SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE (EC)

FOR

Talabira I Opencast Coal Mine Project

At

Village Khinda, Tehsil Rengali, District Sambalpur, Odisha

Submitted to:

Eastern Regional Office Ministry of Environment, Forests & Climate Change, Central Pollution Control Board, New Delhi & Odisha State Pollution Control Board, Bhubaneswar



Submitted by:

Environment Management Department

Raipur Energen Limited

Adani Corporate House, Shantigram, SG Highway, Ahmedabad – 382 421

April'2020 - September'2020

Talabira I Opencast Coal Mine Project Village Khinda, Tehsil Rengali, District Sambalpur, Odisha

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Talabira I Opencast Coal Mine Project at village Khinda, Tehsil Rengali, District Sambalpur, Odisha

INTRODUCTION

M/s Hindalco Industries Ltd. had obtained an Environmental Clearance (EC) for expansion of Talabira-I Opencast Coal mine Project (1.5 MTPA to 3.0 MTPA) in an ML area of 170.30 Ha. at village Khinda, Tehsil Rengali, District Sambalpur, Odisha vide letter No. J-11015/58/2009-IA.II (M) dated 08th November, 2011.

The Supreme Court in pursuant to its order dated 25th August, 2014 read with its order dated 24th September, 2014, and Ministry of Coal in accordance with provisions of the Coal Mines (Special Provisions) Second Ordinance, 2014 and the Coal Mines (Special Provisions) Rules 2014, the nominated authority completed the auction of the de-allocated mines.

In this regards, Ministry of Coal vide Vesting Order under clause (b) of sub-rule (2) of rule 7 and sub-rule (1) of rule 13 and Order no. 104/2/2015/NA dated 23rd March, 2015 allocated Talabira-I Coal Mines to M/s GMR Chhattisgarh Energy Limited, as successful bidder.

M/s GMR Chhattisgarh Energy Limited obtained transfer of Environmental Clearance vide MoEF&CC letter no. J-11015/58/2009-IA.II (M) dated 16.04.2015.

The name of the company has been changed from M/s GMR Chhattisgarh Energy Limited to Raipur Energen Limited with effect from 20th August 2019 and it is to note that Raipur Energen Limited is 100% subsidiary of Adani Power Limited.

Raipur Energen Limited has also obtained EC transfer from MoEF&CC for Talabira-I Opencast Coal Mine vide letter no. J-11015/58/2009-IA.II (M) dated 04.11.2020

Talabira I Opencast Coal Mine Project

at village Khinda, Tehsil Rengali, District Sambalpur, Odisha

Compliance Status of Environmental Clearance granted for Talabira Coal Mine vide letter no. -11015/58/2009-IA.II (M) dated 16th April 2015 and its subsequent transfers vide letter dated 10.06.2015 & 22.10.2020

vide letter dated 10.06.2015 & 22.10.2020					
SI. No.	EC Conditions Compliance status				
Α.	Specific conditions				
(i)	Production of coal shall not exceed 3.0			NIL during the period of	
	MTPA. The project proponent shall obtain	April'2020 to September'2020.			
	prior EC for expansion in production beyond	SI.	Financial	Coal Production	
	3.0 MTPA.	No.	Year	(Million Metric Tons)	
		1.	2015-2016	0.560	
		2.	2016-2017	0.151	
		3.	2017-2018	0.270	
		4.	2018-2019	0.00	
		5.	2019-2020	0.00	
(ii)	No coal washery shall be established	Compl	ied		
	without prior EC from this MOEF.	No wa	shery has bee	en established at Mine site	
		till dat	e.		
(iii)	No fly ash shall be dumped into the de-	Being	complied		
	coaled voids without prior approval of the	-	•	into the de-coaled voids till	
	MOEF.	date.	No fly ash wil	I be dumped without prior	
			al from MoEF		
(iv)	The embankment shall be stabilised with	As pe	r initial EC da	ated 08/11/2011, originally	
	stone pitching on the reservoir side and				
	compacted and plantation using a mix of	embankment related activities have already			
	native species shall be developed.				
	Additional safety and protection measures	Hinda	co) under the	guidance of DoWR, Odisha.	
	including continued operation of high				
	capacity pumps shall be in operation to	The er	nbankment is o	of 1.92 Km length and 1.5 m	
	prevent mine inundation. Prior approval of	height	and 10 m wid	e at the top and 3 m above	
	disaster management plan shall be	the HF	L of Hirakud F	Reservoir. The embankment	
	obtained.	has be	en stabilised	with side-sloping on either	
		side ar	nd plantation u	sing a mix of native species	
		is deve	eloped.		
		There	is a provision	of high capacity pump for	
		de-wa	tering.		
		The di	saster Manag	ement plan is in place and	
		submi	tted to Directo	orate of Mines Safety also.	
(v)	Top soil, if generated, should be properly	Compl	ied		
	stacked with proper slope at earmarked	After	taking over	of Mines by M/s GMR	
	dump site (S) with adequate measures and	Chhat	tisgarh Energ	y Limited, topsoil of 8,000	
	shall be used for reclamation and	Cubic	Meter had bee	en spread over the external	
	development of green belt and for	dump	slope to faci	litate Bio-reclamation and	
	reclamation of back filled quarry should be	12,000) Cubic Mete	r has been conserved in	
	used for reclamation and rehabilitation of	extern	al Top soil du	mp and 8,925 Cubic meter	
	mined out areas within a year of generation.	has b	een preserved	and properly stacked in	
		intern	al top soil dum	p up to 31 st March 2018.	
		Reclar	nation of t	back filled quarry and	
		rehabi	litation of min	ed out area will be done as	
		per ap	proved mine c	losure plan.	

Talabira I Opencast Coal Mine Project

SI. No.	EC Conditions	Compliance status
51. 110.		No generation of top soil from mine since April'
		2018 as mining operations were suspended.
(vi)	The entire OB generated in the expansion project shall be back filled and reclaimed and stabilized with plantation using a mix of species found in the reserve forests in the buffer zone. Monitoring and management of the existing reclaimed dump site shall continue until the vegetation becomes self- sustaining and no dumping of OB on reclaimed dumps shall be permitted. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional Office located at Bhubaneswar on	OB generated by prior allottee was stacked in three external dumps (Dump- 1, Dump- 2 & Dump- 3). Mine closure activities such as back filling, reclamation & stabilization with plantation will be done as per approved Mine Plan & Mine closure plan and status of compliances will be submitted to the Ministry of Environment, Forest & Climate Change and its Regional Office located at Bhubaneswar on yearly basis.
A	yearly basis. Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly de - silted and maintained properly. Garland drains (Size, Gradient & Length) and sump capacity shall be designed keeping 50% safety margin over & above the peek sudden rain fall and maximum discharge in the area adjoining the mine site. Sump capacity also provide adequate retention period to allow proper settling of silt material.	Being complied Catch drains of average width 2.5 m and length 2.9 Km had been constructed and maintained along the toe of OB dumps. Water is collected in mine sump which is being utilized for water spraying in mine area, roads, green belt development etc. The drains are cleaned before every monsoon and maintained properly. Garland drains & sump capacity are designed by taking factor of safety 2.0 to deal with the sudden rain fall. There are no adjoining mines.
(viii)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check the run-off and siltation shall be based on the rain fall data.	Complied Retaining wall at the toe of the dumps and OB benches within the mine to check the run-off and siltation is done by prior allottee. Maintenance & periodic repair of retaining wall has been undertaken by Raipur Energen Limited (Erstwhile, GMR Chhattisgarh Energy Limited).
(ix)	Mist type water sprinkling system shall be provided to check fugitive emissions from conveyor system, haulage roads, transfer points etc. Water sprinkling (Fixed & Mist type, mobile) shall be regularly carried out along the main haul roads.	There is no conveyor system in Talabira-1 mine. Mine operations are temporarily suspended/ hold. During mine operation, mist type mobile tankers are used for water sprinkling along haul roads, stock yards, transfer points etc.
(x)	No blasting shall be carried out.	Complied No blasting practice is adopted in mine.
(xi)	A feasibility plan for transportation of coal to the railway siding by closed overhead	Feasibility plan for transport of coal to railway siding by closed overhead conveyor has been

Talabira I Opencast Coal Mine Project

SI. No.	EC Conditions	Compliance status
	conveyors shall be prepared and furnished to the MOEF within 6 months.	submitted by M/s REL after taking over the mine in April, 2015
(xii)	Area brought under afforestation shall not be less than 137.905 Ha which includes reclaimed external OB dump area (45 Ha), backfilled area (60 Ha), along ML boundary, green belt (28.905 Ha) and top soil dump area (6.0 Ha) by using a mix of species found in the natural forests in the buffer zone in consultation with the local DFO / Agricultural department. The density of the trees shall be around 2500 plants per Ha.	Being complied 37940 No's of additional saplings were planted by REL in addition to Green belt area developed. Total 33.79 Ha within mining lease area is covered with plantation. Back filling, reclamation & plantation work will be carried out as per approved mine plan & mine closure plan after exhaustion of coal in mine.
(xiii)	A progressive mine closure plan shall be implemented and OB generated during the balance life of the mine shall be concurrently back filled and the area reclaimed with a mix of native species and at the end of mine life the balance area 24.4 Ha of de-coaled void shall also be reclaimed with the OB and the entire worked out area shall be back filled up to ground level. There shall be no water bod created at the post – mining stage.	Back filling in de-coaled void, reclamation & plantation work will be carried out as per approved mine plan & mine closure plan. Revised Mining plan and mine closure plan submitted in October'2016 was not approved. The existing mine plan & mine closure plan is already expired on 31.03.2018. As on date, company is not authorized to take any activity related to mining in mine, without approved mining plans from Ministry of Coal for Talabira-1 mine.
(xiv)	A conservation plan comprising for in-situ and ex-situ conservation of schedule I and II, Fauna found within the core & buffer zone shall be implemented in consultation with the State Govt. for the balance life of the project and include a plan for habitat restoration at the post mining stage and which also includes a plan for development of 150 Ha of grass lands for the elephants visiting the area. The activities there under along with status of implementation (including expenditure) shall be regularly reported as part of the compliance reports furnished to MOEF RO, Bhubaneswar and also uploaded on the company website.	Complied Conservation plan including plan for habitat restoration at post mining stage has been prepared which is duly approved by Chief Wildlife Warden (CWLW). Approved amount of Rs. 257 Lacs has been deposited with PCCF, Orissa for implementation of above conservation plan. Conservation plan and status of implementation were submitted to RO MOEFC, Bhubaneswar and also uploaded on our website. <u>https://adanipower.com/Downloads</u> Approved plan and Approval letter of conservation plan with payment details for implementation of conservation plan, Screenshot of the web link was submitted with previous compliance report.
(xv)	Regular monitoring of ground water level on the quality shall be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for quantity shall be done four times in a year pre-monsoon (May), monsoon (August), Post- Monson (November) and winter (January) seasons	A NABL accredited testing agency has been carried out monthly monitoring of the ground water. It is being collected from the existing wells at the nearby villages and also from piezometer installed in front of site office of Talabira-1 mine.

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·	at village Khinda, Tehsil Rengali, District Sambalpur, Odisha			
SI. No.	EC Conditions	Compliance status		
	and for quality in May. Monitoring of heavy metals including mercury shall be carried out and data furnished as part of the compliance report. Data, thus collected shall be submitted to the Ministry of Environment & Forests and to the central Pollution Control board quarterly and regularly uploaded on the company website.	Analysis of ground water is being done by NABL certified lab and report is being submitted on quarterly basis to the office. Photographs of Installed piezometer were submitted with previous compliance report. Environmental monitoring report for the period of April'20 to Sept'20 is enclosed as Annexure I Six month compliance report including environmental monitoring report has been uploaded on the company website. <u>https://adanipower.com/Downloads</u>		
(xvi)	The extent of use of water in the mining operations shall be reduced by recycling and reuse. The company shall put up artificial ground water recharge measures for augmentation of water resource if the water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine. Mine water to be discharged into the Hirakud reservoir shall be treated to prescribed standards before discharge.	Only stagnated water in the sump of mine is being used for mining operations and plantation. Water is contained in the pits within ML, which facilitates recharging the ground water. Hirakud reservoir backwater is adjacent to the mine. Hence, ground Water table varies according to the level of Hirakud reservoir back water. REL is supplying water to nearby villages by 6 no's of water tankers throughout the year. Water from mine is not being discharged to Hirakud Reservoir.		
(xvii)	Besides carrying out regular periodic health check-up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any through any local/regional health institutions and the results reported to the this ministry and to DGMS.	Being complied, Periodic health check- up including occupational disease and hearing impairment was done as per Rule 29 (b) of Mining Rules, 1955. There was no occupational disease and hearing impairment to any workers.		
(xviii)	For monitoring land use pattern and for post mining land use, time series of land use maps, based on satellite imagery (on a scale of 1:5000) of the core zone and buffer zone, from the start of the project, until the end of the mine life shall be prepared once in three years (for any one particular season which is consistent in the time series), and the report submitted to MOEF and its regional office at Bhubaneswar.	The land use analysis based on satellite imagery for core zone of the mine including the land use of 10 km buffer zone has been done for 2015 and 2018 and submitted along with previous compliance report.		
(xix)	A detailed Final Mine Closure Plan along with details of corpus fund submitted to the Ministry of Environment & Forest which shall be implemented from 2017-18. The	All the provisions of mine closure plan will be implemented after the approval of mine plan and mine closure plan as previous plan is expired on 01 st April, 2018.		

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	at village Khinda, Tehsil Rengali, District Sambalpur, Odisha			
SI. No.	EC Conditions	Compliance status		
	time period for reclamation shall be completed within a year of completion of project. The plan for habitat restoration plan for a minimum period of five years (under the MMDR Act) shall be under taken after completion of reclamation in consultation with and a joint inspection carried with the state forest department.			
(xx)	CSR would be implemented in 8 villages – Talabira, Nua Khinda, Purana Khinda, Lapanga, Bhudiapalli, Matul Camp, Behara Munda and Mundapara. Budgetary provisions at @ Rs. 10 per tonne of Coal should be made for CSR activities. The socio-economic development of the villages shall be monitored over the life of the project using UNDP. Human development indices and reported as part of the report submitted to MOEF RO, Bhubaneswar.	Budgetary provision of @ Rs 10/ Ton of coal was kept. Total Expenditure made for CSR activities by REL from April'2015 to Sept.2020) is Rs 1, 42, 88,914.00 . (up to Sept-19), + Rs. 9,86,000 for FY 2019-2020 (up to Sept.2020), Total = Rs. 1,52,74,914/- Mine operations are temporarily suspended/ hold since 01 st April' 2018. Preliminary report on socio-economic development of the villages has been Prepared and submitted along with previous compliance report. Company shall be taking socio economic development assessment in the area every three years after the approval of revised mining plan.		
В.	General Conditions			
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forest.	Complied There is no change in mining technology in mines.		
(ii)	No change in the calendar plan including excavation, quantum of mineral coal and waste shall be made.	Complied Adhered to the mine plan.		
(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM10, PM 2.5, SO2, NOx and heavy metals such as Hg, Pb, Cr, As etc. Location of the stations shall be decided based on Meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the state pollution control board.	Being complied Five numbers Ambient air quality monitoring stations are established in core zone as well as in the buffer zone for monitoring PM10, PM 2.5, SO2, NOx and heavy metals such as Hg, Pb, Cr by external agency (Approved by MOEFC / NABL) and report is being submitted to MOEFC, Bhubaneswar on quarterly basis. Environmental Report is uploaded in company website. https://adanipower.com/Downloads		
(iv)	Data on ambient air quality (PM10, PM 2.5, SO2, NOx and heavy metals such as Hg, Pb, Cr, As etc.) shall be regularly submitted to the ministry including its regional office at Bhubaneswar and to the State Pollution	Reing complied, Data of ambient air quality (PM10, PM 2.5, SO2, NOx and heavy metals such as Hg, Pb, Cr, As etc.) is being monitored on quarterly basis by external agency (Approved by MoEFCC / NABL)		

Talabira I Opencast Coal Mine Project

	at village Khinda, Tehsil Rengali, District Sambalpur, Odisha			
SI. No.	EC Conditions	Compliance status		
	Control Board and Central pollution Control Board once in Six Months.	engaged for this purpose and reports are being submitted to the concerned authorities. Environmental Report is uploaded in company website. <u>https://adanipower.com/Downloads</u>		
(v)	Fugitive dust emissions quality (PM10, PM 2.5 and heavy metals such as Hg, Pb, Cr, As etc.) from all the sources shall be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul road, wagon loading and dump trucks (Loading & un loading) points shall be provided and properly maintained.	Fugitive dust emissions quality (PM ₁₀ , PM _{2.5} and heavy metals such as Hg, Pb, Cr, As etc.) from all the sources are being monitored by external agency (Approved by MOEF&CC / NABL accredited) and reports are being submitted. During mine operation, water spraying arrangement on haul road, wagon loading and dump trucks (Loading & un loading) points were provided and maintained. Recent Environmental Report is uploaded in company website. <u>https://adanipower.com/Downloads</u>		
(vi)	Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc. shall be provided with ear plugs/muffs.	Noise level within ML is well below the stipulated norms. Ear plugs/muffs are also issued to HEMM operators. No drilling & blasting is practiced in mine.		
(vii)	Industrial waste water (workshop and waste water from the mine) shall be properly collected, treated so as to confirm to the standards prescribed under GSR 422 (E) dated 19 th May 1993 and 31 st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	Grease and Oil Trap has been provided in the workshop to treat the waste water. The treated water is being stored and reused for water spraying and cleaning of vehicles in the wash bay.		
(viii)	Vehicular emissions shall be kept under control and regularly monitored.	Being complied During the mine operation, regular maintenance of vehicles was being done to control the vehicular emissions.		
(ix)	Environmental laboratory shall be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	Environmental monitoring and analysis is being carried out by external agency, approved by MOEF&CC / NABL Environmental Monitoring Report is uploaded in company website. <u>https://adanipower.com/Downloads</u>		
(x)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of worker shall be undertaken	Dust masks were issued to all employees working in dusty environment. Initial & refresher training was imparted to contractual employees as per Mines Vocational Rules 1966, Being complied		

Talabira I Opencast Coal Mine Project

	at village Khinda, Tehsil Rengali, District Sambalpur, Odisha			
SI. No.	EC Conditions	Compliance status		
	periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed. A separate environmental management cell with suitable qualified personnel shall be set up under the control of senior executive, who will report directly to the Head of the company.	employees were conducted to observe any		
(xi)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted to other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneswar.	Being complied There is a separate fund centre maintained for the fund earmarked for environmenta protection. Total expenditure incurred towards Environment protection measures is as follows:		
		Financial Year Total expenditure incurred		
		FY 2015-16 Rs.62.61 Lacs FY 2016-17 Rs. 118.23 Lacs FY 2017-18 Rs. 89.48 Lacs FY 2018-19 Rs. 2.5 Lacs FY 2019-20 Rs. 11.25 Lacs April 2020 - Sept 2020 Rs. 4.0 Lacs		
(xii)	A copy of the environmental clearance shall be marked to concerned Panchayat / local NGO, if any, from whom any suggestion/ representation has been received while processing the proposal.	This EC was originally issued to M/s Hindalco in year 2011 and 2015, the EC has been nov transferred to M/s REL (Formerly GMF		
(xiii)	Sate Pollution Control Board shall display a copy of clearance letter at the Regional Office, District Industry Centre and Collectors Office/ Tehsil Office for 30 days.	Complied		
(xiv)	The project authorities shall advertise at least in two local newspapers widely circulated around the projects, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of clearance letter is available with State Pollution Control Board and may also been seen at the website of the Ministry of Environment & Forrest at <u>http://envfor.nic.in</u> . The compliance status including data on monitoring of environmental quality (air, water and noise)	 local newspapers of Odisha state namely Samay (Dt.01.10.2016, Odisa newspaper) and in Dainik Jagaran (Dt.01.10.2016, Hindi newspaper). Data on monitoring of environmental quality (air, water & noise) and status of compliance have been uploaded in the company's website https://adanipower.com/Downloads 		

Talabira I Opencast Coal Mine Project

	at village Khinda, Tehsil Rengali, District Sambalpur, Odisha		
SI. No.	EC Conditions	Compliance status	
	shall also be uploaded by the project		
	authorities in their website and also at their		
	main gate of project premises and office so		
	as to bring the same in the public domain.		
(3)	The Ministry or any other competent	Noted & agreed	
	authority may stipulate any further		
	condition for environmental protection.		
(4)	Failure to comply with any of the conditions	Noted.	
	mentioned above may result in withdrawal		
	of this clearance and attract the provisions		
	of the Environment (Protection) Act, 1986.		
(5)	The above conditions will be enforced inter-	Noted & agreed	
(2)	alia, under the provisions of the Water		
	(Prevention & Control of Pollution) Act,		
	1974, the Air (Prevention & Control of		
	Pollution) Act, 1981, the Environment		
	(Protection) Act, 1986 and the Public		
	Liability Insurance Act, 1991 along with their		
	amendments and Rules. The proponent shall		
	ensure to undertake and provide for costs		
	incurred for taking up remedial measures in		
	case of soil contamination, contamination		
	of groundwater and surface water and		
	occupation and other diseases due to the		
	mining operations.		
	sferred / Amendment dated 16.04.2015	L	
(i)	Any change in scope of work will attract the	Noted & agreed	
	provisions of Environment Protection Act		
	(EPA), 1986 and Environmental Impact		
	Assessment Notification, 2006 in		
	conjunction with the subsequent		
	amendments / circular.		
(ii)	All conditions stipulated in the EC Letter no.	Noted & compliance assured	
	J-11015/58/2009-IA.II (M) dated 08 th		
	November, 2011 shall remain unchanged		
(iii)	The successful bidder shall be liable, if any,	As per the para no (3) of Section 14 of The Coal	
	for any act of violation of the EPA 1986/ EIA	Mines (Special Provisions) Act, 2015,	
	Notification 2006 / subsequent	"Every liability of any prior allottee in relation to	
	amendments and circulars which it has	a Schedule I coal mine in respect of any period	
	inherited during the transfer.	prior to the vesting order or allotment order,	
	J J J J J J J J J J	shall be the liability of such prior allottee and	
		shall be enforceable against it and not against	
		the successful bidder or allottee or the Central	
		Government".	
(iv)	Successful bidder shall be liable for	Noted & compliance assured	
(17)			
	compliance of all court directions, if any.		

Project Name: Talabira I Opencast Coal mineCompany Name: Raipur Energen LimitedVillage Raikheda, Block- Tilda, Dist.-Raipur – 493 225 (Chhattisgarh)

Half Yearly Environmental Monitoring Report

Half Yearly Environmental Monitoring Report (April 2020 – September 2020)

For

Talabira I Open Cast Coal Mine

At

Village Khinda, Tehsil Rengali, District Sambalpur, Odisha

Submitted to:

M/s Raipur Energen Limited.

Village Raikheda, Block- Tilda, District Raipur – 493 225 (Chhattisgarh)

Conducted by:

M/s Vardan EnviroLab Plot no. 82A, Sector-5, IMT Manesar, Gurugram, Haryana

(Recognized by MoEF&CC, Government of India and NABL Accredited)

PREFACE

The growing concern for environmental protection and the passing of various environmental legislations have increased the responsibilities of Ministry of Environment, Forests &Climate Chang, Pollution Control boards in many folds. Besides enforcing the various environmental legislations MoEF&CC, CPCB & SPCB strive to propagate the necessity awareness regarding the various legal provisions and environmental protection measures in the country.

M/s Raipur Energen Limited, Talabira Mines scenario has occupied a significant place in the development program of the country. Development and environment can neither be separated nor ignored. In fact, they are complimentary to each other. These issues have become a concern of the community, particularly the environment impact due to industries in the developing countries.

However, the prerequisite for sustainable development is judicious planning of environmental status, likely impacts of the approach adopted on the environment including inhabitants of the locality, availability of the eco-friendly technology, emerging waste disposal and waste utilization processes, techniques of land reclamation for the restoration of aesthetic beauty and soon.

M/s Raipur Energen Limited, Talabira Mines, Village Raikheda, District-Raipur -493225, CG, India, has engaged **M/S Vardan EnviroLab, Gurugram, (HR)** to provide Environmental Services in respect of ambient air quality monitoring, noise level monitoring & Sampling and Analysis of ground water quality, treated effluent sewage, and soil for **Raipur Energen Limited, Talabira mines, Raipur district of Chhattisgharh**, as per guidelines of MoEF & CC and CPCB Gazette notification.

M/S Vardan EnviroLab, Gurugram, (HR) has deployed entirely its own personnel, facilities and expertise for doing this service. Sampling / Monitoring Stations were identified by the Environmental Officer of Raigarh Energy Generation Ltd,. The samples were analyzed **partly** at site and partly at our MoEF Recognized laboratory situated at Gurugram (HR).

This report presents the data generated for the period from May 2020 to September 2020, *i.e. for Half Yearly which* includes sampling locations, Methodology, testing procedure and compilation for the Environmental parameters i.e. Air, Water & Noise with a view to evaluate the impact due to the Mining activities.

During the course of our operations for the above task, the staff and management of Raipur Energen Limited,. Talabira Mines, were extremely co-operative. We are grateful to them for their invaluable support and assistance rendered to us during the course of the sampling and monitoring.

Date: 28/8/2020



M/S Vardan Envirolab Gurugram (HR)

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Chapter – 1.0 INTRODUCTION

Talabira I Opencast Coalmine is a Coal generation unit for Raipur Energen Limited, a subsidiary of Adani Power Limited based at Raikheda, Dist. Raipur in the state of Chhattisgarh.

Talabira I Opencast Coalmine is also committed towards the environment and the community. It has successfully implemented several community welfare schemes in the field of livelihood, infrastructure, community health and education.

Chapter – 2.0 PROJECT PROFILE

2.1 Adani Group

ADANI Group, is one of the leading business houses of the country with combined market capitalization of around US\$ 14 billion, a sales turnover of US\$ 9.4 billion, employing over 10,000 people and having diverse interests in global trading, development and operation of Ports, IDC Terminal, establishment of SEZ, Oil Refining, Logistics, Gas Distribution, Power Generation, Power Transmission and Power Trading etc. Adani Port at Mundra promoted by the ADANI Group is operational since 1998.

2.2 Climate

The climate of the area is Sub-tropical type. It is in the zone of humid tropic climate where temperature and humidity of air are very high. The temperature varies from the minimum - maximum temperature range between 21.5°C - 42 °C in summer, and 10°C - 28 °C in winter. The humidity varies from 38% to 85%.

Half Yearly Environmental Monitoring Report

Chapter – 3.0 SCOPE OF STUDY AND METHODOLOGY

3.1 Scope of Study

The scope of study includes Environmental Services in respect of ambient air quality monitoring, noise level monitoring & Sampling and Analysis of ground water quality, surface water quality, treated effluent sewage and soil monitoring.

3.2 Methodology

As mentioned in the scope of work covered the various Environmental components monitoring and sampling and its analysis was carried out on the basis of guidelines of Ministry of Environment Forest & Climate Change, Government of India & Odisha State Pollution Control Board. Sampling procedure method reference and analysis procedure method reference are mentioned in monitoring reports.

3.2.1 Ambient Air Quality Monitoring

The ambient air quality has been carried out at various sources of air pollution surrounding and in the Plant. The primary objective of the ambient air quality monitoring is to access the existing air quality of the area.

The ambient air quality monitoring was carried out for 24 hours at each location. At all stations SO₂, NO₂, PM₁₀, PM_{2.5}, CO were monitored. All the samples collected were analyzed for quantitative analysis of various pollutants.

The ambient air quality sampling locations were identified by the Environmental Officer of Raipur Energen Limited.

3.2.2 Groundwater Quality Monitoring

The ground water samples, surface water samples were collected from selected locations in two liter sterilized plastic bottles. These samples were analyzed as per IS 10500:2012. The domestic effluent and Industrial effluent samples were collected and analyzed for parameters: pH, Total suspended solids, Biochemical Oxygen Demand, Chemical Oxygen Demand and Oil & Grease.

3.2.3 Ambient Noise Level Monitoring

Sound level meter was used to know the sound levels generated due to activities at different locations. The measurements were taken for Equivalent sound level over a time period for day and night which is expressed in dB(A).

3.2.4 Soil Quality Analysis

The Soil samples were collected from selected locations. These samples were analyzed for Physico-Chemical parameters including heavy metals.

Project Name: Talabira I Opencast Coal mine Company Name: Raipur Energen Limited

Village Raikheda, Block- Tilda, Dist.-Raipur – 493 225 (Chhattisgarh) Half Yearly Environmental Monitoring Report

Chapter – 4.0

SAMPLING LOCATION AND ANALYSIS REPORTS

4.1 Ambient Air Quality Monitoring

Location Code: -

A1- R & R Colony, 3.2Km in NE from the mines

A2- Weigh Bridge 0.5 Km in South from the mines

A3- Near Petrol pump

A4- In front of the Mines office

A5- Rest Shelter 1.5 Km in SE from the mines

A6- Khinda village 3 Km in SE from the mines

A7- Babu Khinda 3.5 Km in NE from the mines

A8- A1 Downwind point of Talabira-1 mine area

4.2 Noise Level Monitoring

Ambient Noise Level Monitoring Locations Location Code:

N1- Near Weigh Bridge N2- Near petrol pump N3- In front of Mining Office

4.3 Ground water Quality Analysis

Location Code: -

GW1- R & R Colony (Open well)

4.4 Soil Quality Analysis

Location Code: -

S1- Khinda Village

4.5 Effluent Sample Analysis Report

Locations

1. STP Outlet

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Certificate

Sample Number: Name & Address of the Party: VEL/REL/A/01 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Report No.: Format No.:

Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2005250001 5.10 F-01

NIL 30/05/2020 25-30/05/2020

Receipt Date:

25/05/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by Sampling Location Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

Mr. Amit Kumar Soni Vardan EnviroLab Representative R & R Colony, 3.2 Km in NE from the mines **RDS & FPS sampler with all Accessories** VEL/RDS/01 & VEL/FPS/01 Calibrate : Clear Sky : 18/05/2020 to 19/05/2020 : 24 hours (09:00 Hrs to 09:00 Hrs) : Min. 24.0 Max. 32.0 : Human and Vehicular activities : Regulatory Requirement : --- \$: IS-5182 : As per work order '

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	39.5	μg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	73.4	μg/m ³ ,	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	20.3	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	8.75	$\mu g/m^3$	80
5.	Mercury as Hg	CPCB Guidelines	BDL (DL 0.5)	ng/m ³	144
6.	Lead as Pb	IS: 5182 (P-22), Reaffirmed-2009	BDL (DL 0.02)	µg/m3	01
7,	Arsenic as As	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 302: 1988	BDL (DL 1.0)	ng/m ³	06
8.	Chromium as Cr	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 807: 1988	BDL (DL 1.0)	ng/m ³	

* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009

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(Checked By)



Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Certificate

VEL/ REL /A/02 VEL/A/2005250002 Sample Number: **Report No.:** M/s Raipur Energen Limited, Format No.: Name & Address of the 5.10 F-01 Village: Raikheda, Block-Tilda, Dist. Party: Raipur - 493225 (CG) **Party Reference No.:** NIL **Reporting Date:** 30/05/2020 **Receipt Date:** 25/05/2020 Period of Analysis: 25-30/05/2020 Sample Description: AMBIENT AIR QUALITY MONITORING **General Information:-**Mr. Amit Kumar Soni **Client Representative** Vardan EnviroLab Representative Sample collected by Weigh Bridge 0.5 Km in South from the mines **Sampling Location** Instrument Used **RDS & FPS sampler with all Accessories** Instrument Code VEL/RDS/02 & VEL/FPS/02 **Instrument Calibration Status** Calibrated Meteorological condition during monitoring Clear Sky 18/05/2020 to 19/05/2020 **Date of Monitoring** 24 hours(10:00 Hrs to 10:00 Hrs) **Time of Monitoring** Min. 24.0 Max. 32.0 Ambient Temperature (°C) : Human and Vehicular activities Surrounding Activity Scope of Monitoring **Regulatory** Requirement 5 ----**Control measure if Any** Sampling & Analysis Protocol : IS-5182 Parameter Required : As per work order '

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	34.9	µg/m³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	62.4	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	19.2	µg/m³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	8.15	μg/m ³	80

* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009

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Vardan EnviroLab Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051

MoEF & CC Recognised [ISO 9001 | OHSAS 45001)

Test Certificate

Sample Number: Name & Address of the Party:

VEL/ REL /A/03 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Report No.: Format No.:

Party Reference No.: Reporting Date: Period of Analysis:

VEL/A/2005250003 5.10 F-01

NIL 30/05/2020 25-30/05/2020

Receipt Date:

25/05/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any Sampling & Analysis Protocol** Parameter Required

Mr. Amit Kumar Soni Vardan EnviroLab Representative Near Petrol pump RDS & FPS sampler with all Accessories VEL/RDS/03 & VEL/FPS/01 Calibrate : Clear Sky : 18/05/2020 to 19/05/2020 : 24 hours(10:30 Hrs to 10:30 Hrs) : Min. 24.0 Max. 32.0 : Human and Vehicular activities : Regulatory Requirement : --- 4 : IS-5182 : As per work order '

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	34.7	μg/m³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	56.3	μg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	17.8	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	7.6	μg/m ³	80

* NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.

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Test Certificate

Sample Number: Name & Address of the Party: VEL/ REL /A/04 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) Report No.: Format No.:

Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2005250004 5.10 F-01

NIL 30/05/2020 25-30/05/2020

Receipt Date:

25/05/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

: Mr. Amit Kumar Soni Vardan EnviroLab Representative In front of the Mines office **RDS & FPS sampler with all Accessories** VEL/RDS/03 & VEL/FPS/01 Calibrate **Clear Sky** : 18/05/2020 to 19/05/2020 : 24 hours(10:30 Hrs to 10:30 Hrs) : Min. 24.0 Max. 32.0 : Human and Vehicular activities : Regulatory Requirement ------: IS-5182 : PM_{2.5}, PM₁₀, NO_x, SO₂, CO, Hg

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	37.3	μg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	67.5	$\mu g/m^3$	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	18.6	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	10.35	μg/m³	80

* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised |ISO 9001 | OHSAS 45001)

Test Certificate

Sample Number:

VEL/ REL /A/05 Name & Address of the Party: M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Vardan EnviroLab

Report No.: Format No.: **Party Reference No.: Reporting Date: Period of Analysis:**

VEL/A/2005250005 5.10 F-01 NIL 30/05/2020 25-30/05/2020

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Page 1 of 1

Receipt Date:

25/05/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring Date of Monitoring **Time of Monitoring** Ambient Temperature (°C) **Surrounding Activity Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol Parameter Required

Mr. Amit Kumar Soni Vardan EnviroLab Representative Rest Shelter 1.5 Km in SE from the mines **RDS & FPS sampler with all Accessories** VEL/RDS/02 & VEL/FPS/04 Calibrated : Clear Sky : 18/05/2020 to 19/05/2020 : 24 hours(11:00 Hrs to 11:00 Hrs) : Min. 24.0 Max. 32.0 Human and Vehicular activities **Regulatory Requirement** 1014 : IS-5182

PM_{2.5}, PM₁₀, NO_x, SO₂, CO, Hg

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	42.4	μg/m³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	71.8	μg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	19.5	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	9.26	μg/m ³	80
5.	Mercury as Hg	CPCB Guidelines	BDL (DL 0.5)	ng/m ³	
6.	Lead as Pb	IS: 5182 (P-22), Reaffirmed-2009	BDL (DL 0.02)	μg/m3 <	01
7.	Arsenic as As	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 302: 1988	BDL (DL 1.0)	ng/m ³	06
8.	Chromium as Cr	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 807: 1988	BDL (DL 1.0)	ng/m ³ FA	-

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* NAAQS -- National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11

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Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified

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Test Certificate

Sample Number: Name & Address of the Party: VEL/ REL /A/06 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Vardan EnviroLab

Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2005250006 5.10 F-01 NIL 30/05/2020 25-30/05/2020

Receipt Date:

Sample Description:

AMBIENT AIR QUALITY MONITORING

25/05/2020

General Information:-Client Representative Sample collected by **Sampling Location Instrument Used** Instrument Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

Mr. Amit Kumar Soni Vardan EnviroLab Representative Khinda village 3 Km in SE from the mines **RDS & FPS sampler with all Accessories** VEL/RDS/02 & VEL/FPS/04 Calibrated Clear Sky 18/05/2020_to 19/05/2020 24 hours(11:00 Hrs to 11:00 Hrs) Min. 24.0 Max. 32.0 Human and Vehicular activities **Regulatory** Requirement ----IS-5182 PM2.5, PM410, NOx, SO2, CO, Hg

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	45.7	μg/m ³	60
2.	Particulate Matter (PM10)	IS:5182 (P- 23)-2006, RA. 2017	72.5	μg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	20.4	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	12.32	μg/m ³	80
5.	Mercury as Hg	CPCB Guidelines	BDL (DL 0.5)	ng/m ³	
6.	Lead as Pb	IS: 5182 (P-22), Reaffirmed-2009	BDL (DL 0.02)	μg/m3 、	01
7.	Arsenic as As	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 302: 1988	BDL (DL 1.0)	ng/m³	06
8.	Chromium as Cr	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 807: 1988	BDL (DL 1.0)	ng/m ³	

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* NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009

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Test Certificate

Sample Number: Name & Address of the Party:

VEL/ REL /A/07 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2005250007 5.10 F-01 NIL 30/05/2020 25-30/05/2020

Receipt Date:

25/05/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any Sampling & Analysis Protocol Parameter Required**

Mr. Amit Kumar Soni Vardan EnviroLab Representative Babu Khinda 3.5 Km in NE from the mines **RDS & FPS sampler with all Accessories** VEL/RDS/02 & VEL/FPS/04 Calibrated Clear Sky 18/05/2020 to 19/05/2020 24 hours(11:00 Hrs to 11:00 Hrs) Min. 24.0 Max. 32.0 Human and Vehicular activities **Regulatory Requirement** : IS-5182 PM_{2.5}, PM₁₀, NO_x, SO₂, CO, Hg

NAAQS* Unit Protocol Result S. No. Parameter Limit Particulate Matter (PM2.5) IS 5182(P-24): 2019 41.6 $\mu g/m^3$ 60 1. IS:5182 (P- 23)-2006, RA. 2017 70.9 100 Particulate Matter (PM₁₀) $\mu g/m^3$ 2. 80 22.4 Nitrogen Dioxide (NO₂) IS: 5182 (P-6)-2006 RA. 2017 $\mu g/m^3$ 3. IS: 5182 (P-2), 2001 RA. 2017 10.15 80 $\mu g/m^3$ Sulphur Dioxide (SO₂) 4. **CPCB** Guidelines BDL (DL 0.5) ng/m³ Mercury as Hg ---5. IS: 5182 (P-22), Reaffirmed-2009 BDL (DL 0.02) Lead as Pb 01 $\mu g/m3$ 6. Methods of air sampling and analysis,3rd BDL (DL 1.0) ng/m³ Arsenic as As 06 7. Ed.,1988, Method No. 302: 1988 Methods of air sampling and analysis,3rd BDL (DL 1.0) ng/m³ Chromium as Cr 8. Ed., 1988, Method No. 807: 1988

* NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009, [

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Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified



Vardan EnviroLab Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised |ISO 9001 | OHSAS 45001)

Test Certificate

Sample Number:

VEL/ REL /A/08 Name & Address of the Party: M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Report No.: Format No.: **Party Reference No.: Reporting Date:** Period of Analysis:

VEL/A/2005250008 5.10 F-01 NIL 30/05/2020 25-30/05/2020

Receipt Date:

25/05/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) **Surrounding Activity** Scope of Monitoring **Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

: Mr. Amit Kumar Soni Vardan EnviroLab Representative A1 Downwind point of Talabira-1 mine area RDS & FPS sampler with all Accessories VEL/RDS/02 & VEL/FPS/04 Calibrated Clear Sky 18/05/2020_to 19/05/2020 : 24 hours(11:00 Hrs to 11:00 Hrs) Max. 32.0 Min. 24.0 Human and Vehicular activities **Regulatory Requirement** : IS-5182 PM_{2.5}, PM₁₀, NO_x, SO₂, CO, Hg

S. No.	Parameter	Parameter Protocol		Unit	
1.	Total VOC	IS 5182 (P-11)-2006 RA. 2017	BDL (DL 1.0)	µg/m³	
2.	PAH	IS 5182 (P-12)-2004 RA. 2014	BDL (DL 0.5)	μg/m ³	

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NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3BJ], [Part-

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Page 1 of 1

Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised |ISO 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Party:

VEL/REL/A/01 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Report No.: Format No.:

Party Reference No.: Reporting Date: Period of Analysis:

VEL/A/2007030001 5.10 F-01

NIL

07/07/2020

03-07/07/2020

Receipt Date:

03/07/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-**Client Representative** Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

Mr. Amit Kumar Soni Vardan EnviroLab Representative R & R Colony, 3.2 Km in NE from the mines **RDS & FPS sampler with all Accessories** VEL/RDS/01 & VEL/FPS/01 Calibrate Clear Sky 29/06/2020 to 30/06/2020 24 hours (08:00 Hrs to 08:00 Hrs) Min. 32.0 Max. 41.0 Human and Vehicular activities : Regulatory Requirement : ---* IS-5182 : As per work order '

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	38.7	μg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	71.5	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	19.4	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	9.12	µg/m ³	80
5.		CPCB Guidelines	BDL (DL 0.5)	ng/m ³	
6.	Lead as Pb	IS: 5182 (P-22), Reaffirmed-2009	BDL (DL 0.02)	µg/m3	01
7.	Arsenic as As	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 302: 1988	BDL (DL 1.0)	ng/m ³	06
8.	Chromium as Cr	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 807: 1988		ng/m ³	

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* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11

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Note: a) The results listed refer only to the tested samples & applicable parameters

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051

MoEF & CC Recognised |ISO 9001 | OHSAS 45001)

Test Report

Sample Number:
Name & Address of the
Party:

VEL/ REL /A/02 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) Report No.: Format No.:

Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2007030002 5.10 F-01

NIL 07/07/2020 03- 07/07/2020

Receipt Date:

03/07/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

Mr. Amit Kumar Soni Vardan EnviroLab Representative Weigh Bridge 0.5 Km in South from the mines RDS & FPS sampler with all Accessories VEL/RDS/02 & VEL/FPS/02 Calibrate : Clear Sky : 29/06/2020 to 30/06/2020 : 24 hours(09:00 Hrs to 09:00 Hrs) Min. 32.0 Max. 41.0 Human and Vehicular activities **Regulatory Requirement** ---4 IS-5182

: As per work order /

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	32.9	μg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	65.7	μg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	18.7	μg/m ³	80
	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	8.15	μg/m ³	80

* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.

(Checked By)



Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number:
Name & Address of the
Party:

VEL/ REL /A/03 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) Report No.: Format No.:

Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2007030003 5.10 F-01

NIL 07/07/2020 03- 07/07/2020

Receipt Date:

03/07/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) **Surrounding Activity Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

Mr. Amit Kumar Soni Vardan EnviroLab Representative Near Petrol pump RDS & FPS sampler with all Accessories VEL/RDS/03 & VEL/FPS/03 Calibrate **Clear Sky** 29/06/2020 to 30/06/2020 24 hours(09:40 Hrs to 09:40 Hrs) Max. 41.0 Min. 32.0 : Human and Vehicular activities **Regulatory Requirement** ---4 IS-5182 : As per work order y

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	33.1	µg/m ³	60
2	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	60.4	μg/m ³	100
3	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	18.5	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	7.87	μg/m ³	80

* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.

(Checked By)



Page 1 of 1

Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised |ISO 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Party:

VEL/ REL /A/04 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Report No.: Format No.:

Party Reference No.: Reporting Date: Period of Analysis:

VEL/A/2007030004 5.10 F-01

NIL 07/07/2020 03-07/07/2020

Receipt Date:

03/07/2020

Sample Description:

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used Instrument Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

Mr. Amit Kumar Soni Vardan EnviroLab Representative In front of the Mines office **RDS & FPS sampler with all Accessories** VEL/RDS/04 & VEL/FPS/04 Calibrate : Clear Sky 29/06/2020 to 30/06/2020 : 24 hours(10:20 Hrs to 10:20 Hrs) Max. 41.0 : Min. 32.0 Human and Vehicular activities **Regulatory Requirement** ----* IS-5182 : As per work order '

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	36.4	μg/m ³	. 60
2	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006, RA. 2017	68.9	μg/m ³	100
3	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	17.4	μg/m ³	80
4.		IS: 5182 (P-2), 2001 RA. 2017	10.76	μg/m ³	80

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* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.

(Checked By)



Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised [ISO 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Party:

VEL/ REL /A/05 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Report No.: Format No.: **Party Reference No.: Reporting Date: Period of Analysis:**

VEL/A/2007030005 5.10 F-01 NIL 07/07/2020 03-07/07/2020

Receipt Date:

Sample Description:

03/07/2020

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location** Instrument Used **Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity Scope of Monitoring **Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

: Mr. Amit Kumar Soni Vardan EnviroLab Representative Rest Shelter 1.5 Km in SE from the mines **RDS & FPS sampler with all Accessories** VEL/RDS/01 & VEL/FPS/01 Calibrated Clear Sky 30/06/2020_to 01/07/2020 24 hours(10:00 Hrs to 10:00 Hrs) Min. 34.0 Max. 42.0 Human and Vehicular activities **Regulatory Requirement** ----

:

As per work order

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	40.9	$\mu g/m^3$	60
2.	Particulate Matter (PM10)	IS:5182 (P- 23)-2006, RA. 2017	73.4	μg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	21.4	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	9.85	μg/m ³	80
5.	Mercury as Hg	CPCB Guidelines	BDL (DL 0.5)	ng/m ³	
6.	Lead as Pb	IS: 5182 (P-22), Reaffirmed-2009	BDL (DL 0.02)	µg/m3	01
7.	Arsenic as As	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 302: 1988	BDL (DL 1.0)	ng/m³	06
8.	Chromium as Cr	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 807: 1988	BDL (DL 1.0)	ng/m ³	

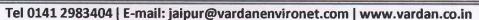
* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2

(Checked By)

Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified



IS-5182

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Party:

VEL/ REL /A/06 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2007030006 5.10 F-01 NIL 07/07/2020 03- 07/07/2020

Receipt Date:

Sample Description:

AMBIENT AIR QUALITY MONITORING

03/07/2020

General Information:-Client Representative Sample collected by Sampling Location Instrument Used Instrument Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

: As per work order

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	42.3	μg/m³	60
2.	Particulate Matter (PM10)	IS:5182 (P- 23)-2006, RA. 2017	74.5	μg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	23.7	μg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	12.21	μg/m ³	80
5.	Mercury as Hg	CPCB Guidelines	BDL (DL 0.5)	ng/m ³	
6.	Lead as Pb	IS: 5182 (P-22), Reaffirmed-2009	BDL (DL 0.02)	µg/m3	01
7.	Arsenic as As	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 302: 1988	BDL (DL 1.0)	ng/m ³	06
8.	Chromium as Cr	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 807: 1988	BDL (DL 1.0)	ng/m ³	

* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009 N

(Checked By)

Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified



Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051

MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Party:

Receipt Date:

VEL/ REL /A/07 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

03/07/2020

Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: VEL/A/2007030007 5.10 F-01 NIL 07/07/2020 03- 07/07/2020

AMBIENT AIR QUALITY MONITORING Sample Description: **General Information:-Client Representative** Sample collected by Sampling Location Instrument Used **Instrument** Code Instrument Calibration Status Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) Surrounding Activity **Scope of Monitoring Control measure if Any** Sampling & Analysis Protocol **Parameter Required**

- Mr. Amit Kumar Soni
 Vardan EnviroLab Representative
 Babu Khinda 3.5 Km in NE from the mines
 RDS & FPS sampler with all Accessories
 VEL/RDS/03 & VEL/FPS/03
 Calibrated
 Clear Sky
 30/06/2@20 to 01/07/2020
 24 hours(11:00 Hrs to 11:00 Hrs)
 Min. 34.0 Max. 42.0
 Human and Vehicular activities
 Regulatory Requirement
 IS-5182
- : As per work order

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Particulate Matter (PM _{2.5})	IS 5182(P- 24): 2019	42.1	μg/m ³	60
2,	Particulate Matter (PM10)	IS:5182 (P- 23)-2006, RA. 2017	72.3	μg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS: 5182 (P- 6)-2006 RA. 2017	23.2	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS: 5182 (P-2), 2001 RA. 2017	11.55	μg/m ³	80
5.	Mercury as Hg	CPCB Guidelines	BDL (DL 0.5)	ng/m ³	
6.	Lead as Pb	IS: 5182 (P-22), Reaffirmed-2009	BDL (DL 0.02)	µg/m3	01
7.	Arsenic as As	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 302: 1988	BDL (DL 1.0)	ng/m ³	06
8.	Chromium as Cr	Methods of air sampling and analysis,3rd Ed.,1988, Method No. 807: 1988	BDL (DL 1.0)	ng/m ³	·

* NAAQS - National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.

(Checked By)

Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified



Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised [ISO 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Party:

VEL/ REL /A/08 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Report No.: Format No.: **Party Reference No.: Reporting Date: Period of Analysis:**

VEL/A/2007030008 5.10 F-01 NIL 07/07/2020 03-07/07/2020

Receipt Date:

Sample Description:

03/07/2020

AMBIENT AIR QUALITY MONITORING

General Information:-Client Representative Sample collected by **Sampling Location Instrument Used Instrument** Code **Instrument Calibration Status** Meteorological condition during monitoring **Date of Monitoring Time of Monitoring** Ambient Temperature (°C) **Surrounding Activity Scope of Monitoring Control** measure if Any Sampling & Analysis Protocol **Parameter Required**

: Mr. Amit Kumar Soni Vardan EnviroLab Representative A1 Downwind point of Talabira-1 mine area RDS & FPS sampler with all Accessories VEL/RDS/04 & VEL/FPS/04 Calibrated : Clear Sky 30/06/2020_to 01/07/2020 24 hours(11:20 Hrs to 11:20 Hrs) Max. 42.0 Min. 34.0 Human and Vehicular activities **Regulatory Requirement** ----IS-5182 : As per work order

S. No.	Parameter	Protocol	Result	Unit
1.	Total VOC	IS 5182 (P-11)-2006 RA. 2017	BDL (DL 1.0)	μg/m³
2.	РАН	IS 5182 (P-12)-2004 RA. 2014	BDL (DL 0.5)	µg/m³

*

NAAQS – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3E

(Checked By)



Page 1 of 1

Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/A/20	07230001	Report No.	: VEL/A/2007230001
Name & Address of the Party	: M/s Raipur Energen Limited Village: Raikheda, Block-Tilda Dist. Raipur -493225	Format No Party Reference No	7.8 F-01 NIL
	(CG)Talabira Mines	Reporting Date	: 30/07/2020
Sample Description	: AMBIENT AIR	Period of Analysis Receipt Date	23/07/2020-30/07/2020 23/07/2020
General Informa		in SE From the Mines	

Sampling Location	3	Rest Shalter 1.5 k.m. in SE From the Mines	
Sample Collected by	:	VEL Team	
Sampling Equipment used	÷	RDS/FPS	
Instrument Code	:	VEL/RDS/FPS/01	
Instrument Calibration Status	ŝ	Calibrated	
Latitude	1	-	
Longitude	2		
Meteorological condition during monitoring	3	Clear Sky	
Date of Monitoring	:	17/07/2020 To 18/07/2020	
Time of Monitoring	:	09,30 am to 09.30 am	
Ambient Temperature (°C)	÷	Min. 27°c, Max 46°c	
Surrounding Activity	3	Human & Vehicular Act.	
Scope of Monitoring	1	Regulatory Requirment	
Sampling & Analysis Protocol	4	IS :5182	
Sampling Duration	1	24 Hrs.	
Parameter Required	:	As Per Wo <mark>rk Order</mark>	

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	72.69	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS: 5182 (P-24), 2019	40.97	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	20.08	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	9.02	µg/m³	80
5	Lead (as Pb)	IS:5182 (P-22),Air Acetylene Method, RA:2009	BDL (*DL 0.02)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0)	ng/m³	6.0
7	Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL0.5)	µg/m³	
8	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	-

Note: a) The results listed refer only to the tested samples & applicable parameters

- b) Total liabilities of our lab will be restricted to the invoice amount only
- c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/A/2	007230002	Report No.	: VEL/A/2007230002
Name & Address of the Part	 M/s Raipur Energen Limited 	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raip	our -493225 Party Reference No	NIL
	(CG)Talabira Mines	Reporting Date	: 30/07/2020
		Period of Analysis	: 23/07/2020-30/07/2020
Sample Description	: AMBIENT AIR	Receipt Date	23/07/2020
General Inform	nation		
Sampling Locat	ion : Village -	Khinda 3 k.m. In SE from the Mine	
Sample Collecte	d by	am	

Sampling Location	:	Village - Khinda 3 k.m. In SE from the Mine
Sample Collected by	1	VEL Team
Sampling Equipment used	÷	RDS/FPS
Instrument Code	1	VEL/RDS/FPS/02
Instrument Calibration Status	:	Calibrated
Latitude	ŝ	S170
Longitude	:	-
Meteorological condition during monitoring	:	Clear Sky
Date of Monitoring	1	17/07/2020 To 18/07/2020
Time of Monitoring		10.30 am to 10.30 am
Ambient Temperature (°C)	3	Min. 27°c, Max 46°c
Surrounding Activity	1	Human & Vehicular Act.
Scope of Monitoring	:	Regulatory Requirment
Sampling & Analysis Protocol	ž	IS :5182
Sampling Duration	3	24 Hrs.
Parameter Required	3	As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	70.93	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS: 5182 (P-24), 2019	43.27	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	19.57	µg/m³ .	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	12.47	⊔µg/m³	80
5	Lead (as Pb)	IS:5182 (P-22),Air Acetylene Method, RA:2009	BDL (*DL 0.02)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0)	ng/m³	6.0
7	Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL0.5)	µg/m³	
8	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	



Note: a) The results listed refer only to the tested samples & applicable parameters

- b) Total liabilities of our lab will be restricted to the invoice amount only
- c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/A/200	07230003	Report No.	: VEL/A/2007230003
Name & Address of the Party	: M/s Raipur Energen Limited Village: Raikheda, Block-Tilda Dist. Raipur -493225	Format No Party Reference No	7 8 F-01 : NIL
	(CG)Talabira Mines	Reporting Date Period of Analysis	: 30/07/2020 : 23/07/2020-30/07/2020
Sample Description	: AMBIENT AIR	Receipt Date	23/07/2020
General Informa	tion		

General Information	
Sampling Location	Babu Khinda 3.5 k.m. in NE from the mines
Sample Collected by	: VEL Team
Sampling Equipment used	: RDS/FPS
Instrument Code	: VEL/RDS/FPS/03
Instrument Calibration Status	: Calibrated
Latitude	2
Longitude	
Meteorological condition during monitoring	Clear Sky
Date of Monitoring	: 17/07/2020 To 18/07/2020
Time of Monitoring	: 11.30 am to 11.30 am
Ambient Temperature (°C)	Min. 27°c, Max 46°c
Surrounding Activity	Human & Vehicular Act.
Scope of Monitoring	Regulatory Requirment
Sampling & Analysis Protocol	IS :5182
Sampling Duration	: 24 Hrs.
Parameter Required	: As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	71.73	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS: 5182 (P-24), 2019	39.33	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	22.46	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	10.00	µg/m³	80
5	Lead (as Pb)	IS:5182 (P-22),Air Acetylene Method, RA:2009	BDL (*DL 0.02)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0)	ng/m³	6.0
7	Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL1.0)	µg/m³	-
8	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	ма (н

Note: a) The results listed refer only to the tested samples & applicable parameters

- b) Total liabilities of our lab will be restricted to the invoice amount only
- c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised (ISO 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/A/2007230004		Report No.	: VEL/A/2007230004
Name & Address of the Party : M/s Raipur En	ergen Limited	Format No	7.8 F-01
	eda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
(CG)Talabira M		Reporting Date	: 31/07/2020
		Period of Analysis Receipt Date	23/07/2020-27/07/2020 23/07/2020
Sample Description : AMBIENT AIR		Neocipt Bate	20/01/2020
General Information			
Sampling Location	: A1 Downwind point of	of talabira -1 Mine area	
Sample Collected by	: VEL Team		
Sampling Equipment used	: RDS/FPS		
Instrument Code	: VEL/RDS/FPS/04		
Instrument Calibration Status	: Calibrated		
Latitude	:		
Longitude			
Meteorological condition during m	onitoring : Clear Sky		
Date of Monitoring	: 17/07/2020 To 18/07	7/2020	
Time of Monitoring	: 12.30 pm to 12.30 p	m	

*BDL- Below Detication Limits. DL- Detication Limit.

Ambient Temperature (°C)

Sampling & Analysis Protocol

Surrounding Activity

Scope of Monitoring

Sampling Duration

Parameter Required

Volatile Organic Compound (as

Polycyclic Aromatic Hydrocarbon

End of Report

Min. 27°c, Max 46°c Human & Vehicular Act.

IS :5182 24 Hrs.

Test Method

IS:5182 (P-11) :2004

IS:5182 (P-12):2004

: As Per Work Order

*

Regulatory Requirment

(Checked By)

S.No. Parameters

BTX)

(as PAH)

1

2

Limit as per

СРСВ

--

Units

µg/m³

ng/m³

Results

*BDL(**DL-1.0)

*BDL(**DL-5.0)

Note: a) The results listed refer only to the tested samples & applicable parameters

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- c) The Sample will be destroyed after retention time unless otherwise specified

d) This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/A/200	7230005	Report No.	: VEL/A/2007230005	
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	7.8 F-01	
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	NIL	
	(CG)Talabira Mines	Reporting Date	: 30/07/2020	
		Period of Analysis	: 23/07/2020-30/07/2020	
Sample Description	: AMBIENT AIR	Receipt Date	23/07/2020	
General Informat	ion			

	General Information		
	Sampling Location	;	R&R Colony, 3.2 km. in NE from the mines
	Sample Collected by	÷	VEL Team
	Sampling Equipment used	:	RDS/FPS
	Instrument Code	:	VEL/RDS/FPS/01
	Instrument Calibration Status	:	Calibrated
	Latitude	:	
	Longitude	. :	-
	Meteorological condition during monitoring	2	Clear Sky
	Date of Monitoring	2	16/07/2020 To 17/07/2020
	Time of Monitoring		09.00 am to 09.00 am
	Ambient Temperature (°C)	:	Min. 28°c, Max 47°c
	Surrounding Activity	i i	Human & Vehicular Act.
	Scope of Monitoring		Regulatory Requirment
. :	Sampling & Analysis Protocol	:	IS :5182
÷.	Sampling Duration	1	24 Hrs.
	Parameter Required	:	As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	74.71	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS: 5182 (P-24), 2019	32.21	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	20.14	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	10.09	µg/m³	80
5	Lead (as Pb)	IS:5182 (P-22),Air Acetylene Method, RA:2009	BDL (*DL 0.02)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0)	ng/m³	6.0
7	Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL1.0)	µg/m³	
8	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	-

No. 1/2 age

Note: a) The results listed refer only to the tested samples & applicable parameters

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c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/A/20	07230006	Report No.	: VEL/A/2007230006
Name & Address of the Party	: M/s Raipur Energen Limited Village: Raikheda, Block-Tilda Dist. Raipur -493225	Format No Party Reference No	7.8 F-01
	(CG)Talabira Mines	Reporting Date	: 31/07/2020
		Period of Analysis Receipt Date	: 23/07/2020-31/07/2020 • 23/07/2020
Sample Description	: AMBIENT AIR		
General Informa	tion		

General information	
Sampling Location	Weigh Bridge 0.5 km. in south from the mines
Sample Collected by	: VEL Team
Sampling Equipment used	: RDS/FPS
Instrument Code	: VEL/RDS/FPS/02
Instrument Calibration Status	: Calibrated
Latitude	; -
Longitude	
Meteorological condition during monitoring	Clear Sky
Date of Monitoring	: 16/07/2020 To 17/07/2020
Time of Monitoring	: 10.30 am to 10.30 am
Ambient Temperature (°C)	Min. 28°c, Max 47°c
Surrounding Activity	: Human & Vehicular Act.
Scope of Monitoring	: Regulatory Requirment
Sampling & Analysis Protocol	: IS :5182
Sampling Duration	: 24 Hrs.
Parameter Required	: As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	62.73	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS: 5182 (P-24), 2019	35.31	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	19.58	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	8.78	µg/m³	80

(Checked By)

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Test Report

Sample Number : VEL/A	/2007230007		Report No.	: VEL/A/2007230007
Name & Ad <mark>dres</mark> s of the Pa	rty : M/s Raipur Energen Limit	ed	Format No	7.8 F-01
	Village: Raikheda, Block-	Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines		Reporting Date	: 31/07/2020
			Period of Analysis	: 23/07/2020-31/07/2020
ample Description	: AMBIENT AIR		Receipt Date	23/07/2020
General Info	rmation			
Sampling Loc	ation	Near Petrol Pump		
Sample Collec	ted by	: VEL Team		
Sampling Equ	ipment used	: RDS/FPS		
Instrument Co	de	: VEL/RDS/FPS/03		
Instrument Ca	libration Status	Calibrated		
Latitude		:		
Longitude				
Meteorologica	I condition during monitoring	Clear Sky		
Date of Monito	pring	: 16/07/2020 To 17/07/2	2020	
Time of Monite	oring	: 12.30 pm to 12.30 pm		
Ambient Temp	perature (°C)	Min. 28°c, Max 47°c		
Surrounding A	Activity	: Human & Vehicular Ad	ct.	
Scope of Mon	itoring	: Regulatory Requirmer	nt	
Sampling & A	nalysis Protocol	i IS :5182		
Sampling Dura	ation	24 Hrs.		
Parameter Rec	quired	: As Per Work Order		

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	59.96	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS: 5182 (P-24), 2019	36.17	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	16.06	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	8.73	µg/m³	80

(Checked By)

Page No. 1/1

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

: VEL/A/2007230008 Report No. VEL/A/2007230008 Sample Number : 7.8 F-01 Name & Address of the Party : M/s Raipur Energen Limited Format No Village: Raikheda, Block-Tilda Dist. Raipur -493225 Party Reference No : NIL (CG)Talabira Mines **Reporting Date** : 31/07/2020 Period of Analysis : 23/07/2020-31/07/2020 Receipt Date 23/07/2020 Sample Description : AMBIENT AIR

General Information			
Sampling Location	:	In Front Of The Mine Office	
Sample Collected by	:	VEL Team	
Sampling Equipment used	:	RDS/FPS	
Instrument Code	1	VEL/RDS/FPS/04	
Instrument Calibration Status		Calibrated	
Latitude	1		
Longitude	4	-	
Meteorological condition during monitoring	:	Clear Sky	
Date of Monitoring		16/07/2020 To 17/07/2020	
Time of Monitoring	1	13.00 pm to 13.00 pm	
Ambient Temperature (°C)	1	Min. 28°c, Max 47°c	
Surrounding Activity	4	Human & Vehicular Act.	
Scope of Monitoring	1	Regulatory Requirment	
Sampling & Analysis Protocol	:	IS :5182	
Sampling Duration	1	24 Hrs.	
Parameter Required	:	As Per Work Order	

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P-23), Gravimetric Method, RA:2006	67.19	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS: 5182 (P-24), 2019	31.91	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P-6), Jacob & Hochheiser, RA:2006	17.77	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P-2), Modified West and Gaeke, RA:2012	9.38	µg/m³	80

(Checked By)

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Page No. 1/1

Tel 0141 2983404 | E-mail: jaipur@vardanenvironet.com | www.vardan.co.in

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **JISO** 9001 **J** OHSAS 45001**J**

<u>Test Report</u>

Sample Number : VEL/REL/	AA/01	Report No.	: VEL/A/2008220002/A
Name & Address of the Party	: M/s Raipur Eneigen Limited	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 28/08/2020
		Period of Analysis	: 22/08/2020-28/08/2020
Semple Description		Receipt Date	22/08/2020

Sample Description

: AMBIENT AIR

General Information	
Sampling Location	Rest Shalter 1.5 k.m. in SE From the Mines
Sample Collected by	: VEL Team
Sampling Equipment used	RDS/FPS
Instrument Code	: VEL/RDS/FPS/01
Instrument Calibration Status	: Calibrated
Latitude	1 e -
Longitude	
Meteorological condition during monitoring	Cloud Cover
Date of Monitoring	: 19/08/2020 To 20/08/2020
Time of Monitoring	: 09.30 to 09.30 Hrs.
Ambient Temperature (°C)	Min. 25 Max 31
Surrounding Activity	Human, Vehicular and Plant Activity
Scope of Monitoring	Regulatory Requirement
Sampling & Analysis Protocol	: IS :5182
Sampling Duration	: 24 hrs.
Parameter Required	: As Per Wo <mark>rk Order</mark>

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	71.54	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 2)-2001, RA. 2017	40.34	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	20.34	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	9.61	µg/m³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 μg/m³)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m³)	ng/m³	6.0

* BDL Below Detection Limit * DL Detection Limit

End of Report

(Checked By)



NABL ACCREDITED TC-6652

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001**)**

<u>Test Report</u>

Vardan EnviroLab

Name & Address of the Party: M/s Raipur Energen LimiterFormat No: 7.8 F-01Village: Raikheda, Block-TillesRaipur -493225 (CG)Talabira MinesParty Reference No: NILReporting Date: 22/08/2020-28/08/2020 : 22/08/2020-28/08/2020 : 22/08/2020-28/08/2020: 22/08/2020-28/08/2020 : 22/08/2020-28/08/2020Sample Description: AMBIENT AIR: Second of Analysis: 22/08/2020-28/08/2020 : 22/08/2020-28/08/2020Sampling Locatior: AMBIENT AIR: VEL Team: VEL TeamSampling Equipmer used: VEL/RDS/FPS/01: VEL/RDS/FPS/01Instrument Code: VEL/RDS/FPS/01: VEL/RDS/FPS/01Instrument Code <td: calibrated<="" td="">: CalibratedLongitude<td: calibrated<="" td="">: VEL/RDS/FPS/01Instrument Code<td: source<="" td="">: VEL/RDS/FPS/01Instrument Code: Source: VEL/RDS/FPS/01<th>Sample Number : VEL/REL/AA/01</th><th></th><th>Report No.</th><th>: VEL/A/2008220002/B</th></td:></td:></td:></td:></td:></td:></td:></td:></td:>	Sample Number : VEL/REL/AA/01		Report No.	: VEL/A/2008220002/B
Image: CG(3)Talabira Mines Reporting Date 28/08/2020 Sample Description : AMBIENT AIR 22/08/2020-28/08/2020 Sampling Location : AMBIENT AIR 22/08/2020 General Information sampling Location : Rest Shalter 1.5 k.m. in SE From the Mines 22/08/2020 Sample Collected by : VEL Team : VEL Team : VEL Team Sampling Equipment used : VEL/RDS/FPS/01 : VEL/RDS/FPS/01 Instrument Cole : VEL/RDS/FPS/01 : VEL/RDS/FPS/01 Instrument Calibration Status : VEL/RDS/FPS/01 : VEL/RDS/FPS/01 Latitude : VEL/RDS/FPS/01 : VEL/RDS/FDS/01 Sope of Monitoring : VEL/RDS/FDS/01 : VEL/RDS/FDS/01 Scope of Monitoring	Name & Address of the Party : M/s Raipur Energen Lin	nited	Format No	7.8 F-01
Sample Description : AMBIENT AIR Period of Analysis Receipt Date : 22/08/2020-28/08/2020 Sampling Location : AMBIENT AIR : 22/08/2020-28/08/2020 General Information Sampling Location : Rest Shalter 1.5 k.m. in SE From the Mines : 22/08/2020 Sample Collected by : VEL Team : VEL Team Sampling Equipment used : RDS/FPS : VEL/RDS/FPS/01 Instrument Codle : VEL/RDS/FPS/01 : VEL/RDS/FPS/01 Latitude : Calibrated : Calibrated Longitude : VEL/RDS/FPS/01 : VEL/RDS/FPS/01 Meteorological condition during monitoring : Calibrated Meteorological condition during monitoring : VEL/RDS/2020 To 20/08/2020 Time of Monitoring : 19/08/2020 To 20/08/2020 Time of Monitoring : 99.30 to 09.30 Hrs. Ambient Temperature (°C) : Min. 25 Max 31 Surrounding Activity : Nin. 25 Max 31 Scope of Monitoring : Regulatory Requirement Scope of Monitoring : Sis182 Sampling & Analysis Protocol : Sis182 Sampling Duration : Sis182	Village: Raikheda, Bloc	k-Tilda Dist. Raipur -493225	Party Reference No	I NIL
Receipt Date 22/08/2020 Sample Destription : AMBIENT AIR Receipt Date : 22/08/2020 General Information Sampling Location : Rest Shalter 1.5 k.m. in SE From the Mines :	(CG)Talabira Mines		Reporting Date	: 28/08/2020
Sample Description: AMBIENT AIRGeneral Information Sampling Location: Rest Shalter 1.5 k.m. in SE From the MinesSample Collected by: VEL TeamSampling Equipment used: RDS/FPSInstrument Code: VEL/RDS/FPS/01Instrument Calibration Status: CalibratedLatitude: CalibratedLongitude: Colud CoverDate of Monitoring: 19/08/2020 To 20/08/2020Time of Monitoring: 9.30 to 09.30 Hrs.Ambient Temperature (°C): Min. 25 Max 31Surrounding Activity: Human, Vehicular and Plant ActivityScope of Monitoring: Scope of MonitoringScope of Monitoring: Scope of MonitoringSampling & Analysis Protocol: Scope of MonitoringSampling Manalysis Protocol: Scope of MonitoringSampling Duration: Scope of Moni			Period of Analysis	: 22/08/2020-28/08/2020
General Information Sampling Location: Rest Shalter 1.5 k.m. in SE From the MinesSample Collected by: VEL TeamSampling Equipment used: RDS/FPSInstrument Code: VEL/RDS/FPS/01Instrument Calibration Status: CalibratedLatitude: -Longitude: -Meteorological condition during monitoring: Cloud CoverDate of Monitoring: 19/08/2020 To 20/08/2020Time of Monitoring: 09.30 to 09.30 Hrs.Ambient Temperature (°C): Min. 25 Max 31Surrounding Activity: Regulatory RequirementScope of Monitoring: Regulatory RequirementSampling & Analysis Protocol: IS :5182Sampling Duration: 24 hrs.			Receipt Date	22/08/2020
Sampling Location:Rest Shalter 1.5 k.m. in SE From the MinesSample Collected by:VEL TeamSampling Equipment used:RDS/FPSInstrument Code:VEL/RDS/FPS/01Instrument Calibration Status:CalibratedLatitude:-Longitude:-Meteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:Sis182Sampling & Analysis Protocol:Sis182Sampling Duration:24 hrs.	Sample Description : AMBIENT AIR			
Sample Collected by:VEL TeamSampling Equipment used:RDS/FPSInstrument Code:VEL/RDS/FPS/01Instrument Calibration Status:CalibratedLatitude:-Longitude:-Meteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:IS :5182Sampling & Analysis Protocol:1S :5182Sampling Duration:24 hrs.				
Sampling Equipment used:RDS/FPSInstrument Code:VEL/RDS/FPS/01Instrument Calibration Status:CalibratedLatitude:-Longitude:-Meteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:Regulatory RequirementSampling & Analysis Protocol:Is :5182Sampling Duration:24 hrs.	Sampling Location	Rest Shalter 1.5 k.m.	in SE From the Mines	
Instrument Code:VEL/RDS/FPS/01Instrument Calibration Status:CalibratedLatitude:-Longitude:-Meteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:Regulatory RequirementSampling & Analysis Protocol:IS :5182Sampling Duration:24 hrs.	Sample Collected by	: VEL Team		
Instrument Calibration Status:CalibratedLatitude:-Longitude:-Meteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:Is :5182Sampling & Analysis Protocol:24 hrs.	Sampling Equipment used	: RDS/FPS		
Latitude:Longitude::Meteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:IS :5182Sampling & Analysis Protocol:1S :5182Sampling Duration:24 hrs.	Instrument Code	: VEL/RDS/FPS/01		
LongitudeMeteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:Regulatory RequirementSampling & Analysis Protocol:IS :5182Sampling Duration:24 hrs.	Instrument Calibration Status	: Calibrated		
Meteorological condition during monitoring:Cloud CoverDate of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:Regulatory RequirementSampling & Analysis Protocol:IS :5182Sampling Duration:24 hrs.	Latitude	: -		
Date of Monitoring:19/08/2020 To 20/08/2020Time of Monitoring:09.30 to 09.30 Hrs.Ambient Temperature (°C):Min. 25 Max 31Surrounding Activity:Human, Vehicular and Plant ActivityScope of Monitoring:Regulatory RequirementSampling & Analysis Protocol:IS :5182Sampling Duration:24 hrs.	Longitude			
Time of Monitoring 09.30 to 09.30 Hrs. Ambient Temperature (°C) Min. 25 Max 31 Surrounding Activity Human, Vehicular and Plant Activity Scope of Monitoring Regulatory Requirement Sampling & Analysis Protocol IS :5182 Sampling Duration 24 hrs.	Meteorological condition during monitoring	G : Cloud Cover		
Ambient Temperature (°C) : Min. 25 Max 31 Surrounding Activity : Human, Vehicular and Plant Activity Scope of Monitoring : Regulatory Requirement Sampling & Analysis Protocol : IS :5182 Sampling Duration : 24 hrs.	Date of Monitoring	: 19/08/2020 To 20/08/	2020	
Surrounding Activity: Human, Vehicular and Plant ActivityScope of Monitoring: Regulatory RequirementSampling & Analysis Protocol: IS :5182Sampling Duration: 24 hrs.	Time of Monitoring	: 09.30 to 09.30 Hrs.		
Scope of Monitoring Regulatory Requirement Sampling & Analysis Protocol IS :5182 Sampling Duration 24 hrs.	Ambient Temperature (°C)	: Min. 25 Max 31		
Sampling & Analysis Protocol IS :5182 Sampling Duration 24 hrs.	Surrounding Activity	: Human, Vehicular and	d Plant Activity	
Sampling Duration 24 hrs.	Scope of Monitoring	: Regulatory Requirem	ent	
	Sampling & Analysis Protocol	: IS :5182		
	Sampling Duration	: 24 hrs.		
Parameter Required As Per Work Order	Parameter Required	: As Per Work Order		

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL1.0 ng/m³)	µg/m³	
2	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

* BDL Below Detection Limit * DL Detection Limit

End of Report

(Checked By)

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised |ISO 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/RI	EL/AA/02	Report No.	: VEL/A/2008220003/A
Name & Address of the Par	ty : M/s Raipur Enęrgen Limited Village: Raikheda, Block-Tilda Dist. Raipur -493225 (CG)Talabira Mines	Format No Party Reference No Reporting Date Period of Analysis Receipt Date	 7.8 F-01 NIL 28/08/2020 22/08/2020-28/08/2020 22/08/2020
Sample Description	: AMBIENT AIR		
General Infor Sampling Loca		n. In SE from the Mine	
Sample Collect	ed by : VEL Team		

Sampling Equipment used	: RDS/FPS
Instrument Code	: VEL/RDS/FPS/02
Instrument Calibration Status	: Calibrated
Latitude	: -
Longitude	
Meteorological condition during monitoring	: Cloud Cover
Date of Monitoring	: 19/08/2020 To 20/08/2020
Time of Monitoring	10.25 to 10.25Hrs.
Ambient Temperature (°C)	Min. 25 Max 31
Surrounding Activity	: Human, Vehicular and Rural Activity
Scope of Monitoring	Regulatory Requirement
Sampling & Analysis Protocol	: IS :5182
Sampling Duration	24 hrs.
Parameter Required	As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	68.51	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 2)-2001, RA. 2017	42.98	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	19.34	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	12.26	µg/m³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m³)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m³)	ng/m³	6.0

* BDL Below Detection Limit * DL Detection Limit

End of Report

(Tested By)

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TC-6652

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<u>Test Report</u>

Sample Number : VEL/REL/AA/02		Report No.	: VEL/A/2008220003/B
Name & Address of the Party : M/s Raipur Energen Limit Village: Raikheda, Block- (CG)Talabira Mines	ted Tilda Dist. Raipur -493225	Format No Party Reference No Reporting Date	7.8 F-01 NIL 28/08/2020 22/08/2020-28/08/2020
Sample Description : AMBIENT AIR		Period of Analysis Receipt Date	22/08/2020
General Information Sampling Location	: Village- Khinda 3 k.m	. In SE from the Mine	
Sample Collected by	: VEL Team		

Sample Concered by	
Sampling Equipment used	: RDS/FPS
Instrument Code	: VEL/RDS/FPS/02
Instrument Calibration Status	: Calibrated
Latitude	: -
Longitude	:
Meteorological condition during monitoring	: Cloud Cover
Date of Monitoring	: 19/08/2020 To 20/08/2020
Time of Monitoring	: 10.25 to 10.25Hrs.
Ambient Temperature (°C)	: Min. 25 Max 31
Surrounding Activity	Human, Vehicular and Rural Activity
Scope of Monitoring	Regulatory Requirement
Sampling & Analysis Protocol	IS :5182
Sampling Duration	: 24 hrs.
Parameter Required	: As Per Wo <mark>rk Order</mark>

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1 Mercury (Hg)		Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL1.0 ng/m³)	µg/m³	-
2	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

* BDL Below Detection Limit * DL Detection Limit

End of Report

(Tested By)



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Test Report

Sample Number : VEL/REL/A	A/03	Report No.	: VEL/A/2008220004/A
Name & Address of the Party	: M/s Raipur Energen Limited Village: Raikheda, Block-Tilda Dist. Raipur -493225	Format No Party Reference No	7.8 F-01 NIL
	(CG)Talabira Mines	Reporting Date	: 28/08/2020
	*	Period of Analysis Receipt Date	22/08/2020-28/08/2020 22/08/2020
Sample Description	: AMBIENT AIR		
General Informat			
O I I	D L Khinds O E h	m in NE from the minee	

Sampling Location	1	Babu Khinda 3.5 k.m. in NE from the mines
Sample Collected by	:	VEL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	1	VEL/RDS/FPS/03
Instrument Calibration Status	1	Calibrated
Latitude	:	
Longitude	3	-
Meteorological condition during monitoring	1	Cloud Cover
Date of Monitoring	1	19/08/2020 To 20/08/2020
Time of Monitoring	1	11.10 to 11.10 Hrs.
Ambient Temperature (°C)	1	Min. 25 Max 31
Surrounding Activity	:	Human, Vehicular and Other Activity
Scope of Monitoring	:	Regulatory Requirement
Sampling & Analysis Protocol	12	IS :5182
Sampling Duration	:	24 hrs.
Parameter Required	:	As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	70.07	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 2)-2001, RA. 2017	38.05	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	21.60	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	10.32	µg/m³	80
5 Lead (as Pb)		IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m³)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m³)	ng/m³	6.0

* BDL Below Detection Limit * DL Detection Limit

End of Report

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Test Report

Sample Number : VEL/REL/AA/03			Report No.	: VEL/A/2008220004/B		
Name & Address of the Party : M/s Raipur Energen Limite					Format No	7.8 F-01
Village: Raikheda, Block-1			ilda	Dist. Raipur -493225	Party Reference No	: NIL
		(CG)Talabira Mines			Reporting Date	: 28/08/2020
					Period of Analysis	: 22/08/2020-28/08/2020
Sample Desc	cription	: AMBIENT AIR			Receipt Date	22/08/2020
(General Infor	mation				
	Sampling Loca		1	Babu Khinda 3.5 k.m.	in NE from the mines	
5	Sample Collec	ted by		VEL Team		
9	Sampling Equi	ipment used	:	RDS/FPS		
1	Instrument Co	de	:	VEL/RDS/FPS/03		
	Instrument Ca	libration Status	:	Calibrated		
	Latitude		:			
L	Longitude		:			
	Meteorologica	I condition during monitoring	. :	Cloud Cover		
	Date of Monito	oring	:	19/08/2020 To 20/08/	2020	
	Time of Monite	oring	:	11.10 to 11.10 Hrs.		
	Ambient Temp	erature (°C)	1	Min. 25 Max 31		
· · · · · ·	Surrounding A	Activity	- 1	Human, Vehicular and	d Other Activity	
	Scope of Moni	itoring	1	Regulatory Requirem	ent	
	Sampling & Ar	nalysis Protocol	1	IS :5182		
¥5	Sampling Dura	ation	1	24 hrs.		
- 10 L	Parameter Red	quired	- 3	As Per Work Order		

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317		µg/m³	
2	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

* BDL Below Detection Limit * DL Detection Limit

End of Report

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Test Report

Sample Number : VEL/REL/A	A/04			Report No.	: VEL/A/2008220005/B
Name & Address of the Party : M/s Raipur Energen Lim				Format No	7.8 F-01
	Village: Raikheda, Block	<-Tilda [Dist. Raipur -493225	Party Reference No	NIL
	(CG)Talabira Mines			Reporting Date	: 28/08/2020
				Period of Analysis	: 22/08/2020-28/08/2020
Sample Description	: AMBIENT AIR			Receipt Date	22/08/2020
, ,					
General Informat					
Sampling Location		:	A1 Downwind point of	talabira-1 Mine area	
Sample Collected t	ру	:	VEL Team		
Sampling Equipme	ent used	:	RDS/FPS		
Instrument Code		:	VEL/RDS/FPS/04		
Instrument Calibrat	tion Status	- 1	Calibrated		
Latitude		:			
Longitude		:			
Meteorological cor	dition during monitoring	:	Cloud Cover		
Date of Monitoring		1	19/08/2020 To 20/08/2	2020	
Time of Monitoring			12.35 to 12.35 Hrs.		
Ambient Temperati	ure (°C)	201	Min. 25 Max 31		
Surrounding Activi	ty	1	Human & Vehicular Ad	tivity	
Scope of Monitorin	g	1	Regulatory Requireme	int	
Sampling & Analys	is Protocol		IS :5182		
Sampling Duration			24 hrs.		
Parameter Require			As Per Work Order		

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Volatile Organic Compound (as BTX)	IS:5182 (P-11) :2004	*BDL(**DL-1.0µg/ m ³	µg/m³	
2	Polycyclic Aromatic Hydrocarbon (as PAH)	IS:5182 (P-12):2004	*BDL(**DL-5.0ng/ m³)	ng/m³	(ma)
-		***End of Report***			

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Sample Nu	mber: VEL/REL/	AA/05			Report No.	: VEL/A/2008220006/A
Name & Address of the Party : M/s Raipur Energen Limite Village: Raikheda, Block-Ti (CG)Talabira Mines			Dist. Raipur -493225	Format No Party Reference No Reporting Date	- 7.8 F-01 : NIL : 28/08/2020	
Sample De	scription	: AMBIENT AIR			Period of Analysis Receipt Date	: 22/08/2020-28/08/2020 : 22/08/2020
	General Informa Sampling Locatio		:	R&R Colony, 3.2 km, i	n NE from the mines	
	Sample Collected	by	:	VEL Team		
	Sampling Equipm	ent used	:	RDS/FPS		
	Instrument Code		:	VEL/RDS/FPS/01		
	Instrument Calibration	ation Status	1	Calibrated		
	Latitude		:			
	Longitude		1			
	Meteorological co	ondition during monitoring	-4	Clear Sky		
	Date of Monitorin	g	;	20/08/2020 To 21/08/2	2020	
	Time of Monitorin	g - 18		09.50 to 09.50 Hrs.		
	Ambient Tempera	ture (°C)		Min. 25 Max 32		
	Surrounding Activ	vity	:	Human & Vehicular Ac	ctivity	
	Scope of Monitor	ing		Regulatory Requireme	ent	
*	Sampling & Analy	sis Protocol	13	IS :5182		
F	Sampling Duratio	n	1	24 hrs.		
	Parameter Requir	ed		As Per Work Order		

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	73.62	µg/m³	100
2 Particulate Matter (as PM - 2.5)		IS:5182 (P- 2)-2001, RA. 2017	33.62	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	19.76	µg/m³	80
4 Sulphur Dioxide (as SO2)		IS:5182 (P- 2)-2001, RA. 2017	9.33	µg/m³	80
5 Lead (as Pb)		IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m³)	µg/m³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m³)	ng/m³	6.0

* BDL Below Detection Limit * DL Detection Limit

End of Report

(Tested By)



Page No. 1/1

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<u>Test Report</u>

Sample Number : VEL/REL/AA/05		Report No.	: VEL/A/2008220006/B
Name & Address of the Party : M/s Raipur Energen Li	mited	Format No	7.8 F-01
Village: Raikheda, Blo	ck-Tilda Dist. Raipur -493225	Party Reference No	NIL
(CG)Talabira Mines		Reporting Date	: 28/08/2020
		Period of Analysis	: 22/08/2020-28/08/2020
Comple Depaription		Receipt Date	22/08/2020
Sample Description : AMBIENT AIR			
General Information			
Sampling Location	R&R Colony, 3.2 km. i	in NE from the mines	
Sample Collected by	: VEL Team		
Sampling Equipment used	: RDS/FPS		
Instrument Code	: VEL/RDS/FPS/01		
Instrument Calibration Status	: Calibrated		
Latitude	: -		
Longitude			
Meteorological condition during monitorin	g : Clear Sky		
Date of Monitoring	20/08/2020 To 21/08/2	2020	
Time of Monitoring	: 09.50 to 09.50 Hrs.		
Ambient Temperature (°C)	: Min. 25 Max 32		
Surrounding Activity	: Human & Vehicular Ad	ctivity	
Scope of Monitoring	Regulatory Requireme	ent	
Sampling & Analysis Protocol	: IS :5182		
Sampling Duration	: 24 hrs.		
Parameter Required	: As Per Work Order		

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL1.0 ng/m³)	µg/m³	-
2	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

* BDL Below Detection Limit * DL Detection Limit

End of Report

(Tested By)

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Test Report

Sample Number : VEL/REL/AA/06		Report No.	: VEL/A/2008220007/A
Name & Address of the Party : M/s Raipur Energen Li	mited	Format No	7.8 F-01
5	ck-Tilda Dist. Raipur -493225	Party Reference No	: NIL
(CG)Talabira Mines		Reporting Date	: 28/08/2020
		Period of Analysis	: 22/08/2020-28/08/2020
Sample Description : AMBIENT AIR		Receipt Date	22/08/2020
General Information			
Sampling Location	: Weigh Bridge 0.5 km.	in south from the mines	;

	Sampling Location	÷.	Weigh Bridge 0.5 km. in south from the mines	
	Sample Collected by	;	VEL Team	
	Sampling Equipment used	:	RDS/FPS	
	Instrument Code	:	VEL/RDS/FPS/02	
	Instrument Calibration Status	:	Calibrated	
	Latitude	÷	-	
	Longitude	1	-	
	Meteorological condition during monitoring	:	Clear Sky	
	Date of Monitoring	;	20/08/2020 To 21/08/2020	
	Time of Monitoring	:	11.10 to 11.10 Hrs.	
	Ambient Temperature (°C)	:	Min. 25 Max 32	
	Surrounding Activity	\$	Human & Vehicular Activity	
	Scope of Monitoring	:	Regulatory Requirement	
8	Sampling & Analysis Protocol	4	IS :5182	
0	Sampling Duration	:	24 hrs.	
	Parameter Required	:	As Per Work Order	

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	63.58	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 2)-2001, RA. 2017	34.07	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	18.74	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	9.46	µg/m³	80

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Test Report

Name & Address of the Par	 ty : M/s Raipur Energen Limit Village: Raikheda, Block- (CG)Talabira Mines : AMBIENT AIR 		Dist. Raipur -493225	Format No Party Reference No Reporting Date Period of Analysis Receipt Date	7.8 F-01 NIL 28/08/2020 22/08/2020-28/08/2020 22/08/2020
General Infor					
Sampling Loca	tion	-	Near Petrol Pump		
Sample Collect	ted by	:	VEL Team		
Sampling Equi	pment used	:	RDS/FPS		
Instrument Co	de		VEL/RDS/FPS/03		
Instrument Cal	ibration Status	:	Calibrated		
Latitude		:	(***)		
Longitude		:	-		
Meteorological	condition during monitoring	:	Clear Sky		
Date of Monito	ring	:	20/08/2020 To 21/08/2	020	3.
Time of Monito	ring	:	11.55 to 11.55 Hrs.		

	Sampling Duration	24 hrs. As Per Work Order			
S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	60.14	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 2)-2001, RA. 2017	35.08	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	16.97	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	8.61	µg/m³	80
_		***End of Report***			

Min. 25 Max 32

IS :5182

Human & Vehicular Activity

Regulatory Requirement

(Checked By)

Sample Number : VEL/REL/AA/07

Ambient Temperature (°C)

Sampling & Analysis Protocol

Surrounding Activity

Scope of Monitoring

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VEL/A/2008220008/A

Report No.

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<u>Test Report</u>

Sample Number : VEL/REL/A	AA/08	Report No.	: VEL/A/2008220009/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 28/08/2020
	S	Period of Analysis	: 22/08/2020-28/08/2020
Sample Description	: AMBIENT AIR	Receipt Date	22/08/2020
General Informat	tion		8

General Information		
Sampling Location	:	In Front Of The Mine Office
Sample Collected by	:	VEL Team
Sampling Equipment used	:	RDS/FPS
Instrument Code	:	VEL/RDS/FPS/04
Instrument Calibration Status	;	Calibrated
Latitude	:	-
Longitude	:	
Meteorological condition during monitoring	1	Clear Sky
Date of Monitoring	:	20/08/2020 To 21/08/2020
Time of Monitoring	:	13.10 to 13.10 Hrs.
Ambient Temperature (°C)	3	Min. 25 Max 32
Surrounding Activity	1	Human & Vehicular Activity
Scope of Monitoring	1	Regulatory Requirement
Sampling & Analysis Protocol	:	IS :5182
Sampling Duration		24 hrs.
Parameter Required	:	As Per Work Order

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	69.50	µg/m³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 2)-2001, RA. 2017	30.94	µg/m³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	17.96	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	9.59	µg/m³	80
		End of Report		U	(n'e

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Test Report

Sample Number : VEL/RE Name & Address of the Party	Line Raipar Energen Linn	ited -Tilda Dist. Raipur -493225	Report No. Format No Party Reference No Reporting Date	: VEL/A/2009250001/A : 7.8 F-01 : NIL : 30/09/2020
Sample Description	: AMBIENT AIR		Period of Analysis Receipt Date	: 25/09/2020-30/09/2020 : 25/09/2020
General Inform Sampling Location Sample Collected Sampling Equipm Instrument Code Instrument Calibre Latitude Longitude	on d by nent used ration Status	 Rest Shalter 1.5 K.M. i VEL Team RDS/FPS VEL/RDS/17/FPS/15 Calibrated 	in SE From The mine	
Date of Monitorin Time of Monitorin Ambient Tempera Surrounding Activ Scope of Monitori Sampling & Analys Sampling Duratior Parameter Require	g ture (°C) ríty ng sis Protocol	 Clear Sky 19/09/2020 To 20/09/20 11.00 TO 11.00 Hrs. Min. 23° Max 34° Human & Vehicular Act Regulatory Requirment IS :5182 24 Hrs. As Per Work Order 	ivity	

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017			
2	Particulate Matter (as PM - 2.5)		71.05	µg/m³	100
3		IS:5182 (P- 24)-2001, RA. 2017	38.69	µg/m³	60
	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	19.18		
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017		µg/m³	80
5	Lead (as Pb)		9.11	µg/m³	80
		IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m³)	µg/m³	1.0
	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m³)	ng/m³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

elow Detection Limit ** DL Detection Limit

End of Report

(Checked By)



Page No. 1/1





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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised (ISO 9001 | OHSAS 45001)

Test Report

Surr Sco Sam Sam	bient Temperature (°C) rounding Activity pe of Monitoring upling & Analysis Protocol upling Duration umeter Required	 Min. 23° Max 34° Human & Vehicular Act Regulatory Requirment IS :5182 24 Hrs. As Per Work Order 		
Lati Lon Met Date Tim	trument Calibration Status itude gitude eorological condition during monitoring e of Monitoring	: Calibrated :	020	
Sar Sar Sar Inst	neral Information npling Location nple Collected by npling Equipment used trument Code	 Rest Shalter 1.5 K.M. i VEL Team RDS/FPS VEL/RDS/17/FPS/15 	n SE From The mine	
ample Descrip	(CG) Falabira Mines	imited ck-Tilda Dist. Raipur -493225	Report No. Format No Party Reference No Reporting Date Period of Analysis Receipt Date	: VEL/A/2009250001/B : 7.8 F-01 : NIL : 30/09/2020 : 25/09/2020-30/09/2020 : 25/09/2020

	- Ar			Limit as per CPCB
1 Mercury (Hg)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL1.0 ng/m ³)	µg/m³	

End of Report

(Checked By)



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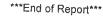
Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **JISO** 9001 J OHSAS 45001

Test Report

Sample Description	M/s Raipur Energen Limi Village: Raikheda, Block- (CG)Talabira Mines	ted Tilda Dist. Raipur -493225	Report No. Format No Party Reference No Reporting Date Period of Analysis Receipt Date	: VEL/A/2009250002/A : 7.8 F-01 : NIL : 30/09/2020 : 25/09/2020-30/09/2020 : 25/09/2020
General Information Sampling Location Sample Collected by Sampling Equipmen Instrument Code Instrument Calibration Latitude Longitude Meteorological condit Date of Monitoring Time of Monitoring Ambient Temperatures Surrounding Activity Scope of Monitoring Sampling & Analysis Sampling Duration Parameter Required	, t used on Status ition during monitoring	 R & R Colony, 3.2 KM VEL Team RDS/FPS VEL/RDS/17/FPS/15 Calibrated Clear Sky 20/09/2020 To 21/09/20 11.30 TO 11.30 Hrs. Min. 23° Max 34° Human & Vehicular Act Regulatory Requirment IS :5182 24 Hrs. As Per Work Order 	ivity	

S.No.	Parameters	Test Method	Results	Units	Limit as per
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017			CPCB
	Particulate Matter (as PM - 2.5)		72.97	µg/m³	100
		IS:5182 (P- 24)-2001, RA. 2017	33.64	µg/m³	60
	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	20.18	µg/m³	
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017			80
5	Lead (as Pb)		11.10	µg/m³	80
6	Arsenic (as As)	IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m³)	µg/m³	1.0
		Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m³)	ng/m³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

* BDI Below Detection Limit ** DL Detection Limit



(Checked By)



Page No. 1/1

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **JISO** 9001 J OHSAS 45001)

Test Report

General Information Sampling Location : R & R Colony, 3.2 KM In NE From The Mines Sample Collected by : VEL Team Sampling Equipment used : RDS/FPS Instrument Code : VEL/RDS/17/FPS/15 Instrument Calibration Status : Calibrated Longitude : Meteorological condition during monitoring : Clear Sky Date of Monitoring : 20/09/2020 To 21/09/2020 Time of Monitoring : 11.30 TO 11.30 Hrs. Ambient Temperature (°C) : Min. 23° Max 34° Surrounding Activity : Human & Vehicular Activity Scope of Monitoring : Regulatory Requirment Sampling & Analysis Protocol : IS :5182 Sampling Duration : 24 Hrs. Parameter Required : As Per Work Order	(CG) falabira Mir	a, Block-Tilda Dist, Raipur -493225	Report No. Format No Party Reference No Reporting Date Period of Analysis	: 30/09/2020 : 25/09/2020-30/09/2020
	General Information Sampling Location Sample Collected by Sampling Equipment used Instrument Code Instrument Calibration Status Latitude Longitude Meteorological condition during moni Date of Monitoring Time of Monitoring Ambient Temperature (°C) Surrounding Activity Scope of Monitoring Sampling & Analysis Protocol Sampling Duration	 VEL Team RDS/FPS VEL/RDS/17/FPS/15 Calibrated 	020 ivity	; 25/09/2020

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Mercury (Hg)	Methods of air sampling and	BDL (*DL1.0	µg/m³	
* BC	I Below Detection Limit ** DI	analysis,3rd ed.,1988, Method No.317	ng/m³)	pgm	1

3DI Below Detection Limit ** DL Detection Limit

End of Report

(Checked By)



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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/RELM	/AA/02			
Name & Address of the Party	: M/s Raipur Energen Limi	ted	Report No.	: VEL/A/2009250003/A
		Tilda Dist. Raipur -493225	Format No Party Reference No Reporting Date	: 7.8 F-01 : NIL : 30/09/2020
Sample Description	: AMBIENT AIR		Period of Analysis Receipt Date	: 25/09/2020-30/09/2020 : 25/09/2020
General Informati Sampling Location Sample Collected b Sampling Equipmen Instrument Code Instrument Calibrati Latitude Longitude Meteorological cond Date of Monitoring Time of Monitoring Ambient Temperatur Surrounding Activity Scope of Monitoring Sampling & Analysis Sampling Duration	y nt used ion Status dition during monitoring re (°C)	 VillKhinda,3 KM In S VEL Team RDS/FPS VEL/RDS/18/FPS/16 Calibrated Clear Sky 19/09/2020 To 20/09/2 11.30 TO 11.30 Hrs. Min. 23° Max 34° Human & Vehicular Ac Regulatory Requirment IS :5182 24 Hrs. 	020 tivity	

	Parameter Required	: 24 Hrs. : As Per Work Order			
S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	70.87		
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2001, RA. 2017		µg/m³	100
3	Nitrogen Dioxides (as NO2)		42.59	µg/m³	60
4		IS:5182 (P- 6)-2006 RA.2017	18.62	µg/m³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	12.92		
5	Lead (as Pb)			µg/m³	80
6	A	IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m³)	µg/m³	1.0
	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m³)	ng/m³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

End of Report*

(Checked By)

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised (ISO 9001 | OHSAS 45001)

Test Report

Sample Number: VEL/RELM// Name & Address of the Party :	M/s Raipur Energen Limi	ted	Report No.	: VEL/A/2009250003/B
		Tilda Dist. Raipur -493225	Format No Party Reference No Reporting Date	: 7.8 F-01 : NIL : 30/09/2020
ample Description :	AMBIENT AIR		Period of Analysis Receipt Date	: 25/09/2020-30/09/2020 : 25/09/2020
General Information Sampling Location Sample Collected by Sampling Equipment Instrument Code Instrument Calibration Latitude Longitude	n Status tion during monitoring (°C)	 VillKhinda,3 KM In S VEL Team RDS/FPS VEL/RDS/18/FPS/16 Calibrated Clear Sky 19/09/2020 To 20/09/2 11.30 TO 11.30 Hrs. Min. 23° Max 34° Human & Vehicular Act Regulatory Requirment IS :5182 24 Hrs. As Per Work Order 	020 tivity	

S.No. Parameters		Test Method	Results	Units	Limit as per
1	Mercury (Hg)				СРСВ
	(ig)	Methods of air sampling and analysis,3rd ed.,1988, Method No.317	BDL (*DL1.0 ng/m ³)	µg/m³	
		End of Report			

(Checked By)



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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/RELM/	AA/06			
Nama 8 Addama at u	M/s Raipur Energen Lim	ited	Report No.	: VEL/A/2009250004/A
		-Tilda Dist. Raipur -493225	Format No	: 7.8 F-01
	(CG)Talabira Mines	- Hidd Dist. (Calput -493225	Party Reference No	: NIL
			Reporting Date	: 30/09/2020
Sample Description	AMBIENT AIR		Period of Analysis Receipt Date	: 25/09/2020-30/09/2020 : 25/09/2020
General Information	วท			
Sample Collected by	(: Weight Bridge 0.5 KI	M In South From The Min	es
Sampling Equipment		: VEL Team		
Instrument Code	L USEQ	: RDS/FPS		
Instrument Calibratio	n Pietus	: VEL/RDS/18/FPS/16		
Latitude	n Status	: Calibrated		
Longitude		;		
-		i		
Date of Monitoring	tion during monitoring	: Clear Sky		
Time of Monitoring		: 20/09/2020 To 21/09/	2020	
Ambient Temperature	(90)	: 12.15 TO 12.15 Hrs.		
Surrounding Activity	(0)	: Min. 23° Max 35°		
Scope of Monitoring		: Human, Vehicular & N	Aining Activity	
Sampling & Analysis I	Dustant	Regulatory Requirmer	nt	
Sampling Duration	-1010001	: IS :5182		
Parameter Required		: 24 Hrs.		
		: As Per Work Order		

3.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	63.57		
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2001, RA. 2017		µg/m³	100
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	25.64	µg/m³	60
4	Sulphur Dioxide (as SO2)	21/1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	19.22	µg/m³	80
		IS:5182 (P- 2)-2001, RA. 2017 ***End of Report***	8.71	µg/m³	80

(Checked By)



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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **[ISO** 9001] OHSAS 45001)

Test Report

Sample Number : VEL/RELN Name & Address of the Party Sample Description General Informat Sampling Location	 M/s Raipur Energen Limi Village: Raikheda, Block- (CG)Talabira Mines AMBIENT AIR 	ted Tilda Dist. Raipur -493225	Report No. Format No Party Reference No Reporting Date Period of Analysis Receipt Date	: VEL/A/2009250005/A : 7.8 F-01 : NIL : 30/09/2020 : 25/09/2020-30/09/2020 : 25/09/2020
Sample Collected b Sampling Equipme Instrument Code Instrument Calibrat Latitude Longitude	nt used ion Status	VEL Team RDS/FPS VEL/RDS/19/FPS/17 Calibrated		
Meteorological con Date of Monitoring Time of Monitoring Ambient Temperatu Surrounding Activity Scope of Monitoring Sampling & Analysis Sampling Duration	Protocol	 Clear Sky 20/09/2020 To 21/09/20 13.10 TO 13.10 Hrs. Min. 23° Max 34° Human, Vehicular Activ Regulatory Requirment IS :5182 24 Hrs. 	vity	

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	70.57		
2	Particulate Matter (as PM - 2.5)		70.57	µg/m³	100
3		IS:5182 (P- 24)-2001, RA. 2017	39.45	µg/m³	60
	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	21.76	µg/m³	
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017		pg/m	80
5	Lead (as Pb)		10.27	µg/m³	80
6		IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 μg/m³)	µg/m³	1.0
	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m ³)	ng/m³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m³	

BDL Below Detection Limit ** DI Detection Limit

Parameter Required



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Page No. 1/1

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **IISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/RELN Name & Address of the Party	: M/s Raipur Energen Lim	ited -Tilda Dist. Raipur -493225	Report No. Format No Party Reference No Reporting Date	: 30/09/2020
Sample Description	: AMBIENT AIR		Period of Analysis Receipt Date	: 25/09/2020-30/09/2020 : 25/09/2020
General Informal Sampling Location Sample Collected Sampling Equipme Instrument Code Instrument Calibra Latitude Longitude Meteorological com Date of Monitoring Time of Monitoring Ambient Temperatu Surrounding Activit Scope of Monitoring Sampling & Analysi Sampling Duration Parameter Required	n by ent used tion Status dition during monitoring ure (°C) ty g s Protocol	 Near Petrol Pump VEL Team RDS/FPS VEL/RDS/19/FPS/17 Calibrated 	vity	

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Mercury (Hg)	Methods of air sampling and analysis.3rd ed. 1988. Method No. 247	BDL (*DL1.0	µg/m³	5 -7
* BC	L Below Detection Limit ** DL	analysis,3rd ed.,1988, Method No.317	ng/m³)		

DL Below Detection Limit ** DI Detection Limit

End of Report

(Checked By)



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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **JISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/RELM/AA/07 Name & Address of the Party : M/s Raipur Energer Village: Raikheda, E (CG)Talabira Mines Sample Description : AMBIENT AIR	Limited Form lock-Tilda Dist. Raipur -493225 Party Repo Perio	ort No. : VEL/A/2009250006/A nat No : 7.8 F-01 r Reference No : NIL orting Date : 30/09/2020 od of Analysis : 25/09/2020-30/09/2020 ipt Date : 25/09/2020
General Information Sampling Location Sample Collected by Sampling Equipment used Instrument Code Instrument Calibration Status Latitude Longitude Meteorological condition during monitor Date of Monitoring Time of Monitoring Ambient Temperature (°C) Surrounding Activity Scope of Monitoring Sampling & Analysis Protocol Sampling Duration Parameter Required	 Near Petrol Pump VEL Team RDS/FPS VEL/RDS/19/FPS/17 Calibrated Clear Sky 20/09/2020 To 21/09/2020 13.10 TO 13.10 Hrs. Min. 23° Max 34° Human, Vehicular Activity Regulatory Requirment IS :5182 24 Hrs. As Per Work Order 	

S.No.	Parameters	Test Method	Results	Units	Limit as per CPCB
1	Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	57.77		
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2001, RA. 2017	36.73	µg/m³	100
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	15.07	µg/m³	60
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017		µg/m³	80
		End of Report	9.11	µg/m³	80

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Description : M/s Raipur Energen Limited F Village: Raikheda, Block-Tilda Dist. Raipur -493225 F (CG)Talabira Mines F P F Sample Description : AMBIENT AIR	Report No. Format No Party Reference No Reporting Date Period of Analysis	: 30/09/2020
Sample Description : AMBIENT AIR	Reporting Date	: NIL : 30/09/2020
	Receipt Date	: 25/09/2020-30/09/2020 : 25/09/2020
General Information Sampling Location : A1 Downwind point of Tala Sample Collected by : VEL Team Sampling Equipment used : RDS/FPS Instrument Code : VEL/RDS/20/FPS/18 Instrument Calibration Status : Calibrated Latitude : Longitude : Meteorological condition during monitoring : Clear Sky Date of Monitoring : 19/09/2020 To 20/09/2020 Time of Monitoring : 19/09/2020 To 20/09/2020 Surrounding Activity : Human, Vehicular & Mining Scope of Monitoring : Regulatory Requirment Sampling & Analysis Protocol : IS :5182 Sampling Duration : 24 Hrs. Parameter Required : As Per Work oder	abira -1 Mine Area	: 20109/2020

No. Parameters	Test Method	Results	Units	Limit as per CPCB
1 Volatile Organic Compound (as BTX)	IS:5182 (P-11) :2004	*BDL(**DL-1.0)	µg/m³	
2 Polycyclic Aromatic Hydrocarbon (as PAH)	IS:5182 (P-12):2004	*BDL(**DL-5.0)	ng/m³	

BDL-Below Detection Limit, **DL-Detection Limit

End of Report

(Checked By)

Approximation and a signature of the sig

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **JISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/REL! Name & Address of the Party	M/AA/08 : M/s Raipur Energen Limit Village: Raikheda, Block- (CG)Talabira Mines		Report No. Format No Party Reference No Reporting Date Period of Analysis	: VEL/A/2009250008/A : 7.8 F-01 : NIL : 30/10/2020 : 25/10/2020-30/10/2020
Sample Description	: AMBIENT AIR		Receipt Date	: 25/09/2020
General Informa Sampling Location Sample Collected Sampling Equipme Instrument Code Instrument Calibra Latitude Longitude Meteorological con Date of Monitoring Time of Monitoring Ambient Temperate Surrounding Activi Scope of Monitoring Sampling & Analys Sampling Duration Parameter Required	n by ent used ation Status ndition during monitoring ure (°C) ty 99 is Protocol	 In front of the mine VEL Team RDS/FPS VEL/RDS/20/FPS/18 Calibrated 	2020 Aining Activity	

Parameters	Test Method	Results	Units	Limit as per CPCB
Particulate Matter (as PM -10)	IS:5182 (P- 23)-2006,RA. 2017	67.71	ua/m ³	100
Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2001, RA. 2017	32.07		60
Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	18.76		80
Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	9.42		80
	Particulate Matter (as PM -10) Particulate Matter (as PM - 2.5) Nitrogen Dioxides (as NO2)	Particulate Matter (as PM -10) IS:5182 (P- 23)-2006,RA. 2017 Particulate Matter (as PM - 2.5) IS:5182 (P- 24)-2001, RA. 2017 Nitrogen Dioxides (as NO2) IS:5182 (P- 6)-2006 RA.2017	Particulate Matter (as PM -10) IS:5182 (P- 23)-2006,RA. 2017 67.71 Particulate Matter (as PM - 2.5) IS:5182 (P- 24)-2001, RA. 2017 32.07 Nitrogen Dioxides (as NO2) IS:5182 (P- 6)-2006 RA.2017 18.76 Sulphur Dioxide (as SO2) IS:5182 (P- 6)-2006 RA.2017 18.76	Particulate Matter (as PM -10) IS:5182 (P- 23)-2006,RA. 2017 67.71 μg/m³ Particulate Matter (as PM - 2.5) IS:5182 (P- 24)-2001, RA. 2017 32.07 μg/m³ Nitrogen Dioxides (as NO2) IS:5182 (P- 6)-2006 RA.2017 18.76 μg/m³

(Checked By)



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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Certificate

Sample Number: Name & Address of the Project: VEL/REL/AN/01 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Ambient Noise Level Monitoring Vardan EnviroLab Team Ambient Noise Level M Format No.: Party Reference No.: Reporting Date: Receipt Date: Protocol Used:

Report No.:

VEL/N/2005250001-03 5.10 F-01 --30/05/2020 25/05/2020 IS: 9989/CPCB Guidelines

Sample Description: Sample Collected by:

Ambient Noise Level Monitoring Results

			Leq. Ir	n dB (A)
SL.No.	Locations	Locations Monitoring Date		Night Time Noise Level (10:00PM-6:00AM)
1,	Near Weigh Bridge	18-19/05/2020	58.4	43.8
2.	Near Petrol Pump	18-19/05/2020	57.5	43.2
3.	In front of mining Office	18-19/05/2020	60.5	51.9
	mits in dB(A) Leq ercial Area)		65.00	55.00
Industri	al Area		75.00	70.00
Resident	tial Area		55.00	45.00
Silence 7	Zone		50.00	40.00

(Checked By)



Page 1 of 1

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Project: VEL/REL/AN/01 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG)

Ambient Noise Level Monitoring

Vardan EnviroLab Team

Format No.: Party Reference No.: Reporting Date: Receipt Date: Protocol Used:

Report No.:

VEL/N/2007030001-03 5.10 F-01 --07/07/2020 03/07/2020 IS: 9989/CPCB Guidelines

Sample Description: Sample Collected by:

Ambient Noise Level Monitoring Results

			Leq. Ir	n dB (A)
SL.No.	Locations	Monitoring Date	Day Time Noise Level (6:00AM-10:00PM)	Night Time Noise Level (10:00PM-6:00AM)
1.	Near Weigh Bridge	29-30/06/2020	60.3	44.2
2.	Near Petrol Pump	29-30/06/2020	58.9	43.8
3.	In front of mining Office	29-30/06/2020	62.1	52.3
	nits in dB(A) Leq rcial Area)		65.00	55.00
Industria	al Area		75.00	70.00
Resident	tial Area		55.00	45.00
Silence Z	lone		5 0.00	40.00

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Page 1 of 1

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<u>Test Report</u>

Dute Test Parameters	Protocol	Tee	t Result dB(A)
Parameter Required	: As Per Work Order		
Surrounding Activity	Human & Vehicular A	Act.	
Ambient Temperature (°C)	Min. 27°c, Max 46°c		
Time of Monitoring	: 06.00 am to 06.00 ar	n	
Date of Monitoring	: 16/07/2020 To 17/07	/2020	
Meteorological condition during monitoring	: Clear Sky		
Instrument Code	: VEL/SLM/04		
General Information Sampling Location	Near Weigh Bridge		
nstrument Used SLM			
Protocol Used : IS 9989: IS 9876		Calibration Status	Calibrated
Cope of Monitoring Regulatory Requirment		Instrument	Calibrated
Sample Description : Ambient Noise		Sampling Duration Sample Collected by	24 Hrs. VEL Team
		Receipt Date	23/07/2020
(CG)Talabira Mines		Reporting Date	: 28/07/2020
Village: Raikheda, Block-T	ilda Dist. Raipur -493225	Party Reference No	: NIL
lame & Address of the Party : M/s Raipur Energen Limite	ed	Format No	: 7.8 F-01
ample Number : VEL/N/2007230001		Report No.	: VEL/N/2007230001

S.No.	Test Parameters	Protocol	Test Result dB(A)		
			Day Time	Night Time	
1	Leq	IS 9989 - 1981	61.45	45.64	

Category of Zones	Leq in dB(A)		
Category of Zones	Day	Night	
Industrial	75	70	
Commercial	65	55	
Residential	55	45	
Silence Zone	50	40	

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

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End of Report

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<u>Test Report</u>

Sample Number : VEL/N/20	07230002		Report No.	: VEL/N/2007230002
Name & Address of the Party	3 M/s Raipur Energen Limited		Format No	7.8 F-01
	Village: Raikheda, Block-Tilda	Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines		Reporting Date	: 28/07/2020
			Receipt Date	: 23/07/2020
Querral Description			Sampling Duration	: 24 Hrs.
Sample Description	Ambient Noise		Sample Collected by	VEL Team
Scope of Monitoring Protocol Used	 Regulatory Requirment IS 9989: IS 9876 		Instrument Calibration Status	Calibrated
Instrument Used	: SLM		ounsidion otatao	
General Informa	ation			
Sampling Locatio	n	Near Petrol Pump		
Instrument Code		VEL/SLM/05		
Meteorological co	ondition during monitoring	Clear Sky		
Date of Monitorin	g	16/07/2020 To 17/07	/2020	
Time of Monitorin	ig i i i i i i i i i i i i i i i i i i	06.00 am to 06.00 ar	n	
Ambient Tempera	iture (°C)	Min. 27°c, Max 46°c		
Surrounding Activ	vity :	Human & Vehicular A	Act.	
Parameter Requir	ed :	As Per Work Order		
S.No. Test Parameters	Pr	otocol	Tes	t Result dB(A)

S.No.	Test Parameters	Protocol Test Result dB(A)		ult dB(A)
	5		Day Time	Night Time
1	Leq	IS 9989 - 1981	57.61	42.87

Category of Zones	Leq in dB(A)		
Category of Zones	Day	Night	
Industrial	75	70	
Commercial	65	55	
Residential	55	45	
Silence Zone	50	40	

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

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<u>Test Report</u>

Sample Number : VEL/N/2007230003		Report No.	: VEL/N/2007230003
Name & Address of the Party : M/s Raipur Energen Limite Village: Raikheda, Block-T (CG)Talabira Mines		Format No Party Reference No Reporting Date Receipt Date	7.8 F-01 NIL 28/07/2020 23/07/2020
Sample DescriptionAmbient NoiseScope of MonitoringRegulatory RequirmentProtocol UsedIS 9989: IS 9876Instrument UsedSLM		Sampling Duration Sample Collected by Instrument Calibration Status	24 Hrs. VEL Team Calibrated
General Information Sampling Location Instrument Code Meteorological condition during monitoring Date of Monitoring Time of Monitoring Ambient Temperature (°C) Surrounding Activity Parameter Required	In Front of Mining Of VEL/SLM/04 Clear Sky 17/07/2020 To 18/07 06.00 am to 06.00 ar Min. 27°c, Max 46°c Human & Vehicular A As Per Work Order	/2020 n	

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Ļeq	IS 9989 - 1981	61.25	51.67

Category of Zones	Leq in dB(A)		
	Day	Night	
Industrial	75	70	
Commercial	65	55	
Residential	55	45	
Silence Zone	50	40	

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

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(Tested By)

End of Report



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<u>Test Report</u>

Sample Number : VEL/REL/AN	√/01		Report No.	: VEL/N/2008220001/A
Name & Address of the Party	M/s Raipur Energen Limited Village: Raikheda, Block-Tild	a Dist. Raipur -493225	Format No Party Reference No	7.8 F-01 NIL
Sample Description	(CG)Talabira Mines Ambient Noise		Reporting Date Receipt Date Sampling Duration	: 26/08/2020 : 22/08/2020 : 24 hrs.
Protocol Used	Regulatory Requirement IS 9989: IS 9876 SLM		Sample Collected by Instrument Calibration Status	VEL Team Calibrated
General Information Sampling Location Instrument Code Meteorological conc Date of Monitoring Time of Monitoring Ambient Temperatur Surrounding Activity Parameter Required	on dition during monitoring re (°C) /	In Front of Mining Off VEL/SLM/01 Clear Sky 20/08/2020 To 21/08/ 06.00 to 06.00 Hrs. Min. 25 Max 31 Human, Vehicular & M As Per Work Order	2020	
S.No. Test Parameters	P	rotocol	Test	Result dB(A)
			Day Time	Night Time

Category of Zones	Leo	q <mark>in dB(A)</mark>
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

60.86

IS 9989 - 1981

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

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Leq

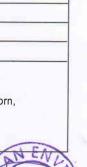
1

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49.67





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<u>Test Report</u>

Sample Number : VEL/REL			Report No.	: VEL/N/2008220002/A
Name & Address of the Party	M/s Raipur Energen Limite	ed	Format No	7.8 F-01
-	Village: Raikheda, Block-T	ilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines		Reporting Date	: 26/08/2020
			Receipt Date	22/08/2020
Sample Description	Ambient Noise		Sampling Duration	: 24 hrs.
Scope of Monitoring	Regulatory Requirement		Sample Collected by	VEL Team
Protocol Used	: IS 9989: IS 9876		Instrument Calibration Status	Calibrated
Instrument Used	: SLM		oundration otatao	
General Informa Sampling Location		Near Petrol Pump		
Instrument Code		: VEL/SLM/02		
Meteorological co	ondition during monitoring	: Clear Sky		
Date of Monitorin	g	: 19/08/2020 To 20/08	3/2020	
Time of Monitorin	Ig	: 06.00 to 06.00 Hrs.		
Ambient Tempera	iture (°C)	Min. 25 Max 31		
Surrounding Acti	vity	: Human, Vehicular &	Mining Activity	
Parameter Requir	red	: As Per Work Order		
S.No. Test Parameters		Protocol	Tes	t Result dB(A)
		100	Day Time	Night Time

Category of Zones	Leo	q in dB(A)	
	Day	Night	
Industrial	75	70	
Commercial	65	55	
Residential	55	45	
Silence Zone	50	40	

57.16

IS 9989 - 1981

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, Iudspeaker and bursting of crackers is banned in these zones.

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End of Report

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1

Leq

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43.04

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<u>Test Report</u>

			Day Time	
S.No. Test Parameters		Protocol	Test	Result dB(A)
Parameter Requir		Human, Vehicular & C As Per Work Order	other Activity	
Surrounding Activ	vity		Other Astivity	
Ambient Tempera	ture (°C)	Min. 25 Max 31		
Time of Monitorin	g	: 06.00 to 06.00 Hrs.		
Date of Monitorin	g	: 19/08/2020 To 20/08/	2020	
Meteorological co	ondition during monitoring	Clear Sky		
Instrument Code		: VEL/SLM/01		
General Informa Sampling Locatio		Near Weigh Bridge		
Instrument Used	SLM		Calibration Status	
Protocol Used	IS 9989: IS 9876		Instrument	Calibrated
Scope of Monitoring	Regulatory Requirement		Sample Collected by	VEL Team
Sample Description	Ambient Noise		Sampling Duration	: 24 hrs.
	· ·		Receipt Date	22/08/2020
	(CG)Talabira Mines	ilua Dist. Kalpul -495225	Party Reference No Reporting Date	: NIL : 26/08/2020
,	Village: Raikheda, Block-T		Format No	: 7.8 F-01
Name & Address of the Party	: M/s Raipur Energen Limite	od.		
Sample Number : VEL/REL	/AN/03		Report No.	VEL/N/2008220003/A

		result db(A)		
		Day Time	Night Time	
1 Leq	IS 9989 - 1981	60.35	45.37	

Category of Zones	Leq	in dB(A)
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, Iudspeaker and bursting of crackers is banned in these zones.

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Test Report

Sample Number : VEL/REL	/AN/01	20	Report No.	: VEL/N/2009250001/A
Name & Address of the Party	: M/s Raipur Energen Limite Village: Raikheda, Block-Ti (CG)Talabira Mines		Format No Party Reference No Reporting Date Receipt Date	: 7.8 F-01 : NIL : 30/09/2020 : 25/09/2020
Sample Description	: Ambient Noise		Sampling Duration Sample Collected by	:24 Hrs. :VEL Team
Scope of Monitoring Protocol Used Instrument Used	:Regulatory Requirment :IS 9989: IS 9876 :SLM		Instrument Calibration Status	: Calibrated
General Inform Sampling Locatio Instrument Code	on	In Front Of Mine Offi	ice	
	ondition during monitoring	Clear Sky		
Date of Monitorin	ng	19/09/2020 To 20/09		
Time of Monitorii Ambient Tempera	•	 06.00 TO 06.00 Hrs. Min. 23° Max 31° 		
Surrounding Acti	vity	: Human, Vehicular &	Mining Activity	
Parameter Requi	red	Ser Work Order		
S.No. Test Parameters		Protocol	Tes	t Result dB(A)

Day	Time Nigl	ht Time
IS 9989 - 1981 59.	.23 4	18.84
	IS 9989 - 1981 59	IS 9989 - 1981 59.23 4

Category of Zones	Leq in dB(A)			
	Day	Night		
Industrial	75	70		
Commercial	65	55		
Residential	55	45		
Silence Zone	50	40		

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

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Page No. 1/1

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised |ISO 9001 | OHSAS 45001)



Test Report

Name & Address of the Party :			Report No.	: VEL/N/2009250002/A
	M/s Raipur Energen Limitı Village: Raikheda, Block-٦ (CG)Talabira Mines	ed Filda Dist. Raipur -493225	Format No Party Reference No Reporting Date Receipt Date	: 7.8 F-01 : NIL : 30/09/2020
Scope of Monitoring : Protocol Used :	Ambient Noise Regulatory Requirment IS 9989: IS 9876 SLM		Sampling Duration Sample Collected by Instrument Calibration Status	: 25/09/2020 : 24 Hrs. : VEL Team : Calibrated
General Information Sampling Location Instrument Code Meteorological condit Date of Monitoring Time of Monitoring Ambient Temperature Surrounding Activity Parameter Required	ion during monitoring	 Near Petrol Pump VEL/SLM/07 Clear Sky 20/09/2020 To 21/09 06.00 TO 06.00 Hrs. Min. 24° Max 35° Human & Vehicular / As Per Work Order 		

S.No.	Test Parameters Protocol		Test Result dB(A)		
			Day Time	Night Time	
1	Leq	IS 9989 - 1981	56.83	42.48	

Category of Zones	Leo	in dB(A)
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

2: Night Time is reckoned between 10.00 PM to 6.00 AM

3. SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, ludspeaker and bursting of crackers is banned in these zones.

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<u>Test Report</u>

Sample Number : VEL/REL/	AN/03		Report No.	: VEL/N/2009250003/A
Name & Address of the Party	: M/s Raipur Energen Limit Village: Raikheda, Block- (CG)Talabira Mines	Dist. Raipur -493225	Format No Party Reference No Reporting Date Receipt Date	: 7.8 F-01 : NIL : 30/09/2020 : 25/09/2020
Sample Description Scope of Monitoring Protocol Used Instrument Used	Ambient Noise Regulatory Requirment IS 9989: IS 9876 SI M		Sampling Duration Sample Collected by Instrument Calibration Status	: 24 Hrs. : VEL Team : Calibrated
General Informa Sampling Location Instrument Code	n ndition during monitoring g ture (°C) rity	 Near Weight Bridge VEL/SLM/07 Clear Sky 21/09/2020 To 22/09/ 06.00 TO 06.00 Hrs. Min. 23° Max 36° Human & Vehicular A As Per Work Order		

S.No.	Test Parameters	Protocol	Test Res	ult dB(A)
			Day Time	Night Time
1	Leq	IS 9989 - 1981	59.10	44.22

Category of Zones	Lea	q in dB(A)
	Day	Night
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence Zone	50	40

1. Day Time is from 6.00 AM to 10.00 PM.

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001**)**

Test Certificate

Sample Number: Name & Address of the Party:

Sample Description: Sample Location: Sample Collected by: Preservation: Parameter Required: Sampling and Analysis Protocol: VEL/REL/W/01 M/s-Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) GROUND WATER SAMPLE R & R Colony (open Well) Vardan EnviroLab Representative Refrigerated As per IS 10500-2012 IS-10500-2012,APHA 23rd Edition 2017 Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: Receipt Date: Sampling Date: Sampling Quantity: Sampling Type: VEL/W/2005250001 5.10 F-01 NIL 30/05/2020 25-30/05/2020 25/05/2020 22/05/2020 2.0 Ltr Grab

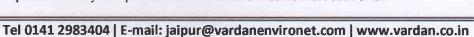
	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012		
S. No.					Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source	
l,	pH (at 25 °C)	IS 3025 (P-11) Reaffirmed 2017, 1983	7.36		6.5 to 8.5	No Relaxation	
2.	Çolour	IS 3025 (P-4) Reaffirmed 2017, 1983	*BDL (**DL 5 Hazen)	Hazen	5	15	
3.	Turbidity	IS 3025 (P-10) Reaffirmed 2017, 1984	*BDL (**DL 0. 1 NTU)	NTU	1	5	
4.	Odour	IS 3025 (P-5) 2018	Agreeable		Agreeable	Agreeable	
5.	Taste	IS 3025 (P-8) Reaffirmed 2017, 1984	Agréeable		Agreeable	Agreeable	
6.	Total Hardness as CaCO3	IS 3025 (P-21) Reaffirmed 2019, 2009	145.6.	mg/l	200	600	
7.	Calcium as Ca	IS 3025(P-40) Reaffirmed 2019, 1991	56.3	mg/l	75	200	
8.	Alkalinity as CaCO3	IS 3025 (P-23) Reaffirmed 2019, 1986	104.0	mg/l	200	600	
9.	Chloride as Cl	IS 3025 (P-32) Reaffirmed 2019, 1988	32.5	mg/l	250	1000	
10	Residual free Chlorine	IS 3025(P-26) Reaffirmed 2019, 1986	*BDL(**DL 0.2mg/l)	mg/l	0.2	1	
11.	Cyanide as CN	APHA (23 rd Edition)2017, 4500 CN ⁻ D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation	
12.	Magnesium as Mg	IS 3025 (P-46) Reaffirmed 2019, 1994	1.25	mg/l	30	100	
13,	Total Dissolved Solids	IS 3025 (P-16) Reaffirmed 2017, 1984	226.0	mg/l	500	2000	
14.	Sulphate as SO ₄	IS 3025(P-24) Reaffirmed 2009, 1986	24.3	mg/l	200	400	
15.	Fluoride as F	APHA (23 rd Edition)2017, 4500-F ⁻ D	0.21	mg/l	1.0	1.5	
16.	Nitrate as NO ₃	IS 3025 (P-34) Reaffirmed 2019, 1988	2.3	mg/l	45	No Relaxation	
17.	Iron as Fe	IS 3025 (P-53) Reaffirmed 2019, 2003	*BDL(**DL 0.1 mg/l)	mg/l	0.3	No relaxation	
18.	Aluminium as Al	IS 3025 (P-55) Reaffirmed 2019, 2003	*BDL(**DL 0.03 mg/l)	mg/l	0.03	0.2	
19.	Baron	APHA (23 rd Edition)2017, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1	
20.	Total Chromium as Cr	APHA (23rd Edition)2017, 3113 B	*BDL(**DL 0.03 mg/l)	mg/l	0.05 N E	No Relaxation	

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Test Certificate

Sample No.: VEL/REL/W/01		Report No:		VEL	/W/2005250001		
			Constant Constant	Markey Start	Limits of IS:10500-2012		
S. No	Parameter	Test-Method	Result	Unit	Requirement (Acceptable) Limit	Permissible limit in the Absence of Alternate Source	
21.	Phenolic Compounds	APHA (23 rd Edition)2017, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002	
22.	Anionic Detergents as MBAS	APHA (23 rd Edition)2017, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0	
23.	Zinc as Zn	APHA (23 rd Edition)2017, 3113 B	*BDL(**DL 0.03 mg/l	mg/l	5	15	
24,	Copper as Cu	APHA (23 rd Edition)2017, 3111 B	* BDL(**DL 0.03 mg/l)	mg/l	0.05	1.5	
25.	Manganese as Mn	APHA (23 rd Edition)2017, 3111 B	*BDL(**DL 0.06 mmg/l)	mg/l	0.1	0.3	
26.	Cadmium as Cd	APHA (23 rd Edition)2017, 3113 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation	
27.	Lead as Pb	APHA (23 rd Edition)2017, 3113 B	*BDL(**DL 0.13mg	mg/l	0.01	No Relaxation	
28.	Selenium as Se	APHA (23 rd Edition)2017, 3114 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation	
29.	Arsenic as As	APHA (23 rd Edition)2017, 3114 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05	
30,	Mercury as Hg	APHA (23 rd Edition)2017, 3114 C	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation	
31.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml		etectable in any sample	
32.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent 🖕	MPN/100m1		etectable in any sample	

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

(Checked By)



Note: a) The results listed refer only to the tested samples & applicable parameters

b) Total liabilities of our lab will be restricted to the invoice amount only

c) The Sample will be destroyed after retention time unless otherwise specified

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

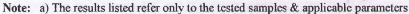
Test Report

Sample Number: Name & Address of the Party:

Sample Description: Sample Location: Sample Collected by: Preservation: Parameter Required: Sampling and Analysis Protocol: VEL/REL/W/01 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) GROUND WATER SAMPLE R & R Colony (open Well) Vardan EnviroLab Representative Refrigerated As per IS 10500-2012 IS-10500-2012,APHA 23rd Edition 2017

Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: Receipt Date: Sampling Date: Sampling Quantity: Sampling Type: VEL/W/2007030001 5.10 F-01 NIL 07/07/2020 03-07/07/2020 03/07/2020 30/06/2020 2.0 Ltr Grab

	Parameter	Parameter Test-Method		Unit	Limits of IS:10500 -2012		
S. No.			Result		Requirement (Acceptable Limit)	Permissible limit in the Absence of Alternate Source	
1.	pH (at 25 °C)	IS 3025 (P-11) Reaffirmed 2017, 1983	7.29		6.5 to 8.5	No Relaxation	
2.	Colour	IS 3025 (P-4) Reaffirmed 2017, 1983	*BDL (**DL 5 Hazen)	Hazen	5	15	
3.	Turbidity	IS 3025 (P-10) Reaffirmed 2017, 1984	*BDL (**DL 0. 1 NTU)	NTU	1	5	
4.	Odour	IS 3025 (P-5) 2018	Agreeable		Agreeable	Agreeable	
5.	Taste	IS 3025 (P-8) Reaffirmed 2017, 1984	Agréeable		Agreeable	Agreeable	
6.	Total Hardness as CaCO ₃	IS 3025 (P-21) Reaffirmed 2019, 2009	156.6	mg/l	200	600	
7.	Calcium as Ca	IS 3025(P-40) Reaffirmed 2019, 1991	62.7	mg/1	75	200	
8.	Alkalinity as CaCO ₃	IS 3025 (P-23) Reaffirmed 2019, 1986	112.3	mg/l	200	600	
9.	Chloride as Cl	IS 3025 (P-32) Reaffirmed 2019, 1988	38.58	mg/l	250	1000	
10.	Residual free Chlorine	IS 3025(P-26) Reaffirmed 2019, 1986	*BDL(**DL 0.2mg/l)	mg/l	0.2	1	
11.	Cyanide as CN	APHA (23 rd Edition)2017, 4500 CN ⁻ D	*BDL(**DL 0.02 mg/l)	mg/l	0.05	No Relaxation	
12.	Magnesium as Mg	IS 3025 (P-46) Reaffirmed 2019, 1994	*BDL(**DL 2.0 mg/l)	mg/l	30	100	
13.	Total Dissolved Solids	IS 3025 (P-16) Reaffirmed 2017, 1984	220.0	mg/l	500	2000	
14.	Sulphate as SO ₄	IS 3025(P-24) Reaffirmed 2009, 1986	26.5	mg/l	200	400	
15.	Fluoride as F	APHA (23 rd Edition)2017, 4500-F ⁻ D	0.23	mg/l	1.0	1.5	
16.	Nitrate as NO ₃	IS 3025 (P-34) Reaffirmed 2019, 1988	1.85	mg/l	45	No Relaxation	
17.	Iron as Fe	IS 3025 (P-53) Reaffirmed 2019, 2003	*BDL(**DL 0.1 mg/l)	mg/l	0.3	No relaxation	
18.	Aluminium as Al	IS 3025 (P-55) Reaffirmed 2019, 2003	*BDL(**DL 0.03 mg/l)	mg/l	0.03	• 0.2	
19.	Boron	APHA (23 rd Edition)2017, 4500B C	*BDL(**DL 0.1 mg/l)	mg/l	0.5	1	
20.	Total Chromium as Cr	APHA (23 rd Edition)2017, 3113 B	*BDL(**DL 0.03 mg/l)	mg/l	O.D.SN E	No Relaxation	



(Checked B

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised [ISO 9001] OHSAS 45001)

Test Report

Sample	No.:	Report No:		VEL/W/2007030001		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS Requirement (Acceptable) Limit	:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA (23rd Edition)2017, 5530 C	*BDL(**DL 0.001 mg/l)	mg/l	0.001	0.002
22.	Anionic Detergents as MBAS	APHA (23 rd Edition)2017, 5540 C	*BDL(**DL 0.02 mg/l)	mg/l	0.2	1.0
23.	Zinc as Zn	APHA (23 rd Edition)2017, 3113 B	*BDL(**DL 0.03 mg/l	mg/l	5	15
24.	Copper as Cu	APHA (23 rd Edition)2017, 3111 B	* BDL(**DL 0.03 mg/l)	mg/l	0.05	1.5
25.	Manganese as Mn	APHA (23 rd Edition)2017, 3111 B	*BDL(**DL 0.06 mmg/l)	mg/l	0.1	0.3
26.	Cadmium as Cd	APHA (23 rd Edition)2017, 3113 B	*BDL(**DL 0.06 mg/l)	mg/l	0.003	No Relaxation
27.	Lead as Pb	APHA (23 rd Edition)2017, 3113 B	*BDL(**DL 0.13mg/b	mg/l	0.01	No Relaxation
28.	Selenium as Se	APHA (23 rd Edition)2017, 3114 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	No Relaxation
29.	Arsenic as As	APHA (23 rd Edition)2017, 3114 B	*BDL(**DL 0.01 mg/l)	mg/l	0.01	0.05
30.	Mercury as Hg	APHA (23 rd Edition)2017, 3114 C	*BDL (**DL 0.001 mg/l)	mg/l	0.001	No Relaxation
31.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall not be de 100 ml	etectable in any sample
32.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent 🦕	MPN/100ml	Shall not be de 100 ml	etectable in any sample

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

(Checked By)

Note: a) The results listed refer only to the tested samples & applicable parameters

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- c) The Sample will be destroyed after retention time unless otherwise specified
- d) This report is not to be reproduced wholly or in part and cannot be used as evidence in the court of law



Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised (ISO 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/W/20	007230001	Report No.	: VEL/W/2007230001
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 31/07/2020
	24 A.	Period of Analysis	: 23/07/2020-31/07/2020
		Receipt Date	: 23/07/2020
Sample Description	: GROUND WATER	Sampling Date	: 18/07/2020
Location	R&R Colony (Open Well)	Sampling Quantity	: 4.0 Ltr
Sample Collected by	: VEL Team	Sampling Type	Grab
Preservation	: 25°c		0100
Sampling and Analysis	IS 10500 -2012		

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
	•				Acceptable Limits (as	Permissible Limits (as per IS
1	рН	IS 30 <mark>25 (P-11): 1983 Reaff. 2017</mark>	7.39	NA	6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	234.00	mg/l	500	2000
3	Total Alkalinity (as CaCO3)	IS: 302 <mark>5 (Part 23): 1986, Rea</mark> ff. 2019	97.00	mg/l	200	600
4	Total Hardness (as CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	152.00	mg/l	200	600
5	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019	2.20	mg/l	45	No Relaxation
6	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	39.14	mg/l	250	1000
7	Sulphate (as SO4)	IS: 302 <mark>5 (Part 24): 1</mark> 986, Reaff. 2019 Turbidity Method	15.13	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	57.72	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	*BDL(**DL- 2 mg/l)	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.23	mg/l	1.0	1.5
11	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	*BDL(**DL-0.1 mg/l)	mg/l	0.3	No Relaxation
12	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	0.05
13	Mercury (as Hg)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.0005 mg/l)	mg/l	0.001	No Relaxation
14	Lead (as Pb)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.005 mg/l)	mg/l	0.01	No Relaxation
15	Cadmium (as Cd)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.002 mg/l)	mg/l	0.003	No Relaxation
16	Chromium (as Cr)	APHA 23rd Edition Year 2017 Method No. 3113 B	*BDL(**DL-0.02 mg/l)	mg/l	0.05	No Relaxation
17	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02mg/ I)	mg/l	0.05	1.5
18	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20 mg/1)	mg/l	5.0 ·	15 EAU
19	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005	mg/l	0.96	No Relaxation

Note: a) The results listed refer only to the tested samples & applicable parameters

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

<u>Test Report</u>

	Parameters	Protocols	Results	11.11	10.44	0000 0040
5.NO.	Farameters		Results	Units	IS:10500-2012	
					Acceptable Limits (as	Permissible Limits (as per IS
19		2	mg/l)		1.51	
20	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA
21	E-Coli	IS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml
22	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometeric Method)	*BDL(**DL-1.0 NTU)	NTU	1	5
23	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03mg/ I)	mg/l	0.03	0.2
24	Menganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05 mg/l)	mg/l	0.1	0.3
25	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
26	Cyanide (as CN)	APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05mg/ I)	mg/I	0.05	No Relaxation
27	Golour	IS 30 <mark>25: 1983 (P-4</mark>) Reaff. 2017	*BDL(**DL-1 Hazen)	Hazen	5	15
28	Odour	IS 3025 (P-5):2018	Agreeable	Qualitat ive	Agreeable	Agreeable
29	Taste	IS 3025(P-8):1984 Reaff. 2017	Agreeable	Qualitat ive	Agreeable	Agreeable
30	Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002
31	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l	0.2	1.0
32	Free Residual Chlorine	IS: 3025 (Part 26): 1986 Reaff. 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1

End of Report

*BDL-Below Detection Limit,**DL-Detection Limit.

(Checked By)

2 4

Note: a) The results listed refer only to the tested samples & applicable parameters

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Page No. 2/2

Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **IISO** 9001 | OHSAS 45001)

<u>Test Report</u>

Sample Number : VEL/W/01		Report No.	: VEL/W/2008220003/A	
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	7.8 F-01	
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL	
	(CG)Talabira Mines	Reporting Date	: 28/08/2020	
		Period of Analysis	: 22/08/2020-28/08/2020	
		Receipt Date	: 22/08/2020	
Sample Description	GROUND WATER	Sampling Date	: 21/08/2020	
Location	: R&R Colony (Oper Well)	Sampling Quantity	2 Ltr.	
Sample Collected by	:VEL Team	Sampling Type	Grab	
Preservation	: 25°c			
Sampling and Analysis	: IS 10500 -2012			

Sampling and Analysis Protocol

S.No.	Parameters	Protocols	Results	Units	IS:1	0500-2012
					Acceptable Limits (as	Permissible Limits (as per IS
1	рН	IS 3025 (P-11): 1983 Reaff. 2017	7.38		6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	241.00	mg/l	500	2000
3	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	121.52	mg/l	200	600
4	Total Hardness (as CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	170.28	mg/l	200	600
5 .	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019	1.58	mg/l	45	No Relaxation
6,	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	44.68	mg/l	250	1000
7	Sulphate (as SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	22.37	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	65.07	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	*BDL(**DL- 2 mg/l)	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.24	mg/l	1.0	1.5
11	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	*BDL(**DL-0.1 mg/l)	mg/l	0.3	No Relaxation
12	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	0.05
13	Mercury (as Hg)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005 mg/l)	mg/l	0.001	No Relaxation
14	Lead (as Pb)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.05 mg/l)	mg/l	0.01	No Relaxation
15	Cadmium (as Cd)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.002 mg/l)	mg/l	0.003	No Relaxation
16	Chromium (as Cr)	APHA 23rd Edition Year 2017 Method No. 3113 B	*BDL(**DL-0.02 mg/l)	mg/l	0.05	No Relaxation
17	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02 mg/l)	mg/l	0.05	1.5
18	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20 mg/l)	mg/l	5.0	15
19	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.05	mg/l	0.01	No Relaxation

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **IISO** 9001 **|** OHSAS 45001**)**

Test Report

Vardan EnviroLab

Sample	ample Number : VEL/W/01		Report No.		: VEL/W/2008220003/A	
S.No.	Parameters	Protocols	Results	Units	IS:1	0500-2012
		1. ²⁰¹			Acceptable Limits (as	Permissible Limits (as per IS:
19			mg/l)			
20	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometeric Method)	*BDL(**DL 1.0 NTU)	NTU	_1	5
21	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03 mg/l)	mg/l	0.03	0.2
22	Menganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05 mg/l)	mg/l	0.1	0.3
23	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
24	Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002

End of Report

*BDL-Below Detection Limit, **DL-Detection Limit.

(Checked By)

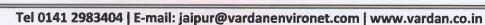




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Page No. 2/2



Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/W/01		Report No.	: VEL/W/2008220003/B
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 28/08/2020
	32. 1	Period of Analysis	: 22/08/2020-28/08/2020
		Receipt Date	: 22/08/2020
Sample Description	GROUND WATER	Sampling Date	: 21/08/2020
Location	: R&R Colony (Oper Well)	Sampling Quantity	2 Ltr.
Sample Collected by Preservation	: VEL Team : 25°c	Sampling Type	Grab
Sampling and Analysis Protocol	: IS 10500 -2012		
S.No. Parameters	Protocols	Results Units	IS:10500-2012

raiameters	Protocols	Results	Units	15:10	0500-2012
·				Acceptable Limits (as	Permissible Limits (as per IS:
Total Coliform (By MPN Method)	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA
E-Coli	IS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml
Çyanide (as CN)	APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05 mg/l)	mg/l	0.05	No Relaxation
Colour	IS 3025: 1983 (P-4) Reaff. 2017	*BDL(**DL 1.0 Hazen)	Hazen Unit	5	15
Odour	IS 30 <mark>25</mark> (P-5):2018	Agreeable	Qualitat ive	Agreeable	Agreeable
Taste	IS 3025(P-8):1984 Reaff. 2017	Agreeable	Qualitat ive	Agreeable	Agreeable
Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l	0.2	1.0
Free Residual Chlorine	IS: 3025 (Part 26): 1986 Reaff. 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1
	Total Coliform (By MPN Method) E-Coli Çyanide (as CN) Colour Odour Taste Anionic Surface Active Agent	Image: Constant of Constan	Total Coliform (By MPN Method)IS:1622AbsentTotal Coliform (By MPN Method)IS:1622AbsentE-ColiIS:1622AbsentÇyanide (as CN)APHA 23rd Edition 2017, 4500CN D mg/l)*BDL(**DL-0.05 mg/l)ColourIS 3025: 1983 (P-4) Reaff. 2017*BDL(**DL 1.0 Hazen)OdourIS 3025 (P-5):2018AgreeableTasteIS 3025 (P-5):2018AgreeableAnionic Surface Active AgentAPHA 23rd Edition 2017, 5540C*BDL(**DL-0.05 mg/l)Free Residual ChlorineIS: 3025 (Part 26): 1986 Reaff. 2019*BDL(**DL-0.2	AbsentMPN/10Total Coliform (By MPN Method)IS:1622AbsentMPN/10 0 mlE-ColiIS:1622Absentper 100 mlÇyanide (as CN)APHA 23rd Edition 2017, 4500CN D*BDL(**DL-0.05 mg/l)mg/lColourIS 3025: 1983 (P-4) Reaff. 2017*BDL(**DL 1.0 Hazen)Hazen UnitOdourIS 3025 (P-5):2018AgreeableQualitat iveTasteIS 3025(P-8):1984 Reaff. 2017AgreeableQualitat iveAnionic Surface Active AgentAPHA 23rd Edition 2017, 5540C*BDL(**DL-0.05 mg/l)mg/lFree Residual ChlorineIS: 3025 (Part 26): 1986 Reaff. 2019*BDL(**DL-0.2mg/l	Acceptable Limits (asTotal Coliform (By MPN Method)IS:1622AbsentMPN/10 0 mlShall not be Detectable in any 100 ml sampleE-ColiIS:1622Absentper 100 mlAbsent/100 mlE-ColiIS:1622Absentper 100 mlAbsent/100 mlQualide (as CN)APHA 23rd Edition 2017, 4500CN D IS 3025: 1983 (P-4) Reaff. 2017*BDL(**DL 1.0 Hazen)Hazen UnitColourIS 3025: 1983 (P-4) Reaff. 2017*BDL(**DL 1.0 Hazen)Hazen ve5OdourIS 3025 (P-5):2018Agreeable veQualitat veAgreeable veAgreeable veTasteIS 3025(P-8):1984 Reaff. 2017*BDL(**DL -0.05 mg/l)mg/l ol.20.2Free Residual ChlorineIS: 3025 (Part 26): 1986 Reaff. 2019*BDL(**DL-0.2 mg/l)mg/l ol.2

*BDL-Below Detection Limit,**DL-Detection Limit.

End of Report

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Page No. 1/1

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised [ISO 9001 | OHSAS 45001)

: Suitable Preservation

: IS 10500 -2012

Test Report

Sample Number : VEL/RELN	//GW/01	Report No.	: VEL/W/2009250001/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
× .	(CG)Talabira Mines	Reporting Date	: 30/09/2020
		Period of Analysis	: 25/09/2020-30/09/2020
		Receipt Date	: 25/09/2020
Sample Description	: GROUND WATER	Sampling Date	: 22/09/2020
Location	: R & R Colony (Open Well)	Sampling Quantity	: 2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	: Grab

Preservation Sampling and Analysis Protocol 1-

S.No.	Parameters	Protocols	Results	Units	IS:1	0500-2012
		*			Acceptable Limits (as	Permissible Limits (as per IS)
1	рН	IS 3025 (P-11): 1983 Reaff. 2017	7.45	NA	6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	218.00	mg/l	500	2000
3	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	113.12	mg/l	200	600
4	Total Hardness (as CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	138.60	mg/l	200	600
5	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019	2.46	mg/l	45	No Relaxation
6	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	35.22	mg/l	250	1000
7	Sulphate (as SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	11.49	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	52.38	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	*BDL(**DL- 2 mg/l)	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.21	mg/l	1.0	1.5
11	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	*BDL(**DL-0.1 mg/l)	mg/l	0.3	No Relaxation
12	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005 mg/l)	mg/l	0.01	0.05
13	Mercury (as Hg)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.0005 mg/l)	mg/l	0.001	No Relaxation
14	Lead (as Pb)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.005 mg/l)	mg/l	0.01	No Relaxation
15	Cadmium (as Cd)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.002 mg/l)	mg/l	0.003	No Relaxation
16	Chromium (as Cr)	APHA 23rd Edition Year 2017 Method No. 3113 B	*BDL(**DL-0.02 mg/l)	mg/l	0.05	No Relaxation
17	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02mg/ I)	mg/l	0.05	1.5
18	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20 mg/l)	mg/l	5.0	15
19	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005	mg/l	0.01	No Relaxation

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Test Report

ample	Number: VEL/RELM/GW/	Report No. : VEL/W/200925000				
S.No.	Parameters	Protocols	Results	Units	IS:1	0500-2012
					Acceptable Limits (as	Permissible Limits (as per IS
19			mg/l)			
20	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometeric Method)	*BDL(**DL-1.0 NTU)	NTU	1	5
21	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03 mg/l)	mg/l	0.03	0.2
22	Menganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05 mg/l)	mg/l	0.1	0.3
23	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2 mg/l)	mg/l	0.5	1.0
24	Phenolic Compound	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.1 mg/l)	mg/l	0.001	0.002
25	Free Residual Chlorine	IS: 3025 (Part 26): 1986 Reaff. 2019	*BDL(**DL-0.2 mg/l)	mg/l	0.2	1

*BDL-Below Detection Limit, **DL-Detection Limit.

End of Report

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Test Report

Sample Number : VEL/RELM	M/GW/01	Report No.	: VEL/W/2009250001/B
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	: 7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 30/09/2020
		Period of Analysis	: 25/09/2020-30/09/2020
3		Receipt Date	: 25/09/2020
Sample Description	: GROUND WATER	Sampling Date	: 22/09/2020
Location	:R & R Colony (Open Well)	Sampling Quantity	÷ 2 Ltr.
Sample Collected by	: VEL Team	Sampling Type	Grab
Preservation	: Suitable Preservation		• 0140
Sampling and Analysis Protocol	: IS 10500 -2012		

S.No.	Parameters	Protocols	Results	Units	IS:10	0500-2012
					Acceptable Limits (as	Permissible Limits (as per IS:
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/10 0 ml	Shall not be Detectable in any 100 ml sample	NA
2	E-Coli	IS:1622	Absent	per 100 ml	Absent/100 ml	Absent/100 ml
3	Cyanide (as CN)	APHA 23rd Edition 2017, 4500CN D	*BDL(**DL-0.05 mg/l)	mg/l	0.05	No Relaxation
4	Colour	IS 3025: 1983 (P-4) Reaff. 2017	*BDL(**DL-1 Hazen)	Hazen	5	15
5	Odour	IS 3025 (P-5):2018	Agreeable	Qualitat ive	Agreeable	Agreeable
6	Taste	IS 3025(P-8):1984 Reaff. 2017	Agreeable	Qualitat ive	Agreeable	Agreeable
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05 mg/l)	mg/l	0.2	1.0

*BDL-Below Detection Limit, **DL-Detection Limit.

End of Report

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Certificate

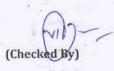
Sample Number: Name & Address of the Party:

Sample Description:SOIL SAMPLESample Location:Khinda VillageSample Collected by:Vardan EnviroLab TeamPacking Status:Temp SealedParameter Required:As per Work OrderSampling and Analysis Protocol:IS 2720, USEPA 3050B & USDA

VEL/REL/S/01 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dist. Raipur - 493225 (CG) SOIL SAMPLE Khinda Village Vardan EnviroLab Team Temp Sealed As per Work Order

Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: Receipt Date: Sampling Date: Sampling Quantity: Sampling Type: VEL/ S/2005250001 5.10 F-01 NIL 30/05/2020 25-30/05/2020 25/05/2020 22/05/2020 2.0 Kg Composite

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P- 26): 1987, RA: 2016	6.89	
2.	Conductivity	IS:14767-2000 Reaffirmed 2016	0.108	mS/cm
3.	Color	USDA Method, 1968	Grey	
4.	Organic Matter	IS:2720 (P-22, RA2009)	1.45	%
5	Zinc (as Zn)	USEPA 3050B	68.0	mg/kg
6. •	Manganese (as Mn)	USEPA 3050B	226.4	mg/kg
7.	Lead (as Pb)	USEPA 3050B	21.3	mg/kg
8.	Cadmium (as Cd)	USEPA 3050B	3.56	mg/kg
9.	Chromium (as Cr)	USEPA 3050B	-, 5.72	mg/kg
10.	Copper (as Cu)	USEPA 3050B	14.35	mg/kg





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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number: Name & Address of the Party: Sample Description: Sample Location: Sample Collected by: Packing Status: Parameter Required: Sampling and Analysis Protocol:		VEL/REGL/S/01 M/s Raipur Energen Limited, Village: Raikheda, Block-Tilda, Dis Raipur - 493225 (CG) SOIL SAMPLE Khinda Village Vardan EnviroLab Team Temp Sealed As per Work Order : IS 2720, USEPA 3050B & USDA	Report No.: Format No.: Party Reference No.: Reporting Date: Period of Analysis: Receipt Date: Sampling Date: Sampling Quantity: Sampling Type:	VEL/ S/2007030 5.10 F-01 NIL 07/07/2020 03-07/07/2020 03/07/2020 30/06/2020 2.0 Kg Composite	001
S. No.	Parameter	Test-Method		Result	U
1.	pH (at 25 °C)	IS: 2720 (P- 26): 1987,	RA: 2016	6.75	
2.	Conductivity	IS:14767-2000 Reaffirm	med 2016	0.124	mS
3.	Soil Texture	IS : 2720 (P-4, RA1	.995)	Silty Clay	

1.	pH (at 25 °C)	IS : 2720 (P- 26): 1987, RA: 2016	6.75	
2.	Conductivity	IS:14767-2000 Reaffirmed 2016	0.124	mS/cm
3.	Soil Texture	IS : 2720 (P-4, RA1995)	Silty Clay	
4.	Color	USDA Method, 1968	Grey	
5.	Water holding capacity	USDA Method, 1968	43.6	%
6	Bulk density	USDA Method, 1968	1.38	gm/cc
7.	Chloride as Cl	USDA Method, 1968	49.5	mg/kg
8.	Calcium as Ca	USDA Method, 1968	164.6	mg/kg
9.	Sodium as Na	USDA Method, 1968	124.3	mg/kg
10.	Potassium as K	USDA Method, 1968	96.4	kg/hec.
11.	Organic Matter	IS:2 <mark>720</mark> (P-22, RA2009)	1.53	%
12.	Magnesium as Mg	USDA Method, 1968	148.6	mg/kg
13.	Available Nitrogen as N	IS:14684, RA2006	87.4	kg./hec
14.	Available Phosphorus	USDA Method, 1968	34.2	kg./hec

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Unit

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **[ISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/S0/20	07230001	Report No.	: VEL/S0/2007230001
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 27/07/2020
		Period of Analysis	: 23/07/2020-27/07/2020
Sample Description	: SOIL	Receipt Date	: 23/07/2020
Location	: Village-Khinda	Sampling Date	18/07/2020
Sample Collected by	: VEL Team	Sampling Quantity	2.0 Kg.
Parameter Required	: As Per Work Order	Sampling Type	: Composite
Sampling and Analysis Protocol	: IS 2720, APHA & USDA	Packing Status	: Temp. Packing

S.No.	rameters Test Method	Results	Units	
2	•			
1	рН (at 25°С)	IS : 2720 (P- 26): 1987,	7.2	
2	Electrical Conductivity	IS 14767: 2000 RA.:	0.14	mS/cm
3	colour	USDA:1954-Reaffirmed,2010	Grey	-
4	Water holding capacity	USDA:1954-Reaffirmed,2010	42.3	%
5	Bulk density	USDA:1954 (Page-96) RA: 2014	1.30	gm/cc
6	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	58,54	mg/kg
7	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	147.5	mg/kg
8	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	175.23	mg/kg
9	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	105.05	mg/kg
10	Organic Matter	IS 2720 (P-22) 1972 RA:	1.10	%
11	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	129.86	mg/kg
12	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	179.1	kg. /hec
13	Phosphorus	Lab SOP no. VEL/STP/01: 2018	31.2	kg. /hec
14	Soil Texture	IS:2720 (P-4) RA:2006	Silty Clay	

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/S/01		Report No.	EL/S0/2008220001/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 28/08/2020
	· · · · · · · · · · · · · · · · · · ·	Period of Analysis	: 22/08/2020-28/08/2020
Sample Description	: SOIL	Receipt Date	: 22/08/2020
Location	: Village- Khinda	Sampling Date	: 21/08/2020
Sample Collected by	: VEL Team	Sampling Quantity	‡ 2 Kg.
Parameter Required	: As Per Work Order	Sampling Type	: Composite
Sampling and Analysis Protocol	: IS 2720, APHA & USDA	Packing Status	Temp. Sealed

Parameters	Test Method		Units
			less a
pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	7.44	
Electrical Conductivity	IS 14767: 2000 RA:2016	0.148	mS/cm
Water holding capacity	USDA:1954-Reaffirmed,2010	41.8	%
Bulk density	USDA:1954 (Page-96) RA: 2014	1.36	gm/cc
Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	57.13	mg/kg
Ċalcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	149.2	mg/kg
Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	178.24	mg/kg
Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	114.6	mg/kg
Organic Matter	IS 2720 (P-22) 1972 RA:2015	1.2	%
Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	108.74	mg/kg
Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	158.12	kg. /hec.
Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	46.8	kg. /hec.
	pH (at 25°C) Electrical Conductivity Water holding capacity Bulk density Chloride Calcium (as Ca) Sodium (as Na) Potassium (as K) Organic Matter Magnesium (as Mg) Available Nitrogen (as N)	pH (at 25°C)IS : 2720 (P- 26): 1987,RA: 2016Electrical ConductivityIS 14767: 2000 RA:2016Water holding capacityUSDA:1954-Reaffirmed,2010Bulk densityUSDA:1954 (Page-96) RA: 2014ChlorideUSDA:1954 Method 13 (Page-98) RA: 2010Čalcium (as Ca)Lab SOP no. VEL/STP/01: 2018Sodium (as Na)USDA:1954 Method 10A (Page-96) RA: 2010Potassium (as K)Lab SOP no. VEL/STP/01: 2018Organic MatterIS 2720 (P-22) 1972 RA:2015Magnesium (as Mg)Lab SOP no. VEL/STP/01: 2018Available Nitrogen (as N)IS : 14684,1999 RA: 2015	pH (at 25°C) IS : 2720 (P- 26): 1987,RA: 2016 7.44 Electrical Conductivity IS 14767: 2000 RA:2016 0.148 Water holding capacity USDA:1954-Reaffirmed,2010 41.8 Bulk density USDA:1954 (Page-96) RA: 2014 1.36 Chloride USDA:1954 Method 13 (Page-98) RA: 2010 57.13 Calcium (as Ca) Lab SOP no. VEL/STP/01: 2018 149.2 Sodium (as Na) USDA:1954 Method 10A (Page-96) RA: 2010 178.24 Potassium (as K) Lab SOP no. VEL/STP/01: 2018 114.6 Organic Matter IS 2720 (P-22) 1972 RA:2015 1.2 Magnesium (as Mg) Lab SOP no. VEL/STP/01: 2018 108.74 Available Nitrogen (as N) IS : 14684,1999 RA: 2015 158.12

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number : VEL/S/01		Report No.	: VEL/S0/2008220001/B
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 28/08/2020
		Period of Analysis	: 22/08/2020-28/08/2020
Sample Description	: SOIL	Receipt Date	: 22/08/2020
Location	: Village- Khinda	Sampling Date	: 21/08/2020
Sample Collected by	: VEL Team	Sampling Quantity	2 Kg.
Parameter Required	: As Per Work Order	Sampling Type	: Composite
Sampling and Analysis Protocol	: IS 2720, APHA & USDA	Packing Status	: Temp. Sealed

No. Parameters	Test Method	Results	Units
1 Colour	USDA:1954-Reaffirmed,2010	Grey	-
2 Soil Texture	IS:2720 (P-4) RA:2006	Silty Clay	

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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Certificate

Sample Number:	VEL/REL/WW/01	Report No.:	VEL/WW/2005250001
Name & Address of the Party:	M/s Raipur Energen Limited,	Format No.:	5.10 F-01
	Village: Raikheda, Block-Tilda, Dist. Raipur	Party Reference No.:	NIL
	- 493225 (CG)	Reporting Date:	30/05/2020
Sample Description:	WASTE WATER SAMPLE	Period of Analysis:	25/05/2020 to 30/05/2020
Sample Location:	STP Outlet	Receipt Date:	25/05/2020
Sample Collected by:	Vardan EnviroLab Representative	Sampling Date:	22/05/2020
Preservation:	Refrigerated	Sampling Quantity:	2.0 Ltr
Parameter Required:	As Per Work order		
Sampling and Analysis Protocol:	APHA 23rd Edition 2017		

				*Standards			ds
S. No.	Parameter	Test-Method	Result	Unit	In-Land Surface Water	Public Sewers	Land for Irrigation
1.	pH (at 25 °C)	IS 3025 (P-11): 1983, RA: 2017	7.39		5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
2.	BOD (3 Days at 27 °C)	IS: 3025 (P-44): 1993,RA: 2019	21.5	mg/l	30	350	100
3	COD	IS : 3025 (P- 58) : 2006,RA: 2017	78.6	mg/l	25 0		
4. •	Total Suspended Solids	IS: 3 <mark>025 (P-17): 19</mark> 84, RA: 2017	16.5	mg/l	100	600	200
5,	Oil & Grease	IS 30 <mark>25(P- 39):1</mark> 991 RA : 2019	0.74	mg/l	10	20	10

Note: - *BDL-Below Detection Limit, **DL- Detection Limit





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Laboratory: Plot No. 24, 25, Narayan Vihar B Block, Jaipur (Raj.) 302035 Corp. Off.: Plot No. 82A, Sector- 5, IMT Manesar, Gurugram- 122051 MoEF & CC Recognised **|ISO** 9001 | OHSAS 45001)

Test Report

Sample Number:	VEL/REL/WW/01	Report No.:	VEL/WW/2007030001
Name & Address of the Party:	M/s Raipur Energen Limited,	Format No.:	5.10 F-01
	Village: Raikheda, Block-Tilda, Dist. Raipur	Party Reference No.:	NIL
	- 493225 (CG)	Reporting Date:	07/07/2020
Sample Description:	WASTE WATER SAMPLE	Period of Analysis:	03/07/2020 to 07/07/2020
Sample Location:	STP Outlet	Receipt Date:	03/07/2020
Sample Collected by: Preservation: Parameter Required: Sampling and Analysis Protocol:	Vardan EnviroLab Representative Refrigerated As Per Work order APHA 23rd Edition 2017	Sampling Date: Sampling Quantity:	30/06/2020 2.0 Ltr

						ds	
S. No.	Parameter	Test-Method	Result	Unit	In-Land Surface Water	Public Sewers	Land for Irrigation
1.	pH (at 25 °C)	IS 3025 (P-11): 1983, RA: 2017	7.42		5.5 to 9.0	5.5 to 9.0	5.5 to 9.0
2.	BOD (3 Days at 27 °C)	IS: 3025 (P-44): 1993,RA: 2019	21.0	mg/l	30	350	100
3	COD	IS : 3025 (P- 58) : 2006,RA: 2017	79.3	mg/l	250	**	
4. ,	Total Suspended Solids	IS: 3025 (P-17): 1984, RA: 2017	18.3	mg/l	100	600	200
5.	Oil & Grease	IS 3 <mark>025(P- 39)</mark> :1991 RA : 2019	0.66	mg/l	10	20	10

Note: - *BDL-Below Detection Limit, **DL- Detection Limit

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Vardan EnviroLab III

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Test Report

		Inlan	d Public Land fo
S.No. Test Parameters	Test Method Resul	t Unit	Standards
Analysis Protocol	: IS 3025		a second a second s
Parameter Required	As Per Work Order		
Preservation	: 25°c		
Sample Collected by	: VEL Team	Sampling Type	Grab
Location	: STP Outlet	Sampling Quantity	2.0 Ltr
Sample Description	: Waste Water	Sampling Date	: 18/07/2020
		Receipt Date	: 23/07/2020
		Period of Analysis	: 23/07/2020-27/07/2020
	(CG)Talabira Mines	Reporting Date	: 27/07/2020
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
Name & Address of the Party	M/s Raipur Energen Limited	Format No	: 7.8 F-01
Sample Number : VEL/WW/2	2007230001	Report No.	VEL/WW/2007230001

					Inland Surface Water	Public Sewers	Land for irrigation
1	рН	IS 302 <mark>5 (P-11): 1983 Reaff. 20</mark> 17	7.36	-	<u>5.5 - 9.0</u>	5.5 - 9.0	5.5 - 9.0
2	Total Suspended Solids	IS: 3025 (Part 17): 1984, Reaff. 2017	19.1	mg/l	100.0	600.0	200.0
3	Oil & Grease	IS 3025(P-39):1991 RA 2019	0.80	mg/l	10.0	20.0	10.0
4	BOD (3 days @ 27°C)	IS: 3025 (Part-44): 1993, Ref: 2019	16.5	mg/l	30.0	350.0	100.0
5	COD	IS : 3025 (Part 58) : 2006 Ref: 2017	69.13	mg/l	250.0		

***End of Report**

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<u>Test Report</u>

Sample Number : VEL/W	N/01	Report No.	: VEL/WW/2008220001/A
Name & Address of the Part	y : M/s Raipur Energen Limited	Format No	7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 28/08/2020
		Period of Analysis	: 22/08/2020-28/08/2020
Sample Description	: Waste Water	Receipt Date	: 22/08/2020
Location	: STP Outlet	Sampling Date	: 21/08/2020
Sample Collected by	: VEL Team	Sampling Quantity	: 2 Ltr.
Parameter Required	: As Per Work Order	Sampling Type	Grab
Sampling and Analysis Protocol	: IS 3025	Packing Status	: Temp. Sealed

S.No.	Test Parameters	Test Method	Result	Unit	Prescribed Limit
1	рН	IS 3025 (P-11): 1983 Reaff. 2017	7.42	-	5.5 - 9.0
2	Total Suspended Solids	IS: 3025 (Part 17): 1984, Reaff. 2017	21.7	mg/l	100.0
3	Oil & Grease	IS 3025(P-39):1991 RA 2019	0.70	mg/l	10.0
4	BOD (3 days @ 27°C)	IS: 3025 (Part-44): 1993, RA: 2019	19.2	mg/l	30.0
5	COD	IS : 3025 (Part 58) : 2006 RA: 2017	79.4	mg/l	250.0

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Test Report

Sample Number : VEL/RELM	M/WW/01	Report No.	: VEL/WW/2009250001/A
Name & Address of the Party	: M/s Raipur Energen Limited Village: Raikheda, Block-Tilda Dist. Raipur -493225 (CG)Talabira Mines	Format No Party Reference No	: 7.8 F-01
		Reporting Date	: 29/09/2020
		Period of Analysis	: 25/09/2020-29/09/2020
Sample Description	: Waste Water	Receipt Date	: 25/09/2020
Location	: STP Outlet	Sampling Date	: 22/09/2020
Sample Collected by	:VEL Team	Sampling Quantity	: 2 Ltr
Parameter Required	: As Per Work Order	Sampling Type	: Grab
Sampling and Analysis Protocol	: IS 3025	Packing Status	: Temp. Sealed

S.No.	Test Parameters	Test Method	Result	Unit	Prescribed Limit
1	рН	IS 3025 (P-11): 1983 RA2017	7.53	-	5.5 - 9.0
2	Total Suspended Solids	IS: 3025 (Part 17): 1984, RA2017	24.7	mg/l	100.0
3	Oil & Grease	IS 3025(P-39):1991 RA 2019	1.1	mg/l	10.0
4	BOD (3 days @ 27°C)	IS: 3025 (Part-44): 1993, RA: 2019	16.8	mg/l	30.0
5	COD	IS : 3025 (Part 58) : 2006 RA: 2017	72.1	mg/l	250.0

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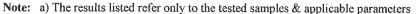
Test Report

Sample Number : VEL/RELN	1/S/01	Report No.	: VEL/S0/2009250001/A
Name & Address of the Party	: M/s Raipur Energen Limited	Format No	• 7.8 F-01
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Party Reference No	: NIL
	(CG)Talabira Mines	Reporting Date	: 29/09/2020
		Period of Analysis	: 25/09/2020-29/09/2020
Sample Description	: SOIL	Receipt Date	: 25/09/2020
Location	: Village- Khinda	Sampling Date	: 22/09/2020
Sample Collected by	: VEL Team	Sampling Quantity	: 2 Kg.
Parameter Required	: As Per Work Order	Sampling Type	: Composite
Sampling and Analysis Protocol	: IS 2720, APHA & USDA	Packing Status	: Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	7.58	-
2	Electrical Conductivity	IS 14767: 2000 RA:2016	0.162	mS/cm
3	Water holding capacity	USDA:1954-Reaffirmed,2010	43.10	%
4	Bulk density	USDA:1954 (Page-96) RA: 2014	1.31	gm/cc
5	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	77.7	mg/kg
6	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	141.3	mg/kg
7	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	184.32	mg/kg
8	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	121.24	kg/hec.
9	Organic Matter	IS 2720 (P-22) 1972 RA:2015	0.91	%
10	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	114.03	mg/kg
11	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	164.6	kg. /hec.
12	Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	43.0	kg. /hec.

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Test Report

Sample Number : VEL/REL	M/S/01	Report No.	
Name & Address of the Party	: M/s Raipur Energen Limited	•	: VEL/S0/2009250001/B
	Village: Raikheda, Block-Tilda Dist. Raipur -493225	Format No	: 7.8 F-01
	(CG)Talabira Mines	Party Reference No	: NIL
	i i	Reporting Date	: 29/09/2020
Sample Depariation		Period of Analysis	: 25/09/2020-29/09/2020
Sample Description	: SOIL	Receipt Date	: 25/09/2020
Location	: Village- Khinda	Sampling Date	: 22/09/2020
Sample Collected by	: VEL Team	Sampling Quantity	
Parameter Required	: As Per Work Order	-	: 2 Kg.
Sampling and Analysis		Sampling Type	: Composite
Protocol	: IS 2720, APHA & USDA	Packing Status	: Temp, Sealed

Test Method	Results	Units
USDA:1954-Reaffirmed.2010	Grev	
	Test Method USDA:1954-Reaffirmed,2010 IS:2720 (P-4) RA:2006	USDA:1954-Reaffirmed,2010 Grey





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Half Yearly Environmental Monitoring Report

Chapter – 5.0

CONCLUSION

M/s. Raipur Energen Limited, Talabira I Opencast Coalmine authorities have been taken successful steps in controlling environmental pollution in and around the project. This fact is clear from analytical results of different environmental parameters. A brief conclusion is as follows.

Sr.	Environmental			
No.	Parameters	Conclusion		
5.1	Air Environment	After analysis of the samples from five different locations it is observed that both the individuals and average concentration of air pollutants in respect of SO ₂ , NO ₂ , PM ₁₀ , PM _{2.5} , CO and Mercury are well within the prescribed limits of NAAQM standards. People of township and of surrounding villages do not have any problems regarding the air quality and have no grievances because of Thermal Power Plant activities.		
5.2	Water Environment	The analytical result of the samples from the ground water of villages, surface water from river, and domestic & industrial effluent after treatment shows that the concentrations of different water parameters are well within prescribed limits and will not cause any adverse impact on human health and on surrounding area. People of surrounding areas express satisfaction about the water quality of that area.		
5.3	Noise Environment	The observations taken at four village location during day and night time shows that the noise level are well within prescribed limits of CPCB. Hence there is no possibility of any adverse effect of noise generated due to Thermal Power Plant activities on peoples of surrounding areas.		

All the above details show that Mining activities of M/s Raipur Energen Limited at Talabira I Opencast Coalmine is not causing any adverse impact on the human health and ecological balance.