

Ref: REL/Talabira/EMD/MoEF/EC/116/11/21
Date: 23.11.2021

To,
Additional Principal Chief Conservator of Forest (APCCF)
Ministry of Environment and Forest & Climate Change
Regional Office (EZ), A/3, Chandrasekharpur,
Bhubaneswar, Odisha-751 023

Sub: Submission of six monthly Environment Clearance (EC) compliance status for Talabira I Opencast Coal Mine Project at village Khinda, Tehsil Rengali, District Sambalpur, Odisha for the period of April'2021 to September'2021.

Ref: Environment clearance vide letter no. **J-11015/58/2009-IA.II (M) dated 16th April 2015** and its subsequent transfers vide letter dated 10.06.2015 & 22.10.2020

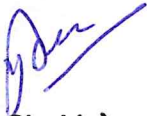
Dear Sir,

With reference to the above, please find herewith enclosed Six monthly Environment Clearance (EC) compliance status report along with Environmental monitoring reports for the period of **April 2021 to September 2021** for Talabira I Opencast Coal Mine Project at village Khinda, Tehsil Rengali, District Sambalpur, Odisha in hard and soft copy (e-mail).

This is for your kind information and record please.

Thanking You,

Yours faithfully,
for, Raipur Energen Limited



(R N Shukla)
Environment and Forest

Encl.: as above

CC:

Member Secretary,
Central Pollution Control Board,
Parivesh Bhavan, East Arjun Nagar,
New Delhi – 110 032

Regional Officer
Odisha State Pollution Control Board
Sambalpur, Plot No.1070 Hospital Road,
Modipara, Sambalpur – 768 002

Member Secretary,
Odisha State Pollution Control Board
Paribesh Bhawan, A/118, Nilakantha Nagar,
Unit – VIII, Bhubaneswar – 751 012, Odisha

Raipur Energen Limited
(Formerly Known as GMR Chhattisgarh Energy Limited)
Adani Corporate House
Shantigram, S G Highway
Ahmedabad 382 421
Gujarat India
CIN : U40108KA2008PLC047974

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Registered Office: Adani Corporate House, Shantigram, S G Highway, Vaishnodevi Circle, Ahmedabad – 382 421,
Gujarat, India

SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE (EC)

for

TALABIRA OPENCAST COAL MINE PROJECT

At

**Village Khinda, Tehsil Rengali, District Sambalpur,
Odisha**

Submitted to:

Integrated Regional Office

Ministry of Environment, Forest and Climate Change,

Central Pollution Control Board, New Delhi &

Odisha State Pollution Control Board, Bhubaneswar

The Adani logo consists of the word "adani" in a lowercase, sans-serif font. The letters "a", "d", and "n" are blue, while the letters "a", "n", and "i" are purple.

Submitted by:

Environment Management Department

Raipur Energen Limited

Adani Corporate House, Shantigram

SG Highway, Ahmedabad- 382 421

Period: April'2021 – September'2021

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Raipur Energen Limited
Talabira I Opencast Coal Mine Project
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 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 deallocated 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.** Currently, Talabira-I Opencast Coal Mine is **not operational.**

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

Sl. No	Conditions	Compliance status																					
A.	Specific Conditions																						
(i)	Production of coal shall not exceed 3.0 MTPA. The project proponent shall obtain prior EC for expansion in production beyond 3.0 MTPA.	Coal production is nil during the period of April'2021 to September'2021. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Sl. No</th> <th style="text-align: center;">Financial Year</th> <th style="text-align: center;">Coal Production (Million Metric Tonne)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td style="text-align: center;">2015-2016</td> <td style="text-align: center;">0.560</td> </tr> <tr> <td style="text-align: center;">2.</td> <td style="text-align: center;">2016-2017</td> <td style="text-align: center;">0.151</td> </tr> <tr> <td style="text-align: center;">3.</td> <td style="text-align: center;">2017-2018</td> <td style="text-align: center;">0.270</td> </tr> <tr> <td style="text-align: center;">4.</td> <td style="text-align: center;">2019-2020</td> <td style="text-align: center;">0.00</td> </tr> <tr> <td style="text-align: center;">5.</td> <td style="text-align: center;">2020-2021</td> <td style="text-align: center;">0.00</td> </tr> <tr> <td style="text-align: center;">6.</td> <td style="text-align: center;">2021-2022</td> <td style="text-align: center;">0.00</td> </tr> </tbody> </table>	Sl. No	Financial Year	Coal Production (Million Metric Tonne)	1.	2015-2016	0.560	2.	2016-2017	0.151	3.	2017-2018	0.270	4.	2019-2020	0.00	5.	2020-2021	0.00	6.	2021-2022	0.00
Sl. No	Financial Year	Coal Production (Million Metric Tonne)																					
1.	2015-2016	0.560																					
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4.	2019-2020	0.00																					
5.	2020-2021	0.00																					
6.	2021-2022	0.00																					
(ii)	No coal washery shall be established without prior EC from this MOEF.	Complied. No washery has been established at Mine site till date.																					
(iii)	No fly ash shall be dumped into the de-coaled voids without prior approval of the MOEF.	No fly ash is dumped into the de-coaled voids till date. No fly ash will be dumped without prior approval from MoEF & CC.																					
(iv)	The embankment shall be stabilised with stone pitching on the reservoir side and compacted and plantation using a mix of native species shall be developed. Additional safety and protection measures including continued operation of high capacity pumps shall be in operation to prevent mine inundation. Prior approval of disaster management plan shall be obtained.	As per initial EC dated 08/11/2011, originally issued to M/s Hindalco Industries Ltd, embankment related activities have already been executed by the prior Mine Allottee (M/s Hindalco) under the guidance of DoWR, Odisha. The embankment is of 1.92 Km length and 1.5 m height and 10 m wide at the top and 3 m above the HFL of Hirakud Reservoir. The embankment has been stabilised with side-sloping on either side and plantation using a mix of native species is developed. There is a provision of high-capacity pump for de-watering. The disaster management plan is in place and submitted to directorate of Mines Safety also.																					
(v)	Top soil, if generated, should be properly stacked with proper slope at earmarked dump site (S) with adequate measures and shall be used for reclamation and development of green belt and for reclamation of back filled quarry should be used for reclamation and rehabilitation of	Complied After taking over of Mines by M/s GMR Chhattisgarh Energy Limited, topsoil of 8,000 Cubic Meter had been spread over the external dump slope to facilitate Bio-reclamation and 12,000 Cubic Meter has been conserved in external Top soil dump																					

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Sl. No	Conditions	Compliance status
	mined out areas within a year of generation.	and 8,925 Cubic meter has been preserved and properly stacked in internal top soil dump up to 31 st March 2018. Reclamation of back filled quarry and rehabilitation of mined out area will be done as per approved mine closure plan. No generation of topsoil 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 yearly basis.	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 & Forests and its Regional Office located at Bhubaneswar on yearly basis.
A	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 peak 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

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		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 conveyors shall be prepared and furnished to the MOEF within 6 months.	Feasibility plan for transport of coal to railway siding by closed overhead conveyor has been 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.	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	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

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	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.	implementation of above conservation plan. Conservation plan and status of implementation were submitted to RO MOEFC, Bhubaneswar and also uploaded on our website. https://adanipower.com/Downloads Approved plan, Approval letter of conservation plan, payment letter 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- Monsoon (November) and winter (January) seasons 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.	A NABL accredited testing agency has been appointed for 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. Analysis of ground water is being done by NABL certified lab and report is being submitted on half yearly basis to the office. Environmental monitoring report for the period of April'21 to September'21 is enclosed as Annexure I . Six month compliance report including environmental monitoring report has been uploaded on the company website. https://adanipower.com/Downloads
(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. No water from mine is being discharged to Hirakud Reservoir.

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(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 the same was submitted.
(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 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.	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 1 st April, 2018.
(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.	Complied assured. Budgetary provision of @ Rs 10/ Ton of coal was kept. Mine operation are temporarily suspended since 1 st April 2018. Preliminary report on socio-economic development of the villages has been Prepared and submitted with previous compliance report. Socio economic development assessment in the area every three years after the

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		approval of revised mining plan will be implemented.
B.	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 monitoring report is enclosed as Annexure – I.
(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 Control Board and Central pollution Control Board once in Six Months.	Being Complied. Data on 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) engaged for this purpose and reports are being submitted to the concerned authorities. Environmental monitoring report is enclosed as Annexure – I.

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Sl. No	Conditions	Compliance status
(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.	Being Complied. 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 MOEFC / NABL) and reports are being submitted. During mine operation, water spraying arrangement on haul road, wagon loading and dump trucks (Loading & unloading) points were provided and maintained. Environmental monitoring report is enclosed as Annexure – I .
	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 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 conform 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 wastewater. 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 MOEFC / NABL) engaged for this purpose. Environmental monitoring report is enclosed as Annexure – I .
(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	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,

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	surveillance programme of worker shall be undertaken 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.	Periodical Medical Examination of 140 no's of employees were conducted to observe any contractions due to exposure to dust.
(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 REL has earmarked a separate budget for environmental protection measures. Mine operations are temporarily suspended since 1 st April' 2018.
(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 2011 and in 2015 the EC was transferred to M/s REL (Formerly GMR Chhattisgarh Energy Ltd). Copy of the Environmental Clearance (EC) and Public Notice Advertisements in Newspapers related to EC have been displayed in Panchayat Office, Khinda and Sambalpur.
(xiii)	State 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 be seen at the website of the Ministry of Environment & Forrest at http://envfor.nic.in . The compliance status including data on monitoring of environmental quality (air, water and noise) shall also be uploaded by	Advertisements have been published in two local newspapers of Odisha state namely Samay (Dt.01.10.2016, Odia news paper) 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

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Sl. No	Conditions	Compliance status
	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 authority may stipulate any further condition for environmental protection.	Noted and agreed
(4)	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.	Noted
(5)	The above conditions will be enforced inter-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.	Noted and agreed
EC Transferred / Amendment dated 16.04.2015		
(i)	(i) Any change in scope of work will attract the provisions of Environment Protection Act (EPA), 1986 and Environmental Impact Assessment Notification, 2006 in conjunction with the subsequent amendments / circular.	Noted and agreed.
(ii)	All conditions stipulated in the EC Letter no. J-11015/58/2009-IA.II (M) dated 08th November,2011 shall remain unchanged	Noted & compliance assured
(iii)	The successful bidder shall be liable, if any, for any act of violation of the EPA 1986/ EIA Notification 2006 / subsequent amendments and circulars which it has inherited during the transfer.	As per the para no (3) of Section 14 of The Coal Mines (Special Provisions) Act, 2015, <i>"Every liability of any prior allottee in relation to a Schedule I coal mine in respect of any period prior to the vesting order or allotment order, shall be the</i>

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		<i>liability of such prior allottee and shall be enforceable against it and not against the successful bidder or allottee or the Central Government".</i>
(iv)	Successful bidder shall be liable for compliance of all court directions, if any.	Noted & compliance assured.

April 2021



Test Report

Sample Number : VEL/REL/AA/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2104280001/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sample Description : AMBIENT AIR

General Information

- Sampling Location : Rest Shelter 1.5 KM in SE From the Mine
- Sample Collected by : VEL Team
- Sampling Equipment used : RDS/FPS
- Instrument Code : VEL/JAI/RDS/22/FPS/22
- Instrument Calibration Status : Calibrated
- Latitude : --
- Longitude : --
- Meteorological condition during monitoring : Clear Sky
- Date of Monitoring : 19/04/2021 To 20/04/2021
- Time of Monitoring : 10.00 to 10.00 Hrs.
- Ambient Temperature (°C) : Min 22 Max 36
- Surrounding Activity : Human, Vehicular & Plant 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	77.79	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	36.96	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	23.75	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	10.84	µg/m ³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m ³)	µg/m ³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m ³)	ng/m ³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m ³	--

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

End of Report

VIJENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/REL/AA/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2104280001/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location

: Rest Shelter 1.5 KM in SE From the Mine

Sample Collected by

: VEL Team

Sampling Equipment used

: RDS/FPS

Instrument Code

: VEL/JAI/RDS/22/FPS/22

Instrument Calibration Status

: Calibrated

Latitude

: --

Longitude

: --

Meteorological condition during monitoring

: Clear Sky

Date of Monitoring

: 19/04/2021 To 20/04/2021

Time of Monitoring

: 10.00 to 10.00 Hrs.

Ambient Temperature (°C)

: Min 22 Max 36

Surrounding Activity

: Human, Vehicular & Plant 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	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	BDL (**DL1.0 ng/m ³)	µg/m ³	--

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

End of Report

VIJENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AA/02

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

Report No. : VEL/A/2104280002/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : R&R Colony 3.2 Km in NE From the Mine

Sample Collected by : VEL Team

Sampling Equipment used : RDS/FPS

Instrument Code : VEL/JAI/RDS/23/FPS/23

Instrument Calibration Status : Calibrated

Latitude : --

Longitude : --

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 20/04/2021 To 21/04/2021

Time of Monitoring : 11.00 to 11.00 Hrs.

Ambient Temperature (°C) : Min 23 Max 36

Surrounding Activity : Human, Vehicular & Plant 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	72.59	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	32.31	µg/m ³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	18.86	µg/m ³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	10.28	µg/m ³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02 µg/m ³)	µg/m ³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0 ng/m ³)	ng/m ³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m ³	--

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

End of Report

VIJENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

Q M LAB OPERATION



Test Report

Sample Number : VEL/REL/AA/02

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2104280002/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : R&R Colony 3.2 Km in NE From the Mine
Sample Collected by : VEL Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/23/FPS/23
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 20/04/2021 To 21/04/2021
Time of Monitoring : 11.00 to 11.00 Hrs.
Ambient Temperature (°C) : Min 23 Max 36
Surrounding Activity : Human, Vehicular & Plant 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	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	BDL (*DL1.0 ng/m ³)	µg/m ³	--

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

End of Report

VI. ENDRA KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AA/03

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

Report No. : VEL/A/2104280003/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : In From of the Mine office
Sample Collected by : VEL Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/24/FPS/24
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 21/04/2021 To 22/04/2021
Time of Monitoring : 12.00 to 12.00 Hrs.
Ambient Temperature (°C) : Min 22 Max 36
Surrounding Activity : Human, Vehicular & Plant 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	70.12	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	32.25	µg/m ³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	16.28	µg/m ³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	9.36	µg/m ³	80

End of Report

VIJENDRA KUMAR
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TECHNICAL MANAGER

RAJ KUMAR YADAV
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G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AA/04

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2104280004/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location

: A1 Down Wind point of talabira mine Area

Sample Collected by

: VEL Team

Sampling Equipment used

: RDS/VOC

Instrument Code

: VEL/JAI/RDS/25/VOC/01

Instrument Calibration Status

: Calibrated

Latitude

: --

Longitude

: --

Meteorological condition during monitoring

: Clear Sky

Date of Monitoring

: 22/04/2021 To 23/04/2021

Time of Monitoring

: 13.00 to 13.00 Hrs.

Ambient Temperature (°C)

: Min 22 Max 37

Surrounding Activity

: Human, Vehicular & Plant 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	Volatile Organic Compound (as BTX)	IS:5182 (P-11) :2006, RA 2017	BDL (*DL1.0 µg/m ³)	µg/m ³	--
2	Polycyclic Aromatic Hydrocarbon (as PAH)	IS:5182 (P-12):2004	*BDL(**DL-5.0ng/m ³)	ng/m ³	--

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

End of Report

VIJENDRA KUMAR
(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

Q M LAB OPERATION



Test Report

Sample Number : VEL/REL/W/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : GROUND WATER

Location : R&R Colony (Open Well)

Sample Collected by : VEL Team

Preservation : Suitable Preservation

Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VEL/W/2104280002/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sampling Date : 24/04/2021

Sampling Quantity : 2 Ltr.

Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH	IS 3025 (P-11): 1983 Reaff. 2017	7.48	--	6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	266.0	mg/l	500	2000
3	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	133.32	mg/l	200	600
4	Total Hardness (as CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	179.40	mg/l	200	600
5	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019	3.15	mg/l	45	No Relaxation
6	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	59.34	mg/l	250	1000
7	Sulphate (as SO ₄)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	13.10	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	62.69	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	5.59	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.23	mg/l	1.0	1.5
11	Phenolic Compound (as C ₆ H ₅ OH)	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.001)	mg/l	0.001	0.002
12	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	*BDL(**DL- 0.1)	mg/l	0.3	No Relaxation
13	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005)	mg/l	0.01	0.05
14	Mercury (as Hg)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.0005)	mg/l	0.001	No Relaxation
15	Lead (as Pb)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.005)	mg/l	0.01	No Relaxation
16	Cadmium (as Cd)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.002)	mg/l	0.003	No Relaxation
17	Chromium (as Cr)	APHA 23rd Edition Year 2017 Method No. 3113 B	*BDL(**DL-0.02)	mg/l	0.05	No Relaxation
18	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02)	mg/l	0.05	1.5
19	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20)	mg/l	5.0	15
20	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005)	mg/l	0.01	No Relaxation

VI. ENDRA KUMAR

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TECHNICAL MANAGER

Note: Terms & conditions refer on backside of test report.

RAJESH KUMAR YADAV

Page No. 1/2

Q M LAB OPERATION



Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

TC-6652

Test Report

Sample Number : VEL/REL/W/01

Report No. : VEL/W/2104280002/A

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
21	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometric Method)	*BDL(**DL 1.0)	NTU	1	5
22	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03)	mg/l	0.03	0.2
23	Manganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05)	mg/l	0.1	0.3
24	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2)	mg/l	0.5	1.0
25	Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	*BDL(**DL-0.2)	mg/l	0.2	1

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

End of Report

VIJENDRA KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
S. M. LAB OPERATION



Test Report

Sample Number : VEL/REL/W/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : GROUND WATER

Location : R&R Colony (Open Well)

Sample Collected by : VEL Team

Preservation : Suitable Preservation

Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VEL/W/2104280002/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sampling Date : 24/04/2021

Sampling Quantity : 2 Ltr.

Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/100 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	0.05	No Relaxation
4	Colour	IS 3025: 1983 (P-4) RA.. 2017	*BDL(**DL 1.0)	Hazen Unit	5	15
5	Odour	IS 3025 (P-5): RA. 2018	Agreeable	Qualitative	Agreeable	Agreeable
6	Taste	IS 3025(P-8):1984 RA. 2017	Agreeable	Qualitative	Agreeable	Agreeable
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05)	mg/l	0.2	1.0

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

End of Report

VIJENDRA KUMAR

RAJ KUMAR YADAV

(Checked By)

(Authorized Signatory)

TECHNICAL MANAGER

G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AN/01 Report No. : VEL/N/2104280001/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 Report Date : 06/05/2021
 Receipt Date : 28/04/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : VEL Team
 Instrument : Calibrated
 Calibration Status :
 Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989: IS 9876
 Instrument Used : SLM

General Information

Sampling Location : In Front of the mine office
 Instrument Code : VEL/JAI/SLM/05
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 21/04/2021 To 22/04/2021
 Time of Monitoring : 06.00 to 06.00 Hrs.
 Ambient Temperature (°C) : Min 22 Max 36
 Surrounding Activity : Human, Vehicular & Plant Activity
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	63.74	48.12

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

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VIJENDRA KUMAR
(Checked By)

RAJ KUMAR PADAV
(Authorized Signatory)

TECHNICAL MANAGER

G M LAB OPERATION



Vardan EnviroLab

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001



TC-6652

Test Report

Sample Number : VEL/REL/AN/02

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : Ambient Noise

Scope of Monitoring : Regulatory Requirement

Protocol Used : IS 9989: IS 9876

Instrument Used : SLM

Report No. : VEL/N/2104280002/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Receipt Date : 28/04/2021

Sampling Duration : 24 Hrs.

Sample Collected by : VEL Team

Instrument : Calibrated

Calibration Status

General Information

Sampling Location : Near Petrol Pump

Instrument Code : VEL/JAI/SLM/06

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 22/04/2021 To 23/04/2021

Time of Monitoring : 06.00 to 06.00 Hrs.

Ambient Temperature (°C) : Min 23 Max 37

Surrounding Activity : Human, Vehicular & Plant Activity

Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	62.32	46.25

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, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

VIJENDRA KUMAR

End of Report

(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

Q M LAB OPERATION



Test Report

Sample Number : VEL/REL/AN/03

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

Sample Description : Ambient Noise
Scope of Monitoring : Regulatory Requirement
Protocol Used : IS 9989: IS 9876
Instrument Used : SLM

Report No. : VEL/N/2104280003/A

Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 06/05/2021
Receipt Date : 28/04/2021
Sampling Duration : 24 Hrs.
Sample Collected by : VEL Team
Instrument : Calibrated
Calibration Status

General Information

Sampling Location : Near Weight Bridge
Instrument Code : VEL/JAI/SLM/06
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 21/04/2021 To 22/04/2021
Time of Monitoring : 06.00 to 06.00 Hrs.
Ambient Temperature (°C) : Min 22 Max 36
Surrounding Activity : Human, Vehicular & Plant Activity
Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	56.37	42.57

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

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VI'ENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AN/04

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : Ambient Noise

Scope of Monitoring : Regulatory Requirement

Protocol Used : IS 9989: IS 9876

Instrument Used : SLM

Report No. : VEL/N/2104280004/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Receipt Date : 28/04/2021

Sampling Duration : 24 Hrs.

Sample Collected by : VEL Team

Instrument : Calibrated

Calibration Status

General Information

Sampling Location : R&R Colony 3.2 km. in NE From The mine

Instrument Code : VEL/JAI/SLM/05

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 22/04/2021 To 23/04/2021

Time of Monitoring : 06.00 to 06.00 Hrs.

Ambient Temperature (°C) : Min 22 Max 37

Surrounding Activity : Human, Vehicular & Plant Activity

Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	60.24	44.58

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

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

VIJENDRA KUMAR

End of Report

RAJ KUMAR YADAV

(Checked By)
TECHNICAL MANAGER

(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : VEL/S0/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : SOIL

Location : Near Field Hostal

Sample Collected by : VEL Team

Parameter Required : As Per Work Order

Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2104280001/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sampling Date : 23/04/2021

Sampling Quantity : 2 Kg.

Sampling Type : Composite

Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	pH (at 25°C)	IS : 2720 (P- 26): 1987,RA: 2016	3.82	-
2	Electrical Conductivity	IS 14767: 2000 RA:2016	0.162	mS/cm
3	Bulk density	USDA:1954 (Page-121) RA: 2014	1.32	gm/cc
4	Chloride	USDA:1954 Method 13 (Page-98) RA: 2010	236.12	mg/kg
5	Calcium (as Ca)	Lab SOP no. VEL/STP/01: 2018	224.18	mg/kg
6	Sodium (as Na)	USDA:1954 Method 10A (Page-96) RA: 2010	138.45	mg/kg
7	Potassium (as K)	Lab SOP no. VEL/STP/01: 2018	83.29	kg/hect.
8	Organic Matter	IS 2720 (P-22) 1972 RA:2015	0.36	%
9	Magnesium (as Mg)	Lab SOP no. VEL/STP/01: 2018	171.75	mg/kg
10	Available Nitrogen (as N)	IS : 14684,1999 RA: 2015	258.11	kg. /hect.
11	Available Phosphorus	Lab SOP no. VEL/STP/01: 2018	36.25	kg. /hect.
12	Total Zinc (as Zn)	USEPA 3050 B: 1996	43.21	mg/kg
13	Total Manganese (as Mn)	USEPA 3050	170.28	mg/kg
14	Total Lead (as Pb)	USEPA 3050 B: 1996	13.48	mg/kg
15	Total Cadmium (as Cd)	USEPA 3050	10.21	mg/kg
16	Total Copper (as Cu)	USEPA 3050 B: 1996	12.73	mg/kg

End of Report

VI. ENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : VEL/S0/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : SOIL

Location : Near Field Hostal

Sample Collected by : VEL Team

Parameter Required : As Per Work Order

Sampling and Analysis Protocol : IS 2720, APHA & USDA

Report No. : VEL/S0/2104280001/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 06/05/2021

Period of Analysis : 28/04/2021-06/05/2021

Receipt Date : 28/04/2021

Sampling Date : 23/04/2021

Sampling Quantity : 2 Kg.

Sampling Type : Composite

Packing Status : Temp. Sealed

S.No.	Parameters	Test Method	Results	Units
1	Colour	USDA:1954-Reaffirmed,2010	Grey	-
2	Water holding capacity	USDA:1954-Reaffirmed,2010	22.14	%
3	Total Chromium (as Cr)	USEPA 3050 B:1996	6.12	mg/kg
4	Soil Texture	IS:2720 (P-4) RA:2006	Silty Clay	--

End of Report

VINENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Test Report

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

Report No. : VEL/WW/2104280001/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 06/05/2021
Period of Analysis : 28/04/2021-06/05/2021
Receipt Date : 28/04/2021
Sampling Date : 24/04/2021
Sampling Quantity : 2 Ltr.
Sampling Type : Grab
Packing Status : Temp. Sealed

Sample Description : Waste Water
Location : STP Outlet
Sample Collected by : VEL Team
Parameter Required : As Per Work Order
Sampling and Analysis Protocol : IS 3025

S.No.	Test Parameters	Test Method	Result	Unit	Prescribed Limit
1	pH	IS 3025 (P-11): 1983 RA2017	7.47	-	5.5 - 9.0
2	Total Suspended Solids	IS: 3025 (Part 17): 1984, RA2017	22.6	mg/l	100.0
3	Oil & Grease	IS 3025(P-39):1991 RA 2019	0.6	mg/l	10.0
4	BOD (3 days @ 27°C)	IS: 3025 (Part-44): 1993, RA: 2019	14.0	mg/l	30.0
5	COD	IS : 3025 (Part 58) : 2006 RA: 2017	42.4	mg/l	250.0

End of Report

VIJENDRA KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
O.M. LABORATORY

May 2021



Test Report

Sample Number : VEL/REL/AA/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2105280007/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location

: Rest Shelter 1.5 KM in SE From the Mine

Sample Collected by

: VEL Team

Sampling Equipment used

: RDS/FPS

Instrument Code

: VEL/JAI/RDS/22/FPS/22

Instrument Calibration Status

: Calibrated

Latitude

: --

Longitude

: --

Meteorological condition during monitoring

: Clear Sky

Date of Monitoring

: 21/05/2021 To 22/05/2021

Time of Monitoring

: 10.00 to 10.00 Hrs.

Ambient Temperature (°C)

: Min 23 Max 38

Surrounding Activity

: Human, Vehicular & Plant 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	76.50	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	35.26	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	22.54	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	9.99	µg/m ³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	*BDL(**DL-0.02 µg/m ³)	µg/m ³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	*BDL(**DL-1.0 ng/m ³)	ng/m ³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	*BDL(**DL 1.0 µg/m ³)	µg/m ³	--

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

End of Report

DINESH PALSANIYA

(Checked By)

RAJ KUMAR RAYDAV

(Authorized Signatory)

NY TECHNICAL MANAGER**G M LAB OPERATION**

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Note: Terms & conditions refer on backside of test report.



Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/REL/AA/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2105280007/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location

: Rest Shelter 1.5 KM in SE From the Mine

Sample Collected by

: VEL Team

Sampling Equipment used

: RDS/FPS

Instrument Code

: VEL/JAI/RDS/22/FPS/22

Instrument Calibration Status

: Calibrated

Latitude

: --

Longitude

: --

Meteorological condition during monitoring

: Clear Sky

Date of Monitoring

: 21/05/2021 To 22/05/2021

Time of Monitoring

: 10.00 to 10.00 Hrs.

Ambient Temperature (°C)

: Min 23 Max 38

Surrounding Activity

: Human, Vehicular & Plant 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	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	*BDL(**DL-1.0 ug/m3)	µg/m ³	--

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

End of Report

DINESH PALSANIYA

(Checked By)

BY TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AA/02

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2105280008/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : R&R Colony 3.2 KM. in NE From the Mine
 Sample Collected by : VEL Team
 Sampling Equipment used : RDS/FPS
 Instrument Code : VEL/JAI/RDS/22/FPS/22
 Instrument Calibration Status : Calibrated
 Latitude : --
 Longitude : --
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 22/05/2021 To 23/05/2021
 Time of Monitoring : 11.00 to 11.00 Hrs.
 Ambient Temperature (°C) : Min 23 Max 38
 Surrounding Activity : Human, Vehicular & Plant 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	71.02	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	31.75	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	18.53	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	9.37	µg/m ³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	*BDL(**DL-0.02 µg/m ³)	µg/m ³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	*BDL(**DL-1.0 ng/m ³)	ng/m ³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	*BDL(**DL 1.0 µg/m ³)	µg/m ³	--

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

End of Report

DINESH PALSANIYA

(Checked By)

DY TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/REL/AA/02

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2105280008/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location

: R&R Colony 3.2 KM. in NE From the Mine

Sample Collected by

: VEL Team

Sampling Equipment used

: RDS/FPS

Instrument Code

: VEL/JAI/RDS/22/FPS/22

Instrument Calibration Status

: Calibrated

Latitude

: --

Longitude

: --

Meteorological condition during monitoring

: Clear Sky

Date of Monitoring

: 22/05/2021 To 23/05/2021

Time of Monitoring

: 11.00 to 11.00 Hrs.

Ambient Temperature (°C)

: Min 23 Max 38

Surrounding Activity

: Human, Vehicular & Plant 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	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	*BDL(**DL-1.0 ug/m3)	µg/m ³	--

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

End of Report

DINESH PALSANIYA

(Checked By)

SV TECHNICAL MANAGER

RAJ KUMAR PADAV

(Authorized Signatory)

G.M. LAB OPERATION

Page No. 1/1

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Note: Terms & conditions refer on backside of test report.

Ph: 0141-2983404, 9810355569, 9953147268 E-mail: jaipur@vardanenvironet.com



Test Report

Sample Number : VEL/REL/AA/03

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2105280009/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

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 : VEL/JAI/RDS/22/FPS/22

Instrument Calibration Status : Calibrated

Latitude : --

Longitude : --

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 23/05/2021 To 24/05/2021

Time of Monitoring : 12.00 to 12.00 Hrs.

Ambient Temperature (°C) : Min 23 Max 39

Surrounding Activity : Human, Vehicular & Plant 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	69.14	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	31.83	µg/m ³	60
3	Nitrogen Dioxides (as NO2)	IS:5182 (P- 6)-2006 RA.2017	16.10	µg/m ³	80
4	Sulphur Dioxide (as SO2)	IS:5182 (P- 2)-2001, RA. 2017	8.96	µg/m ³	80

End of Report

DINESH PALSANIYA

(Checked By)

BY TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G.M. LAB OPERATOR



Test Report

Sample Number : VEL/REL/AA/04

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2105280010/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : A1 Down Wind point of talabira mine area
Sample Collected by : VEL Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/22/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 24/05/2021 To 25/05/2021
Time of Monitoring : 12.00 to 12.00 Hrs.
Ambient Temperature (°C) : Min 23 Max 39
Surrounding Activity : Human, Vehicular & Plant 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	Volatile Organic Compound (as BTX)	IS:5182 (P-11):2006, RA 2017	*BDL(**DL-1.0ng/m ³)	µg/m ³	--
2	Polycyclic Aromatic Hydrocarbon (as PAH)	IS:5182 (P-12):2004	*BDL(**DL-5.0ng/m ³)	ng/m ³	--

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

End of Report

DINESH PALSANIYA

(Checked By)

DY TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)



Test Report

Sample Number : VEL/REL/W/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : GROUND WATER

Location : R&R Colony (Open Well)

Sample Collected by : VEL Team

Preservation : Suitable Preservation

Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VEL/W/2105280001/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

Sampling Date : 24/05/2021

Sampling Quantity : 2 Ltr.

Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH	IS 3025 (P-11): 1983 Reaff. 2017	7.41	--	6.5 to 8.5	No Relaxation
2	Total Dissolved Solids	IS 3025 (P-16): 1984 Reaff 2017	354.1	mg/l	500	2000
3	Total Alkalinity (as CaCO ₃)	IS: 3025 (Part 23): 1986, Reaff. 2019	138.04	mg/l	200	600
4	Total Hardness (as CaCO ₃)	IS: 3025 (Part 21): 2009, Reaff. 2019	165.6	mg/l	200	600
5	Nitrate (as NO ₃)	IS: 3025 (Part 34): 1988, Reaff. 2019	4.75	mg/l	45	No Relaxation
6	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	63.17	mg/l	250	1000
7	Sulphate (as SO ₄)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	14.15	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	55.31	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	6.71	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.25	mg/l	1.0	1.5
11	Phenolic Compound (as C ₆ H ₅ OH)	APHA 23rd Edition 2017, 5530C	BDL(*DL0.001)	mg/l	0.001	0.002
12	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	BDL(*DL0.1)	mg/l	0.3	No Relaxation
13	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	BDL(*DL0.005)	mg/l	0.01	0.05
14	Mercury (as Hg)	APHA (23rd edition-2017), 3114C	BDL(*DL0.0005)	mg/l	0.001	No Relaxation
15	Lead (as Pb)	APHA (23rd edition-2017), 3030D, 3113 B	BDL(*DL0.005)	mg/l	0.01	No Relaxation
16	Cadmium (as Cd)	APHA (23rd edition-2017), 3030D, 3113 B	BDL(*DL0.002)	mg/l	0.003	No Relaxation
17	Chromium (as Cr)	APHA 23rd Edition Year 2017 Method No. 3113 B	BDL(*DL0.02)	mg/l	0.05	No Relaxation
18	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	BDL(*DL0.02)	mg/l	0.05	1.5
19	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	BDL(*DL0.2)	mg/l	5.0	15
20	Selenium (as Se)	APHA (23rd edition-2017), 3114C	BDL(*DL0.005)	mg/l	0.01	No Relaxation



Vardan EnviroLab



TC-6652

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/REL/W/01

Report No. : VEL/W/2105280001/A

S.No.	Parameters	Protocols	Results	Units	IS:10503-2012	
					Acceptable Limits	Permissible Limits
21	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometric Method)	BDL(*DL1.0)	NTU	1	5
22	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	BDL(*DL0.03)	mg/l	0.03	0.2
23	Manganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	BDL(*DL0.05)	mg/l	0.1	0.3
24	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	BDL(*DL0.2)	mg/l	0.5	1.0
25	Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	BDL(*DL0.2)	mg/l	0.2	1

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

End of Report

DINESH PALSANIYA

(Checked By)

BY TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

O.M. LAB OPERATION



Test Report

Sample Number : VEL/REL/W/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : GROUND WATER

Location : R&R Colony (Open Well)

Sample Collected by : VEL Team

Preservation : Suitable Preservation

Sampling and Analysis Protocol : IS 10500 -2012

Report No. : VEL/W/2105280001/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Period of Analysis : 28/05/2021-02/06/2021

Receipt Date : 28/05/2021

Sampling Date : 24/05/2021

Sampling Quantity : 2 Ltr.

Sampling Type : Grab

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/100 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(*DL0.05)	mg/l	0.05	No Relaxation
4	Colour	IS 3025: 1983 (P-4) RA.. 2017	BDL(*DL1.0)	Hazen Unit	5	15
5	Odour	IS 3025 (P-5): RÀ. 2018	Agreeable	Qualitative	Agreeable	Agreeable
6	Taste	IS 3025(P-8):1984 RA. 2017	Agreeable	Qualitative	Agreeable	Agreeable
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	BDL(*DL0.05)	mg/l	0.2	1.0

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

End of Report

DINESH PALSANIYA
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G.M. LAB OPERATION



Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

TC-6652

Test Report

Sample Number : VEL/REL/AN/01

Report No. : VEL/N/2105280001/A

Name & Address of the Party : M/s Raipur Energen Limited

Format No : 7.8 F-01

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Party Reference No : NIL

Report Date : 02/06/2021

Receipt Date : 28/05/2021

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 : Calibrated

Instrument Used : SLM

Calibration Status

General Information

Sampling Location : In Front of the mine office

Instrument Code : VEL/JAI/SLM/05

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 21/05/2021 To 22/05/2021

Time of Monitoring : 06.00 to 06.00 Hrs.

Ambient Temperature (°C) : Min 23 Max 38

Surrounding Activity : Human, Vehicular & Plant Activity

Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	64.12	49.25

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

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

DINESH PALSANIYA
(Checked By)

RAJ KUMAR YADAV
(Authorized Signatory)

DV TECHNICAL MANAGER

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Note: Terms & conditions refer on backside of test report.

Ph: 0141-2983404, 9810355569, 9953147268 E-mail: jaipur@vardanenvirolab.com



Vardan EnviroLab



TC-6652

Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

Test Report

Sample Number : VEL/REL/AN/02

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/N/2105280002/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Receipt Date : 28/05/2021

Sampling Duration : 24 Hrs.

Sample Collected by : VEL Team

Instrument : Calibrated

Calibration Status

Sample Description : Ambient Noise

Scope of Monitoring : Regulatory Requirement

Protocol Used : IS 9989: IS 9876

Instrument Used : SLM

General Information

Sampling Location : Near Petrol Pump

Instrument Code : VEL/JAI/SLM/05

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 22/05/2021 To 23/05/2021

Time of Monitoring : 06.00 to 06.00 Hrs.

Ambient Temperature (°C) : Min 23 Max 38

Surrounding Activity : Human, Vehicular & Plant Activity

Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	61.58	45.36

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

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

DWESH PALSANIYA

(Checked By)

BY TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

TC-6652

Test Report

Sample Number : VEL/REL/AN/03

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : Ambient Noise

Scope of Monitoring : Regulatory Requirement

Protocol Used : IS 9989: IS 9876

Instrument Used : SLM

Report No. : VEL/N/2105280003/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Receipt Date : 28/05/2021

Sampling Duration : 24 Hrs.

Sample Collected by : VEL Team

Instrument : Calibrated

Calibration Status

General Information

Sampling Location : Near Weight Bridge

Instrument Code : VEL/JAI/SLM/05

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 23/05/2021 To 24/05/2021

Time of Monitoring : 06.00 to 06.00 Hrs.

Ambient Temperature (°C) : Min 23 Max 38

Surrounding Activity : Human, Vehicular & Plant Activity

Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	58.21	43.53

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

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

DINESH PALSANIYA

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RAJ KUMAR YADAV

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Vardan EnviroLab



Laboratory: Plot No. 24 & 25, Narayan Vihar, B-Block, Jaipur (Rajasthan) 302020
MoEF & CC Recognized | ISO 9001 | ISO 45001

TC-6652

Test Report

Sample Number : VEL/REL/AN/04

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : Ambient Noise

Scope of Monitoring : Regulatory Requirement

Protocol Used : IS 9989: IS 9876

Instrument Used : SLM

Report No. : VEL/N/2105280004/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 02/06/2021

Receipt Date : 28/05/2021

Sampling Duration : 24 Hrs.

Sample Collected by : VEL Team

Instrument : Calibrated

Calibration Status

General Information

Sampling Location : R&R Colony 3.2 KM. in NE From the mine

Instrument Code : VEL/JAI/SLM/05

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 24/05/2021 To 25/05/2021

Time of Monitoring : 06.00 to 06.00 Hrs.

Ambient Temperature (°C) : Min 23 Max 38

Surrounding Activity : Human, Vehicular & Plant Activity

Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	61.47	45.84

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. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

DINESH PALSANIYA

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TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G.M LAB OPERATION

June 2021



Test Report

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

Report No. : VEL/A/2106240001/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 29/06/2021
Period of Analysis : 24/06/2021-29/06/2021
Receipt Date : 24/06/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Rest Shelter 1.5 KM in SE From the Mine
Sample Collected by : VEL Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/22/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 15/06/2021 To 16/06/2021
Time of Monitoring : 09.00 to 09.00 Hrs.
Ambient Temperature (°C) : Min 24 Max 39
Surrounding Activity : Human, Vehicular & Plant 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	74.41	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	37.38	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	27.15	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	11.02	µg/m ³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	*BDL(**DL-0.02)	µg/m ³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0)	ng/m ³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m ³	--

BDL(Below Detection Limit),DL(Detection Limit)

End of Report

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Test Report

Sample Number : VEL/REL/AA/01

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

Report No. : VEL/A/2106240001/B
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 29/06/2021
Period of Analysis : 24/06/2021-29/06/2021
Receipt Date : 24/06/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : Rest Shelter 1.5 KM in SE From the Mine
Sample Collected by : VEL Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/22/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 15/06/2021 To 16/06/2021
Time of Monitoring : 09.00 to 09.00 Hrs.
Ambient Temperature (°C) : Min 24 Max 39
Surrounding Activity : Human, Vehicular & Plant 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	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	BDL (*DL1.0)	µg/m ³	--

**BDL(Below Detection Limit), **DL(Detection Limit)

End of Report

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(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AA/02

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2106240002/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 29/06/2021

Period of Analysis : 24/06/2021-29/06/2021

Receipt Date : 24/06/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : R&R Colony 3.2 KM in NE From The mine
 Sample Collected by : VEL Team
 Sampling Equipment used : RDS/FPS
 Instrument Code : VEL/JAI/RDS/22/FPS/22
 Instrument Calibration Status : Calibrated
 Latitude : --
 Longitude : --
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 16/06/2021 To 17/06/2021
 Time of Monitoring : 10.00 to 10.00 Hrs.
 Ambient Temperature (°C) : Min 23 Max 38
 Surrounding Activity : Human, Vehicular & Plant 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	73.27	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	33.87	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	16.22	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	10.1	µg/m ³	80
5	Lead (as Pb)	IS 5182 (P-22) : 2004 RA.2014	BDL (*DL 0.02)	µg/m ³	1.0
6	Arsenic (as As)	Methods of air sampling and analysis,3rd ed.,1988, Method No.302	BDL (*DL1.0)	ng/m ³	6.0
7	Chromium as Cr	Methods of air sampling and analysis, 3rd Ed, 1988,Method No.807:1988	BDL(DL 1.0)	µg/m ³	--

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

End of Report

VIJENDRA KUMAR
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Test Report

Sample Number : VEL/REL/AA/02

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2106240002/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 29/06/2021

Period of Analysis : 24/06/2021-29/06/2021

Receipt Date : 24/06/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : R&R Colony 3.2 KM in NE From The mine
Sample Collected by : VEL Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/22/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 16/06/2021 To 17/06/2021
Time of Monitoring : 10.00 to 10.00 Hrs.
Ambient Temperature (°C) : Min 23 Max 38
Surrounding Activity : Human, Vehicular & Plant 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	Mercury (Hg)	Methods of air sampling and analysis, 3rd ed., 1988, Method No.317	BDL (*DL1.0)	µg/m ³	--

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

End of Report

VIJENDRA KUMAR

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RAJ KUMAR YADAV

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Test Report

Sample Number : VEL/REL/AA/03
Name & Address of the Party : M/s Raipur Energen Limited
Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2106240003/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 29/06/2021
Period of Analysis : 24/06/2021-29/06/2021
Receipt Date : 24/06/2021

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 : VEL/JAI/RDS/22/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 17/06/2021 To 18/06/2021
Time of Monitoring : 11.00 to 11.00 Hrs.
Ambient Temperature (°C) : Min 24 Max 38
Surrounding Activity : Human, Vehicular & Plant 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	67.84	µg/m ³	100
2	Particulate Matter (as PM - 2.5)	IS:5182 (P- 24)-2019	29.04	µg/m ³	60
3	Nitrogen Dioxides (as NO ₂)	IS:5182 (P- 6)-2006 RA.2017	14.54	µg/m ³	80
4	Sulphur Dioxide (as SO ₂)	IS:5182 (P- 2)-2001, RA. 2017	9.87	µg/m ³	80

BDL(Below Detection Limit),DL(Detection Limit)

End of Report

WINDRA KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AA/04

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/A/2106240004/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 29/06/2021

Period of Analysis : 24/06/2021-29/06/2021

Receipt Date : 24/06/2021

Sample Description : AMBIENT AIR

General Information

Sampling Location : A1 Down Wind point of talabira mine Area
Sample Collected by : VEL Team
Sampling Equipment used : RDS/FPS
Instrument Code : VEL/JAI/RDS/22/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 18/06/2021 To 19/06/2021
Time of Monitoring : 12.00 to 12.00 Hrs.
Ambient Temperature (°C) : Min 24 Max 39
Surrounding Activity : Human, Vehicular & Plant 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	Volatile Organic Compound (as BTX)	IS:5182 (P-11) :2006, RA 2017	*BDL(**DL-1.0)	µg/m ³	--
2	Polycyclic Aromatic Hydrocarbon (as PAH)	IS:5182 (P-12):2004	*BDL(**DL-5.0)	ng/m ³	--

BDL(Below Detection Limit),DL(Detection Limit)

End of Report

VINENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV

(Authorized Signatory)

G M LAB OPERATION



Laboratory: Plot No 24 & 25, Narayan Vihar, B-Block, Jaipur(Rajasthan)-302020
MoEF& CC Recognized | ISO 9001 | ISO 45001|

Test Report

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

Report No. : VEL/W/2106240001/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 29/06/2021
Period of Analysis : 24/06/2021-29/06/2021
Receipt Date : 24/06/2021
Sampling Date : 18/06/2021
Sampling Quantity : 2 Ltr
Sampling Type : Grab

Sample Description : GROUND WATER
Location : R&R Colony (Oper Well)
Sample Collected by : VEL Team
Preservation : Suitable Preservation
Sampling and Analysis Protocol : IS 10500 -2012

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	pH	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	410.0	mg/l	500	2000
3	Total Alkalinity (as CaCO3)	IS: 3025 (Part 23): 1986, Reaff. 2019	141.62	mg/l	200	600
4	Total Hardness (as CaCO3)	IS: 3025 (Part 21): 2009, Reaff. 2019	178.54	mg/l	200	600
5	Nitrate (as NO3)	IS: 3025 (Part 34): 1988, Reaff. 2019	5.51	mg/l	45	No Relaxation
6	Chloride (as Cl)	IS: 3025 (Part 32): 1988, Reaff. 2019	58.56	mg/l	250	1000
7	Sulphate (as SO4)	IS: 3025 (Part 24): 1986, Reaff. 2019 Turbidity Method	26.32	mg/l	200	400
8	Calcium (as Ca)	IS: 3025 (Part 40): 1991 Reaff. 2019	45.29	mg/l	75	200
9	Magnesium (as Mg)	IS: 3025 (Part 46): 1994, Reaff. 2009 (EDTA method)	15.93	mg/l	30	100
10	Fluorides (as F)	APHA 23rd Edition 2017, 4500 FD	0.23	mg/l	1.0	1.5
11	Phenolic Compound (as C6H5OH)	APHA 23rd Edition 2017, 5530C	*BDL(**DL-0.001)	mg/l	0.001	0.002
12	Total Iron (as Fe)	IS 3025(P-53): 2003 Reaffirm 2019	*BDL(*DL- 0.1)	mg/l	0.3	No Relaxation
13	Arsenic (as As)	APHA (23rd edition-2017), 3114 C	*BDL(**DL-0.005)	mg/l	0.01	0.05
14	Mercury (as Hg)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.0005)	mg/l	0.001	No Relaxation
15	Lead (as Pb)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.005)	mg/l	0.01	No Relaxation
16	Cadmium (as Cd)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.02)	mg/l	0.003	No Relaxation
17	Chromium (as Cr)	APHA 23rd Edition Year 2017 Method No. 3113 B	*BDL(**DL-0.02)	mg/l	0.05	No Relaxation
18	Copper (as Cu)	APHA 23rd Edition Year 2017 Method No. 3111B	*BDL(**DL-0.02)	mg/l	0.05	1.5
19	Zinc (as Zn)	APHA (23rd edition-2017), 3030D, 3113 B	*BDL(**DL-0.20)	mg/l	5.0	15
20	Selenium (as Se)	APHA (23rd edition-2017), 3114C	*BDL(**DL-0.005)	mg/l	0.01	No Relaxation

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Note: Terms & conditions refer on backside of test report.

TECHNICAL MANAGER

RAJ KUMAR YADAV
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G.M. LAB OPERATION



Test Report

Sample Number : VEL/REL/W/01

Report No. : VEL/W/2106240001/A

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
21	Turbidity	IS 3025 (Part 10): 1984, Ref: 2017, (Nephelometric Method)	BDL(*DL1.0)	NTU	1	5
22	Aluminium	IS 3025 (Part-55): 2003, Reaff. 2019	*BDL(**DL-0.03)	mg/l	0.03	0.2
23	Manganese (as Mn)	IS: 3025 (Part 46): 1994, Reaff. 2019 (EDTA method)	*BDL(**DL-0.05)	mg/l	0.1	0.3
24	Boron (as B)	APHA 23rd Edition Year 2017 Method No. 4500B	*BDL(**DL-0.2)	mg/l	0.5	1.0
25	Free Residual Chlorine	IS: 3025 (Part 26): 1986 RA 2019	*BDL(**DL-0.2)	mg/l	0.2	1

End of Report

VIJENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

Q M LAB OPERATION



Test Report

Sample Number : VEL/REL/W/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Report No. : VEL/W/2106240001/B

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 29/06/2021

Period of Analysis : 24/06/2021-29/06/2021

Receipt Date : 24/06/2021

Sampling Date : 18/06/2021

Sampling Quantity : 2 Ltr.

Sampling Type : Grab

Sample Description : GROUND WATER

Location : R&R Colony (Oper Well)

Sample Collected by : VEL Team

Preservation : Suitable Preservation

Sampling and Analysis Protocol : IS 10500 -2012

S.No.	Parameters	Protocols	Results	Units	IS:10500-2012	
					Acceptable Limits	Permissible Limits
1	Total Coliform (By MPN Method)	IS:1622	Absent	MPN/100 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	0.05	No Relaxation
4	Colour	IS 3025: 1983 (P-4) RA.. 2017	BDL(*DL1.0)	Hazen Unit	5	15
5	Odour	IS 3025 (P-5): RA. 2018	Agreeable	Qualitative	Agreeable	Agreeable
6	Taste	IS 3025(P-8):1984 RA. 2017	Agreeable	Qualitative	Agreeable	Agreeable
7	Anionic Surface Active Agent	APHA 23rd Edition 2017, 5540C	*BDL(**DL-0.05)	mg/l	0.2	1.0

End of Report

VINODRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AN/01

Name & Address of the Party : M/s Raipur Energen Limited

Village: Raikheda, Block-Tilda Dist. Raipur -493225
(CG)Talabira Mines

Sample Description : Ambient Noise

Scope of Monitoring : Regulatory Requirement

Protocol Used : IS 9989: IS 9876

Instrument Used : SLM

Report No. : VEL/N/2106240001/A

Format No : 7.8 F-01

Party Reference No : NIL

Report Date : 29/06/2021

Receipt Date : 24/06/2021

Sampling Duration : 24 Hrs.

Sample Collected by : VEL Team

Instrument : Calibrated

Calibration Status

General Information

Sampling Location : In front of mine office

Instrument Code : VEL/JAI/SLM/05

Meteorological condition during monitoring : Clear Sky

Date of Monitoring : 14/06/2021 To 15/06/2021

Time of Monitoring : 06.00 to 06.00 Hrs.

Ambient Temperature (°C) : Min 24 Max 38

Surrounding Activity : Human, Vehicular & Plant Activity

Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	66.02	48.20

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. Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn,

loudspeaker and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VIJENDRA KUMAR

(Checked By)

TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)

G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AN/02

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

Sample Description : Ambient Noise
Scope of Monitoring : Regulatory Requirement
Protocol Used : IS 9989: IS 9876
Instrument Used : SLM

Report No. : VEL/N/2106240002/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 29/06/2021
Receipt Date : 24/06/2021
Sampling Duration : 24 Hrs
Sample Collected by : VEL Team
Instrument : Calibrated
Calibration Status

General Information

Sampling Location : Near Petrol Pump
Instrument Code : VEL/JAI/SLM/05
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 15/06/2021 To 16/06/2021
Time of Monitoring : 06.00 to 06.00 Hrs.
Ambient Temperature (°C) : Min 24 Max 39
Surrounding Activity : Human, Vehicular & Plant Activity
Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	63.0	47.21

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

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - SilenceZone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VINENDRA KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AN/03

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

Sample Description : Ambient Noise
Scope of Monitoring : Regulatory Requirement
Protocol Used : IS 9989: IS 9876
Instrument Used : SLM

Report No. : VEL/N/2106240003/A
Format No : 7.8 F-01
Party Reference No : NIL
Report Date : 29/06/2021
Receipt Date : 24/06/2021
Sampling Duration : 24 Hrs
Sample Collected by : VEL Team
Instrument : Calibrated
Calibration Status

General Information
Sampling Location : Near Weight Bridge
Instrument Code : VEL/JAI/SLM/05
Meteorological condition during monitoring : Clear Sky
Date of Monitoring : 16/06/2021 To 17/06/2021
Time of Monitoring : 06.00 to 06.00 Hrs.
Ambient Temperature (°C) : Min 24 Max 38
Surrounding Activity : Human, Vehicular & Plant Activity
Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	57.84	44.95

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, loudspeaker and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VIJENDRA KUMAR
(Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
(Authorized Signatory)
G M LAB OPERATION



Test Report

Sample Number : VEL/REL/AN/04
 Name & Address of the Party : M/s Raipur Energen Limited
 Village: Raikheda, Block-Tilda Dist. Raipur -493225
 (CG)Talabira Mines

Report No. : VEL/N/2106240004/A
 Format No : 7.8 F-01
 Party Reference No : NIL
 Report Date : 29/06/2021
 Receipt Date : 24/06/2021
 Sampling Duration : 24 Hrs.
 Sample Collected by : VEL Team
 Instrument : Calibrated
 Calibration Status

Sample Description : Ambient Noise
 Scope of Monitoring : Regulatory Requirement
 Protocol Used : IS 9989: IS 9876
 Instrument Used : SLM

General Information

Sampling Location : R&R Colony 3.2 KM. in NE From the mine
 Instrument Code : VEL/JAI/SLM/05
 Meteorological condition during monitoring : Clear Sky
 Date of Monitoring : 17/06/2021 To 18/06/2021
 Time of Monitoring : 06.00 to 06.00 Hrs.
 Ambient Temperature (°C) : Min 24 Max 39
 Surrounding Activity : Human, Vehicular & Plant Activity
 Parameter Required : As Per Work Order

S.No.	Test Parameters	Protocol	Test Result dB(A)	
			Day Time	Night Time
1	Leq	IS 9989 - 1981	64.22	47.33

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

- Day Time is from 6.00 AM to 10.00 PM.
 - Night Time is reckoned between 10.00 PM to 6.00 AM
 - Silence Zone is defined as an area up to 100m around premises of Hospitals, Educational Institutions and Courts. Use of vehicle horn, loudspeaker and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

End of Report

VIJENDRA KUMAR
 (Checked By)
TECHNICAL MANAGER

RAJ KUMAR YADAV
 (Authorized Signatory)
G M LAB OPERATION

July 2021



Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/REL/AA/01 Report No.: VEL/A/2107290001
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 05/08/2021
Sample Description : Ambient Air Quality Monitoring Period of Analysis: 30/07/2021-05/08/2021
Receipt Date: 29/07/2021

General Information:-

Sampling Location : Rest Shelter 1.5 KM in SE From the Mine
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 25/07/2021 to 26/07/2021
Time of Sampling : 10:10 AM to 10:10 AM
Ambient Temperature (°C) : Min. 28°C, Max. 39 °C
Surrounding Activity : Human , Vehicular & Plant Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	33.73	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	68.42	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	26.20	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	10.54	µg/m ³	80
5.	Lead (as Pb)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 0.02)	µg/m ³	1.0
6.	Arsenic (as As)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 1.0)	ng/m ³	6.0
7.	Chromium (as Cr)	Method Of air sampling and analysis,3rd 1988,Method No.302	BDL(DL 1.0)	µg/m ³	--
8.	Mercury as (Hg)	Method Of air sampling and analysis,3rd 1988,Method No.317	BDL(DL-1.0)	µg/m ³	--

Note :-*BDL-Below Detecation Limit,**DL-Detecation Limit.

(Checked By)

(Authorized Signatory)

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/REGL/AA/02 Report No.: VEL/A/2107290002
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 05/08/2021
Sample Description : Ambient Air Quality Monitoring Period of Analysis: 30/07/2021-05/08/2021
Receipt Date: 29/07/2021

General Information:-

Sampling Location : R&R Colony 3.2KM in NE from the Mine
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 26/07/2021 to 27/07/2021
Time of Sampling : 10:30 AM to 10:30 AM
Ambient Temperature (°C) : Min. 25°C, Max. 37 °C
Surrounding Activity : Human , Vehicular & Plant Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	35.37	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	71.33	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	18.43	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	8.58	µg/m ³	80
5.	Lead (as Pb)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 0.02)	µg/m ³	1.0
6.	Arsenic (as As)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 1.0)	ng/m ³	6.0
7.	Chromium (as Cr)	Method Of air sampling and analysis,3rd 1988,Method No.302	BDL(DL 1.0)	µg/m ³	--
8.	Mercury as (Hg)	Method Of air sampling and analysis,3rd 1988,Method No.317	BDL(DL-1.0)	µg/m ³	--

Note :-*BDL-Below Detecation Limit,**DL-Detecation Limit.

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/REGL/AA/03
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines
Report No.: VEL/A/2107290003
Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 05/08/2021
Period of Analysis: 30/07/2021-05/08/2021
Receipt Date: 29/07/2021
Sample Description: Ambient Air Quality Monitoring

General Information:-

Sampling Location : In Front of the Mine Office
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 27/07/2021 to 28/07/2021
Time of Sampling : 11.20 AM to 11:20 AM
Ambient Temperature (°C) : Min. 26°C, Max. 37 °C
Surrounding Activity : Human , Vehicular & Plant Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	27.51	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	64.45	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	15.47	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	9.12	µg/m ³	80

Note :-*BDL-Below Detecation Limit, **DL-Detecation Limit.

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/REGL/AA/04
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines
Report No.: VEL/A/2107290004
Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 05/08/2021
Period of Analysis: 30/07/2021-05/08/2021
Receipt Date: 29/07/2021
Sample Description : Ambient Air Quality Monitoring

General Information:-

Sampling Location : A1 Down Wind Point of Talabira Mine area
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 27/07/2021 to 28/07/2021
Time of Sampling : 10:15 AM to 10:15 AM
Ambient Temperature (°C) : Min. 27°C, Max. 38 °C
Surrounding Activity : Human , Vehicular & Plant Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
Parameter Required : As Per Work Order

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Volatile Organic Compounds(as BTX)	IS:51 82 (P- 11)-2006, RA. 2017	BDL(DL-1.0)	µg/m ³	--
2.	Polycyclic aromatic Hydrocarbon(as PAH)	IS:51 82 (P- 12)-2004	BDL(DL-1.0)	ng/m ³	--

Note :-*BDL-Below Detecation Limit,**DL-Detecation Limit.

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number:	VEL/REL/W/01	Report No.:	VEL/W/2107290001
Name & Address of Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ground Water	Party Reference No.:	NIL
Sampling Location:	R&R Colony(Open Well)	Reporting Date:	05/08/2021
Sample Collected by:	VardanEnviroLab Representative	Period of Analysis:	30-05/08/2021
Preservation:	Refrigerated	Receipt Date:	29/07/2021
Sampling & Analysis Protocol:	IS-10500-2012	Sampling Date:	27/07/2021
		Sampling Type:	Grab
		Sampling Quantity:	2.0 Ltr.

TEST RESULTS

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Desirable limit (Max.)	Permissible limit in the Absence of Alternate Source (Max.)
1.	pH (at 25 °C)	IS 3025(P-11):1983:RA.2017	7.44	--	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025(P-4):1983:RA.2017	BDL(DL 1 Hazen)	Hazen	5	15
3.	Odour	IS 3025(P-5):RA.2018	Agreeable	--	Agreeable	Agreeable
4.	Taste	IS 3025(P-8):1984:RA.2017	Agreeable	--	Agreeable	Agreeable
5.	Turbidity	IS 3025(P-10):1984:RA.2017	BDL(DL 1.0)	NTU	1	5
6.	Total Hardness as CaCO ₃	IS 3025(P-21):2009:RA.2019	168.56	mg/l	200	600
7.	Calcium as Ca	IS 3025(P-40):1991:RA.2019	39.28	mg/l	75	200
8.	Alkalinity as CaCO ₃	IS 3025(P-23):1986:RA.2019	130.6	mg/l	200	600
9.	Chloride as Cl	IS 3025(P-32):1988:RA.2019	62.68	mg/l	250	1000
10.	Residual free Chlorine	IS 3025(P-26):1986:RA.2019	BDL(DL 0.15)	mg/l	0.2	1
11.	Magnesium as Mg	IS 3025(P-46):1994:RA.2019	17.10	mg/l	30	100
12.	Total Dissolved Solids	IS 3025(P-16):1984:RA.2017	438	mg/l	500	2000
13.	Sulphate as SO ₄	IS 3025(P-24):1986:RA.2019	22.23	mg/l	200	400
14.	Fluoride as F	APHA 23 rd Edition,2017, 4500-F-D	0.21	mg/l	1.0	1.5
15.	Nitrate as NO ₃	IS 3025 (P-34) 1988:RA.2019	4.0	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (P-53)2003:RA.2019	0.18	mg/l	0.3	No relaxation
17.	Aluminium as Al	IS 3025 (P-55)2003:RA.2019	BDL(DL 0.002)	mg/l	0.03	0.2
18.	Boron	APHA 23 rd Edition,2017,4500-B	BDL(DL 0.01)	mg/l	0.5	1
19.	Phenolic Compounds	APHA 23 rd Edition,2017, 5530 C	BDL(DL 0.0004)	mg/l	0.001	0.002

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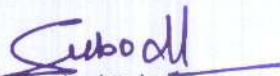
Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample No.: VEL/REL/W/01			Report No.: VEL/W/2107290001			
S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012	
					Desirable limit (Max.)	Permissible limit in the Absence of Alternate Source (Max.)
20.	Anionic Detergents as MBAS	APHA 23 rd Edition,2017, 5540 C	BDL(DL 0.05)	mg/l	0.2	1.0
21.	Cyanide as CN	APHA 4500CN-D	BDL(DL 0.02)	mg/l	0.05	No relaxation
22.	Zinc as Zn	APHA 23 rd Edition 2017, 3030D,3112B	BDL(DL 0.01)	mg/l	5	15
23.	Lead as Pb	APHA 23 rd Edition 2017,3030D,3111B	BDL(DL 0.002)	mg/l	0.01	No relaxation
24.	Copper as Cu	APHA 23 rd Edition 2017,3111B	BDL(DL 0.002)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (P-46) 1994:RA.2019	BDL(DL 0.01)	mg/l	0.1	0.3
26.	Barium	APHA 31111B	BDL(DL 0.01)	mg/l	0.7	No relaxation
27.	Arsenic as As	APHA (23 rd Edition)3030D,3114C,2017	BDL(DL 0.002)	mg/l	0.01	0.05
28.	Selenium as Se	APHA (23 rd Edition)3114C,2017	BDL(DL 0.001)	mg/l	0.01	No relaxation
29.	Cadmium (as Cd)	APHA (23 rd Edition)3030D,3113B	BDL(DL 0.002)	mg/l	0.003	No relaxation
30.	Mercury as Hg	APHA (23 rd Edition)3114C,2017	BDL(DL 0.0005)	mg/l	0.001	No relaxation
31.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall Not Be detectable in 100 ml Sample	NA
32.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Absent/100ml	NA
33.	Fecal Coliform	IS:1622:2009	Absent	MPN/100ml	Shall Not Be detectable in 100 ml Sample	NA

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


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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number:	VEL/REL/AN/01	Report No.:	VEL/N/2107290001
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	05/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	29/07/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument	Calibrated
		Calibration Status	

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: In front of Mine Office
Instrument Code	: VEL/JAI/SLM/05
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 25/07/2021 to 26/07/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 27°C, Max. 37 °C
Surrounding Activity	: Human, Vehicular & Plant Activities
Parameter Required	: As per Work Order

SL.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	65.10	46.28

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number:	VEL/REGL/AN/02	Report No.:	VEL/N/2107290002
Name & Address of the Party:	M/s Raipur Energen Limited. Village - Raikheda, Block-Tilda Dist, Raipur-493225 (CG) Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	05/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	29/07/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument Calibration Status	Calibrated

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: Near Petrol Pump
Instrument Code	: VEL/JAI/SLM/06
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 26/07/2021 to 27/07/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 26°C, Max. 36 °C
Surrounding Activity	: Human, Vehicular & Plant Activities
Parameter Required	: As per Work Order

SL.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	62.54	44.58

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

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

5. Night Time is reckoned between 10.00 PM to 6.00 AM.

6. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number:	VEL/REGL/AN/03	Report No.:	VEL/N/2107290003
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	05/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	29/07/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument Calibration Status	Calibrated

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: Near Weight Bridge
Instrument Code	: VEL/JAI/SLM/06
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 27/07/2021 to 28/07/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 26°C, Max. 38 °C
Surrounding Activity	: Human, Vehicular & Plant Activities
Parameter Required	: As per Work Order

SL.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	55.63	43.57

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

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

8. Night Time is reckoned between 10.00 PM to 6.00 AM.

9. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number:	VEL/REGL/AN/04	Report No.:	VEL/N/2107290004
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	05/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	29/07/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument Calibration Status	Calibrated

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: R&R Colony 3.2 KM in NE From the Mine
Instrument Code	: VEL/JAI/SLM/05
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 26/07/2021 to 27/07/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 25°C, Max. 37 °C
Surrounding Activity	: Human, Vehicular & Plant Activities
Parameter Required	: As per Work Order

SL.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	61.57	46.15

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

10. Day Time is from 6.00 AM to 10.00 PM.
11. Night Time is reckoned between 10.00 PM to 6.00 AM.
12. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Vardan EnviroLab

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Test Report

Sample Number: VEL/REL/AA/01 Report No.: VEL/A/2108300001
Name & Address of the Party: M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG) Talabira Mines Format No.: 7.8 F 01 Party Reference No.: NIL
Report Date: 31/08/2021
Sample Description: Ambient Air Quality Monitoring Period of Analysis: 30/08/2021-31/08/2021
Receipt Date: 30/08/2021

General Information:-

Sampling Location : Rest Shelter 1.5 KM in SE From the Mine
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 25/08/2021 to 26/08/2021
Time of Sampling : 10:30 to 10:30 Hrs.
Ambient Temperature (°C) : Min. 26°C, Max. 38 °C
Surrounding Activity : Human , Vehicular Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	33.87	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	70.30	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	25.76	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	10.26	µg/m ³	80
5.	Lead (as Pb)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 0.02)	µg/m ³	1.0
6.	Arsenic (as As)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 1.0)	ng/m ³	6.0
7.	Chromium (as Cr)	Method Of air sampling and analysis,3rd 1988,Method No.302	BDL(DL 1.0)	µg/m ³	--
8.	Mercury as (Hg)	Method Of air sampling and analysis,3rd 1988,Method No.317	BDL(DL-1.0)	µg/m ³	--

Note :-*BDL-Below Detecation Limit ,**DL-Detecation Limit.

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Test Report

Sample Number: VEL/REL/AA/02 **Report No.:** VEL/A/2108300002
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines **Format No.:** 7.8 F 01
Party Reference No.: NIL
Report Date: 31/08/2021
Sample Description : Ambient Air Quality Monitoring **Period of Analysis:** 30/08/2021-31/08/2021
Receipt Date: 30/08/2021

General Information:-

Sampling Location : R&R Colony 3.2KM in NE from the Mine
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 26/08/2021 to 27/08/2021
Time of Sampling : 10:15 to 10:15 Hrs.
Ambient Temperature (°C) : Min. 27°C, Max. 39 °C
Surrounding Activity : Human , Vehicular & Other Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	35.99	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	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	19.26	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	8.10	µg/m ³	80
5.	Lead (as Pb)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 0.02)	µg/m ³	1.0
6.	Arsenic (as As)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 1.0)	ng/m ³	6.0
7.	Chromium (as Cr)	Method Of air sampling and analysis,3rd 1988,Method No.302	BDL(DL 1.0)	µg/m ³	--
8.	Mercury as (Hg)	Method Of air sampling and analysis,3rd 1988,Method No.317	BDL(DL-1.0)	µg/m ³	--

Note :-*BDL-Below Detecation Limit ,**DL-Detecation Limit.
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VEL/E/1/TR/PN350

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Test Report

Sample Number: VEL/REL/AA/03
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines
Report No.: VEL/A/2108300003
Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 31/08/2021
Period of Analysis: 30/08/2021-31/08/2021
Receipt Date: 30/08/2021
Sample Description : Ambient Air Quality Monitoring

General Information:-

Sampling Location : In Front of the Mine Office
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 27/08/2021 to 28/08/2021
Time of Sampling : 11.10 to 11:10 Hrs.
Ambient Temperature (°C) : Min. 26°C, Max. 38 °C
Surrounding Activity : Human , Vehicular Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	28.04	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	66.30	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	16.68	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	9.90	µg/m ³	80

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Test Report

Sample Number: VEL/REL/AA/04 Report No.: VEL/A/2108300004
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 31/08/2021
Sample Description : Ambient Air Quality Monitoring Period of Analysis: 30/08/2021-31/08/2021
Receipt Date: 30/08/2021

General Information:-

Sampling Location : A1 Down Wind Point of Talabira Mine area
Sample collected by : Vardan EnviroLab Representative
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 27/08/2021 to 28/08/2021
Time of Sampling : 10:20 to 10:20 Hrs.
Ambient Temperature (°C) : Min. 26°C, Max. 37 °C
Surrounding Activity : Human , Vehicular Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
Parameter Required : As Per Work Order

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Volatile Organic Compounds(as BTX)	IS:51 82 (P- 11)-2006, RA. 2017	BDL(DL-1.0)	µg/m ³	--
2.	Polycyclic aromatic Hydrocarbon(as PAH)	IS:51 82 (P- 12)-2004	BDL(DL-1.0)	ng/m ³	--

Note :-*BDL-Below Detecation Limit ,**DL-Detecation Limit.

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Test Report

Sample Number:	VEL/REL/W/01	Report No.:	VEL/W/2108300003
Name & Address of Party:	M/s Raipur Energen Limited, Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ground Water	Party Reference No.:	NIL
Sampling Location:	R&R Colony(Open Well)	Reporting Date:	31/08/2021
Sample Collected by	Vardan EnviroLab Representative	Period of Analysis:	30-31/08/2021
Preservation:	Refrigerated	Receipt Date:	30/08/2021
Sampling & Analysis Protocol:	IS-10500-2012	Sampling Date:	26/08/2021
		Sampling Type:	Grab
		Sampling Quantity:	2.0 Ltr.

TEST RESULTS

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Desirable limit (Max.)	Permissible limit in the Absence of Alternate Source (Max.)
1.	pH (at 25 °C)	IS 3025(P-11):1983:RA.2017	7.56	--	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025(P-4):1983:RA.2017	BDL(DL 1.0)	Hazen	5	15
3.	Odour	IS 3025(P-5):RA.2018	Agreeable	--	Agreeable	Agreeable
4.	Taste	IS 3025(P-8):1984:RA.2017	Agreeable	--	Agreeable	Agreeable
5.	Turbidity	IS 3025(P-10):1984:RA.2017	BDL(DL 1.0)	NTU	1	5
6.	Total Hardness as CaCO ₃	IS 3025(P-21):2009:RA.2019	155.2	mg/l	200	600
7.	Calcium as Ca	IS 3025(P-40):1991:RA.2019	34.2	mg/l	75	200
8.	Alkalinity as CaCO ₃	IS 3025(P-23):1986:RA.2019	118.2	mg/l	200	600
9.	Chloride as Cl	IS 3025(P-32):1988:RA.2019	57.58	mg/l	250	1000
10.	Residual free Chlorine	IS 3025(P-26):1986:RA.2019	BDL(DL 0.15)	mg/l	0.2	1
11.	Magnesium as Mg	IS 3025(P-46):1994:RA.2019	16.93	mg/l	30	100
12.	Total Dissolved Solids	IS 3025(P-16):1984:RA.2017	414.00	mg/l	500	2000
13.	Sulphate as SO ₄	IS 3025(P-24):1986:RA.2019	19.14	mg/l	200	400
14.	Fluoride as F	APHA 23 rd Edition,2017, 4500-F D	0.2	mg/l	1.0	1.5
15.	Nitrate as NO ₃	IS 3025 (P-34) 1988:RA.2019	3.32	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (P-53)2003:RA.2019	0.16	mg/l	0.3	No relaxation
17.	Aluminium as Al	IS 3025 (P-55)2003:RA.2019	BDL(DL 0.002)	mg/l	0.03	0.2
18.	Boron	APHA 23 rd Edition,2017,4500-B	BDL(DL 0.01)	mg/l	0.5	1
19.	Phenolic Compounds	APHA 23 rd Edition,2017, 5530 C	BDL(DL 0.0004)	mg/l	0.001	0.002

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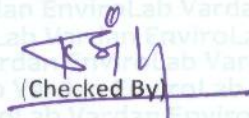
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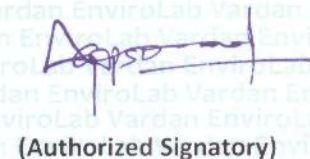
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Test Report

Sample No.: VEL/REL/W/01				Report No.: VEL/W/2108300003		
S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012	
					Desirable limit (Max.)	Permissible limit in the Absence of Alternate Source (Max.)
20.	Anionic Detergents as MBAS	APHA 23 rd Edition,2017, 5540 C	BDL(DL 0.05)	mg/l	0.2	1.0
21.	Cyanide as CN	APHA 4500CN-D	BDL(DL 0.02)	mg/l	0.05	No relaxation
22.	Zinc as Zn	APHA 23 rd Edition 2017, 3030D,3112B	BDL(DL 0.01)	mg/l	5	15
23.	Lead as Pb	APHA 23 rd Edition 2017,3030D,3111B	BDL(DL 0.002)	mg/l	0.01	No relaxation
24.	Copper as Cu	APHA 23 rd Edition 2017,3111B	BDL(DL 0.002)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (P-46) 1994:RA.2019	BDL(DL 0.01)	mg/l	0.1	0.3
26.	Barium	APHA 31111B	BDL(DL 0.01)	mg/l	0.7	No relaxation
27.	Arsenic as As	APHA (23 rd Edition)3030D,3114C,2017	BDL(DL 0.002)	mg/l	0.01	0.05
28.	Selenium as Se	APHA (23 rd Edition)3114C,2017	BDL(DL 0.001)	mg/l	0.01	No relaxation
29.	Cadmium (as Cd)	APHA (23 rd Edition)3030D,3113B	BDL(DL 0.002)	mg/l	0.003	No relaxation
30.	Mercury as Hg	APHA (23 rd Edition)3114C,2017	BDL(DL 0.0005)	mg/l	0.001	No relaxation
31.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall Not Be detectable in 100 ml Sample	NA
32.	E. Coli	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Absent/100ml	NA
33.	Fecal Coliform	IS:1622:2009	Absent	MPN/100ml	Shall Not Be detectable in 100 ml Sample	NA

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


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Test Report

Sample Number:	VEL/REL/AN/01	Report No.:	VEL/N/2108300001
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	31/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	30/08/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument Calibration Status	Calibrated

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: In front of Mine Office
Instrument Code	: VEL/JAI/SLM/05
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 25/08/2021 to 26/08/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 26°C, Max. 39 °C
Surrounding Activity	: Human, Vehicular Activities
Parameter Required	: As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	64.26	45.24

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number:	VEL/REL/AN/02	Report No.:	VEL/N/2108300002
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	31/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	30/08/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument	Calibrated
		Calibration Status	

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: Near Petrol Pump
Instrument Code	: VEL/JAI/SLM/06
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 26/08/2021 to 27/08/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 26°C, Max. 38°C
Surrounding Activity	: Human, Vehicular & Other Activities
Parameter Required	: As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	61.06	43.14

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.
- Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number:	VEL/REL/AN/03	Report No.:	VEL/N/2108300003
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	31/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	30/08/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument Calibration Status	Calibrated

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: Near Weight Bridge
Instrument Code	: VEL/JAI/SLM/06
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 27/08/2021 to 28/08/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 27°C, Max. 39 °C
Surrounding Activity	: Human, Vehicular & Other Activities
Parameter Required	: As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	54.66	42.04

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number:	VEL/REL/AN/04	Report No.:	VEL/N/2108300004
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Reporting Date:	31/08/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	30/08/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument Calibration Status	Calibrated

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: R&R Colony 3.2 KM in NE From the Mine
Instrument Code	: VEL/JAI/SLM/05
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 26/08/2021 to 27/08/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 26°C, Max. 38 °C
Surrounding Activity	: Human, Vehicular Activities
Parameter Required	: As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	52.72	43.24

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report


Sample Number: VEL/REL/AA/01 Report No.: VEL/A/2110010001
Name & Address of the Party: M/s Raipur Energen Limited, Village -Raikheda, Block-Tilda, Dist,Raipur-493225 (CG)Talabira Mines Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 06/10/2021
Sample Description: Ambient Air Quality Monitoring Period of Analysis: 01/10/2021-06/10/2021
Receipt Date: 01/10/2021

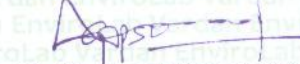
General Information:-

Sampling Location : Rest Shelter 1.5 KM in SE From the Mine
Sample collected by : VEL Team
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 25/09/2021 to 26/09/2021
Time of Sampling : 10:30 to 10:30 Hrs.
Ambient Temperature (°C) : Min. 25°C, Max. 36 °C
Surrounding Activity : Human , Vehicular & Plant Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	31.26	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	69.69	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	23.12	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	10.22	µg/m ³	80
5.	Lead (as Pb)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 0.02)	µg/m ³	1.0
6.	Arsenic (as As)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 1.0)	ng/m ³	6.0
7.	Chromium (as Cr)	Method Of air sampling and analysis,3rd 1988,Method No.302	BDL(DL 1.0)	µg/m ³	--
8.	Mercury as (Hg)	Method Of air sampling and analysis,3rd 1988,Method No.317	BDL(DL-1.0)	µg/m ³	--

Note :-*BDL-Below Detecation Limit ,**DL-Detecation Limit.


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Test Report

Sample Number: VEL/REL/AA/02
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines
Report No.: VEL/A/2110010002
Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 06/10/2021
Period of Analysis: 01/10/2021-06/10/2021
Receipt Date: 01/10/2021
Sample Description : Ambient Air Quality Monitoring

General Information:-

Sampling Location : R&R Colony 3.2KM in NE from the Mine
Sample collected by : VEL Team
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/FPS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 26/09/2021 to 27/09/2021
Time of Sampling : 10:15 to 10:15Hrs.
Ambient Temperature (°C) : Min. 25°C, Max. 36 °C
Surrounding Activity : Human , Vehicular & Plant Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	31.20	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	73.36	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	20.47	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	8.56	µg/m ³	80
5.	Lead (as Pb)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 0.02)	µg/m ³	1.0
6.	Arsenic (as As)	IS:51 82 (P- 22)-2004, RA. 2014	BDL(DL 1.0)	ng/m ³	6.0
7.	Chromium (as Cr)	Method Of air sampling and analysis,3rd 1988,Method No.302	BDL(DL 1.0)	µg/m ³	--
8.	Mercury as (Hg)	Method Of air sampling and analysis,3rd 1988,Method No.317	BDL(DL-1.0)	µg/m ³	--

Note :-*BDL-Below Detecation Limit,**DL-Detecation Limit.

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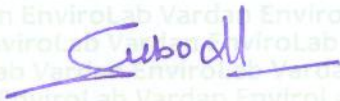
Test Report

Sample Number: VEL/REL/AA/03
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines
Report No.: VEL/A/2110010003
Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 06/10/2021
Period of Analysis: 01/10/2021-06/10/2021
Receipt Date: 01/10/2021
Sample Description : Ambient Air Quality Monitoring

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/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 27/09/2021 to 28/09/2021
Time of Sampling : 11.10 to 11:10 Hrs.
Ambient Temperature (°C) : Min. 25°C, Max. 36 °C
Surrounding Activity : Human & Vehicular Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
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	27.52	µg/m ³	60
2.	Particulate Matter (PM ₁₀)	IS:5182 (P- 23)-2006,RA. 2017	64.25	µg/m ³	100
3.	Nitrogen Dioxide (NO ₂)	IS:5182 (P- 6)-2006 RA.2017	16.10	µg/m ³	80
4.	Sulphur Dioxide (SO ₂)	IS:51 82 (P- 2)-2001, RA. 2017	8.61	µg/m ³	80



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Test Report

Sample Number: VEL/REL/AA/04
Name & Address of the Party: M/s Raipur Energen Limited.
Village -Raikheda, Block-Tilda
Dist,Raipur-493225 (CG)Talabira Mines
Report No.: VEL/A/2110010004
Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 06/10/2021
Period of Analysis: 01/10/2021-06/10/2021
Receipt Date: 01/10/2021

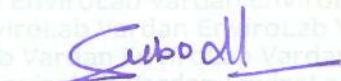
Sample Description : Ambient Air Quality Monitoring

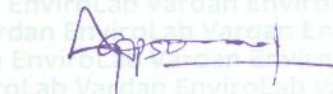
General Information:-

Sampling Location : A1 Down Wind Point of Talabira Mine area
Sample collected by : VEL Team
Sampling Equipment used : RDS &FPS
Instrument Code : VEL/RDS/22
Instrument Calibration Status : Calibrated
Latitude : --
Longitude : --
Meteorological condition during monitoring : Clear sky
Date of Sampling : 27/09/2021 to 28/09/2021
Time of Sampling : 10:20 to 10:20 Hrs.
Ambient Temperature (°C) : Min. 24°C, Max. 35 °C
Surrounding Activity : Human & Vehicular Activities
Scope of Monitoring : Regulatory Requirement
Sampling & Analysis Protocol : IS-5182 & CPCB Guidelines
Sampling Duration : 24 hrs.
Parameter Required : As Per Work Order

S. No.	Parameter	Protocol	Result	Unit	NAAQS* Limit
1.	Volatile Organic Compounds(as BTX)	IS:5182 (P- 11)-2006, RA. 2017	BDL(DL-1.0)	µg/m ³	--
2.	Polycyclic aromatic Hydrocarbon(as PAH)	IS:5182 (P- 12)-2004	BDL(DL-1.0)	ng/m ³	--

Note :-*BDL-Below Detecation Limit ,**DL-Detecation Limit.


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Test Report

Sample Number: VEL/REL/W/01 Report No.: VEL/W/2110010001
M/s Raipur Energen Limited. Format No.: 7.8 F 01
Village -Raikheda, Block-Tilda Party Reference No.: NIL
Name & Address of Party: Dist,Raipur-493225 (CG)Talabira Mines Report Date: 06/10/2021
Ground Water Period of Analysis: 01-06/10/2021
R&R Colony(Open Well) Receipt Date: 01/10/2021
VEL Team Sampling Date: 26/09/2021
Refrigerated Sampling Type: Grab
IS-10500-2012 Sampling Quantity: 2.0 Ltr.

TEST RESULTS

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 -2012	
					Desirable limit (Max.)	Permissible limit in the Absence of Alternate Source (Max.)
1.	pH (at 25 °C)	IS 3025(P-11):1983:RA.2017	7.52	--	6.5 to 8.5	No Relaxation
2.	Colour	IS 3025(P-4):1983:RA.2017	BDL(DL 1.0)	Hazen	5	15
3.	Odour	IS 3025(P-5):RA.2018	Agreeable	--	Agreeable	Agreeable
4.	Taste	IS 3025(P-8):1984:RA.2017	Agreeable	--	Agreeable	Agreeable
5.	Turbidity	IS 3025(P-10):1984:RA.2017	BDL(DL 1.0)	NTU	1	5
6.	Total Hardness as CaCO ₃	IS 3025(P-21):2009:RA.2019	156.7	mg/l	200	600
7.	Calcium as Ca	IS 3025(P-40):1991:RA.2019	35.9	mg/l	75	200
8.	Alkalinity as CaCO ₃	IS 3025(P-23):1986:RA.2019	116.5	mg/l	200	600
9.	Chloride as Cl	IS 3025(P-32):1988:RA.2019	56.2	mg/l	250	1000
10.	Residual free Chlorine	IS 3025(P-26):1986:RA.2019	BDL(DL 0.15)	mg/l	0.2	1
11.	Magnesium as Mg	IS 3025(P-46):1994:RA.2019	16.93	mg/l	30	100
12.	Total Dissolved Solids	IS 3025(P-16):1984:RA.2017	412.00	mg/l	500	2000
13.	Sulphate as SO ₄	IS 3025(P-24):1986:RA.2019	18.56	mg/l	200	400
14.	Fluoride as F	APHA 23 rd Edition,2017, 4500-F-D	0.21	mg/l	1.0	1.5
15.	Nitrate as NO ₃	IS 3025 (P-34) 1988:RA.2019	3.12	mg/l	45	No Relaxation
16.	Iron as Fe	IS 3025 (P-53)2003:RA.2019	0.14	mg/l	0.3	No relaxation
17.	Aluminium as Al	IS 3025 (P-55)2003:RA.2019	BDL(DL 0.002)	mg/l	0.03	0.2
18.	Boron	APHA 23 rd Edition,2017,4500-B	BDL(DL 0.01)	mg/l	0.5	1
19.	Phenolic Compounds	APHA 23 rd Edition,2017, 5530 C	BDL(DL 0.0004)	mg/l	0.001	0.002

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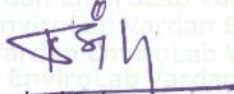
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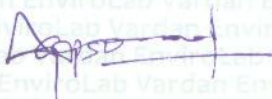
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Test Report

Sample No.: VEL/REL/W/01				Report No.: VEL/W/2110010001		
S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012	
					Desirable limit (Max.)	Permissible limit in the Absence of Alternate Source (Max.)
20.	Anionic Detergents as MBAS	APHA 23 rd Edition,2017, 5540 C	BDL(DL 0.05)	mg/l	0.2	1.0
21.	Cyanide as CN	APHA 4500CN-D	BDL(DL 0.02)	mg/l	0.05	No relaxation
22.	Zinc as Zn	APHA 23 rd Edition 2017, 3030D,3112B	BDL(DL 0.01)	mg/l	5	15
23.	Lead as Pb	APHA 23 rd Edition 2017,3030D,3111B	BDL(DL 0.002)	mg/l	0.01	No relaxation
24.	Copper as Cu	APHA 23 rd Edition 2017,3111B	BDL(DL 0.002)	mg/l	0.05	1.5
25.	Manganese as Mn	IS 3025 (P-46) 1994:RA.2019	BDL(DL 0.01)	mg/l	0.1	0.3
26.	Barium	APHA 31111B	BDL(DL 0.01)	mg/l	0.7	No relaxation
27.	Arsenic as As	APHA (23 rd Edition)3030D,3114C,2017	BDL(DL 0.002)	mg/l	0.01	0.05
28.	Selenium as Se	APHA (23 rd Edition)3114C,2017	BDL(DL 0.001)	mg/l	0.01	No relaxation
29.	Cadmium (as Cd)	APHA (23 rd Edition)3030D,3113B	BDL(DL 0.002)	mg/l	0.003	No relaxation
30.	Mercury as Hg	APHA (23 rd Edition)3114C,2017	BDL(DL 0.0005)	mg/l	0.001	No relaxation
31.	Total Coliform	IS 1622,1981(Reaffirmed 2003)	Absent	MPN/100ml	Shall Not Be detectable in 100 ml Sample	NA
	E. Coli	IS 1622,1981(Reaffirmed 2003)			Absent/100ml	NA
33.	Fecal Coliform	IS:1622:2009	Absent	MPN/100ml	Shall Not Be detectable in 100 ml Sample	NA

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


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Test Report

Sample Number:	VEL/REL/AN/01	Report No.:	VEL/N/2110010001
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Report Date:	06/10/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	01/10/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument	Calibrated
		Calibration Status	

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: In front of Mine Office
Instrument Code	: VEL/SLM/05
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 25/09/2021 to 26/09/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 24°C, Max. 36 °C
Surrounding Activity	: Human & Vehicular Activities
Parameter Required	: As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	63.20	44.86

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number:	VEL/REL/AN/02	Report No.:	VEL/N/2110010002
Name & Address of the Party:	M/s Raipur Energen Limited. Village -Raikheda, Block- Tilda Dist,Raipur-493225 (CG)Talabira Mines	Format No.:	7.8 F 01
Sample Description:	Ambient Noise Level Monitoring	Party Reference No.:	NIL
Scope of Monitoring	Regulatory Requirement	Report Date:	06/10/2021
Protocol Used:	IS 9989: IS 9876	Receipt Date:	01/10/2021
Instrument Used	SLM	Sampling Duration	24 Hrs"
		Sample Collected by	VEL Team
		Instrument	Calibrated
		Calibration Status	

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location	: Near Petrol Pump
Instrument Code	: VEL/SLM/06
Meteorological condition during monitoring	: Clear sky
Date of Monitoring	: 26/09/2021 to 27/09/2021
Time of Monitoring	: 06:00 AM to 06:00AM
Ambient Temperature (°C)	: Min. 26°C, Max. 38°C
Surrounding Activity	: Human, Vehicular & Other Activities
Parameter Required	: As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	60.16	44.11

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

- Day Time is from 6.00 AM to 10.00 PM.
- Night Time is reckoned between 10.00 PM to 6.00 AM.
- Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.

Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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Test Report

Sample Number: VEL/REL/AN/03 **Report No.:** VEL/N/2110010003
Name & Address of the Party: M/s Raipur Energy Limited.
Village -Raikheda, Block-
Tilda Dist,Raipur-493225
(CG)Talabira Mines **Format No.:** 7.8 F 01
Party Reference No.: NIL
Report Date: 06/10/2021
Sample Description: Ambient Noise Level **Receipt Date:** 01/10/2021
Monitoring: **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

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location: Near Weight Bridge
Instrument Code: VEL/SLM/06
Meteorological condition during monitoring: Clear sky
Date of Monitoring: 27/09/2021 to 28/09/2021
Time of Monitoring: 06:00 AM to 06:00AM
Ambient Temperature (°C): Min. 25°C, Max. 36 °C
Surrounding Activity: Human, Vehicular & Other Activities
Parameter Required: As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	54.01	43.22

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

(Checked By)

(Authorized Signatory)



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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/REL/AN/04 Report No.: VEL/N/2110010004
Name & Address of the Party: M/s Raipur Energen Limited. Format No.: 7.8 F 01
Village -Raikheda, Block- Party Reference No.: NIL
Tilda Dist,Raipur-493225 Report Date: 06/10/2021
(CG)Talabira Mines
Sample Description: Ambient Noise Level Monitoring Receipt Date: 01/10/2021
Scope of Monitoring Regulatory Requirement Sampling Duration 24 Hrs"
Protocol Used: IS 9989: IS 9876 Sample Collected by VEL Team
Instrument Used SLM Instrument Calibrated
Calibration Status

Ambient Noise Level Monitoring Results

General Information:-

Sampling Location : R&R Colony 3.2 KM in NE From the Mine
Instrument Code : VEL/SLM/05
Meteorological condition during monitoring : Clear sky
Date of Monitoring : 26/09/2021 to 27/09/2021
Time of Monitoring : 06:00 AM to 06:00AM
Ambient Temperature (°C) : Min. 24°C, Max. 36 °C
Surrounding Activity : Human, Vehicular Activities
Parameter Required : As per Work Order

Sr.No.	Test Parameter	Protocol	Test Result dB(A)	
			Day Time	Night Time
1.	Leq	IS:9989,IS9876:1981	51.47	42.67

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. Silence Zone is defined as an area up to 100 m around premises of Hospitals, Educational and Courts. Use of vehicle horn, Loudspeakers and bursting of crackers is banned in these zones.
Note: Mixed categories of areas be declared as one of the four above mentioned categories by the competent Authority and the corresponding standards shall apply

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VEL/E/1/TR/PN2156

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

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

Report No.: VEL/S0/2110010001
Format No.: 7.8 F 01
Party Reference No.: NIL
Report Date: 06/10/2021
Period of Analysis : 01-06/10/2021
Receipt Date: 01/10/2021
Sampling Date: 26/09/2021
Sample Quantity: 2 kg.
Sampling Type: Composite
Packing Status: Temp. Sealed

Sample Description: SOIL
Location: Near Field Hostal
Sample Collected By: VEL Team
Parameter Required: As per work order
Sampling and Analysis Protocol: IS 2720, APHA & USDA

S. No.	Parameters	TestMethod	Results	Units
1	pH(at 25°C)	IS: 2720 (P- 26): 1987,RA: 2016	8.54	--
2	Electrical Conductivity	IS14767: 2000 RA:2016	0.182	mS/cm
3	Colour	USDA:1954-Reaffirmed,2010	Grey	-
4	Bulkdensity	USDA:1954(Page-121) RA: 2014	1.31	gm/cc
5	Water holding capacity	USDA:1954-Reaffirmed,2010	23.25	%
6	Calcium(as Ca)	LabSOP no. VEL/STP/01: 2018	217.26	mg/kg
7	Magnesium(as Mg)	LabSOP no. VEL/STP/01: 2018	165.74	mg/kg
8	Sodium(as Na)	USDA:1954Method 10A (Page-96) RA: 2010	134.51	mg/kg
9	Potassium(as K)	LabSOP no. VEL/STP/01: 2018	81.20	Kg/hect.
10	Available Nitrogen (as N)	IS: 14684,1999 RA: 2015	241.25	Kg./hect.
11	Total Zinc (as Zn)	USEPA3050 B: 1996	39.60	mg/kg
12	Manganese	USEPA3050	164.32	mg/kg
13	Total Lead (as Pb)	USEPA3050 B: 1996	11.63	mg/kg
14	Total Chromium	USEPA3050 B: 1996	4.56	mg/kg
15	Total Copper (as Cu)	USEPA3050	12.34	mg/kg
16.	Soil Texture	IS 2720 (P-4)RA:2006	Silty Clay	--

End of Report

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (Haryana)
ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number:	VEL/REL/WW/01	Report No.:	VEL/WW/2110010001
Name & Address of Party:	M/s Raipur Energen Limited. Village -Raikheda, Block-Tilda Dist,Raipur- 493225 (CG)Talabira Mines	Format No.:	7.8 F-01
Sample Description:	Waste Water	Party Reference No.:	NIL
Sampling Location :	STP Outlet	Report Date:	06/10/2021
Sample Collected by:	VEL Team	Receipt Date:	01/10/2021
		Sampling Date:	27/09/2021
		Sample Quantity:	2 Ltr
		Parameter Required:	As per Work Order

S.No.	Test Parameters	Test Method	Result	Unit	Prescribed Limit
1	pH	APHA 4500 H+B Electrometric Method: 2017	7.41	---	5.5-9.0
2	Total Suspended Solids	APHA 2540 D Gravimetric Method	20	mg/l	100.0
3	Oil & Grease	APHA 5520 B Partition Gravimetric Method:2017	0.5	mg/l	10.0
4	BOD (3 Days @27°C)	APHA 5210 C Ultimate BOD Test:2017	12.0	mg/l	30.0
5	COD	APHA 5220 B Open Reflux Method:2017	52.3	mg/l	250.0

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