1		0.37			0.34			0.31			0.41	
Ammonia	$\mu g/m^3$	400		30.73			27.51			29.85			28.95	
Ozone	$\mu g/m^3$	180		34.91			31.12			34.07			33.34	
Lead	$\mu g/m^3$	1		0.11			0.07			0.09			0.10	
Nickel	ng/m^3	20		10.08			7.83			10.03			9.58	
Arsenic	ng/m^3	6		1.54			1.59			1.42			1.71	
Benzene	$\mu g/m^3$	5		1.71			1.67			1.60			1.86	

Name of Location			SARASWATIGUNJ						PRATPPUR					
Month			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Parameter	UoM	NAAQS LIMIT												
$PM_{2.5}$	$\mu g/m^3$	60	35.29	33.70	38.59	42.14	47.72	56.40	32.14	47.72	37.08	47.86	51.26	56.17
PM_{10}	$\mu g/m^3$	100	78.33	73.78	73.47	73.32	88.90	89.65	74.71	87.08	76.78	95.53	95.69	97.25
Nitrogen Dioxide	$\mu g/m^3$	80	24.64	25.68	27.35	27.82	30.62	32.22	25.26	25.89	28.08	30.79	31.96	32.33
Sulphur Dioxide	$\mu g/m^3$	80	4.63	4.52	4.66	4.43	4.57	4.77	4.44	4.16	4.82	4.68	4.37	4.42
Carbon Monoxide	mg/m^3	2	0.46	0.43	0.45	0.43	0.46	0.48	0.44	0.45	0.45	0.44	0.44	0.47
Hydrocarbon	mg/m^3	NIL	1.42	1.74	1.64	1.72	1.86	1.96	1.60	2.04	1.81	1.96	2.18	2.16
Mercury	mg/m^3			< 0.002			< 0.002			< 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	$\mu g/m^3$			3.04			3.35			3.46			3.87	
Benzo(a)Pyrene	ng/m^3	1		0.40			0.42			0.54			0.56	
Ammonia	$\mu g/m^3$	400		31.57			29.11			34.12			34.49	
Ozone	$\mu g/m^3$	180		35.81			33.68			38.39			38.87	
Lead	$\mu g/m^3$	1		0.12			0.10			0.17			0.16	
Nickel	ng/m^3	20		10.51			9.87			12.52			13.43	
Arsenic	ng/m^3	6		1.59			1.76			1.94			2.19	
Benzene	$\mu g/m^3$	5		1.77			1.89			2.12			2.33	

Name of Location			BANSIA						JAMGORA					
Month														
Parameter	UoM	NAAQS LIMIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
$PM_{2.5}$	$\mu g/m^3$	60	34.72	36.88	38.75	47.08	52.54	46.85	47.15	43.61	39.28	49.40	55.60	51.83
PM_{10}	$\mu g/m^3$	100	75.44	79.96	81.70	97.84	95.11	89.39	83.74	80.02	76.17	92.98	96.30	93.27
Nitrogen Dioxide	$\mu g/m^3$	80	27.23	25.23	26.81	29.39	31.31	31.16	26.96	25.26	27.88	29.80	32.65	32.48
Sulphur Dioxide	$\mu g/m^3$	80	4.82	4.33	4.66	4.66	4.60	4.58	4.26	4.30	4.79	4.69	4.14	4.42
Carbon Monoxide	mg/m^3	2	0.43	0.44	0.45	0.45	0.44	0.46	0.46	0.46	0.45	0.45	0.45	0.46
Hydrocarbon	mg/m^3	NIL	1.48	1.91	1.98	1.86	1.99	2.16	1.56	1.93	1.75	1.96	2.09	2.04
Mercury	mg/m^3			< 0.002			< 0.002			< 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	$\mu g/m^3$			3.28			3.59			3.32			3.69	
Benzo(a)Pyrene	ng/m^3	1		0.45			0.46			0.48			0.51	
Ammonia	$\mu g/m^3$	400		32.76			30.57			33.07			32.37	
Ozone	$\mu g/m^3$	180		36.93			35.18			37.11			36.94	
Lead	$\mu g/m^3$	1		0.14			0.12			0.15			0.14	
Nickel	ng/m^3	20		11.48			10.71			11.81			12.17	
Arsenic	ng/m^3	6		1.70			1.97			1.78			2.10	
Benzene	$\mu g/m^3$	5		1.93			2.05			1.97			2.21	

Name of Location			KULDIHA						JATGORIA					
Month														
Parameter	UoM	NAAQS LIMIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
$PM_{2.5}$	$\mu g/m^3$	60	29.74	42.39	42.41	49.34	48.95	44.27	34.24	34.74	39.98	50.92	49.27	55.42
PM_{10}	$\mu g/m^3$	100	55.94	84.19	81.67	97.43	92.44	90.37	71.69	73.90	70.66	96.45	93.38	92.52
Nitrogen Dioxide	$\mu g/m^3$	80	23.71	25.80	28.59	30.93	32.39	32.44	26.26	25.60	26.84	30.34	32.52	31.17
Sulphur Dioxide	$\mu g/m^3$	80	4.02	4.76	4.91	4.74	4.84	4.54	4.44	4.16	4.67	4.45	4.82	4.46
Carbon Monoxide	mg/m^3	2	0.41	0.44	0.46	0.45	0.46	0.46	0.45	0.42	0.44	0.45	0.45	0.47
Hydrocarbon	mg/m^3	NIL	0.98	1.98	1.96	1.88	2.07	2.12	1.54	1.77	1.52	1.92	2.27	2.18
Mercury	mg/m^3			< 0.002			< 0.002			< 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	$\mu g/m^3$			3.38			3.67			3.09			4.03	
Benzo(a)Pyrene	ng/m^3	1		0.51			0.50			0.42			0.59	
Ammonia	$\mu g/m^3$	400		33.58			31.56			31.68			36.14	
Ozone	$\mu g/m^3$	180		37.69			36.19			35.89			39.71	
Lead	$\mu g/m^3$	1		0.16			0.13			0.12			0.18	
Nickel	ng/m^3	20		12.07			11.39			10.42			14.89	
Arsenic	ng/m^3	6		1.86			2.05			1.62			2.32	
Benzene	$\mu g/m^3$	5		2.03			2.16			1.80			2.49	

Name of Location			Gopalpur Warehouse						KANTABERIA					
Month			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Parameter	UoM	NAAQS LIMIT												
$PM_{2.5}$	$\mu g/m^3$	60	24.37	27.39	35.18	42.88	49.57	50.32	36.34	35.51	37.15	49.96	52.98	56.25
PM_{10}	$\mu g/m^3$	100	57.69	66.56	73.84	82.13	93.14	96.36	74.22	77.34	71.20	98.89	94.67	97.28
Nitrogen Dioxide	$\mu g/m^3$	80	23.95	23.75	27.96	29.36	31.11	31.58	25.96	24.53	28.79	31.73	31.21	31.58
Sulphur Dioxide	$\mu g/m^3$	80	4.41	4.31	4.52	4.66	4.69	4.68	4.69	4.15	4.57	4.70	4.46	4.57
Carbon Monoxide	mg/m^3	2	0.40	0.43	0.44	0.45	0.45	0.47	0.46	0.44	0.45	0.46	0.46	0.46
Hydrocarbon	mg/m^3	NIL	1.04	1.48	1.70	1.80	1.90	1.98	1.46	1.85	1.59	1.96	2.12	2.12
Mercury	mg/m^3			< 0.002			< 0.002			< 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	$\mu g/m^3$			2.80			3.46			3.21			3.81	
Benzo(a)Pyrene	ng/m^3	1		0.29			0.43			0.46			0.53	
Ammonia	$\mu g/m^3$	400		28.17			29.57			32.29			33.15	
Ozone	$\mu g/m^3$	180		32.24			34.06			36.51			37.44	
Lead	$\mu g/m^3$	1		0.08			0.11			0.14			0.15	
Nickel	ng/m^3	20		9.17			10.16			11.26			12.96	
Arsenic	ng/m^3	6		1.33			1.82			1.67			2.13	
Benzene	$\mu g/m^3$	5		1.52			1.93			1.88			2.28	

Name of Location			NACHAN						SARENGA					
Month														
Parameter	UoM	NAAQS LIMIT	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
$PM_{2.5}$	$\mu g/m^3$	60	33.93	34.36	38.43	47.90	52.43	52.12	38.96	27.92	43.94	46.50	49.17	50.83
PM_{10}	$\mu g/m^3$	100	79.98	73.37	76.90	94.58	92.20	95.25	76.17	66.48	80.36	86.48	90.96	97.63
Nitrogen Dioxide	$\mu g/m^3$	80	27.56	26.33	29.23	32.01	32.69	31.05	25.59	24.86	27.71	28.47	32.21	32.24
Sulphur Dioxide	$\mu g/m^3$	80	4.49	4.15	4.80	4.58	4.64	4.92	4.59	4.37	4.73	4.12	4.34	4.46
Carbon Monoxide	mg/m^3	2	0.45	0.45	0.44	0.45	0.44	0.46	0.43	0.44	0.44	0.43	0.45	0.48
Hydrocarbon	mg/m^3	NIL	1.58	1.71	1.78	1.94	1.91	2.10	1.48	1.44	1.94	1.74	2.04	2.06
Mercury	mg/m^3			< 0.002			< 0.002			< 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	$\mu g/m^3$			3.11			3.51			2.76			3.64	
Benzo(a)Pyrene	ng/m^3	1		0.41			0.44			0.28			0.48	
Ammonia	$\mu g/m^3$	400		31.24			29.77			27.34			30.81	
Ozone	$\mu g/m^3$	180		35.69			34.28			31.83			35.73	
Lead	$\mu g/m^3$	1		0.12			0.11			0.08			0.13	
Nickel	ng/m^3	20		10.84			10.29			3.74			11.08	
Arsenic	ng/m^3	6		1.56			1.87			1.30			2.01	
Benzene	$\mu g/m^3$	5		1.79			1.98			1.48			2.09	

Name of Location			LABNAPARA					
Month			Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24
Parameter	UoM	NAAQS LIMIT						
PM $_{2.5}$	µg/m^3	60	38.45	39.06	40.22	46.25	45.42	47.92
PM $_{10}$	µg/m^3	100	82.57	70.25	78.11	70.80	90.87	91.40
Nitrogen Dioxide	µg/m^3	80	27.03	24.73	28.22	28.78	30.02	32.30
Sulphur Dioxide	µg/m^3	80	4.92	4.10	4.56	4.32	4.56	4.56
Carbon Monoxide	mg/m^3	2	0.46	0.43	0.45	0.43	0.45	0.46
Hydrocarbon	mg/m^3	NIL	1.54	1.64	1.86	1.68	1.78	2.02
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
VOC's	µg/m^3			2.92			3.27	
Benzo(a)Pyrene	ng/m^3	1		0.33			0.38	
Ammonia	µg/m^3	400		30.19			28.58	
Ozone	µg/m^3	180		34.05			32.78	
Lead	µg/m^3	1		0.10			0.09	
Nickel	ng/m^3	20		10.24			8.96	
Arsenic	ng/m^3	6		1.47			1.67	
Benzene	µg/m^3	5		1.65			1.79	

ANNEXURE II

ANNEXURE II

Ambient Noise Monitoring Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Ltd.

(Period: October'23 to March'24)

Ambient Noise Monitoring Result				
Location	DAY TIME		NIGHT TIME	
	Limit as per the EC, dBA	Noise Level (Leq) dBA	Limit as per the EC, dBA	Noise Level (Leq) dBA
KULDIHA [EDN # 099]	75	59.14	70	53.41
MCS-MALANDIGHI	75	63.84	70	53.05
SARASWATIGUNJ [EDI # 039]	75	60.96	70	52.08
GOPALPUR WAREHOUSE	75	63.85	70	51.53
GGS#002 NEAR MAIN GATE SECURITY ROOM	75	64.01	70	54.97
JAMGORA [EDP # 406]	75	57.40	70	50.87
NACHAN [EDD – 053]	75	62.44	70	52.62
PRATAPPUR [EDD # 049]	75	56.83	70	50.72
JATGORIA [EDD – 005]	75	53.15	70	50.30
KANTABERIA [EDD-012]	75	60.87	70	54.31
PARULIA [EDC-413]	75	56.39	70	52.37
KHATGORIA [GGS # 001]	75	62.31	70	51.69
BANSIA [EDD – 411]	75	61.05	70	51.60
LABNAPARA [EDH # 064]	75	61.33	70	53.82
SARENGA	75	55.93	70	50.45