

Ref No.: AE/01-10/2024

Date: 19/11/2024

To,  
The Director  
Ministry Of Environment, Forest and Climate Change  
Regional Office (EZ),  
A/3, Chandrasekharpur  
Bhubaneswar-751023

**Sub:** Requesting to issue a certified Compliance report of the Status of compliance of the conditions stipulated in the environment clearance (Vide F.No. J-11015/225/2010-IA-II(M) dated 24/09/2012) for the proposed project (Expansion and modification of Ore Beneficiation (COB) Plant from existing 1,000 TPA to 1, 20,000 TPA) of M/s Anand Exports located at District Jajpur, Odisha.

**Ref:** EC Order No.J-11015/225/2010-IA-II(M) dated 24/09/2012

**Respected Sir,**

With reference to above subject, we are submitting herewith the half yearly compliance report Period of **(April-2024 to September-2024)** in respect of stipulated prior Environmental Clearance terms and conditions in hard and soft copies in respect of our proposal "Expansion and modification of Ore Beneficiation (COB) Plant from Existing 1,000 TPA to 1, 20,000 TPA" of M/s Anand Exports located at District Jajpur, Odisha.

Now we need a copy of the Certified Compliance Report issued by your good office as per the requirements of MoEF & CC. Considering the same, we hereby request you to undertake a visit of our site & issue us a Certified Compliance Report based on your observation at your earliest convenience.

Thanking You

Anand Exports

  
Mahapatra  
Authorized Signatory  
Anand Exports

Copy to:

1. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-office Complex, East Arjun Nagar, Delhi-110032.
2. The Chairman, Odisha State Pollution Control Board, Parivesh Bhawan/118, Nilakantha Nagar, Unit-VIII Bhubaneswar-751012.

**Compliance on condition for Environmental Clearance for the Ore Beneficiation (COB)  
Plant of M/s Anand Exports located at District Jajpur, Odisha  
(Ref: F.No.-J-11015/225/2010-IA.II (M), Government of India, MoEF & CC)**

**A. SPECIFIC CONDITION:**

<b>Sr. No.</b>	<b>Conditions</b>	<b>Compliance</b>
i.	The environment clearance is co-terminus with the mine lease.	Agreed
ii.	The project proponent shall obtain Consent to Establish and Consent to Operate from the State Pollution Control Board, Orissa and effectively implement all the conditions stipulated therein.	The Consent to Establish has been already obtained from Odisha State Pollution Control Board. Now, Consent to Operate obtained vide letter no. 952/KNG/IND/242 dtd. 27.03.2023. Attached as <b>Annexure-I</b> .
iii.	Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this Project	Not Applicable
iv.	The drainage from the plant area should be contained within the plant. No surface run of should be allowed to go outside the plant premises.	Agreed  The surface runoff will be collected through this garland drain and will be collected in collection tank followed by ETP consists of flash mixer with chemical dosing (FeSO <sub>4</sub> & lime) followed by settling tank for conversion of Hexavalent chromium to trivalent chromium before discharge to outside.
v.	The company shall submit within 3months their policy towards Corporate Environment Responsibility which should inter-alia provide for (i) Standard operating process / process to bring into focus any fringement/ deviation/violation of the environmental or forest norms/conditions, (ii) Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions and (iii) System of reporting of non- compliances/violations of environmental norms to the Board of Directors of the Company and / or Shareholders or stakeholders.	The Corporate Environmental Responsibility Policy specifically provides for the following: <ul style="list-style-type: none"> <li>• Standard operating process/procedures to bring into focus any fringement/ deviation/violation of the environmental or forest norms/conditions,</li> <li>• Awareness of environmental and forest legislation throughout the company so that all regulatory requirements are met including conditions/stipulations/norms specified in environment and forest clearance.</li> <li>• Monitoring the implementation of the policy by carrying out periodic compliance audits which are reported to the Board of Directors and, when appropriate, adopting remedial measures.</li> <li>• Ensuring that during the course of their duties all employees act in accordance with the policy so as to appropriately deal with any environmental issues besides complying with all environment clearance conditions and also encouraging suppliers, contractors and</li> </ul>

		<p>vendors to do the same.</p> <ul style="list-style-type: none"> <li>• Giving preference to non-polluting technology, minimizing waste through re-use / recycling and reducing energy consumption</li> <li>• Maintaining transparency in all matters relating to compliance of environmental conditions/stipulations/norms.</li> <li>• Contributing towards awareness of the local community about the importance of the environment through open communication and appropriate CSR activities.</li> </ul>
<b>vi.</b>	Closed Crusher shall only be installed.	Agreed
<b>vii.</b>	The effluent treatment plant shall be provided for treatment of ore.	<ul style="list-style-type: none"> <li>• The effluents generated from beneficiation process were taken to settling tank.</li> <li>• Tailings were taken to slime pond from where the treated water is recycled and semidried/cake form tailings and taken to the proposed tailing pond in pay loader.</li> <li>• The adopted process involves only physical conversion such as grinding and separation under differentiation gravitational forces method. However, the runoff generated from tailing pond area is treated with Ferrous Sulphate and lime to convert Hexavalent chromium to trivalent chromium before discharge to outside.</li> </ul>
<b>viii.</b>	The particulate level shall be monitored for presence of Chromium, if any.	Presence of Chromium is BDL (Below Detection Limit) in Particulate level. The Ambient air Quality analysis report attached as Annexure-V.
<b>ix.</b>	The storage area, both for raw material as also the tailings will be lined with HDPE lining.	Taken care & Implemented.
<b>x.</b>	Water quality both ground water and surface water shall be monitored for any possible leaching taking place. In case, any leaching of Chromium is observed, immediate necessary safeguard measures shall be implemented.	Ground Water Quality analysis Report attached as <b>Annexure-II</b>
<b>xi.</b>	Soil quality shall be monitored in and around the plant for chromium content.	Soil Quality Analysis Report attached as <b>Annexure-III</b>
<b>xii.</b>	Prior permission for drawl of requisite quantity of ground water for the project shall be obtained from the State Government Water Board/ Central Ground Water Authority.	NOC to be obtained from ground water Authority. Letter for CGWA Clearance vide letter no. 21-4 (365) /SER/CGWA/2011-1503 dated: 12.10.2011.
<b>xiii.</b>	The rainwater harvesting shall be adopted in consultation with the Regional Director, Central Ground Water Board.	Rain water harvesting proposal has already been submitted to the Regional Ground Water Board, Bhubaneswar vide letter no. 21-4 (365) /SER/CGWA/2011-1503dated:12.10.2011. Copy enclosed as <b>Annexure-IV</b>
<b>xiv.</b>	As part of ambient air quality monitoring during operational phase of the project, the air	Agreed. AAQ analysis Report attached as <b>Annexure-V</b>

	samples shall also be analyzed for their mineralogical composition and records maintained.	
<b>xv.</b>	The water recovery and spill way system shall be so designed that the natural water resources are not affected and that no spill water from the plant goes into the Brahmani river or any other water body.	The water generated is treated for conversion of Cr+6 to Cr+3 before discharge to outside.
<b>xvi.</b>	The filter cake shall be disposed at the earmarked site only, which shall be above highest water table and shall be lined with HOPE lining to prevent any leaching from the filter cake disposal site into groundwater.	The tailings will be disposed in tailing pond in wet cake form after drying in slime pond.
<b>xvii.</b>	Effective safeguard measures such as conditioning of ore with water, regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as around crushing and screening plant, loading and unloading point and transfer points. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.	Water sprinklers have been provided at all the potential dust generating source to control fugitive dust emission. AAQ qualities are within the standards.
<b>xviii.</b>	The project authority shall implement suitable water conservation measures to augment ground water resources In the area In consultation with the Regional Director, Central Ground Water Board.	Company has already obtained NOC from CGWA, Bhubaneswar vide letter No. 21-4 (365) /SER/CGWA/2011-1503 dated:12.10.2011.
<b>xix.</b>	Regular monitoring of ground water level and quality shall be carried out in and around the mine lease by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August). post- monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Bhubaneswar, the Central Ground Water Authority and the Regional Director, Central Ground water Board. If at any stage, it Is observed that the groundwater table is getting depleted due to the mining activity. Necessary corrective measures shall be carried out.	Not Applicable as it is not a Mining Lease.
<b>xx.</b>	The water quality of Brahmani river. Upstream and downstream of the project shall be monitored regularly and records maintained. It shall be ensured that the quality or Water in the Brahmani river is not affected adversely due to this project.	Being followed. Surface Water Quality analysis report is attached as <b>Annexure-VI</b> .
<b>xxi.</b>	Greenbelt shall be raised in an area of 1.73 ha in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 1500 - 2000	2000 plants were planted every year. This will also continue in the future expansion.

	plants per ha. Greenbelt shall be developed all along the plant area in a phased manner and shall be completed within first five years.	
<b>xxii.</b>	Pre-placement medical examination and periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the worker should be drawn and followed accordingly.	All the employees do undergo periodical medical examination (PME) in hospital every five years. However, as per the recent notification, PME of all the employees shall be carried out once in three years for those employees who have reached 45 years of age or more. As of now, no occupational diseases have been reported till date.
<b>xxiii.</b>	The proponent should evolve, if not already having a well laid down Environment Policy approved by its Board of Directors. It should inter-alia prescribe for standard operating process/ procedures to bring into focus any infringement/ deviation/violation of the environmental or forest norms/conditions. Hierarchical system or Administrative order of the company to deal with the environmental issues and for ensuring compliance with the EC conditions should also be clearly spelt out. Details in this regard should be furnished.	It is being carried out.
<b>xxiv.</b>	Provision shall be made for the housing of construction labor within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	It is being provided in the plant area with all amenities mentioned.

## B. General Conditions

<b>Sr. No.</b>	<b>Conditions</b>	<b>Compliance</b>
<b>i.</b>	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.	Agreed. If any further expansion or modifications in the plant to be carried out with Prior approval from Ministry of Environment and Forests.
<b>ii.</b>	At least four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RSPM (Particulate matter with size less than 10 micron i.e. PM10) and NOx monitoring. Location	Monitoring of the air quality was being conducted twice in a week as per CPCB guide lines. Likewise monitoring is done in buffer zone also. We have done ambient air quality monitoring as per recent Gazette Notification 826(E), dated 16.11.2009. The Ambient air Monitoring Report is attached in Annexure V.
<b>iii.</b>	Measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in high noise areas, etc. Should be provided with ear plugs/muffs.	To limit exposure of noise level of 85 dBA, due precautions at source and at the receiver end are being taken adequately. Rubber padding, acoustic hoods, silencers is being used to control noise within the plant. DG sets have also been provided with acoustic enclosures to prevent noise propagation.
<b>iv.</b>	Industrial waste water should be properly collected, treated so as to conform to the	Effluent generated from the industry is being collected in a central sump & treated in the

	standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.	ETP for reuse in the plant. And the analysis report for ETP water enclosed as Annexure-VII
v.	Personnel working in dusty areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.	Adequate training & information is being given to personnel working in dusty areas. They are also provided with personal protective Equipments (PPEs) such as dust mask.
vi.	Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.	Health camp for health check-up of workers done in regular basis. Use of helmet and shoes is compulsory for both workers and visitors within plant premises.
vii.	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to Head of the Organization.	General Manager of the company is in charged Environmental Department who will report the different issues changed from time to time in the plant area to Head of Organization under supervision of our senior executive of environment management cell made on.
viii.	The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office located at Bhubaneswar.	The necessary pollution control equipment has been installed and is under regular maintenance for which funds has been earmarked in the annual budget.
ix.	The project authorities should inform to the Regional Office at Bhubaneswar regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	The date of financial closure and final approval of the project has been informed to Regional Office every year.
x.	The Regional Office of this Ministry located at Bhubaneswar shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.	Necessary information shall be furnished as and when requested by the Regional Office of Ministry of Environment and Forests.
xi.	The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board. The proponent shall upload the status of the compliance of the environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the Ministry of Environment and Forests, Bhubaneswar, the respective Zonal Officer of Central Pollution Control Board and the State Pollution Control Board.	Six monthly reports on the status of compliance report of the stipulated environmental clearance conditions including results of monitored data is submitted to the Ministry of Environment and Forests, its Regional Office Bhubaneswar, the respective Zonal Office of Central Pollution Control Board and the State Pollution Control Board.
xii.	A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban	Environment Clearance letters were sent to concerned Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body.

	Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.	
<b>xiii.</b>	The State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and the Collector's Office/ Tehsildar's Office for 30 days.	Complied by the State Pollution Control Board.
<b>xiv.</b>	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Office of the Ministry of Environment and Forests, Bhubaneswar by e- mail.	It is submitted every year. And the receiving copy is annexed as <b>Annexure- VIII.</b>
<b>xv.</b>	The project authorities should advertise at least in two local newspapers of the District or State in which the project is located and widely circulated. One of which shall be in the vernacular language of the locality concerned, within 7 days of issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and also at website of the Ministry of Environment and forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional Office of this Ministry located at Bhubaneswar.	Copy of Environmental Clearance has been published in local News and the same was forwarded to the Regional Office of the Ministry located at Bhubaneswar MoEF & CC, New Delhi. And annexed as <b>Annexure-IX.</b>



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**REGIONAL OFFICE KALINGANGAR**  
**STATE POLLUTION CONTROL BOARD, ODISHA**  
**[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]**

AT- DHABALAGIRI, NEAR OMC OFFICE, J.K Road, PO: Ferro Chrome Plant, Jajpur  
DIST- JAJPUR-755019, ODISHA, INDIA

No 834 /KNG/IND/242

Date 13.03.2024

**CONSENT ORDER**

**CONSENT ORDER NO. RO/SPCB/KNG/ 86/2019 (APC & WPC)**

**Sub: Consent to operate under section 25/26 of Water (PCP) Act, 1974 & 21 of the Air (PCP) Act, 1981.**

**Ref : Your online application No. 5369738 & This office consent to operate order no 952/KNG/IND-242 Dtd 27.03.2023**

Consent to operate is hereby granted under section 25 / 26 of Water (Prevention & Control of Pollution) Act, 1974 & under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed there under to

**Name of the Industry** M/s. Anand Exports(Chrome Ore Beneficiation Plant)  
**Name of the Occupier & Designation** Mr Jitendriya Mohapatra, Partner  
**Address** At-Nimapali, Golagaon, PO-Pankapal, Dist-Jajpur

This consent order is valid for the period from **01.04.2024 up to 31.03.2025.**

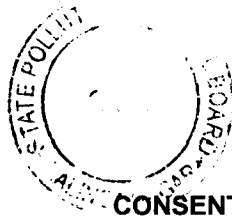
This consent order is valid for the product quantity, specified outlets, discharge quantity and quality, specified chimney / stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

**A. Details of Products Manufactured.**

<b>Sl. No.</b>	<b>Product &amp; Quantity</b>
<b>1</b>	<b>Chrome Ore Beneficiation (COB) of 1,20,000 TPA throughput capacity</b>

P.T.O



**CONSENT ORDER****B. Discharge permitted through the following outlet subject to the standard.**

Outlet No.	Description of outlet.	Point of discharge.	Quantity of discharge KLD or KL/hr	Prescribed standard.				
				pH	SS mg/l	O&G mg/l	Cr+6	
1	Domestic waste water	Soak pit via septic tank.	-	-	-	-	-	-
2	Wash water	Recycled through treatment by ETP	-	5.5-9.0	100	10	0.1	-

**C. Emission permitted through the following stack subject to the prescribed standard.**

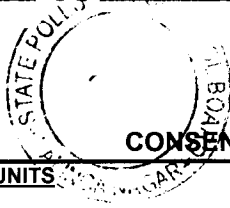
Chimney Stack No.	Description of stack.	Stack height (m)	Quantity of emission	Prescribed standard.				
				mg/Nm <sup>3</sup>	PM	SO <sub>2</sub>	NO <sub>x</sub>	
1			-	-	-	-	-	-
2			-	-	-	-	-	-

*The Unit shall maintain within its premises the prescribed Ambient Noise Level for Residential Area.*

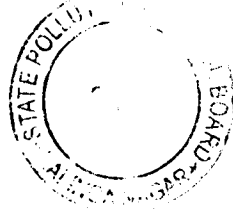
**D. Disposal of solid waste permitted in the following manner.**

Sl. No.	Type of solid waste	Quantity generated (TPD)	Quantity to be reused on site (TPD)	Quantity to be reused off site (TPD)	Quantity disposed off (TPD)	Description of disposal site.
1	Tailings	-	-	-	-	to be stored in earmarked area
2	-	-	-	-	-	-

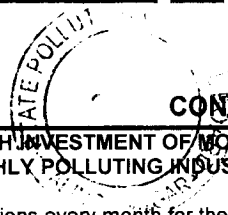
*Contd...*

**CONSENT ORDER****D. GENERAL CONDITIONS FOR ALL UNITS**

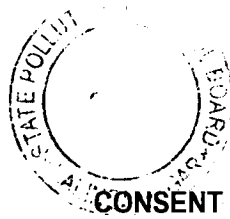
1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.
2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / and products / manufacturing process or quantity /quality of the effluent rate of emission / air pollution control equipment / system etc.
3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.
4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. . In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.
5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.
6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.
7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.
8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.
9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.
10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.
11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been taped by the consumer for utilization for any purposes whatsoever.
12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:
  - a) Industrial cooling, spraying in mine pits or boiler feed,
  - b) Domestic purpose
  - c) Process
13. The applicant shall display suitable caution board at the lace where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.
14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.
15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.
16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.
17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.
18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.
19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.
20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.
21. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.
22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production
23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.

**CONSENT ORDER**

24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.
25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.
26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.
27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner and to ion of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).
28. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.
29. There shall not be any fugitive or episodal discharge from the premises.
30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.
31. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.
32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax / speed post within 24 hours of its occurrence.
33. The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.
34. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as no to cause fugitive emission, dust problems through leaching etc., of any kind.
35. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :
  - i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
  - ii) Controlled incineration, wherever possible in case of combustible organic material.
  - iii) Composting, in case of bio-degradable material.
36. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.
37. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.
38. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.
39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.
40. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.
41. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.
42. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.
43. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.

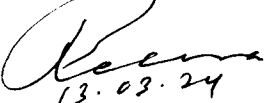
**CONSENT ORDER****GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs 50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).**

1. The applicant shall analyse the emissions every month for the parameters indicated in TABLE .B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10<sup>th</sup> of the succeeding month.
2. The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphur Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monoxide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.
3. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.
4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.
  - a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
  - b. Progress on planting of trees quarterly.
5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.
6. The following information shall be forwarded to the Member Secretary on or before 10<sup>th</sup> of every month.
  - a. Performance / progress of the treatment plant.
  - b. Monthly statement of daily discharge of domestic and/or trade effluent.
7. **Non-compliance with effluent limitations**
  - a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.
    - i) Causes of non-compliance
    - ii) A description of the non-compliance discharge including its impact on the receiving waters.
    - iii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.
    - iv) Steps taken by the applicant to reduce and eliminate the non-complying discharge and Steps to be taken by the applicant to prevent the condition of non-compliance.
  - b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.
  - c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.
8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.
9. The addition of various treatment chemicals should be done only with mechanical dosers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalies arbitrarily and utilizing poles for stirring etc. should not be resorted to.
10. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;
  - Rotation of crops
  - Change of point of application of effluent on land
  - A portion of land kept fallow.
11. The adoption of these would avoid soil becoming sick or slate, the industry may ensure this in consultation with the Agriculture Department.
12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.
13. Proper housekeeping shall be maintained by a dedicated team.
14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.

**CONSENT ORDER****Special Conditions (Water & Air Pollution Control)**

1. Raw materials shall store over impervious platform & under covered shed to avoid any wash out during rain & hence contamination run off
2. The unit shall provide adequate dust containment-cum-extraction system/dust suppression system at all potential dust generating points of the plant including that of raw material handling and product handling area etc. to minimize fugitive dust emission.
3. Industry has to provide DFS at ground hopper, all transfer points of belt conveyor for effective control of fugitive dust within one month.
4. Effluent to be generated from ore washing, process, spillage & concentrate storage yards shall be adequately treated in ETP for removal of Cr<sup>+6</sup> & SS and treated effluent shall be 100% recycled.
5. Garland drain shall be provided along the boundary wall. Provision shall be made for collection of runoff water from the garland drain and water collected shall be treated in a sedimentation tank for further use inside the premises for green belt or water sprinkling etc. Under no circumstances, the contaminated water shall be allowed outside the premises without adequate treatment.
6. Garland drain shall be provided all around the raw material and product dump area for preventing any entry of rain water into the area or flow of solids along with surface run off..
7. Tailings shall be stored in lined tailing pond/ impervious platform and garland drain which will lead to treatment system to collect surface run off of that area. Treated surface run off shall be used for dust suppression &/or tailings generated shall be disposed to authorized TSDF/Common hazardous waste disposal facility.
8. All the internal roads should be black topped/concreted within the industry premises.
9. Dust suppression arrangement shall be provided on approach road by using water sprinklers / mobile water tanker.
10. Green belt of adequate width (at least two rows) shall be developed all along the plant boundary premises
11. The unit shall obtain permission from concerned authority for drawl of water and submitted to the Board within three months
12. The unit shall provide pollution control measures for controlling the fugitive dust emission and the ambient air quality inside the factory premises which shall conform to the National Ambient Air Quality Standards.
13. The unit shall maintain a record of chrome ore collected from different mines for processing and submitted to the board on every year.
14. The unit shall abide by all the provisions of Environment (Protection) Act, 1986 and Rules framed there under.
15. The unit shall submit a declaration by 30<sup>th</sup> of April every year that all the pollution control systems are in good condition and operating properly and waste water quality and ambient air quality conform to the prescribed standards and all the consent conditions have been complied with.
16. The Board reserves the right to revoke / refuse consent at any time during this period incase any violation is observed and to modify / stipulate additional conditions as deemed appropriate.

The occupier must comply with the conditions stipulated in section A,B,C,D and E to keep this consent order valid.

  
13.03.24

**REGIONAL OFFICER**  
Regional Officer

State Pollution Control Board, Odisha  
Kalinga Nagar, Jajpur

To,  
**Sri Jitendriya Mohapatra, Partner**  
**M/s Anand Exports(Chrome Ore Beneficiation Plant)**  
**At/PO-Nimapali, Golagaon**  
**Dist-Jajpur, Odisha**

Memo No. 835 / Dtd. 13.03.2024

Copy forwarded to:

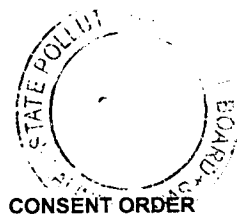
1. Member Secretary, S.P.C. Board, Odisha, Bhubaneswar
2. Collector & District Magistrate, Jajpur
3. General Manager, Regional Industries Centre, Jajpur
4. Dy. Director of Mines, Jajpur
5. Copy to Guard file.

  
13.03.24

**REGIONAL OFFICER**  
Regional Officer

State Pollution Control Board, Odisha  
Kalinga Nagar, Jajpur

o/c



## NATIONAL AMBIENT AIR QUALITY STANDARDS

Sl. No.	Pollutants	Time Weighed Average	Concentrate of Ambient Air		
			Industrial Residential, Rural and other Area	Ecologically Sensitive Area (notified by Central Government)	Methods of Measurement
(1)	(2)	(3)	(4)	(5)	(6)
1.	Sulphur Dioxide (SO <sub>2</sub> ), µg/m <sup>3</sup>	Annual * 24 Hours **	50 80	20 80	-Improved west and Gaeke - Ultraviolet fluorescence
2.	Nitrogen Dioxide (NO <sub>2</sub> ), µg/m <sup>3</sup>	Annual * 24 Hours **	40 80	30 80	- Modified Jacob &Hochheiser ( Na-Arsenite) - Chemiluminescence
3.	Particulate Matter (size less than 10µm) or PM <sub>10</sub> µg/m <sup>3</sup>	Annual * 24 Hours **	60 100	60 100	-Gravimetric - TOEM - Beta Attenuation
4.	Particulate Matter (size less than 2.5µm) or PM <sub>2.5</sub> µg/m <sup>3</sup>	Annual * 24 Hours **	40 60	40 60	-Gravimetric - TOEM - Beta Attenuation
5.	Ozone (O <sub>3</sub> ) µg/m <sup>3</sup>	8 Hours ** 1 Hours **	100 180	100 180	- UV Photometric - Chemiluminescence - Chemical Method
6.	Lead (Pb) µg/m <sup>3</sup>	Annual * 24 Hours **	0.50 1.0	0.50 1.0	-AAS/ICP method after sampling on EMP 2000 or equivalent filter paper. - ED-XRF using Teflon filter
7.	Carbon Monoxide (CO) mg/m <sup>3</sup>	8 Hours ** 1 Hours **	02 04	02 04	- Non Dispersive Infra Red (NDIR) Spectroscopy
8.	Ammonia (NH <sub>3</sub> ) µg/m <sup>3</sup>	Annual* 24 Hours**	100 400	100 400	-Chemiluminescence - Indophenol Blue Method
9.	Benzene (C <sub>6</sub> H <sub>6</sub> ) µg/m <sup>3</sup>	Annual *	05	05	-Gas Chromatography based continuous analyzer - Adsorption and Desorption followed by GC analysis
10.	Benzo (a) Pyrene (BaP)- Particulate phase only, ng/m <sup>3</sup>	Annual*	01	01	-Solvent extraction followed by HPLC/GC analysis
11.	Arsenic (As), ng/m <sup>3</sup>	Annual*	06	06	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper
12.	Nickel (Ni),ng/m <sup>3</sup>	Annual*	20	20	-AAS/ICP method after sampling on EPM 2000 or equivalent filter paper

\*\* Annual arithmetic mean of minimum 104 measurements in a year at a particular site taken twice a week 24 hourly at uniform intervals.

\*\* 24 hourly or 08 hourly or 01 hourly monitored values, as applicable, shall be complied with 98% of the time in a year, 2% of the time, they may exceed the limits but not on two consecutive days of monitoring.



Ref: ENVLAB/24-25/TR-12307

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF GROUND WATER QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

1. Name of Client : M/s Anand Exports, Kalinga Nagar, Jajpur
2. Sampling Location : GW1: Near Main Gate
3. Sample Collected by : VCSPL Representative

Sl. No	Parameter	Testing Method	Unit	Standard IS - 10500:2012 Amended on 2015 & 2018	Analysis Result						
					APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	Avg
<b>Essential Characteristics</b>											
1	Colour	Visual Comparison Method APHA 23 <sup>RD</sup> Ed,2017 : 2120 B, C	Hazen	5	<5	<5	<5	<5	<5	<5	<5
2	Odour	Threshold Odour Test APHA 23 <sup>RD</sup> Ed,2017 :2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Flavor Threshold Test APHA 23 <sup>RD</sup> Ed,2017 : 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	Nephelometric Method APHA 23 <sup>RD</sup> Ed,2017 :2130 B	NTU	1	<1.0	1.0	<1.0	1.2	1.6	1.4	1.3
5	pH Value at 25°C	pH Meter APHA 23 <sup>RD</sup> Ed,2017 : 4500H <sup>+</sup> B	--	6.5-8.5	7.23	7.15	7.17	7.23	7.31	7.27	7.23
6	Total Hardness (as CaCO <sub>3</sub> )	EDTA Titrimetric Method APHA 23 <sup>RD</sup> Ed,2017 : 2340 C	mg/l	200	148	177	162	159	154	160	160
7	Iron (as Fe)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 : 3111, B	mg/l	1.0	0.23	0.34	0.30	0.34	0.37	0.31	0.32
8	Chloride (as Cl <sup>-</sup> )	Argentometric Method APHA 23 <sup>RD</sup> Ed,2017 : 4500Cl <sup>-</sup> B	mg/l	250	41.0	37.6	40.8	36.5	34.8	40.2	38.5
9	Residual, free Chlorine	Iodometric Method APHA 23 <sup>RD</sup> Ed,2017 : 4500Cl <sub>2</sub> B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND
<b>Desirable Characteristics</b>											
10	Dissolved Solids	Gravimetric Method APHA 23 <sup>RD</sup> Ed,2017 : 2540 C	mg/l	500	264	243	257	269	274	282	264.8
11	Calcium (as Ca)	EDTA Titrimetric Method APHA 23 <sup>RD</sup> Ed,2017 : 3500Ca B	mg/l	75	33.6	30.9	36.5	40.4	36.9	38.1	36.07
12	Magnesium (as Mg)	Calculation Method APHA 23 <sup>RD</sup> Ed,2017 : 3500Mg B	mg/l	30	5.37	10.41	6.53	2.70	3.37	2.15	5.09
13	Copper (as Cu)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Manganese (as Mn)	Persulfate Method APHA 23 <sup>RD</sup> Ed,2017: 3500Mn B	mg/l	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Sulphate (as SO <sub>4</sub> )	Turbidimetric Method APHA 23 <sup>RD</sup> Ed,2017: 4500 SO <sub>4</sub> <sup>2-</sup> E	mg/l	200	18.6	15.7	20.2	19.8	22.3	20.6	19.53
16	Nitrate (as NO <sub>3</sub> )	By UV-Screen Method APHA 23 <sup>RD</sup> Ed,2017: 4500 NO <sub>3</sub> <sup>-</sup> E	mg/l	45	7.2	6.5	6.9	7.0	6.4	7.8	6.97
17	Fluoride (as F)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed,2017: 4500F <sup>-</sup> C	mg/l	1.0	0.18	0.15	0.13	0.14	0.18	0.17	0.16
18	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	Chloroform Extraction by Colorimetric Method APHA 23 <sup>RD</sup> Ed,2017: 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Mercury (as Hg)	AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3112 B	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cadmium (as Cd)	AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Selenium (as Se)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3500 Se C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Arsenic (as As)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3114 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Cyanide (as CN)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed,2017: 4500 CN <sup>-</sup> C,D	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Lead (as Pb)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 3111 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Zinc (as Zn)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	5	1.4	1.2	1.0	1.2	1.3	1.5	1.27
27	Chromium (as Cr <sup>+6</sup> )	Diphenyl Carbazide Method APHA 23 <sup>RD</sup> Ed,2017: 3500Cr B	mg/l	--	0.009	0.012	0.011	0.013	0.016	0.015	0.013
29	Alkalinity	Titration Method APHA 23 <sup>RD</sup> Ed,2017:2320 B	mg/l	200	172	160	175	186	166	194	176
30	Aluminium as( Al)	AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 D	mg/l	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
31	Boron (as B)	Curcumin Method APHA 23 <sup>RD</sup> Ed,2017: 4500B, B	mg/l	0.5	0.39	0.40	0.35	0.38	0.41	0.40	0.39



# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017 Certified

32	Total Chromium as Cr	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
33	Total Coliform as TC	MPN Method APHA 23 <sup>RD</sup> Ed,2017 : 9221 b	MPN/ 100ml	Shall not be detectable in any 100ml sample	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8

CL – Colorless, U/O – Unobjectionable, ND – Not detected.

BDL (Below detection limit) Values : (Cu<0.05 mg/l, Mn<0.005 mg/l, C<sub>6</sub>H<sub>5</sub>OH<0.001 mg/l, Hg<0.005mg/l, Cd<0.001 mg/l, Se<0.001 mg/l, As<0.001 mg/l, Pb<0.01 mg/l, Zn<0.05 mg/l, Cr<sup>+6</sup><0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l, NO<sub>3</sub><0.01 mg/l)

  
Reviewed By



  
Approved By







Ref: ENVLAB/24-25/TR-12308

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF GROUND WATER QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

1. Name of Client : M/s Anand Exports, Kalinga Nagar, Jajpur
2. Sampling Location : GW2: Near Staff Quarter Site
3. Sample Collected by : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard IS - 10500:2012 Amended on 2015 & 2018	Analysis Result						
					APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	Avg
<b>Essential Characteristics</b>											
1	Colour	Visual Comparison Method APHA 23 <sup>RD</sup> Ed.2017 : 2120 B, C	Hazen	5	<5	<5	<5	<5	<5	<5	<5
2	Odour	Threshold Odour Test APHA 23 <sup>RD</sup> Ed.2017 :2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Flavor Threshold Test APHA 23 <sup>RD</sup> Ed.2017 : 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	Nephelometric Method APHA 23 <sup>RD</sup> Ed.2017 :2130 B	NTU	1	<1.0	<1.0	<1.0	<1.0	1.3	1.1	1.2
5	pH Value at 25°C	pH Meter APHA 23 <sup>RD</sup> Ed.2017 : 4500H <sup>+</sup> B	--	6.5-8.5	7.16	7.22	7.28	7.14	7.21	7.20	7.20
6	Total Hardness (as CaCO <sub>3</sub> )	EDTA Titrimetric Method APHA 23 <sup>RD</sup> Ed.2017 : 2340 C	mg/l	200	136	142	149	150	144	153	145.7
7	Iron (as Fe)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017 : 3111, B	mg/l	1.0	0.24	0.22	0.23	0.28	0.24	0.25	0.24
8	Chloride (as Cl <sup>-</sup> )	Argentometric Method APHA 23 <sup>RD</sup> Ed.2017 : 4500Cl <sup>-</sup> B	mg/l	250	34.2	30.9	31.4	29.6	34.5	33.2	32.3
9	Residual, free Chlorine	Iodometric Method APHA 23 <sup>RD</sup> Ed.2017 : 4500Cl <sup>-</sup> B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND
<b>Desirable Characteristics</b>											
10	Dissolved Solids	Gravimetric Method APHA 23 <sup>RD</sup> Ed.2017 : 2540 C	mg/l	500	278	296	324	336	310	286	305.0
11	Calcium (as Ca <sup>+</sup> )	EDTA Titrimetric Method APHA 23 <sup>RD</sup> Ed.2017 : 3500Ca B	mg/l	75	34.6	38.6	33.2	37.5	35.3	36.1	35.88
12	Magnesium (as Mg)	Calculation Method APHA 23 <sup>RD</sup> Ed.2017 : 3500Mg B	mg/l	30	4.76	5.74	8.53	4.46	4.34	3.37	5.20
13	Copper (as Cu)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Manganese (as Mn)	Persulfate Method APHA 23 <sup>RD</sup> Ed.2017: 3500Mn B	mg/l	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Sulphate (as SO <sub>4</sub> )	Turbidimetric Method APHA 23 <sup>RD</sup> Ed.2017: 4500 SO <sub>4</sub> <sup>2-</sup> E	mg/l	200	17.5	20.8	20.1	19.6	20.4	21.3	19.95
16	Nitrate (as NO <sub>3</sub> )	By UV-Screen Method APHA 23 <sup>RD</sup> Ed.2017: 4500 NO <sub>3</sub> <sup>-</sup> E	mg/l	45	5.2	4.6	4.8	5.0	4.3	5.1	4.83
17	Fluoride (as F)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500F <sup>-</sup> C	mg/l	1.0	0.18	0.21	0.25	0.22	0.20	0.18	0.21
18	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	Chloroform Extraction by Colorimetric Method APHA 23 <sup>RD</sup> Ed.2017: 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Mercury (as Hg)	AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3112 B	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cadmium (as Cd)	AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Selenium (as Se)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3500 Se C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Arsenic (as As)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3114 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Cyanide (as CN)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500 CN <sup>-</sup> C,D	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Lead (as Pb)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017 3111 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Zinc (as Zn)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	5	2.2	1.9	2.0	2.1	2.3	2.4	2.15
27	Chromium (as Cr <sup>+6</sup> )	Diphenyl Carbazide Method APHA 23 <sup>RD</sup> Ed.2017: 3500Cr B	mg/l	--	0.018	0.015	0.017	0.016	0.020	0.017	0.017
29	Alkalinity	Titration Method APHA 23 <sup>RD</sup> Ed.2017:2320 B	mg/l	200	238	224	219	226	230	225	227
30	Aluminium as( Al)	AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 D	mg/l	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
31	Boron (as B)	Curcumin Method	mg/l	0.5	0.52	0.48	0.50	0.51	0.46	0.52	0.50



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32	Total Chromium as Cr	APHA 23 <sup>RD</sup> Ed,2017: 4500B, B By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
33	Total Coliform as TC	MPN Method APHA 23 <sup>RD</sup> Ed,2017 : 9221 b	MPN/ 100ml	Shall not be detectable in any 100ml sample	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8

CL – Colourless, U/O – Unobjectionable, ND – Not detected.

BDL (Below detection limit) Values : (Cu<0.05 mg/l, Mn<0.005 mg/l, C<sub>6</sub>H<sub>5</sub>OH<0.001 mg/l, Hg<0.005mg/l, Cd<0.001 mg/l, Se<0.001 mg/l, As<0.001 mg/l, Pb<0.01 mg/l, Zn<0.05 mg/l, Cr<sup>+6</sup><0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l, NO<sub>3</sub><0.01 mg/l)

Reviewed By



Approved By



Ref: ENVLAB/24-25/TR-12309

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF GROUND WATER QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

1. Name of Client : M/s Anand Exports, Kalinga Nagar, Jajpur
2. Sampling Location : GW3: Near Old Office Building Site
3. Sample Collected by : VCSPL Representative

Sl. No.	Parameter	Testing Method	Unit	Standard IS -10500:2012 Amended on 2015 & 2018	Analysis Result						
					APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	Avg
<i>Essential Characteristics</i>											
1	Colour	Visual Comparison Method APHA 23 <sup>RD</sup> Ed.2017: 2120 B, C	Hazen	5	<5	<5	<5	<5	<5	<5	<5
2	Odour	Threshold Odour Test APHA 23 <sup>RD</sup> Ed.2017: 2150 B	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3	Taste	Flavor Threshold Test APHA 23 <sup>RD</sup> Ed.2017: 2160 C	--	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
4	Turbidity	Nephelometric Method APHA 23 <sup>RD</sup> Ed.2017: 2130 B	NTU	1	1.1	<1.0	1.2	<1.0	<1.0	<1.0	1.15
5	pH Value at 25°C	pH Meter APHA 23 <sup>RD</sup> Ed.2017: 4500H <sup>+</sup> B	--	6.5-8.5	7.03	7.15	6.98	7.24	7.15	7.07	7.10
6	Total Hardness (as CaCO <sub>3</sub> )	EDTA Titrimetric Method APHA 23 <sup>RD</sup> Ed.2017: 2340 C	mg/l	200	124	138	122	120	118	124	124.3
7	Iron (as Fe)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111, B	mg/l	1.0	0.21	0.25	0.19	0.20	0.22	0.21	0.21
8	Chloride (as Cl <sup>-</sup> )	Argentometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500Cl <sup>-</sup> B	mg/l	250	33.6	36.7	35.4	31.9	32.8	34.1	34.1
9	Residual, free Chlorine	Iodometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500Cl <sub>2</sub> B	mg/l	0.2	ND	ND	ND	ND	ND	ND	ND
<i>Desirable Characteristics</i>											
10	Dissolved Solids	Gravimetric Method APHA 23 <sup>RD</sup> Ed.2017: 2540 C	mg/l	500	267	244	232	241	239	232	242.5
11	Calcium (as Ca)	EDTA Titrimetric Method APHA 23 <sup>RD</sup> Ed.2017: 3500Ca B	mg/l	75	32.6	30.7	31.4	33.5	30.7	31.3	31.70
12	Magnesium (as Mg)	Calculation Method APHA 23 <sup>RD</sup> Ed.2017: 3500Mg B	mg/l	30	5.98	10.53	9.62	6.89	7.13	6.28	7.74
13	Copper (as Cu)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
14	Manganese (as Mn)	Persulfate Method APHA 23 <sup>RD</sup> Ed.2017: 3500Mn B	mg/l	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Sulphate (as SO <sub>4</sub> )	Turbidimetric Method APHA 23 <sup>RD</sup> Ed.2017: 4500 SO <sub>4</sub> <sup>2-</sup> E	mg/l	200	12.5	11.7	13.2	12.2	13.6	12.7	12.65
16	Nitrate (as NO <sub>3</sub> )	By UV-Screen Method APHA 23 <sup>RD</sup> Ed.2017: 4500 NO <sub>3</sub> <sup>-</sup> E	mg/l	45	4.3	5.4	5.8	5.0	5.5	6.1	5.35
17	Fluoride (as F)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500F <sup>-</sup> C	mg/l	1.0	0.16	0.14	0.17	0.15	0.16	0.18	0.16
18	Phenolic Compounds (as C <sub>6</sub> H <sub>5</sub> OH)	Chloroform Extraction by Colorimetric Method APHA 23 <sup>RD</sup> Ed.2017: 5530 B,D	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
19	Mercury (as Hg)	AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3112 B	mg/l	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
20	Cadmium (as Cd)	AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
21	Selenium (as Se)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3500 Se C	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
22	Arsenic (as As)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3114 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
23	Cyanide (as CN)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500 CN <sup>-</sup> C,D	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
24	Lead (as Pb)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017 3111 B	mg/l	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
25	Zinc (as Zn)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	5	1.3	1.1	0.9	1.1	1.5	1.4	1.22
27	Chromium (as Cr+6)	Diphenyl Carbazide Method APHA 23 <sup>RD</sup> Ed.2017: 3500Cr B	mg/l	--	0.013	0.015	0.011	0.013	0.012	0.015	0.013
29	Alkalinity	Titration Method APHA 23 <sup>RD</sup> Ed.2017:2320 B	mg/l	200	152	148	155	150	146	150	150
30	Aluminium as( Al)	AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 D	mg/l	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01



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31	Boron (as B)	Curcumin Method APHA 23 <sup>RD</sup> Ed,2017: 4500B, B	mg/l	0.5	0.23	0.21	0.30	0.28	0.26	0.27	0.26
32	Total Chromium as Cr	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
33	Total Coliform as TC	MPN Method APHA 23 <sup>RD</sup> Ed, 2017: 9221 b	MPN/ 100ml	Shall not be detectable in any 100ml sample	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8

CL – Colorless, U/O – Unobjectionable, ND – Not detected.

BDL (Below detection limit) Values : (Cu<0.05 mg/l, Mn<0.005 mg/l, C<sub>6</sub>H<sub>5</sub>OH<0.001 mg/l, Hg<0.005mg/l, Cd<0.001 mg/l, Se<0.001 mg/l, As<0.001 mg/l, Pb<0.01 mg/l, Zn<0.05 mg/l, Cr<sup>6+</sup><0.05 mg/l, Al<0.001 mg/l, B<0.01 mg/l, NO<sub>3</sub><0.01 mg/l)

  
Reviewed By



  
Approved By





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Ref: ENVLAB/24-25/TR-12310

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPTEMBER-2024)

1. Name of Industry : M/s Anand Exports, Kalinga Nagar , Jajpur
2. Sampling Location : S1: Soil From Main Gate Left Site
3. Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVG
1	Colour	--	--	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown
2	Type of Soil	--	--	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	7.02	6.75	6.89	6.72	7.01	7.11	6.92
4	Soil Texture	%	Methods of Soil Analyses Black 1965 American Society of Agronomy USA	Sandy Loam	Sandy Loam	Loam	Sandy Loam	Loam	Loam	---
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	1.42	1.36	1.39	1.21	1.18	1.20	1.3
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	7.2	6.9	8.1	5.6	6.0	6.1	6.65
7	Chloride as Cl	%	USDA 1954, RA 2010, Page 133	10.2	8.8	10.1	9.5	8.7	8.3	9.3
8	Sulphate as SO4	mg/kg	IS 2720 (P-27) 1977 RA 2015	31.6	29.5	30.7	32.4	33.6	34.1	32.0
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.52	1.46	2.02	1.70	1.42	1.58	1.6
10	Phosphorous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	3.7	4.0	4.8	4.3	5.0	4.7	4.42
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10729	10561	10603	10963	10875	11021	10792
12	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10.9	10.5	9.8	10.2	9.9	9.5	10.1
13	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.35	1.28	1.41	1.36	1.52	1.56	1.41
13	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	2.19	2.17	3.02	2.56	3.13	3.25	2.72
14	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	0.27	0.31	0.43	0.32	0.38	0.30	0.34
15	Electrical Conductivity	µS/cm	IS:14767:2000 ( RA 2016 )	172.6	167.5	181.9	168.4	163.6	170.2	170.7
16	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	14.9	15.1	13.6	13.7	14.2	13.6	14.2

  
Prepared By: 

  
Verified By: 



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Ref: ENVLAB/24-25/TR-12311

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPTEMBER-2024)

- Name of Industry : M/s Anand Exports, Kalinga Nagar , Jajpur
- Sampling Location : S2: Soil From Near Staff Quarter Site
- Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVG
1	Colour	--	--	Brown	Brown	Brown	Brown	Brown	Brown	Brown
2	Type of Soil	--	--	Basic	Basic	Basic	Basic	Basic	Basic	Basic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	6.68	6.91	6.63	6.79	6.83	6.72	6.76
4	Soil Texture	%	Methods of Soil Analyses Black 1965 American Society of Agronomy USA	Sandy Loam	Loam	Loam	Sandy Loam	Loam	Loam	Loam
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	1.32	1.44	2.08	1.13	1.42	1.38	1.5
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	6.6	7.5	6.1	7.0	7.2	8.0	7.07
7	Chloride as Cl	%	USDA 1954, RA 2010, Page 133	10.2	8.6	9.7	7.2	8.8	8.2	8.8
8	Sulphate as SO4	mg/kg	IS 2720 (P-27) 1977 RA 2015	37.6	32.8	33.6	30.7	32.8	31.3	33.1
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.45	1.32	1.38	1.40	1.35	1.31	1.4
10	Phosphorous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	4.8	4.3	5.0	5.1	4.8	5.0	4.83
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10726	10089	10142	10236	10328	10114	10273
12	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	6.3	7.5	6.9	7.2	7.1	6.8	7.0
13	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.31	1.68	1.63	1.72	2.02	2.19	1.76
14	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	2.31	4.06	3.19	2.63	2.85	3.10	3.02
15	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.38	1.29	1.31	0.92	1.34	1.30	1.26
16	Electrical Conductivity	µS/cm	IS:14767:2000 ( RA 2016 )	175.6	182.8	180.6	178.8	190.2	184.6	182.1
17	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	13.9	12.4	12.8	12.5	11.7	12.1	12.6

Prepared By:   


Verified By:   




Ref: ENVLAB/24-25/TR-12312

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

- Name of Industry : M/s Anand Exports, Kalinga Nagar , Jajpur
- Sampling Location : S3: Soil From Old Office Building site
- Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVG
1	Colour	--	--	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown	Reddish Brown
2	Type of Soil	--	--	Basic	Basic	Basic	Basic	Basic	Basic	Basic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	6.91	6.78	7.02	6.95	6.88	7.06	6.93
4	Soil Texture	%	Methods of Soil Analyses Black 1965 American Society of Agronomy USA	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Loam	Loam	Sandy Loam
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	4.53	4.11	3.98	3.52	3.01	2.72	3.6
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	6.3	8.1	7.9	7.6	8.0	6.7	7.43
7	Chloride as Cl	%	USDA 1954, RA 2010, Page 133	9.8	10.2	9.5	9.6	9.1	10.1	9.7
8	Sulphate as SO4	mg/kg	IS 2720 (P-27) 1977 RA 2015	36.6	30.8	32.7	29.3	28.5	30.1	31.3
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.81	1.63	1.73	1.70	1.69	1.72	1.7
10	Phosphorous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	5.6	5.5	5.1	5.3	4.7	5.0	5.20
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	9862	9840	9563	9475	9823	9726	9715
12	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	8.5	7.9	7.5	8.0	9.3	6.7	8.0
13	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.41	1.45	1.23	1.30	1.35	1.53	1.38
14	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	3.52	3.44	2.96	3.01	3.13	3.20	3.21
15	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	0.24	0.30	0.28	0.27	0.30	0.31	0.28
16	Electrical Conductivity	µS/cm	IS:14767:2000 ( RA 2016 )	158.3	160.8	157.6	155.0	161.4	157.2	158.4
17	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	8.3	7.7	7.2	10.0	9.3	9.5	8.7

Prepared By:   


Verified By:   




Ref: ENVLAB/24-25/TR-12313

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF SOIL QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

- Name of Industry : M/s Anand Exports, Kalinga Nagar , Jajpur
- Sampling Location : S4: Soil From Near Crusher Site
- Sample Collected By : VCSPL Representative in presence of Client's Representative

Sl. No.	Name of the Parameters	Unit	Testing Method	Analysis Result						
				APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVG
1	Colour	--	--	Brown	Brown	Reddish Brown	Reddish Brown	Brown	Reddish Brown	Reddish Brown
2	Type of Soil	--	--	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic	Acidic
3	pH at 250C	--	IS 2720 (P-26) 1987, RA 2016	7.15	6.87	6.93	6.64	6.72	6.76	6.85
4	Soil Texture	%	Methods of Soil Analyses Black 1965 American Society of Agronomy USA	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam	Sandy Loam
5	Bulk Density	gm/cc	USDA 1954 , RA 2010	1.31	1.28	1.25	1.30	1.43	1.52	1.3
6	Moisture content	%	IS 2720 (Part-2) 1973, RA 2015	6.1	5.5	5.9	6.0	6.3	5.8	5.93
7	Chloride as Cl	%	USDA 1954, RA 2010, Page 133	8.2	7.0	7.7	6.6	7.3	7.5	7.4
8	Sulphate as SO4	mg/kg	IS 2720 (P-27)1977 RA 2015	26.3	28.7	30.3	29.4	31.2	29.8	29.3
9	Available Potassium as K	mg/kg	Method of Analysis of Soil by HLS.Tandon	1.35	1.27	1.30	1.31	1.25	1.23	1.3
10	Phosphrous as P	mg/kg	Method of Analysis of Soil by HLS.Tandon	4.4	5.2	3.3	3.8	4.0	4.2	4.15
11	Iron as Fe	mg/kg	EPA 3050B, 7000B Rev 02, 1996	10116	10578	10102	10126	10028	10173	10187
12	Organic Carbon	%	Method of Analysis of Soil by HLS.Tandon	1.27	1.40	1.35	1.31	1.29	1.30	1.3
13	Total Chromium as Cr	mg/kg	EPA 3050B, 7000B Rev 02, 1996	7.0	6.7	6.2	5.9	6.0	6.3	6.35
14	Organic Matter	%	Method of Analysis of Soil by HLS.Tandon	2.16	2.24	1.96	1.42	1.77	2.02	1.93
15	Available Nitrogen as N	mg/kg	Method of Analysis of Soil by HLS.Tandon	0.27	0.32	0.30	0.25	0.33	0.28	0.29
16	Electrical Conductivity	µS/cm	IS:14767:2000 ( RA 2016 )	184.5	163.2	178.1	153.8	168.5	179.2	171.2
17	Silica as SiO2	mg/kg	Method of Analysis of Soil by HLS.Tandon	5.6	7.1	6.9	6.5	8.0	7.3	6.9

Prepared By: 



Verified By: 







Ref: ENVLAB/24-25/TR-12314

Date: 14.10.2024

## SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (APRIL-2024 TO SEPT-2024) CORE ZONE

1. Name of Industry : M/s. Anand Exports, Kalinga Nagar, Jajpur
2. Sampling Location : AAQMS-1: Near Old Office Building Site
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Cr (µg/m <sup>3</sup> )
APRIL-24	61.3	31.6	5.2	12.5	10.5	0.24	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAY-24	63.9	33.5	5.7	11.9	10.8	0.29	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JUNE-24	56.7	31.9	5.3	12.3	10.6	0.3	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JULY-24	59.2	34.2	5.1	12.1	10.3	0.25	BDL	BDL	BDL	BDL	BDL	BDL	BDL
AUG-24	57.3	30.3	4.8	11.4	11.1	0.24	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SEPT-24	54.5	30.7	5	11.9	10.8	0.29	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	58.8	32.0	5.2	12.0	10.7	0.27	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>, NH<sub>3</sub> <20 µg/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, Pb<0.00 µg/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, Cr <0.005 µg/m<sup>3</sup>

Reviewed by:



Approved by: P. Patil





# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017 Certified

Ref: ENVLAB/24-25/TR-12315

Date: 14.10.2024

## SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (APRIL-2024 TO SEPT-2024) CORE ZONE

1. Name of Industry : M/s. Anand Exports, Kalinga Nagar , Jajpur
2. Sampling Location : AAQMS-2 : Near Washing Plant
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Cr (µg/m <sup>3</sup> )
APRIL-24	64.3	33.2	8.3	14.5	14.2	0.48	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAY-24	66.2	34.6	8.1	15.2	13.8	0.50	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JUNE-24	68.9	30.9	8.3	16.1	13.1	0.46	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JULY-24	60.1	31.3	7.9	15.4	12.7	0.49	BDL	BDL	BDL	BDL	BDL	BDL	BDL
AUG-24	59.5	33.4	8.2	14.2	13.3	0.45	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SEPT-24	60.3	32.7	8.3	14.7	14.2	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	63.2	32.7	8.2	15.0	13.6	0.47	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: SO<sub>2</sub> < 4 µg/m<sup>3</sup>, NO<sub>x</sub> < 9 µg/m<sup>3</sup>, O<sub>3</sub> < 4 µg/m<sup>3</sup>, CO < 0.1 mg/m<sup>3</sup>, NH<sub>3</sub> < 20 µg/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub> < 0.001 µg/m<sup>3</sup>, BaP < 0.002 ng/m<sup>3</sup>, Ni < 0.01 ng/m<sup>3</sup>, Pb < 0.001 µg/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, Cr < 0.005 µg/m<sup>3</sup>

Reviewed by:   


Approved by:   




Ref: ENVLAB/24-25/TR-12316

Date: 14.10.2024

## SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (APRIL-2024 TO SEPT-2024) BUFFER ZONE

- Name of Industry : M/s. Anand Exports, Kalinga Nagar , Jajpur
- Sampling Location : AAQMS-1 : Near Staff Quarter Site
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
- Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Cr (µg/m <sup>3</sup> )
APRIL-24	63.5	32.6	7.1	18.2	9.3	0.58	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAY-24	57.2	31.9	6.6	17.6	8.7	0.60	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JUNE-24	61.6	33.5	7.0	17.9	8.6	0.55	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JULY-24	56.3	30.7	6.9	18.1	9.0	0.53	BDL	BDL	BDL	BDL	BDL	BDL	BDL
AUG-24	55.4	29.6	6.5	17.7	8.2	0.51	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SEPT-24	55.2	30.3	6.5	17.2	8.6	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	58.2	31.4	6.8	17.8	8.7	0.55	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>, NH<sub>3</sub> <20 µg/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, Cr <0.005 µg/m<sup>3</sup>

Reviewed by:   


Approved by:   




# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017 Certified

Ref: ENVLAB/24-25/TR-12317

Date: 14.10.2024

## SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (APRIL-2024 TO SEPT-2024) BUFFER ZONE

- Name of Industry : M/s. Anand Exports, Kalinga Nagar , Jajpur
- Sampling Location : AAQMS-2 : Near Main Gate Site
- Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
- Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>x</sub> ( $\mu\text{g}/\text{m}^3$ )	O <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	CO ( $\text{mg}/\text{m}^3$ )	NH <sub>3</sub> ( $\mu\text{g}/\text{m}^3$ )	C <sub>6</sub> H <sub>6</sub> ( $\mu\text{g}/\text{m}^3$ )	BaP ( $\text{ng}/\text{m}^3$ )	Ni ( $\text{ng}/\text{m}^3$ )	Pb ( $\mu\text{g}/\text{m}^3$ )	As ( $\text{ng}/\text{m}^3$ )	Cr ( $\mu\text{g}/\text{m}^3$ )
APRIL-24	58.9	31.3	7.0	14.1	9.4	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAY-24	60.1	30.9	6.6	14.4	9.2	0.38	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JUNE-24	54.6	28.5	6.2	13.7	9.0	0.44	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JULY-24	56.3	30.4	5.9	14.6	8.9	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
AUG-24	52.8	27.6	6.0	14.3	9.2	0.42	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SEPT-24	54.4	29.5	5.4	13.8	9.6	0.39	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	56.2	29.7	6.2	14.2	9.2	0.41	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: SO<sub>2</sub> < 4  $\mu\text{g}/\text{m}^3$ , NO<sub>x</sub> < 9  $\mu\text{g}/\text{m}^3$ , O<sub>3</sub> < 4  $\mu\text{g}/\text{m}^3$ , CO < 0.1  $\text{mg}/\text{m}^3$ , NH<sub>3</sub> < 20  $\mu\text{g}/\text{m}^3$ , C<sub>6</sub>H<sub>6</sub> < 0.001  $\mu\text{g}/\text{m}^3$ , BaP < 0.002  $\text{ng}/\text{m}^3$ , Ni < 0.01  $\text{ng}/\text{m}^3$ , Pb < 0.001  $\mu\text{g}/\text{m}^3$ , As < 0.001  $\text{ng}/\text{m}^3$ , Cr < 0.005  $\mu\text{g}/\text{m}^3$

Reviewed by:   


Approved by:   




Ref: ENVLAB/24-25/TR-12318

Date: 14.10.2024

## SIX MONTHLY AVERAGE OF AMBIENT AIR QUALITY MONITORING REPORT (APRIL-2024 TO SEPT-2024) BUFFER ZONE

1. Name of Industry : M/s. Anand Exports, Kalinga Nagar , Jajpur
2. Sampling Location : AAQMS-3 : Near Crusher Site
3. Monitoring Instruments : RDS (APM 460 BL), FPS (APM 550) Envirotech, CO Monitor, VOC Sampler.
4. Sample collected by : VCSPL representative

Date	PARAMETERS												
	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>x</sub> (µg/m <sup>3</sup> )	O <sub>3</sub> (µg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	NH <sub>3</sub> (µg/m <sup>3</sup> )	C <sub>6</sub> H <sub>6</sub> (µg/m <sup>3</sup> )	BaP (ng/m <sup>3</sup> )	Ni (ng/m <sup>3</sup> )	Pb (µg/m <sup>3</sup> )	As (ng/m <sup>3</sup> )	Cr (µg/m <sup>3</sup> )
APRIL-24	57.6	30.9	6.6	16.4	10.2	0.62	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MAY-24	53.9	28.5	5.9	16.1	9.6	0.58	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JUNE-24	55.1	30.1	6.3	15.9	10.5	0.55	BDL	BDL	BDL	BDL	BDL	BDL	BDL
JULY-24	54.2	27.9	6.1	16.3	10.1	0.52	BDL	BDL	BDL	BDL	BDL	BDL	BDL
AUG-24	53.9	31.2	5.7	16.8	9.3	0.57	BDL	BDL	BDL	BDL	BDL	BDL	BDL
SEPT-24	54.2	30.3	5.9	16.2	9.5	0.53	BDL	BDL	BDL	BDL	BDL	BDL	BDL
NAAQ Standard	100	60	80	80	180	4	400	5	1	20	1	6	--
Monthly Average	54.8	29.8	6.1	16.3	9.9	0.56	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Testing method	Gravimetric	Gravimetric	Improved West and Geake method	Modified Jacob & Hochheiser (Na-Arsenite)	Chemical Method	NDIR Spectroscopy	Indo phenol blue method	Absorption & Desorption followed by GC analysis	Solvent extraction followed by Gas Chromatography analysis	AAS method after sampling	AAS method after sampling	AAS method after sampling	AAS method after sampling

BDL Values: SO<sub>2</sub>< 4 µg/m<sup>3</sup>, NO<sub>x</sub>< 9 µg/m<sup>3</sup>, O<sub>3</sub><4 µg/m<sup>3</sup>, CO<0.1 mg/m<sup>3</sup>, NH<sub>3</sub> <20 µg/m<sup>3</sup>, C<sub>6</sub>H<sub>6</sub><0.001 µg/m<sup>3</sup>, BaP<0.002 ng/m<sup>3</sup>, Ni<0.01 ng/m<sup>3</sup>, Pb<0.001 µg/m<sup>3</sup>, As < 0.001 ng/m<sup>3</sup>, Cr <0.005 µg/m<sup>3</sup>

Reviewed by:   


Approved by:   




Ref: ENVLAB/24-25/TR-12319

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF SURFACE WATER QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

- Name of Industry : M/s Anand Exports, Kalinga Nagar , Jajpur
- Sampling location : SW1: Brahmani River Upstream
- Sample Collected By : VCSPL representative in presence of Client's representative

Sl No.	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class -'C'	Analysis Results						Averages
					APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	
1	Colour	Visual Comparison Method APHA 23 <sup>RD</sup> Ed.2017 : 2120 B, C	Hazen	300	<10	<15	10	<10	15	<15	<15
2	pH at 25°C	pH Meter APHA 23 <sup>RD</sup> Ed.2017 4500H <sup>+</sup> B	--	6.0-9.0	7.35	7.50	7.42	7.41	7.37	7.44	7.42
3	Dissolved Oxygen (min)	Modified Winkler Method APHA 23 <sup>RD</sup> Ed.2017 : 4500 O <sup>-</sup> C	mg/l	4.0	5.6	5.2	5.4	5.6	5.2	5.8	5.5
4	Turbidity	Nephelometric Method APHA 23 <sup>RD</sup> Ed.2017: 2130 B	NTU	--	3.2	3.5	3.8	4.4	4.1	4.6	3.93
5	Chloride (max)	Titrimetric Method APHA 23 <sup>RD</sup> Ed.2017: 4500Cl <sup>-</sup> B	mg/l	600	26.5	29.2	31.4	28.6	30.3	27.4	28.9
6	Total Dissolved Solids	Gravimetric Method APHA 23 <sup>RD</sup> Ed.2017: 2540 C	mg/l	1500	120	128	130	134	130	135	129.5
7	Oil & Grease (max)	Gravimetric Method (Solvent Extraction) APHA 23 <sup>RD</sup> Ed.2017:5520-B	mg/l	--	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)
8	BOD (3) days at 27°C (max)	Oxygen Depletion Method IS 3025(P-44) : 1993 RA 2003	mg/l	3.0	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)
9	Chemical Oxygen Demand (COD)	Open Reflux Method APHA 23 <sup>RD</sup> Ed.2017: 5220 C	mg/l	--	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)
10	Arsenic as As	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3114 B	mg/l	0.2	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)
11	Lead as Pb	By AAS Method APHA 23 <sup>RD</sup> Ed.2017 3111 B	mg/l	0.1	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
12	Cadmium as Cd (max)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	0.01	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
13	Hexa Chromium as Cr <sup>+6</sup>	Diphenyl Carbazide Method APHA 23 <sup>RD</sup> Ed.2017: 3500Cr B	mg/l	0.05	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
14	Copper as Cu (max)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	1.5	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)
15	Zinc as Zn(max)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	15	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)
16	Selenium as Se (max)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3500 Se C	mg/l	0.05	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
17	Cyanide as CN (max)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500 CN <sup>-</sup> C,D	mg/l	0.05	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
18	Fluoride as F (max)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed.2017: 4500F <sup>-</sup> C	mg/l	1.5	0.23	0.25	0.21	0.23	0.25	0.27	0.24
19	Sulphates (SO <sub>4</sub> ) (max)	Turbidimetric Method APHA 23 <sup>RD</sup> Ed.2017: 4500 SO <sub>4</sub> <sup>2-</sup> E	mg/l	400	15.2	14.9	14.8	15.0	14.6	14.4	14.82
20	Phenolic Compounds as C <sub>6</sub> H <sub>5</sub> OH (max)	Chloroform extraction by Colorimetric Method APHA 23 <sup>RD</sup> Ed.2017: 5530 B,D	mg/l	0.005	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
21	Iron as Fe (max)	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	0.5	0.28	0.31	0.33	0.34	0.32	0.38	0.33
22	Total Chromium as Cr	By AAS Method APHA 23 <sup>RD</sup> Ed.2017: 3111 B	mg/l	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
23	Nitrate as NO <sub>3</sub> (max)	By UV-Screen Method APHA 23 <sup>RD</sup> Ed.2017: 4500 NO <sub>3</sub> <sup>-</sup> E	mg/l	50	2.5	3.0	2.6	3.3	2.8	3.0	2.9
24	Total Coli form	By Multiple Tube Fermentation Technique APHA 23 <sup>RD</sup> Ed.2017: 9221 B	MPN/100 ml	5000	920	1040	980	960	1020	960	980

Reviewed By   


Approved By   


Ref: ENVLAB/24-25/TR-12320

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF SURFACE WATER QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

1. Name of Industry : M/s Anand Exports, Kalinga Nagar, Jajpur
2. Sampling location : SW2: Brahmani River Downstream
3. Sample Collected By : VCSPL representative in presence of Client's representative

Sl. No.	Parameter	Testing Methods	Unit	Standards as per IS-2296:1992 Class - 'C'	Analysis Result						Average s
					APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	
1	Colour	Visual Comparison Method APHA 23 <sup>RD</sup> Ed,2017 : 2120 B, C	Hazen	300	<10	<10	<10	<15	20	<15	20.0
2	pH at 250C	pH Meter APHA 23 <sup>RD</sup> Ed,2017 4500H+ B	--	6.0-9.0	7.13	7.40	7.28	7.34	7.46	7.34	7.33
3	Dissolved Oxygen (min)	Modified Winkler Method APHA 23 <sup>RD</sup> Ed,2017 : 4500 O. C	mg/l	4.0	4.6	5.0	4.2	4.8	5.6	5.4	4.9
4	Turbidity	Nephelometric Method APHA 23 <sup>RD</sup> Ed,2017: 2130 B	NTU	--	4.2	5.0	4.6	4.2	6.1	5.8	4.98
5	Chloride (max)	Titrimetric Method APHA 23 <sup>RD</sup> Ed,2017: 4500Cl- B	mg/l	600	28.5	30.6	31.4	30.9	33.2	31.3	31.0
6	Total Dissolved Solids	Gravimetric Method APHA 23 <sup>RD</sup> Ed,2017: 2540 C	mg/l	1500	202	186	192	208	220	216	204.0
7	Oil & Grease (max)	Gravimetric Method (Solvent Extraction) APHA 23 <sup>RD</sup> Ed,2017:5520-B	mg/l	--	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)	BDL (<0.6)
8	BOD (3) days at 270C (max)	Oxygen Depletion Method IS 3025(P-44) : 1993 RA 2003	mg/l	3.0	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)	BDL (<1.8)
9	Chemical Oxygen Demand (COD)	Open Reflux Method APHA 23 <sup>RD</sup> Ed,2017: 5220 C	mg/l	--	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)	BDL(<4)
10	Arsenic as As	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3114 B	mg/l	0.2	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)	BDL (<0.004)
11	Lead as Pb	By AAS Method APHA 23 <sup>RD</sup> Ed,2017 3111 B	mg/l	0.1	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
12	Cadmium as Cd (max)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.01	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
13	Hexa Chromium as Cr+6	Diphenyl Carbazide Method APHA 23 <sup>RD</sup> Ed,2017: 3500Cr B	mg/l	0.05	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
14	Copper as Cu (max)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	1.5	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)	BDL (<0.02)
15	Zinc as Zn(max)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	15	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)	BDL (<0.03)
16	Selenium as Se (max)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3500 Se C	mg/l	0.05	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
17	Cyanide as CN (max)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed,2017: 4500 CN- C,D	mg/l	0.05	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)	BDL (<0.01)
18	Fluoride as F (max)	Distillation followed by Spectrophotometric Method APHA 23 <sup>RD</sup> Ed,2017: 4500F- C	mg/l	1.5	0.42	0.46	0.50	0.53	0.48	0.51	0.48
19	Sulphates (SO4) (max)	Turbidimetric Method APHA 23 <sup>RD</sup> Ed,2017: 4500 SO <sub>4</sub> <sup>2-</sup> E	mg/l	400	26.9	31.2	30.8	33.1	34.6	36.5	32.18
20	Phenolic Compounds as C6H5OH (max)	Chloroform extraction by Colorimetric Method APHA 23 <sup>RD</sup> Ed,2017: 5530 B,D	mg/l	0.005	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)	BDL (<0.001)
21	Iron as Fe (max)	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.5	0.32	0.40	0.37	0.39	0.45	0.42	0.39
22	Total Chromium as Cr	By AAS Method APHA 23 <sup>RD</sup> Ed,2017: 3111 B	mg/l	0.04	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
23	Nitrate as NO3 (max)	By UV-Screen Method APHA 23 <sup>RD</sup> Ed,2017: 4500 NO <sub>3</sub> <sup>-</sup> E	mg/l	50	16.3	17.2	15.6	18.1	16.9	17.5	16.9
24	Total Coli form	By Multiple Tube Fermentation Technique APHA 23 <sup>RD</sup> Ed,2017: 9221 B	MPN/ 100 ml	5000	1140	980	1060	1040	1120	1080	1070

Reviewed By



Approved By





Ref: ENVLAB/24-25/TR-12312

Date: 14.10.2024

## SIX MONTHLY AVERAGES OF WASTE WATER QUALITY ANALYSIS REPORT (APRIL-2024 TO SEPT-2024)

1. Name of Industry : M/s Anand Exports, Kalinga Nagar, Jajpur
2. Sampling location : WW1: Effluent Treatment Plant (ETP)
3. Sample Collected By : VCSPL representative

Sl. No.	Parameters	Testing Methods	Unit	Standards (In land Surface water)	Analysis Results						
					APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	Average
1	Colour	Visual Comparison Method APHA 2120 B; 23rd Edition, 2017	Hazen	Colourless	10	<10	10	<10	<10	<10	10
2	Odour	Threshold Odour Method APHA 2150 B; 23rd Edition, 2017	--	Odourless	pungent smell	pungent smell	pungent smell	pungent smell	pungent smell	pungent smell	pungent smell
3	pH at 250C	pH Meter APHA 4500 H+B; 23rd Edition, 2017	--	5.5-9.0	7.44	7.61	7.57	7.38	7.46	7.50	7.49
4	Total Suspended Solids	Gravimetric Method APHA 2540 D; 23rd Edition, 2017	mg/l	100	42.0	38.0	40.0	41.0	39.5	43.0	40.6
5	Copper as Cu	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6	Fluoride as F	Distillation followed by Spectrophotometric Method APHA 4500 F- C,D; 23rd Edition, 2017	mg/l	2	0.32	0.29	0.30	0.31	0.27	0.30	0.30
7	Total Residual Chlorine	Iodometric Method APHA 23RD Ed,2017 : 4500Cl, B	mg/l	1	ND	ND	ND	ND	ND	ND	ND
8	Iron as Fe	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	3	0.32	0.35	0.35	0.34	0.36	0.38	0.35
9	Manganese as Mn	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10	Nitrate as NO3	By UV-Screen Method APHA 4500 NO3- B; 23rd Edition, 2017	mg/l	10	7.13	6.95	7.01	6.89	7.15	7.21	7.06
11	Phenolic Compounds as C6H5OH	Distillation Followed by Spectrophotometric Method APHA 5530-B, D; 23rd Edition, 2017	mg/l	1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
12	Selenium as Se	By AAS Method APHA 3500 Se C; 23rd Edition, 2017	mg/l	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
13	Cadmium as Cd	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	2.0	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
14	Cyanide as CN	Distillation Followed by Spectrophotometric Method APHA 4500 -CN-C,E; 23rd Edition, 2017	mg/l	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
15	Lead as Pb	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
16	Mercury as Hg	By AAS Method APHA 3112 B; 23rd Edition, 2017	mg/l	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
17	Nickel as Ni	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Arsenic as As	By AAS Method APHA 3114 B; 23rd Edition, 2017	mg/l	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
19	Total Chromium as Cr	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	2	0.27	0.22	0.25	0.26	0.24	0.23	0.25
20	Zinc as Zn	By AAS Method APHA 3111 B; 23rd Edition, 2017	mg/l	5	0.024	0.021	0.026	0.023	0.024	0.022	0.023
21	Hexavalent Chromium as Cr+6	By AAS Method APHA 3500 Cr B; 23rd Edition, 2017	mg/l	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
22	Vanadium as V	By AAS Method APHA 3500 V; 23rd Edition, 2017	mg/l	0.2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Temperature	By Thermometer APHA 2550 B; 23rd Edition, 2017	°C	Shall not exceed 50C above the receiving water temperature	23.5	26.8	24.2	24.3	25.6	24.9	24.9
24	Dissolved Oxygen	Modified Winkler Method APHA 4500 O. C; 23rd Edition, 2017	mg/l	--	5.7	6.0	5.3	5.0	5.2	5.4	5.4
25	Biochemical Oxygen Demand as BOD	Oxygen Depletion Method IS 3025 (Part 44 ):2003	mg/l	30	4.0	4.2	4.4	4.5	3.8	4.2	4.2
26	Chemical	Open Reflux Method	mg/l	250	18.0	21.0	22.0	16.0	14.0	16.0	17.8





# Visiontek Consultancy Services Pvt. Ltd.

(Committed For Better Environment)

ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 (OH&S), ISO/IEC 17025:2017 Certified

	Oxygen Demand as COD	APHA 5220 B; 23rd Edition, 2017										
27	Oil & Grease	Gravimetric Method (Solvent Extraction) APHA 5520 B; 23rd Edition, 2017	mg/l	10	2.7	3.0	2.3	2.5	3.1	2.8	2.73	
28	Ammonical Nitrogen as N	By TKN Method APHA 4500-NH3 C; 23rd Edition, 2017	mg/l	50	1.9	2.2	2.1	2.6	3.0	2.1	2.3	
29	Total Kjeldahl Nitrogen as N	By TKN Method APHA 4500-Norg C; 23rd Edition, 2017	mg/l	100	3.4	3.8	4.0	3.7	3.5	3.7	3.7	
30	Sulphide as S	By Methylene Blue Method APHA 4500-S D; 23rd Edition, 2017	mg/l	2	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	
31	Free Ammonia as NH3	By Calculation	mg/l	10	4.5	5.1	5.0	4.7	4.9	5.0	4.9	
32	Particulate Size of Suspended Solids	Gravimetric Method APHA 2540 D; 23rd Edition, 2017	μ	Shall pass 850 micron IS Sieve	<850	<850	<850	<850	<850	<850	<850	
33	Bio-assay Test	Evaluating Acute Toxicity IS 6582 (P-2) 2008	%	90% survival of fish after 96 hours in 100% effluent	99% Survival of Fish after 96 Hrs in 100% Effluent	97% Survival of Fish after 96 Hrs in 100% Effluent	98% Survival of Fish after 96 Hrs in 100% Effluent	99% Survival of Fish after 96 Hrs in 100% Effluent	95% Survival of Fish after 96 Hrs in 100% Effluent	97% Survival of Fish after 96 Hrs in 100% Effluent	99% Survival of Fish after 96 Hrs in 100% Effluent	

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*P. Patil*  
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- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Report. No: Envlab/23-24/TR-12313

Date: 14.10.2024

## MINEROLOGICAL COMPOSITION ANALYSIS REPORT (APRIL-24 TO SEPT-24)

Name & Address of the Client : M/s. Anand Exports, Kalinga Nagar, Jajpur  
 Sample Type : Mineralogical Composition  
 Sample Collected by : VCSPL Representative

Sl. No.	Monitoring Locations	Test Results in %						
		S-1: Near Old Office Building Site						
		APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVERAGE
1	Cr <sub>2</sub> O <sub>3</sub>	25.6	23.9	26.2	24.3	26.5	22.1	24.8
2	Fe <sub>2</sub> O <sub>3</sub>	10.3	12.1	11.2	11.9	10.2	14.1	11.6
3	MnO <sub>2</sub>	4.1	4.5	4.0	3.6	3.9	4.0	4.0
4	SiO <sub>2</sub>	20.8	21.3	21.3	22.5	23.4	23.2	22.1
5	Al <sub>2</sub> O <sub>3</sub>	10.9	11.6	13.5	12.1	10.2	11.8	11.7
6	MgO	11.5	10.2	10.2	16.3	12.9	13.9	12.5
7	CaO	4.4	5.3	4.6	4.1	5.2	4.9	4.8

Sl. No.	Monitoring Locations	Test Results in %						
		S-2: Near Washing Plant						
		APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVERAGE
1	Cr <sub>2</sub> O <sub>3</sub>	21.9	20.1	23.4	24.2	22.2	23.6	22.6
2	Fe <sub>2</sub> O <sub>3</sub>	11.3	10.8	10.7	9.6	11.6	10.4	10.7
3	MnO <sub>2</sub>	4.4	5.2	3.9	3.5	4.3	4.0	4.2
4	SiO <sub>2</sub>	25.6	20.3	21.2	22.1	22.8	21.3	22.2
5	Al <sub>2</sub> O <sub>3</sub>	10.8	10.6	11.3	11.9	11.4	13.2	11.5
6	MgO	12.2	13.4	15.2	14.5	16.3	11.9	13.9
7	CaO	5.0	4.4	5.0	4.4	4.8	4.8	4.7

Sl. No.	Monitoring Locations	Test Results in %						
		S-3: Near Staff Quarter Site						
		APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVERAGE
1	Cr <sub>2</sub> O <sub>3</sub>	20.1	21.2	23.7	22.9	21.5	22.3	22.0
2	Fe <sub>2</sub> O <sub>3</sub>	10.9	11.5	11.3	10.5	11.2	10.9	11.1
3	MnO <sub>2</sub>	3.5	4.0	3.3	3.6	3.9	4.0	3.7
4	SiO <sub>2</sub>	21.9	23.9	21.2	20.4	20.5	21.5	21.6
5	Al <sub>2</sub> O <sub>3</sub>	12.2	13.8	13.1	12.3	13.5	13.1	13.0
6	MgO	13.8	12.7	13.6	14.1	15.2	14.4	14.0
7	CaO	4.6	5.0	4.4	5.0	4.0	4.6	4.6

*Bab*  
 Reviewed By: 

*P. Patu*  
 Approved By: 



- Infrastructure Engineering
- Water Resource Management
- Environmental & Social Study

- Surface & Sub-Surface Investigation
- Quality Control & Project Management
- Renewable Energy

- Agricultural Development
- Information Technology
- Public Health Engineering

- Mine Planning & Design
- Mineral/Sub-Soil Exploration
- Waste Management Services

Report. No: Envlab/23-24/TR-12314

Date: 14.10.2024

## MINEROLOGICAL COMPOSITION ANALYSIS REPORT (APRIL-24 TO SEPT-24)

Name & Address of the Client : M/s. Anand Exports, Kalinga Nagar, Jajpur  
 Sample Type : Mineralogical Composition

Sl. No.	Monitoring Locations	Test Results in %						
		S-4: Near Main Gate Site						
		APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVERAGE
1	Cr <sub>2</sub> O <sub>3</sub>	25.2	24.4	24.7	23.2	22.9	23.1	23.9
2	Fe <sub>2</sub> O <sub>3</sub>	12.3	10.2	11.6	10.9	10.7	11.6	11.2
3	MnO <sub>2</sub>	3.1	3.6	4.0	3.8	4.0	3.7	3.7
4	SiO <sub>2</sub>	24.9	23.5	22.9	24.1	23.6	24.4	23.9
5	Al <sub>2</sub> O <sub>3</sub>	12.5	11.9	11.3	11.9	12.2	11.6	11.9
6	MgO	15.3	14.4	13.5	14.6	15.1	14.5	14.6
7	CaO	4.0	3.6	4.2	4.1	4.3	4.5	4.1

Sl. No.	Monitoring Locations	Test Results in %						
		S-5: Near Crusher Site						
		APRIL-24	MAY-24	JUNE-24	JULY-24	AUG-24	SEPT-24	AVERAGE
1	Cr <sub>2</sub> O <sub>3</sub>	24.2	23.9	23.5	22.5	24.6	25.3	24.0
2	Fe <sub>2</sub> O <sub>3</sub>	11.6	12.7	12.2	11.6	13.5	12.4	12.3
3	MnO <sub>2</sub>	4.0	4.0	3.5	4.2	4.0	4.4	4.0
4	SiO <sub>2</sub>	23.5	21.6	22.9	23.6	21.6	22.5	22.6
5	Al <sub>2</sub> O <sub>3</sub>	10.4	12.3	11.4	11.2	10.5	11.7	11.3
6	MgO	12.6	11.8	13.6	15.2	11.9	13.6	13.1
7	CaO	4.7	5.1	4.4	4.5	4.2	4.5	4.6

  
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 Approved By: 