केवल नागपुर कोर्ट के अधिकार क्षेत्र मे

Under Jurisdiction of Nagpur Court Only

**वेस्टर्न कोलफ़िल्डस लिमिटेड Western Coalfields Limited**

(मिनीरत्न कंपनी) (A Miniratna Company)

(कोल इंडिया लि. की अनुषंगी कंपनी) (A Subsidiary of Coal India Limited)

CIN-U10100MH1975GOI018626

**क्षेत्रीय महाप्रबंधक कार्यालय, चंद्रपुर क्षेत्र / Office of Area General Manager, Chandrapur Area**

पताः वेकोलि, चंद्रपुर क्षेत्र, पो. बाबुपेठ जि. चंद्रपुर, महाराष्ट्र, पिनः 442403 / Address: WCL, Chandrapur Area, Po- Babupeth, Dist: Chandrapur, MS, Pin-442403

**Email: anoenv.cha@coalindia.in** **FAX:- 07172-255287**

**संदर्भ संख्या:वेकोलि/चक्षे/क्षेमप्र/पर्यावरण/2023-24/123** **दिनांक: 29.10.2023**

प्रति,

अतिरिक्त प्रधान मुख्य वन संरक्षक,
पर्यावरण, वन और जलवायु परिवर्तन मंत्रालय,
क्षेत्रीय कार्यालय (WCZ),
भूतल, पूर्वी विंग, नया सचिवालय भवन,
सिविल लाइन्स, नागपुर- 440001

विषय: Six Monthly Report against Compliance of Conditions of Environmental Clearance letter for **Hindustan Lalpeth Colliery 1&3 UG Mine** of Chandrapur Area, WCL (As on 01.10.2023)

संदर्भ: EC letter No. J-11015/182/2006.IA.II(M) dtd: 17.10.2006

महोदय,

Please find enclosed herewith, Six Monthly Report against Compliance of Conditions of Environmental Clearance letter for **Hindustan Lalpeth Colliery 1&3 UG Mine** of Chandrapur Area, WCL (As on 01.10.2023)

This for your kind information & necessary action please.

भ व दि य

29/10/23

(प्रशांत अश्विनकुमार ठाकर)
क्षेत्रीय केंद्रस्थ अधिकारी (पर्यावरण)
वेकोलि, चंद्रपुर क्षेत्र

संलग्न: यथोपरी

प्रतिलिपी:

१. प्रादेशिक अधिकारी, महाराष्ट्र प्रदुषण नियंत्रण बोर्ड, उद्योग भवन, प्रथम तल, रेलवे स्टेशन रोड चंद्रपुर 442401
२. क्षेत्रीय महाप्रबंधक, वेकोलि, चंद्रपुर क्षेत्र
३. महाप्रबंधक (पर्यावरण), वेकोलि-मुख्यालय, नागपुर
४. ऑफिस कॉपी

# E.M.P. COMPLIANCE REPORT

**AS ON 01.10.2023**

## HINDUSTAN LALPETH (I&III) UG EXPANSION PROJECT

## WESTERN COALFIELD LIMITED
## CHANDRAPUR AREA

**Sl.** **CONTENTS**

1. Present Status of Project Work Progress.(Part –I to Part-III)

2. Compliance Report against EC for Expansion of Hindusthan Lalpeth Colliery(I&III)UG (Part-IV)

3. Data Sheet

## ANNEXURES

I. Copy of Environmental Clearance vide J-11015/182/2006.IA.II(M),dt; 17/10/2006 of MOC/GOI.

II. Copy of Consent to Operate from Maharashtra Pollution control Board Consent No. BO/JD/(APC)/UAN No.1997/R/CC-0241DT.07/12/2017 Valid upto 31/03/2020

III. Environmental Monitoring Report for the month of **April- 2023 to August-2023**

IV. Copy of Environment Audit (Form-V)

V. Ground water Monitoring Report for **period- Dec 2022 (post-monsoon) & Jan-Feb -2023 (winter) & May – 2023 (Pre-Monsoon)**

VI. Key Surface plan showing infrastructure and monitoring station for Air, water etc.

# WESTERN COALFIELDS LIMITED
# CHANDRAPUR AREA ;ENVIRONMENT DEPARTMENT

## COMPLIANCE OF ENVIRONMENTAL CLEARANCE CONDITIONS

## SIX MONTHLY STATUS AS ON 01.10.2023

### Environmental clearance details

- Name of Project /Area : **Hindusthan Lalpeth Colliery No.1 & III (Expansion) W.C.L.-Chandrapur Area**
- Location and Address : Sub Area Manager,
  Hindusthan Lalpeth Sub Area,
  P.O.Hindusthan Lalpeth Colliery,
  Dist. Chandrapur
  ( M.S.) PIN CODE: 442 507
- Production : 0.18 Million Te./Yr.
- Total Lease Area : 748.97 Ha.
- Agricultural(Tenancy land) : 67.96 Ha.
- Waste Land (Govt. Land) : 346.76 Ha.
- Forest Land : 334.25 Ha.
- Capital Cost : **24.27 Crore**
- Environmental Clearance for 0.18 Million Te./Yr. Coal production vide letter no; J-11015/182/2006-IA-II(M), for expansion of Hindusthan Lalpeth Under Ground Coal Mine.
- Public Hearing Conducted on 20/10/2005

a) Consent to operate obtained vide consent No. BO/JD/(APC)/UAN No.1997/R/CC-0241 DT.07/12/17 Valid upto 31/03/2020

- Environment Clearance for expansion for 0.18 Million Te./Yr. coal production vide letter No. **J-11015/182/2006-IA-II(M) dtd.17/10/2006**

# PRESENT STATUS OF PROJECT WORK

**PART - I**

| | |
|---|---|
| Name of the Project | HINDUSTHAN LALPETH I & III UG EXPANSION MINE |
| Location | At-P.O.Hindusthan Lalpeth Colliery, Tahsil-Chandrapur,District-Chandrapur, Maharashtra State. |
| Address for correspondence | Sub Area Manager, Hindusthan Lalpeth Sub Area, P.O. : Hindusthan Lalpeth Colliery, Distt. : Chandrapur (M.S.) – 442507. |
| MoEF's Clearance No. & Date | J-11015/182/2006-IA-II(M) dtd.17/10/2006. |
| Period of Status Report | 01/04/2023 to 30/09/2023 |
| Date of Submission of Last Report | 30.05.2023 vide e-mail |
| Year of Commencement of Project work | H.L.C.No.1 – 1924, H.L.C. No.3 - 1960 |

**STATUS OF LAND ACQUISITION AS ON** 01/04/2023

| TYPE OF LAND | REQUIRED AS PER EMP (In Hectares) | ACTUAL AREA ACQUIRED (In Hectares) |
|---|---|---|
| FOREST LAND | 334.25 | 334.25 |
| WASTE LAND (GOVT. LAND) | 346.76 | 346.76 |
| AGRICULTURAL LAND | 67.96 | 67.96 |
| **TOTAL** | **748.97** | **748.97** |

**STATUS OF LEGAL COMPLIANCE AS ON 01/04/2023**

| | | |
|---|---|---|
| A. | Consent under Water (Prevention & Control of Pollution) Act | Consent to Operate under Air & Water Act & for a production capacity of 0.18 Million Te./Yr. Granted vide consent No.BO/JD(APC)/ EIC No. CH-1180-13/R/CC-6825 dtd.16/08/2013 **CTO Consent No. BO/JD/(APC)/UAN No. 1997/R/CC-0241 DT.07/12/2017 Valid** Upto 31/03/2020 (**Mine has stopped production since 12/10/2017)** |
| B. | Consent Fees under Water (Prevention & Control of Pollution) Act | Water cess paid upto Dec.-2015. CGWA NOC under infrastructure category under process. |
| C. | Environment (Protection) Act | Environment Statement for the Year 2019-20 submitted online vide MPCB –ENVIRONMENT STATEMENT- 0000023618 Dtd.19/05/2020 (Mine has stopped production since 12/10/2017) |
| D. | Forest (Conservation) Act | Proposal for diversion of 216.25 Hectares of Forest Land has been submitted to MOEF vide our letter No. WCL/CHA/CGM/PLG/REV/ 10634 dtd.28/11/2005. The proposal was placed before FAC on 4/7/2007 and 1st stage clearance done vide L. No. F. No.8-138/2006-FC dtd. 2/5/2008. Mine is now closed. |

**PART - II**

| | AIR POLLUTION CONTROL | STATUS OF ENVIRONMENT |
|---|---|---|
| A. | No. of Ambient Air Monitoring Stations | 04 Nos.(Fortnightly) |
| B. | * Name of the Locations | |
| | CH1 UA-1/CH3 UA-1 | Sub Station, H.Lalpeth Colliery UG. |
| | CH1 UA-2/CH3 UA-2 | Pit Office, H.Lalpeth Colliery Incline. |
| | CH1 UA-3/CH3 UA-3 | H.L.C.-III Colony |
| | CH1 UA-4/CH3 UA-4 | Babupeth Area Rajiv Gandhi Engineering College. |
| C. | ** Ambient Air Quality Status for the Parameters prescribed by State Pollution Control Board. | Average 95% Time Weighted Values. |
| | CH1 UA-1/CH3 UA-1 | As seen from the Environmental Monitoring Reports for the month of April 2023 to August-2023 the values of environmental parameters are within permissible limits.. |
| | CH1 UA-2/CH3 UA-2 | |
| | CH1 UA-3/CH3 UA-3 | |
| | CH1 UA-4/CH3 UA-4 | |

* Location of the Sampling Stations have been delineated on the Working Mine Plan Enclosed

** Detailed Report of Sampling & Analysis of Ambient Air Quality as per the Statute of Standard &Approved Laboratory : CMPDIL'S Report for the month of April-2023 to August -2023 is Enclosed.

| | WATER POLLUTION CONTROL | |
|---|---|---|
| A. | No. of Stations & Frequency of Monitoring | 02 ( Fortnightly ) |
| B. | *Description of Locations | |
| | CH1 UW-1<br>CH1 UW-2 | Mine Discharge (After Settlement) from Sand-HLC-1 stowing tank.<br>Mine Discharge – HLC-III |
| C. | Average Concentrations of Major Pollutants prescribed by State Pollution control Board | As seen from the Environmental Monitoring Reports for month of April-2023 to August -2023 the values of environmental parameters are within permissible limits.. |

Environmental Monitoring Reports for month of April-2023 to August -2023 is enclosed.

| | | |
|---|---|---|
| D. | Quantity of Effluent discharged to Local Water Course from each course ( in $M^3$ / day ) | DRY SEASON : 2750 K.L.per day.<br>WET SEASON : 8054 K.L. per day. |

- Location of the Sampling Stations have been delineated on the Working Mine Plan : ENCLOSED **Detailed Report of Sampling & Analysis of Effluent Quality as per the Statute of Standard & Approved Laboratory : Report for the month of April-2023 to August -2023 is enclosed.

| | NOISE POLLUTION CONTROL | |
|---|---|---|
| **A.** | **No. of Noise Monitoring Stations** | **03 No.** |
| B. | * Description of Locations & dB (A) Value | 1. Near Fan house – CH1-HLC-1 UN-1/CH3 UN-1<br>2. Fan House HLC-III<br>3. Colony – CH1 UN-3/CH3 UN-3 |
| C. | Average Concentrations of Major Pollutants prescribed by State Pollution control Board | As seen from the Environmental Monitoring Reports for the month of April-2023 to August -2023 values of environmental parameters are within permissible limits.. |

* Location Points have been delineated on the Working Mine Plan : ENCLOSED.

** Detailed Report of Noise Monitoring as per the Statute to be Enclosed : Report for the month of April-2023 to August -2023 is enclosed.

**PART-III**

## REHABILITATION & RESETTLEMENT

The Actual position as on 01/04/2023 is as follows.

1. **COMPENSATION FOR LAND ACQUIRED : N.A.**
2. **COMPENSATION FOR HOUSES ACQUIRED : N.A.**

| | |
|---|---|
| Organisation set up at Project Level<br>( Name & Designation of the Personnel to be given ) | **Shri, Tarun Devra,** Sub Area Manager, H'Lalpeth Sub Area.<br>**Shri. Vinod Rao, MT** ( Civil )<br>Nodal Officer ( Environment ), H'Lalpeth Sub Area. |

**EXPENDITURE : CAPITAL**

| **EXPENDITURE ON POLLUTION CONTROL MEASURES AT HINDUSTHAN LALPETH COLLIERY NO.I & III as on 01/10/2023** | | | |
|---|---|---|---|
| **I** | **AIR POLLUTION** | | |
| **A) BLACK TOPPING OF ROADS/RCC PAVEMENT AT WEIGH BRIDGE** | | | |
| **Sl** | **Head** | **Period 01/04/2023 to 30/09/2023** | **Amount in Rs. Lakhs** |
| 1 | Black Topping of road from Railway under bridge to Worker institute distance – 450 M. | Nil | 5.91 |
| 2 | Black Topping near Over Bridge turning to Rly. Siding for distance of 380 M. | Nil | 2.58 |
| | **T O T A L** | | **8.49** |
| | | | |
| **B)MIST SPRAY SYSTEM/FIXED SPRINKLERS INSTALLED/MOBILE TANKERS as on 01/10/2023** | | | |
| **Sl** | **Head** | **Period 01/04/2023 to 30/09/2023** | **Amount in Rs. Lakhs (Prog)** |
| 1 | Fixed Sprinkler at CHP Pit No.2 – 6 Nos. | Nil | 1.00 |
| 2 | Fixed Sprinkler at H.L.C. Railway Siding and Mist Guns – 8 Nos. | Nil | 2.47 |
| | | | |
| | **T O T A L** | | **03.47** |
| | **TOTAL : I ( A + B )** | | **11.96** |

| **I** | **WATER POLLUTION** | | |
|---|---|---|---|
| **Sl** | **Head** | **Period 01/04/2023 to 30/09/2023** | **Amount in Rs. Lakhs (Prog)** |
| **1** | Construction of Water Treatment Plant - III | Nil | 14.00 |
| **2** | Construction of Sedimentation pond for mine discharge at HLC No.3 Stowing | Nil | 10.00 |
| **3** | Construction of sedimentation pond for HLC-1 | Nil | 09.75 |
| **4** | Making 01 No.of RCC Settling tank at HLC -1 | Nil | 09.14 |
| 5 | Construction of clear water tank & installation of 5000 GPH pressure filter and pipe line | Nil | 20.00 |
| | **Total: I I** | | **62.89** |
| | **Grand Total : I & I I of HLC** | | **74.85** |

**EXPENDITURE : REVENUE** ( In Rupees )

| ACCOUNT HEAD | CURRENT YEAR 01.04.23 to 30.09.23 | PROGRESSIVE |
|---|---|---|
| Afforestation | Rs. NIL | Rs 4.78 Lakhs approx. |
| Air Pollution Control(O & M of 1 Mobile Tankers) | Rs. NIL | Rs.169.36 Lakhs approx. |
| Water Pollution Control(O & M )(Filter Plant) | Rs. NIL | Rs.19. 25Lakhs approx. |
| Filter Plant | Rs. NIL | Rs.50. 05 Lakhs |
| Monitoring | Rs. NIL | Rs.61.27 Lakhs |
| Legal Expenses | Rs. NIL | Rs.15.00 Lakhs |
| Environmental Audit + Water Cess | Rs. NIL | Rs. 4.158 Lakhs |
| Others (JVs by MPCB) | Rs. NIL | Rs.1.1537 Lakhs |
| Side cladding of CHP &workshop at HLC-1 Civil | Rs. NIL | Rs. 1.68 Lakhs |
| TOTAL | Rs. NIL | Rs. 326.70 Lakhs. |

26.10.23
COLLIERY MANAGER
HINDUSTHAN LALPETH COLLIERY
NO.1, CHANDRAPUR.

26/10/23
SUB AREA MANAGER
HL- SUB AREA

AREA NODAL OFFICER (ENV)
CHANDRAPUR AREA.

**Monitoring the Implementation of Environmental Safeguards**

**Ministry of Environment & Forests-Regional Office ( W),Bhopal.**

**Monitoring Report**

**DATA SHEET**

**DATE : 01/10/2023**

| | | |
|---|---|---|
| 1.Project type :River- valley/Mining/Industry/ Thermal/Nuclear/Other (Specify) | : | MINING |
| 2. Name of the Project | : | HINDUSTHAN LALPETH COLLIERY NO.I & 3 |
| 3. Clearance letter (s)/ OM No. & date of Addl. Director,MoEF- NEW DELHI. (This supersedes all clearances granted earlier) | : | J-11015/182/2006-IA, II(M), Dt. 17/10/2006 |
| 4. Location | | |
| a) District | : | CHANDRAPUR |
| b) State | : | MAHARASHTRA |
| c) Latitude/Longitude | : | Latitude - 19°-53'-35" to 19°-33"N<br>Longitude- 79°-18-04" to 79°- 19'30"E |
| 5.Address for correspondence<br>a) address for Concerned Project Chief Engineer ( with Pin. Code & | : | CHIEF GENERAL MANAGER<br>WESTERN COALFIELDS LTD.<br>PO;BABUPETH<br>MAHARASHTRA. |
| Telephone No./telex/Fax. Numbers | : | 07172-253322..23..24..25<br>07172-256715,256124 Fax-07172-255287 |
| b) Address of Executive Project Engineer /Manager( with Pin.Code | : | SUB AREA MANAGER<br>H'LALPETH SUB AREA<br>P.O.Hindusthan Lalpeth Colliery<br>Dist-Chandrapur-Maharashtra |
| & Fax numbers | : | 07172-255287<br>Pin No. – 442 507. |
| 6. Salient features | | |
| a) of the project | : | Enclosed as A |
| b) of the Environmental management Plans | : | Enclosed as B |

| | | |
|---|---|---|
| 7.Break up of the project area | : | 748.97 Ha as on 01/10/2023 |
| a)submergence area : forest & non forest | : | Not Applicable |
| b)others | : | Agricultural…….. 67.96 Ha.<br>Forest Land…….334.25 Ha.<br>Waste Land 346.76 Ha<br>(Govt. Land)<br>T O T A L 748.97 Ha. |
| 8.Break up of the project affected population: with enumeration of those losing houses/ dwelling units only, agricultural land only, both dwelling units & Agricultural land & landless labourers /artisan | : | Not Applicable |
| a)SC , ST/ ADIWASI | : | -N.A.- |
| b)Others | : | -N.A.- |
| (Please indicate whether these figures are based: on any scientific and systematic survey carried out or only provision figures, if as survey is carried out give details and years of Survey) | | -N.A.-<br>. |
| 9. Financial details | : | |
| a) Project cost as originally planned and subsequent revised estimates and year of price reference | : | **Rs.24.27 crores** |
| b)Allocation made for environmental management plans with item wise and year wise break-up | : | Provision of Rs.74.85 Lakhs<br>Details enclosed as B. |
| c)Benefit cost ratio/Internal Rate of Return and the year of assessment | : | ---- |
| d)Whether © includes the cost of environmental management as shown in the above | : | ---- |
| e)Actual expenditure incurred on the Project so far | : | **Rs.24.27** crores (as on 01/10/2023)<br>( H.L.C.No.I & III) |
| f)Actual expenditure incurred on the environmental management plans so far | : | Capital-Rs. 74.85 Lakhs (as on 01/10/2023)<br>Revenue-Rs. 326.70 Lakhs (progressive)<br>as on 01/10/2023. This expenditure has been incurred on existing HLC-I & III.<br>(Details given on Page No.5 and page No.6) |

10.Forest land requirement

| | | |
|---|---|---|
| a) The status of approval for diversion of forest land for non-forestry | : | Forest land applied vide our letter No.WCL/CHA/CGM/PLG/REV10634 dtd.28/11/2005. The proposal was placed before FAC on 4-7-2007 and 1st stage clearance done vide letter No. F.No.8-138/2006-FC dtd.2-5-2008. |
| b) The status of clearing felling | : | NOT APPLICABLE |
| c) The status of compensatory afforestation ,if any | : | NOT APPLICABLE |
| d)Comments on the viability & sustainability of compensatory afforestation programme in the light of actual field experience so far | : | NOT APPLICABLE |
| 11. The status of clear felling in non-forest areas (such as reservoir, approach roads), if any with quantitative information | : | NOT APPLICABLE |
| 12.Status of construction | | |
| a)Date of commencement(Actual and/ or planned) | : | HLC-I – 1924, HLC-3 - 1960 |
| b)Date of completion (Actual and /or planned) | : | Existing mine |
| 13. Reasons for the delay if the project is yet to start. | : | Not Applicable. |
| 14.Dates of site visits | | |
| a)The dates on which the project was monitored by the Regional Office on previous occasions, if any. | : | Not Done |
| b)Date of site visit for this monitoring report: | | -do- |
| 15.Details of correspondence with project authorities for obtaining action plans information on status of compliance to safeguards other than the routine letters for logistic support for site visits) | : | No correspondence received till date. |

(The first monitoring report may contain the details of all the letters issued so far, but the later reports may cover only the letters issued subsequently)

26.10.23
COLLIERY MANAGER
HINDUSTHAN LALPETH COLLIERY
NO.1, CHANDRAPUR.

26/10/23
SUB AREA MANAGER
HL SUB AREA

AREA NODAL OFFICER(ENV)
CHANDRAPUR AREA.

**PART-IV**

Project : HINDUSTHAN LALPETH COLLIERY NO.1 & 3

Environmental Clearance : FOR COAL PRODUCTION CAPACITY OF 0.18 M Te/Yr
Ref : No. J-11015/182/2006.IA.II(M) dt;17/10/2006

## COMPLIANCE REPORT AGAINST ENVIRONMENTAL CLEARANCE

| S.No. | A. Specific Conditions | Compliance |
|---|---|---|
| i) | The lease areas of Hindusthan Lalpeth UG and of Mahakali UG shall be revised and recast before the mine working of the present project progresses into the lease area of the Mahakali UG Project. | The lease areas of Hindusthan Lalpeth U/G and of Mahakali UG is revised and recast. Presently the workings of Hindusthan Lalpeth Colliery within the common lease boundary of Mahakali Colliery is exhausted, sand stowed and sealed off. |
| ii) | All the conditions stipulated by the SPCB in their NOC shall be effectively implemented | The following conditions stipulated in their NOC were implemented during the operation of mine.<br>1) Coal handling plant provided with water sprinkler.<br>2) Spraying of water on working areas, truck movement area is being done.<br>3) Tree plantation done along boundary of mine area.<br>4) Black top metal road provided for coal transportation.<br>(a) Black topping road from Railway under bridge to Worker Institute.<br>(b) Black topping near Rajiv Gandhi Engineering College to Railway Siding.<br>5) Coal transportation trucks are covered with tarpaulins.<br><br>The mine has stopped production since 12-10-2017. |
| iii) | No mining operations shall be undertaken in the forestland until clearance has been obtained under the provision of FC Act, 1980 | Vide our letter No. WCL/CHA/CGM/ PLG/REV/10634 dtd.28/11/05, proposals for ex-post facto approval for diversion of forest land under Section-2 of Forest (Conservation) Act-1980 for 216.25 ha. for mining lease including 46.90 ha. for surface for Hindusthan Lalpeth Colliery has already been submitted. Stage -I FC received in 2008. Mine has stopped operations since 12-10-2017 |

| | | |
|---|---|---|
| iv) | Regular Monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structures, roads, surroundings should be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures should be taken to avoid loss of life and material. Cracks should be effectively plugged with ballast and clayey soil/suitable material | The C.M.R.S. team Dhanbad investigated subsidence over Panel-E from 24/7/1985 to 26/4/1988 within a depth of cover 60.00 mtr. to 113.00 mtr. As per the record and observation of pillar no subsidence is found. However regular monitoring of subsidence shall be taken over the working panels and if any cracks is observed it shall be effectively plugged with ballast and clayey soil/suitable material. The subsidence prediction study carried out by CMRI, for U/G coal extraction with hydraulic sand stowing was incorporated in the EIA/EMP submitted to MOEF. The depillaring is carried out after taking due permission from DGMS. All conditions with respect to precautionary measured as well as monitoring, etc. are stipulated in the permission letter & are adhered to during actual depillaring operations in the mine. The implementation of the stipulated conditions are also monitored by DGMS. |
| v) | Garland drain (size, gradient & length) around the safety areas such as mineshaft and low lying areas and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper setting of silt material. | This is U/G mine hence not applicable |
| vi) | Crushers at the CHP should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emission from crushing operations, haulage roads, transfer points etc. | Mine has stopped production since 12/10/2017 |
| vii) | Drill should be wet operated only | Mine has stopped production since 12/10/2017 |
| viii) | Controlled blasting should be practiced with the use of delay detonators. | Mine has stopped production since 12/10/2017 |
| ix) | A Progressive afforestation plan shall be prepared and implemented for the undisturbed area and shall include areas under green belt development areas along roads, along ML boundary, township outside the lease area etc. by planting native plant species in consultation with the local DFO/Agriculture department. The density of the trees should be around 2500 plants per ha. | The mining lease within 216.25 ha. Forest land is covered by deep forest and other revenue land is covered by colony and hutments.<br>Till date plantation of 600 nos carried out in 0.24 Ha in HLC UG mine |

| | | |
|---|---|---|
| x) | Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. The monitoring for water levels should be done at least four times a year in pre monsoon (May), Monsoon (August), Post Monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the MOEF & CGWB, Regional Office quarterly within one month of monitoring. | Complied.<br>The ground water level are being monitored four times in a year i.e. in the month of May, August, November and January and the reports are submitted to MOEF & CGWB Regional Office.<br>Copy of the last report period- Dec-2022 (post-monsoon) & Jan-Feb -2023 (winter) & May-2023 (Pre-monsoon) is enclosed. |
| xi) | The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to de-watering of the mine. | In the U/G Mines there is no adverse impact on shallow aquifer being harnessed by surrounding population. Rooftop rainwater harvesting has been proposed for office premises in line with CGWA guidelines. However most of the mine discharge water is re-circulated for sand stowing purpose and balance is used for filter plant. From the filter plant the water is supplied to local population viz-residential colony, Chandrapur Engineering College and Babupeth Railway Station. |
| xii) | The Company shall obtain approval of CGWA/CGWB Regional Office for use of ground water for mining operation. | Application submitted to Reginal Director (CGWB) Vide letter No. WCL/ENV/HQ/17-U&20-J/55 Dtd. 16.03.2017.<br>Revised application has been submitted Application Number: 21-4/7863/MH/INF/2022 under infrastructure category as the mining operations has stopped. The application is under process with CGWA |
| xiii) | Sewage treatment plant should be installed in the existing colony. ETP should also be provided for workshop and CHP waste water | Soak pit & Septic tank is already provided to existing colony. Since it is an underground mine there is no need of E.T.P. for workshop and Mini C.H.P. |
| xiv) | Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahemedabad within a period of one year and the results reported to this Ministry and to DGMS. | Complied<br>PME details :- 2016-2017 - 138<br>2017-2018 - 078<br>2018-2019 - 042<br>2019-2020 - 031<br>2020-2021 - 041<br>2021-2022 - 022<br>2022-2023 - 032 |
| xv) | Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring land use pattern and report submitted to MOEF and its Regional Office at Bhopal. | Done by CMPDIL through remote sensing every 3 year |

| | | |
|---|---|---|
| xvi) | A final mine closure plan along with details of corpus fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval. | A final mine closure plan 5 years in advance shall be submitted to the Ministry of Environment and Forest for approval. |
| xvii) | Consent to operate shall be obtained before starting mining operation. | Mine has stopped production since 12/10/2017. CTO Consent No. BO/JD/(APC)/UAN No. 1997/R/CC-0241 DT.07/12/2017 Valid Upto 31/03/2020 |

| Sl. | B. General Conditions | Compliance |
|---|---|---|
| i) | No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forest. | Noted for compliance |
| ii) | No change in the calendar plan including excavation, quantum of mineral coal and waste should be made. | Mine has stopped production since 12/10/2017 |
| iii) | Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, SO2, Nox & CO monitoring location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultations with the State Pollution Control Board. | Ambient Air quality monitoring stations are fixed within mining lease area in consultations with the State Pollution Control Board. The locations are given below.<br>S.No. Location Details Location code<br>1. Sub station - Hindusthan Lalpeth Colliery-UG CH1 UA-1/CH3 UA-1<br>2. Pit Office HLC-1 CH1 UA-2/CH3 UA-2<br>3. HLC-III Colony CH1 UA-3/CH3 UA-3<br>4. Babupeth Area/ CH1 UA-4/CH3 UA-4<br><br>Regular monitoring is done by authorized Agency Central Mine Planning & Design Institute Ltd. Kasturba Nagar, Jaripatka, Nagpur and quarterly reports are submitted to State Pollution Control Board. |
| iv) | Data on ambient air quality (RPM, SPM, SO2, NOx & CO) should be regularly submitted to the Minstry including its Regional Office at Bhopal and the State Pollution Control Board/Central Pollution Control Board once in a six months. | Quarterly data on ambient air quality (RPM, SPM, SO2, Nox & CO) is regularly submitted to State Pollution Control Board. The same report is being submitted to the Ministry including its Regional Office at Bhopal and Central Pollution Control Board once in a six months. The report for April-2023 to August-2023 is enclosed. |
| v) | Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dump trucks, (loading & unloading) should be provided and properly maintained. | Complied |

| | | |
|---|---|---|
| vi) | Adequate measures should be taken for control of noise levels below 85 dB (A) in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc should be provided with ear plugs/muffs, | Complied |
| vii) | Industrial waste water (Workshop and waste water from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422(E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. Oil & grease trap should be installed before discharge of workshop effluents. | U/G mine hence no ETP required |
| viii | Vehicular emissions should be kept under control and regularly monitored. Vehicles used for transporting and mineral should be covered with tarpaulin and optimally loaded. | NA. |
| ix) | Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board. | Well established environmental laboratory exists at CMPDI |
| x) | 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. Occupational health surveillances program of the workers should be undertaken periodically to observe any contradictions due to exposure to coal dust and take corrective measures, if needed | Mining operations closed since 12/10/2017.. Every worker is subjected to periodic medical examination once in 5 years and workers engaged in U/G mines and having age above 50 years are examined once in 2 years. Based on the results of periodic medical examination, appropriate medical care & assistance is given to the affected worker. |
| xi) | 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 the Head of the Company. | At project level, Environmental management cell is headed by Sub Area Manager and is assisted directly by Project Nodal Officer (ENV)/SE (C) at area level, Chief General Manager heads the cell assisted by Area Nodal Officer (ENV). At WCL H.Q./Corporate level HOD (ENV) heads the environmental department assisted by multi disciplinary team & qualified and trained engineers. |
| xii) | 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 Bhopal. | Funds for environmental protection measures are kept separate and year-wise expenditure is reported through six monthly EMP compliance reports |

| | | |
|---|---|---|
| xiii) | The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities should extend full co-operation to the officer(s) of the Regional Office by furnishing the requisite data/information/monitoring reports. | Full co-operation to the officer(s) of the Regional office shall be done by furnishing the requisite data/information/monitoring reports. |
| xiv | A copy of clearance letter will be marked to concerned panchayat/local NGO. If any from whom and suggestion/representation has been received while processing the proposal. | Already Complied |
| xv) | State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's office/Tahsildar's office for 30 days. | Not Applicable. |
| xvi | The Project authorities should advertise at lease in two local news papers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at web site of the Ministry of Environment & Forests at http://envfor.nic.in. | Already Complied. |
| 3 | The Ministry or any other competent authority may alter/modify the above conditions or stipulate any further condition in the interest of environment protection. | Noted |
| 4 | Failure to comply with any of the conditions mentioned above may result withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986. | Noted |
| 5. | The above conditions will be enforced inter-alia, under the provisions of the Water(prevention & control of pollution) Act, 1974, the Air(prevention & control of pollution) Act, 1981, the Environment(Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules. | Noted |

26.10.23
COLLIERY MANAGER
HINDUSTHAN LALPETH COLLIERY
NO.1, CHANDRAPUR

26/10/23
SUB AREA MANAGER
HL SUB AREA

AREA NODAL OFFICER (ENV.)
CHANDRAPUR AREA.

( A )

# SALIENT FEATURES OF THE PROJECT

| | | |
|---|---|---|
| Name of project | : | Hindusthan Lalpeth Colliery No.I & III |
| Capacity of project | : | 0.18 Million Te./Yr. |
| Capital Investment | : | **24.27 Crore** |
| Life of project | : | 18 years |
| Land Required | : | 748.97 Ha. |
| No. of Seams/Seam thickness | : | 15.45 m to 17.45 m. |
| Depth of Working ( Maximum) | : | 27.00 m. to 310.00 m. |
| Total Coal Production | : | 10.640 Million Te. (Since 1973) |
| Environment Provision Including R & R | : | Enclose Annexure-'C' (Chapter V, Page No.76, 97, 98, 99) |

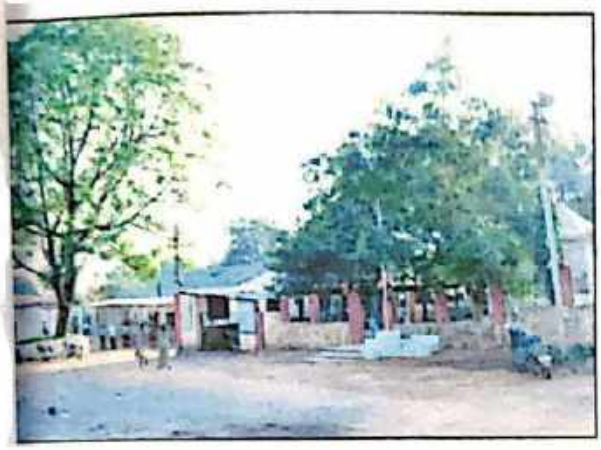
( B )

## SALIENT FEATURES OF ENVIRONMENT MANAGEMENT PLAN

| Sl | Environmental issues | Already practiced | Proposed |
|---|---|---|---|
| 1 | Air Pollution | Green belt, Water Spraying ,Black topping of roads | Mine Closed |
| 2. | Water Pollution | Sedimentation ponds. | Mine Closed |
| 3. | Water conservation | Excess mine water pumped out after treatment is let off into surface drainage system, | To be continued. |
| 4. | Noise Pollution | Green Belt, use of personal protective gears, proper maintenance of machinery, training of workmen & PME. | Mine Closed |
| 5. | Solid Waste | Not Applicable | Not applicable |
| 6. | Land degradation | Not applicable | Not applicable |
| 7. | Erosion & sediment | Not applicable | Not applicable |
| 8. | Top soil | Not applicable | Not applicable |
| 9. | Ground vibration | Not applicable | Mine Closed |
| 10 | Wildlife conservation | Not applicable | Not applicable |
| 11 | Forest Protection | As specified in approved letter | To be continued. |
| 12 | Others (specify) | Social welfare/community development works already carried out in nearby villages | To be continued. |

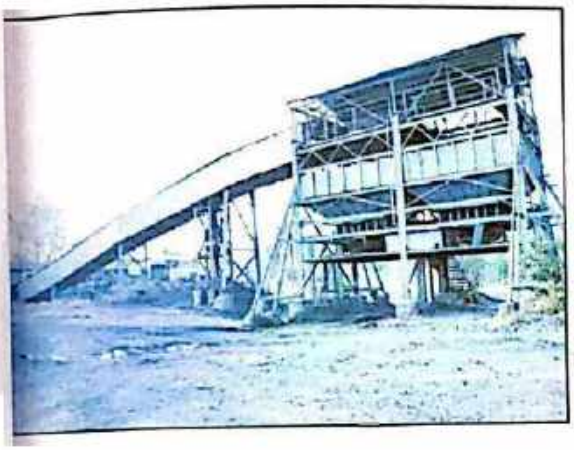
# PHOTOGRAPHS OF ENVIRONMENTAL WORKS AT HINDUSTAN LALPETH ( I & III ) UG

## A ) PLANTATION AT HLC



## B ) BLACK TOPPED SAND TRANSPORT ROAD

## C ) CHP AT HLC



## D ) FIXED SPRINKLERS AT HLC RLY SIDING

No.J-11015/182/2006-IA.II(M)
Government of India
Ministry of Environment & Forests

Paryavaran Bhawan,
C.G.O.Complex, Lodi Road,
New Delhi -110003.

Dated: 17th October 2006

To
Head of Department Env./CE(Civil),
Environment Department,
M/s Western Coalfields Ltd.,
Coal Estate, Civil Lines,
NAGPUR - 440001.

Sub: Expansion of Hindustan Lalpeth Underground (I & III) Coalmine Project (0.14 MTPA to 0.18 MTPA.) of M/s Western Coalfields Ltd. (WCL), located in village Babupeth, Tehsil & District Chandrapur, Maharashtra- environmental clearance - reg.

Sir,

This has reference to letter No. 43011/80/2006-CPAM dated 21.06.2006 forwarding your application and your letter dated 05.04.2006 on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. It has been noted that the project is for expansion in production of coal in the existing Hindustan Lalpeth Underground (I & III) Coalmine Project. The total lease area is 748.97 ha, of which 67.96 ha is agricultural land, 334.25 ha is forestland and 346.76 ha is wasteland. It is proposed to work in an additional area of 41.07 ha of Mahakali UG mine. Forestry clearance has not been obtained. There area no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. However, the Junona RF is situated at a distance of about 4m form the mine site. The Erai River flows at a distance of 6.7 km from the lease boundary. It is not proposed to modify the existing drainage of the area. The project does not involve R&R. Of the surface area, 31.60 ha is for sand stock yards, 4.32 ha is for minerals toarge, 2.80 ha is for roads, 3.50 ha is for township, an 659.57 ha is for mining. Mining will be underground by semi-mechanised method. Controlled blasting is involved. Expansion of the rated capacity of the mine is from 0.14 MTPA to 0.18 million tonnes per annum (MTPA) of coal production. Coal production from HLC-I is 297 TPD and from HLC-III is 130 TPD. Combined mineral transportation from HLC-I and HLC-III is 427TPD of coal of which 331 TPD is by road by use of 60 vehicles per day and 96 TPD is by rail. Ultimate working depth of the mine is 310m below ground level (bgl). For HLC-I and 260m bgl for HLC-III. Water table is in the range of 2.8m -11.35 m bgl in the core zone and 2.3-13.2 m bgl in the buffer zone. Mining will intersect water table. Peak water demand is 5964 m3/d of water, of which water requirement of HLC-I is 3120 m3/d and for HLC-III is 2844 m3/d, and is met from mine sump/pit water. Life of the mine at the rated capacity is 20 years. Public Hearing was held on 20.10.2005. NOC has been obtained on 13.03.2006. The project has been approved by Department of Coal on 31.10.1980. The capital cost of the project is Rs. 767 lakhs.

2. The Ministry of Environment & forests hereby accords environmental clearance for the above-mentioned Hindustan Lalpeth Underground Expansion Coal Project of M/s WCL over a lease area of 748.97 ha for production of coal of 0.18 MTPA rated capacity under the provisions of the Environmental Impact Assessment Notification, 2006 subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

(i) The lease areas of Hindustan Lalpeth UG and of Mahakali UG shall be revised and recast before the mine working of the present project progresses into the lease area of the Mahakali UG Project.

(ii) All the conditions stipulated by the SPCB in their NOC shall be effectively implemented.

(iii) No mining shall be undertaken in lease area falling in forestland for which forestry clearance has not been obtained under the provisions of the Forest Conservation Act, 1980.

(iv) Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings should be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures should be taken to avoid loss of life and material. Cracks should be effectively plugged with ballast and clayey soil/suitable material.

(v) Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity should be designed keeping 50% safety margin over an above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity should also provided adequate retention period to allow proper settling of silt material.

(vi) Crushers at the CHP should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.

(vii) Drills should be wet operated only.

(viii) Controlled blasting should be practiced with use of delay detonators.

(ix) A progressive afforestation plan shall be prepared and implemented over the mine lease area and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township outside the lease areas, etc, by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per ha.

(x) Regular monitoring of groundwater level and quality should be carried out by establishing a network of exiting wells and construction of new peizometers. The monitoring for quantity should be done four times a year in pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and tot eh Central Pollution Control Board quarterly within one month of monitoring.

(xi) The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

(xii) The company shall obtain approval of CGWA/CGWB Regional Office for use of groundwater if any, for mining operations.

(xiii) Sewage treatment plant should be installed in the existing colony. ETP should also be provided for workshop and CHP wastewater.

(xiv) Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmedabad within a period of one year and the results reported to this Ministry and to DGMS.

(xv) Digital processing of the entire lease area using remote sensing technique should be done regularly once in 3 years for monitoring land use pattern and report submitted to MOEF and its Regional office at Bhopal.

(xvi) A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

(xvii) Consent to Operate shall be obtained before starting mining operations.

B. General Conditions

(i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests.

(ii) No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.

(iii) Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO2 and NOx monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.

(iv) Data on ambient air quality (SPM, RPM, SO2 and NOx) should be regularly submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months.

(v) Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points should be provided and properly maintained.

(vi) Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc should be provided with ear plugs/muffs.

(vii) Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap should be installed before discharge of workshop effluents.

(viii) Vehicular emissions should be kept under control and regularly monitored. Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.

(ix) Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.

(x) 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.

Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.

(xi) 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 the Head of the company.

(xii) The funds earmarked for environmental protection measures should e kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to this Ministry and its Regional Office at Bhopal.

(xiii) The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/monitoring reports.

(xiv) A copy of the will be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/representation has been received while processing the proposal.

(xv) State Pollution Control Board should display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.

(xvi) The Project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.

3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

4. Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.

5. The above conditions will be enforced *inter-alia*, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and Rules.

(Dr.T.Chandini)
Additional Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment, Government of Maharashtra, 15th Floor, New Admn. Bldg., Madam Cama Road, MUMBAI – 400032.
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arear Colony, Bhopal – 462016.
4. Chairman, Maharsashtra State Pollution Control Board, Kalapataru Point, 3rd & 4th Floors, Sion, Matunga Scheme Road No. 8, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai – 400002.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. Shri M.K. Shukla, CGM, Coal India Limited, SCOPE Minar, Core-I, 4t Floor, Vikas Marg, Laxminagar, New Delhi.
8. District Collector, Chandrapur, Government of Maharashtra.
9. EI Division, Ministry of Environment & Forests, New Delhi.
10. Monitoring File 10. Guard File 11. Record File

# MAHARASHTRA POLLUTION CONTROL BOARD

Phone : 24010437/24014701/24020781
Fax : 24024068/24023516
Website: http://mpcb.gov.in.
E-Mail: jdair@mpcb.gov.in

KALPATARU POINT, 3rd Floor,
Sion-Matunga Scheme Rd. No.8,
Opp. Sion Circle, Sion (East),
Mumbai-400 022.

**RED/LSI**
**Consent No: BO/JD(APC)/ UAN No. 1997/R/CC-** 0241 **Date:** 07/~~04~~12**/2017**

**Consent to Operate under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorisation / Renewal of Authorisation under Rule 6 of the Hazardous and Other Wastes (Management and Transboundry Movement) Rules, 2016.**

**[To be referred as Water Act, Air Act and H&OW (M&TM) Rules respectively].**

CONSENT is hereby granted to,

**M/s. Western Coal Fields Ltd.,**
**Hindustan Lalpeth Colliery Mine 1 & 3,**
**Post. Hindustan Lalpeth Colliery,**
**Tal & Dist. Chandrapur**

located in the area declared under the provisions of the Water Act, Air act and Authorization under the provisions of H & OW(M&TM) Rules and amendments thereto subject to the provisions of the Act and the Rules and the Orders that may be made further and subject to the following terms and conditions:

1. **The Consent to Operate is granted for a period up to: 31/03/2020 or up to validity of mine lease period whichever is earlier.**

2. **The Consent is valid for the activity of Mining of Coal over a mining lease area of 748.97 Ha**

| Sr. No. | Product Name | Maximum Quantity | UOM |
|---|---|---|---|
| 1 | **Coal Mining** | **0.18** | **Million Ton/Annum** |

3. **CONDITIONS UNDER WATER ACT:**

(i) The daily quantity of trade effluent from the factory shall not exceed **655 $m^3$/d.** (Including Mine Discharge).

(ii) The daily quantity of sewage effluent from the factory shall not exceed **150 $m^3$/d.**

(iii) **Trade Effluent Treatment:** The applicant shall provide comprehensive treatment system consisting of primary / secondary and/or tertiary treatment as is warranted with reference to influent quality and operate and maintain the same continuously so as to achieve the quality of the treated effluent to the following standards:

| | | | | |
|---|---|---|---|---|
| 1) | pH | Between | 5.5 to 9.0 | |
| 2) | Suspended Solids | Not to exceed | 100 | mg/l. |
| 3) | BOD 3days 27 Deg. C. | Not to exceed | 30 | mg/l. |
| 4) | Oil & Grease | Not to exceed | 10 | mg/l. |
| 5) | Total Dissolved Solids | Not to exceed | 2100 | mg/l. |
| 6) | Chlorides | Not to exceed | 600 | mg/l. |
| 7) | Sulphate | Not to exceed | 1000 | mg/l. |
| 8) | Nitrate Nitrogen | Not to exceed | 10 | mg/l. |
| 9) | Phenolic | Not to exceed | 1 | mg/l. |

(iv) **Trade Effluent Disposal:** The treated effluent shall be used for spraying mine

Maharashtra Pollution Control Board

pits to the maximum possible extent and excess shall be discharged into local nalla only after achieving above standards. The project authorities shall take proactive initiatives for use of this excess water for agricultural purposes in the vicinity of mine.

(v) **Sewage Effluent Treatment:** The applicant shall provide comprehensive treatment system as is warranted with reference to influent quality and operate and maintain the same continuously so as to achieve the quality of treated effluent to the following standards.

| | | | |
|---|---|---|---|
| (1) | Suspended Solids | Not to exceed | 100 mg/l. |
| (2) | BOD 3 days 27° C. | Not to exceed | 100 mg/l. |

(vi) **Sewage Effluent Disposal:** The treated domestic effluent shall be used on land for gardening / irrigation purpose only.

(vii) **Non-Hazardous Solid Wastes:**

| Type of waste | Quantity | Treatment | Disposal |
|---|---|---|---|

The waste i.e. Over burden shall be disposed for by means of backfilling or Reclamation of the land.

(viii) **Other conditions:** The industry shall monitor effluent quality regularly.

4. The applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977 (to be referred as Cess Act) and Amended Rules, 2003 there under:

water consumption for the following categories is as under:

| Sr No | Consumption | Quantity |
|---|---|---|
| 1 | Domestic | 210.0 CMD |
| 2 | Mine Discharge | 655.0 CMD |
| 3 | Spraying,Workshop,dust Suppression | 120.0 CMD |
| 4 | Sand stowing | -- CMD |
| 5 | Other uses like gardening Etc | 0.0 CMD |

5. **CONDITIONS UNDER AIR ACT:**

(I) The applicant shall install a comprehensive control system consisting of control equipments as is warranted with reference to generation of emission and operate and maintain the same continuously so as to achieve the level of pollutants to the following standards:

**(A) Standards for Ambient Air Pollutants:**

| | | | |
|---|---|---|---|
| (i) | Suspended Particulate Matter [SPM] | Not to exceed | 500 ug/m$^3$ |
| (ii) | Respirable Particulate Matter [RSPM] [Size less than 10 micrometer] | Not to exceed | 250 ug/m$^3$ |
| (iii) | Sulphur Dioxide ($SO_2$) | Not to exceed | 120 ug/m$^3$ |
| (iv) | Oxides of Nitrogen (NOx) | Not to exceed | 120 ug/m$^3$. |

**(B) Standards for Emissions of Air Pollutants:**

| | | | |
|---|---|---|---|
| (i) | TPM | Not to exceed | 150 mg/Nm$^3$ |
| (ii) | $SO_2$ | Not to exceed | -- Kg/Day |

**(C) Control Equipment:**

(i) Coal handling plant will be provided with Dust Collector and Automatic Water Sprinkler.

(ii) Scientific spraying of water on all working area, dump area, stock piles with the help of appropriate dust suppression system.

(iii) Coal shall be properly covered during transportation.

(iv) The applicant shall carry out tree plantation along road side, around dumps or Compulsory a forestation as per proposal approved by Forest Department. The tree plantation programme shall be taken up well in advance of the actual mining activity, so that green belt of sufficient width and height is developed between mining area/road and surrounding environment.

(v) Black topped metal led roads shall be provided and well maintained to prevent dust formation.

Maharashtra Pollution Control Board

(vi) Overloading of dumpers shall be avoided to prevent spillages.

(vii) Correct type and quantity of explosive shall be used to avoid excess dust formation and vibration in the surrounding area.

(viii) The slope of the over burden shall have slope but not more than 28 degree to the horizontal. The overburden shall be properly covered by vegetation for Stabilization.

(ix) Coal transportation shall be done by installing conveyors wherever possible & mechanically covered closed trucks shall be used for transportation.

(II) **The applicant shall observe the following fuel pattern:-**

| Sr.No. | Type of Fuel | Quantity |
|---|---|---|
| 1.0 | Diesel | 600 Liter/month |

(III) **The applicant shall erect the chimney(s) of the following specifications:-**

| Sr.No. | Chimney attached to | Height in Mtrs. |
|---|---|---|
| -- | -- | -- |

(IV) The applicant shall provide minimum three ambient air quality monitoring stations within mining area which should be monitored for SPM, RSPM, $SO_2$, NOx, HC, CO etc. The Annual Arithmetic Mean of minimum 104 measurements in a year taken twice a week 24 hourly at uniform interval shall conform to the National Ambient Air Quality Standards prescribed under Air (Prevention and Control of Pollution) Act, 1981 and Environment (Protection) Act, 1986. The records of results of continuous monitoring done shall be made available for inspection to the officers of the Board.

(V) The applicant shall take adequate measures for control of noise levels from its own Sources as follows:

| Sr.No. | Location | Permissible Norms [in dB(a)] | Desired minimum thickness of Green Belt |
|---|---|---|---|
| 1 | Along road | 65 (Commercial Area) | 20 |
| 2 | In Colonies | 55 (Residential Area) | 20 |
| 3 | Near Opencast Mines | 75 (Industrial Area) | 10 (*40) |
| 4 | Near CHPs | 75 | 30 |
| 5 | Near Shaft | 75 | 20 |
| 6 | Near Mine exhaust fan | 75 | >50 |
| (* The Open Cast Mine needs to be surrounded by a green belt of sufficient width as per the guidelines of Design Institute Ltd. (A Subsidiary of Coal India Ltd.] if the residential complexes are very close). | | | |

(VI) **Other Conditions:**

1. Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.
2. If Coal Washeries are installed, then follow the conditions of the Ministry of Environment &Forests, Government of India's Notification No.Q.15017/13/9 CPW, dated 27th January, 1999 strictly.

**6. CONDITIONS UNDER H & OW (M &TM) RULES, 2016:**

(i) The applicant shall handle hazardous wastes as specified below:

| Sr.No. | Item No. as per Sch-I | Type of Waste | Quantity | Disposal |
|---|---|---|---|---|
| | | Nil | | |

**7. General conditions:**

Maharashtra Pollution Control Board

(i) The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a yearly statement by 30th September every year on available open plot area, no. of trees surviving as on 31st March of the year and no. of trees planted by September end.

(ii) The applicant shall provide for an alternate electric power source sufficient to operate all pollution control facilities installed by he applicant and operate the same in case of power failure to maintain compliance with the terms and conditions of the consent. In the absence of same, the applicant shall stop, reduce or otherwise, control production to abide by terms & conditions of this consent regarding pollution levels.

(iii) The applicant shall make an application for renewal of the consent at least 60 days before the date of the expiry of the consent. The applicant shall not change or alter quantity, quality, the rate of discharge, temperature or the mode of the effluent/ emissions or hazardous wastes or control equipments provided for without previous written permission of the Board.

(iv) The firm shall submit MPCB, the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as pre the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992 before 30th September every year.

(v) The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained. The applicant shall also submit a comparative statement of designed power and chemical consumptions vis-a vis actual power and chemical consumption alongwith Environmental statement.

(vi) Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers down- stream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system. Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.

(vii) The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous wastes to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf. An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.

(viii) The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.

(ix) The applicant shall maintain good house keeping and take adequate measures for control of pollution from all sources so as not to cause nuisance to surrounding area / inhabitants. The project authorities shall work out the feasibility of deploying mechanically closed trucks for transportation and submit action plan within 3 months.

8. The project authorities shall submit an action plan for using closed coal conveyor belt system in place of truck transportation, wherever the coal transportation distances is less than 3 Kilometers initially, within 3 months.

9. The project authorities shall identify critical road sections where the dust generated from coal transportation is likely to affect human population and/or agriculture and take up works of making those roads pucca and clean, so as to reduce dust emissions in 3 months.

Maharashtra Pollution Control Board

10. The project authorities shall install well designed water sprinkling arrangements including fixed and mobile sprayers for dust suppression. The augmentation/ up gradation proposal for dust suppression system shall be submitted in 3 months.
11. The project authorities shall give suitable training to field level mine personnel and truck drivers on environmental protection and pollution control.
12. The project authorities shall obtain consent for their railway siding operation.
13. This consent is valid along with the Environmental Clearance granted to the mine.
14. This Board reserves the right to amend or add any conditions in this consent and the same shall be binding on the Applicant.
15. **Industry shall implement mechanical close type transportation system for coal/metal minerals handling trucks.**
16 **The applicant shall comply with the conditions stipulated in Environmental Clearance granted by Ministry of Forest & Environment, Govt. of India vide No. J-11015/182/2006-IA.II(M), dtd. 17/10/2006**
17. **The applicant shall extend existing operational BG of Rs. 5,00,000/- drawn in favour of Regional Officer, MPCB Chandrapur within 15 days valid for the period up to 31/07/2020 towards operation and maintenance of pollution control system so as to achieve the consented standards.**
18. **The applicant shall submit the bank guarantees as per BG Regime of coal mine approved in Boards CAC Meeting dt: 03/11/2015 drawn in favour of RO-MPCB, Chandrapur within 15-days valid for one year period. BG regime enclosed at Annex-I.**
19. **Total Capital investment of the Mine is Rs. 24.12/- Crore.**

For and On Behalf of the
Maharashtra Pollution Control Board,

6/7/17

**(Dr. V. M. Motghare)**
Joint Director (Air Pollution Control)

**To,**
**M/s. Western Coal Fields Ltd.,**
**Hindustan Lalpeth Colliery Mine 1 & 3,**
**Post. Hindustan Lalpeth Colliery,**
**Tal & Dist. Chandrapur**

**Copy to:**
1) Regional Officer, MPCB, Chandrapur. 2) Sub-Regional Officer, MPCB, Chandrapur
- ***They are directed to obtain BG's from the industry as per consent conditions and submit the compliance of consent conditions along with the monitoring results within one month period.***

Chief Accounts Officer, MPCB, Mumbai.

**Received Consent fee of –**

| Sr. No. | Amount (Rs.) | DD. No. | Date | Drawn On |
|---|---|---|---|---|
| 1 | 2,44,000/- | 20338 | 06/05/2016 | SBI Bank |

Previous balance consent fee of Rs. 2.94 Lakhs (DD No. 578040 dtd. 1/1/2013, UCO Bank) adjusted in this consent. Now no any consent fee balance with Board.

4) Cess Branch, MPCB. 5) Master file.

Maharashtra Pollution Control Board

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# ENVIRONMENTAL MONITORING REPORT

# HLP-I & III UG

**CHANDRAPUR AREA**

## WESTERN COALFIELDS LTD.

JOB NO. 4094423068

**APRIL 2023**


**Environment Laboratory**
**NABL Accredited vide Cert. No. TC-7102**
CMPDI
REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014


AN ISO 9001:2015 COMPANY

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | | |
|---|---|---|---|
| TEST REPORT NO. | RIN/TR/APRIL-23/36 | DATE OF ISSUE | 30-05-23 |
| NAME OF CUSTOMER | GM(ENV.), WCL(HQ), NAGPUR | | |
| TEST REQUIRED | SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017) | | |
| SAMPLE DESCRIPTION | AIR SAMPLE | SAMPLING PLAN : | LQR 47 |
| SAMPLING METHOD : LSOP 4 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES: | | 13-04-23 TO 15-05-23 |

| SUBSTATION HLC I UG | | CHUA1 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01-04-23 | 02-04-23 | 241 | 147 | 53 | 22 | 16 | Clear / Light Breeze |
| 23-04-23 | 24-04-23 | 257 | 161 | 60 | 21 | 14 | Cloudy / Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| PIT OFFICE - HLC-I INCLINE | | CHUA2 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01-04-23 | 02-04-23 | 247 | 142 | 47 | 20 | 15 | Clear / Light Breeze |
| 23-04-23 | 24-04-23 | 251 | 147 | 59 | 17 | 14 | Cloudy / Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| HLC-III COLONY | | CHUA3 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01-04-23 | 02-04-23 | 133 | 63 | 27 | 13 | BDL | Clear / Light Breeze |
| 27-04-23 | 28-04-23 | 169 | 66 | 37 | 11 | BDL | Cloudy / Light Breeze |
| NAAQS, 2009 | | **-** | **100** | **60** | **80** | | |

| RAJIV GANDHI ENGG. COLLEGE | | CHUA4 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | Rainy/Windy |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01-04-23 | 02-04-23 | 137 | 61 | 28 | 14 | BDL | Clear / Light Breeze |
| 27-04-23 | 28-04-23 | 150 | 57 | 31 | 12 | BDL | Cloudy / Light Breeze |
| NAAQS, 2009 | | **-** | **100** | **60** | **80** | **80** | |

Analysed by

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | |
|---|---|---|
| SAMPLE DESCRIPTION | Water sample | |
| Test Required | pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019) | |
| SAMPLING METHOD | LSOP 5 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 13-04-23 TO 15-05-23 |

| MINE WATER DISCHARGE(HLP-III): CHUW1 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 01-04-23 | 7.67 | 26 | 24 | BDL |
| 16-04-23 | 7.6 | 32 | 28 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

| MINE WATER DISCHARGE(HLP-I): CHUW2 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 01-04-23 | 7.75 | 30 | 40 | BDL |
| 16-04-23 | 7.72 | 24 | 48 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

Analysed by

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

## NOISE LEVEL MONITORING DATA

| | |
|---|---|
| SAMPLE DESCRIPTION | NOISE SAMPLE |
| Test Required | CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015 |
| SAMPLING METHOD | LSOP 6 |

| | FAN HOUSE-I: | CHUN1 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| APRIL'2023 | 13-04-23 | 44.5 | 43.6 |
| APRIL'2023 | 26-04-23 | 43.7 | 43.5 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **75** | **70** |

| | COLONY: | CHUN2 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| APRIL'2023 | 13-04-23 | 43.7 | 43.5 |
| APRIL'2023 | 26-04-23 | 43.4 | 42.2 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **55** | **45** |

Ashwin B Wasnik
Reviewed by

Deepanshu Sahu
Authoriesed by

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# ENVIRONMENTAL MONITORING REPORT

# HLP-I & III UG

**CHANDRAPUR AREA**

## WESTERN COALFIELDS LTD.

JOB NO. 4094423068

**MAY 2023**


**Environment Laboratory**
**NABL Accredited vide Cert. No. TC-7102**
CMPDI
REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014


AN ISO 9001:2015 COMPANY

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | | | |
|---|---|---|---|---|
| TEST REPORT NO. | RIN/TR/MAY-23/36 | | DATE OF ISSUE | 30-06-2023 |
| NAME OF CUSTOMER | GM(ENV.), WCL(HQ), NAGPUR | | | |
| TEST REQUIRED | SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017) | | | |
| SAMPLE DESCRIPTION | AIR SAMPLE | | SAMPLING PLAN : | LQR 47 |
| SAMPLING METHOD : LSOP 4 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES: | | | 15-05-23 TO 16-06-23 |

| SUBSTATION HLC I UG | | CHUA1 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 02-05-2023 | 03-05-2023 | 251 | 157 | 63 | 21 | 13 | Cloudy / Light Breeze |
| 16-05-2023 | 17-05-2023 | 238 | 144 | 58 | 20 | 16 | Cloudy / Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| PIT OFFICE - HLC-I INCLINE | | CHUA2 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 02-05-2023 | 03-05-2023 | 250 | 141 | 47 | 19 | 14 | Cloudy / Light Breeze |
| 16-05-2023 | 17-05-2023 | 246 | 140 | 50 | 15 | 12 | Cloudy / Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| HLC-III COLONY | | CHUA3 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 02-05-2023 | 03-05-2023 | 172 | 60 | 34 | 10 | BDL | Cloudy / Light Breeze |
| 16-05-2023 | 17-05-2023 | 135 | 67 | 31 | 12 | BDL | Cloudy / Light Breeze |
| NAAQS, 2009 | | **-** | **100** | **60** | **80** | **80** | |

| RAJIV GANDHI ENGG. COLLEGE | | CHUA4 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | Rainy/Windy |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 02-05-2023 | 03-05-2023 | 150 | 59 | 27 | 12 | BDL | Cloudy / Light Breeze |
| 16-05-2023 | 17-05-2023 | 136 | 60 | 29 | 13 | BDL | Cloudy / Light Breeze |
| NAAQS, 2009 | | **-** | **100** | **60** | **80** | **80** | |

Analysed by

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | |
|---|---|---|
| SAMPLE DESCRIPTION | Water sample | |
| Test Required | pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019) | |
| SAMPLING METHOD | LSOP 5 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 15-05-23 TO 16-06-23 |

| MINE WATER DISCHARGE(HLP-III): CHUW1 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 03-05-2023 | 7.72 | 32 | 28 | BDL |
| 16-05-2023 | 8.39 | 30 | 36 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

| MINE WATER DISCHARGE(HLP-I): CHUW2 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 03-05-2023 | 7.7 | 38 | 44 | BDL |
| 16-05-2023 | 7.32 | 26 | 40 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

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| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

## NOISE LEVEL MONITORING DATA

| | |
|---|---|
| SAMPLE DESCRIPTION | NOISE SAMPLE |
| Test Required | CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015 |
| SAMPLING METHOD | LSOP 6 |

| FAN HOUSE-I: | | CHUN1 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| MAY'2023 | 13-05-2023 | 71.5 | 69.9 |
| MAY'2023 | 27-05-2023 | 70.5 | 68.8 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **75** | **70** |

| COLONY: | | CHUN2 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| MAY'2023 | 13-05-2023 | 44.4 | 43.3 |
| MAY'2023 | 27-05-2023 | 42.8 | 41.9 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **55** | **45** |

Ashwin B Wasnik
Reviewed by

Deepanshu Sahu
Authoriesed by

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# ENVIRONMENTAL MONITORING REPORT

# HLP-I & III UG

**CHANDRAPUR AREA**

## WESTERN COALFIELDS LTD.

JOB NO. 4094423068

**JUNE 2023**


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JARIPATKA, NAGPUR, PIN – 440 014


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| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | | |
|---|---|---|---|
| TEST REPORT NO. | RIN/TR/JUNE-23/36 | DATE OF ISSUE | 31-07-23 |
| NAME OF CUSTOMER | GM(ENV.), WCL(HQ), NAGPUR | | |
| TEST REQUIRED | SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017) | | |
| SAMPLE DESCRIPTION | AIR SAMPLE | SAMPLING PLAN : | LQR 47 |
| SAMPLING METHOD : LSOP 4 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES: | | 17-06-23 TO 15-07-23 |

| SUBSTATION HLC I UG | | CHUA1 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 14-06-23 | 15-06-23 | 257 | 151 | 60 | 20 | 14 | Cloudy / Light Breeze |
| 20-06-23 | 21-06-23 | 240 | 138 | 53 | 18 | 15 | Cloudy / Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| PIT OFFICE - HLC-I INCLINE | | CHUA2 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 14-06-23 | 15-06-23 | 244 | 137 | 51 | 18 | 13 | Cloudy / Light Breeze |
| 20-06-23 | 21-06-23 | 248 | 130 | 48 | 15 | 11 | Cloudy / Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| HLC-III COLONY | | CHUA3 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 14-06-23 | 15-06-23 | 170 | 56 | 39 | 10 | BDL | Cloudy / Light Breeze |
| 20-06-23 | 21-06-23 | 149 | 60 | 33 | 12 | BDL | Cloudy / Light Breeze |
| NAAQS, 2009 | | **-** | **100** | **60** | **80** | | |

| RAJIV GANDHI ENGG. COLLEGE | | CHUA4 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | Rainy/Windy |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 14-06-23 | 15-06-23 | 143 | 52 | 30 | 12 | BDL | Cloudy / Light Breeze |
| 20-06-23 | 21-06-23 | 131 | 67 | 25 | 11 | BDL | Cloudy / Light Breeze |
| NAAQS, 2009 | | **-** | **100** | **60** | **80** | **80** | |

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| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | |
|---|---|---|
| SAMPLE DESCRIPTION | Water sample | |
| Test Required | pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019) | |
| SAMPLING METHOD | LSOP 5 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 17-06-23 TO 15-07-23 |

| MINE WATER DISCHARGE(HLP-III): CHUW1 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 14-06-23 | 8.2 | 28 | 36 | BDL |
| 20-06-23 | 8.1 | 24 | 40 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

| MINE WATER DISCHARGE(HLP-I): CHUW2 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 14-06-23 | 8.16 | 34 | 48 | BDL |
| 20-06-23 | 8.18 | 38 | 52 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

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|---|---|---|

## NOISE LEVEL MONITORING DATA

| | |
|---|---|
| SAMPLE DESCRIPTION | NOISE SAMPLE |
| Test Required | CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015 |
| SAMPLING METHOD | LSOP 6 |

| | FAN HOUSE-I: | CHUN1 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| JUNE'2023 | 13-06-23 | 74.6 | 73.5 |
| JUNE'2023 | 19-06-23 | 66.6 | 65.8 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **75** | **70** |

| | COLONY: | CHUN2 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| JUNE'2023 | 13-06-23 | 42.7 | 41.6 |
| JUNE'2023 | 19-06-23 | 42.7 | 41.9 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **55** | **45** |

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# ENVIRONMENTAL MONITORING REPORT

# HLP-I & III UG

**CHANDRAPUR AREA**

## WESTERN COALFIELDS LTD.

JOB NO. 4094423068

**JULY 2023**


**Environment Laboratory**
**NABL Accredited vide Cert. No. TC-7102**
CMPDI
REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014


AN ISO 9001:2015 COMPANY

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | | | |
|---|---|---|---|---|
| TEST REPORT NO. | RIN/TR/JULY-23/36 | | DATE OF ISSUE | 31-08-2023 |
| NAME OF CUSTOMER | GM(ENV.), WCL(HQ), NAGPUR | | | |
| TEST REQUIRED | SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017) | | | |
| SAMPLE DESCRIPTION | AIR SAMPLE | | SAMPLING PLAN : | LQR 47 |
| SAMPLING METHOD : LSOP 4 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES: | | | 16-07-23 TO 14-08-23 |

| SUBSTATION HLC I UG | | CHUA1 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 10.07.2023 | 11.07.2023 | 262 | 154 | 58 | 22 | 15 | Cloudy Sky/Light Breeze |
| 22.07.2023 | 23.07.2023 | 234 | 130 | 49 | 16 | 11 | Rainy sky/Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| PIT OFFICE - HLC-I INCLINE | | CHUA2 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 10.07.2023 | 11.07.2023 | 250 | 144 | 56 | 20 | 14 | Cloudy Sky/Light Breeze |
| 22.07.2023 | 23.07.2023 | 230 | 130 | 46 | 17 | 10 | Rainy sky/Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25TH September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| HLC-III COLONY | | CHUA3 | | | | |
|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 2 | 6 | 10 | |
| 10.07.2023 | 11.07.2023 | 70 | 28 | 15 | BDL | Cloudy Sky/Light Breeze |
| 22.07.2023 | 23.07.2023 | 59 | 22 | 11 | BDL | Rainy sky/Light Breeze |
| NAAQS, 2009 | | **100** | **60** | **80** | **80** | |

| RAJIV GANDHI ENGG. COLLEGE | | CHUA4 | | | | |
|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | Rainy/Windy |
| | | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 2 | 6 | 10 | |
| 10.07.2023 | 11.07.2023 | 65 | 26 | 13 | BDL | Cloudy Sky/Light Breeze |
| 20.07.2023 | 21.07.2023 | 55 | 20 | 9 | BDL | Rainy sky/Light Breeze |
| NAAQS, 2009 | | **100** | **60** | **80** | **80** | |

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|---|---|---|

| | | |
|---|---|---|
| SAMPLE DESCRIPTION | Water sample | |
| Test Required | pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019) | |
| SAMPLING METHOD | LSOP 5 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 16-07-23 TO 14-08-23 |

**MINE WATER DISCHARGE(HLP-III): CHUW1**

| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
|---|---|---|---|---|
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 10.07.2023 | 8.13 | 31 | 32 | BDL |
| 22.07.2023 | 7.96 | 24 | 36 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

**MINE WATER DISCHARGE(HLP-I): CHUW2**

| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
|---|---|---|---|---|
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 10.07.2023 | 8.05 | 33 | 40 | BDL |
| 22.07.2023 | 7.86 | 40 | 48 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

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|---|---|---|

## NOISE LEVEL MONITORING DATA

| | |
|---|---|
| SAMPLE DESCRIPTION | NOISE SAMPLE |
| Test Required | CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015 |
| SAMPLING METHOD | LSOP 6 |

| FAN HOUSE-I: | | CHUN1 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| JULY'23 | 07-07-2023 | 67.6 | 66.5 |
| JULY'23 | 22-07-2023 | 68.6 | 67.9 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **75** | **70** |

| COLONY: | | CHUN2 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| JULY'23 | 07-07-2023 | 44.4 | 43.2 |
| JULY'23 | 22-07-2023 | 42.8 | 41.5 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **55** | **45** |

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# ENVIRONMENTAL MONITORING REPORT

# HLP-I & III UG

**CHANDRAPUR AREA**

## WESTERN COALFIELDS LTD.

JOB NO. 4094423068

**AUGUST 2023**


**Environment Laboratory**
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| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | | |
|---|---|---|---|
| TEST REPORT NO. | RIN/TR/AUGUST-23/36 | DATE OF ISSUE | 30-09-2023 |
| NAME OF CUSTOMER | GM(ENV.), WCL(HQ), NAGPUR | | |
| TEST REQUIRED | SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017) | | |
| SAMPLE DESCRIPTION | AIR SAMPLE | SAMPLING PLAN : | LQR 47 |
| SAMPLING METHOD : LSOP 4 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES: | | 15-08-23 TO 15-09-23 |

| SUBSTATION HLC I UG | | CHUA1 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01.08.2023 | 02.08.2023 | 274 | 176 | 57 | 23 | 15 | Cloudy Sky/Light Breeze |
| 16.08.2023 | 17.08.2023 | 265 | 167 | 53 | 26 | 17 | Cloudy Sky/Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| PIT OFFICE - HLC-I INCLINE | | CHUA2 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01.08.2023 | 02.08.2023 | 254 | 159 | 50 | 23 | 18 | Cloudy Sky/Light Breeze |
| 16.08.2023 | 17.08.2023 | 267 | 167 | 55 | 20 | 13 | Cloudy Sky/Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| HLC-III COLONY | | CHUA3 | | | | |
|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 2 | 6 | 10 | |
| 01.08.2023 | 02.08.2023 | 68 | 26 | 14 | BDL | Cloudy Sky/Light Breeze |
| 16.08.2023 | 17.08.2023 | 73 | 23 | 12 | 10 | Cloudy Sky/Light Breeze |
| NAAQS, 2009 | | **100** | **60** | **80** | **80** | |

| RAJIV GANDHI ENGG. COLLEGE | | CHUA4 | | | | |
|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | Rainy/Windy |
| | | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 2 | 6 | 10 | |
| 01.08.2023 | 02.08.2023 | 67 | 24 | 11 | BDL | Cloudy Sky/Light Breeze |
| 16.08.2023 | 17.08.2023 | 70 | 28 | 14 | BDL | Cloudy Sky/Light Breeze |
| NAAQS, 2009 | | **100** | **60** | **80** | **80** | |

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| | | |
|---|---|---|
| SAMPLE DESCRIPTION | Water sample | |
| Test Required | pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019) | |
| SAMPLING METHOD | LSOP 5 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 15-08-23 TO 15-09-23 |

**MINE WATER DISCHARGE(HLP-III): CHUW1**

| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
|---|---|---|---|---|
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 01.08.2023 | 7.92 | 25 | 36 | BDL |
| 16.08.2023 | 7.8 | 21 | 28 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

**MINE WATER DISCHARGE(HLP-I): CHUW2**

| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
|---|---|---|---|---|
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 01.08.2023 | 7.59 | 24 | 32 | BDL |
| 16.08.2023 | 7.86 | 28 | 40 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

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## NOISE LEVEL MONITORING DATA

| | |
|---|---|
| SAMPLE DESCRIPTION | NOISE SAMPLE |
| Test Required | CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015 |
| SAMPLING METHOD | LSOP 6 |

| FAN HOUSE-I: | | CHUN1 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| AUG'23 | 08-08-2023 | 67.9 | 66.5 |
| AUG'23 | 26-08-2023 | 65.8 | 64.5 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **75** | **70** |

| COLONY: | | CHUN2 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| AUG'23 | 08-08-2023 | 43.5 | 42.6 |
| AUG'23 | 26-08-2023 | 42.9 | 41.6 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **55** | **45** |

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# ENVIRONMENTAL MONITORING REPORT

# HLP-I & III UG

**CHANDRAPUR AREA**

## WESTERN COALFIELDS LTD.

JOB NO. 4094423068

**SEPTEMBER 2023**


**Environment Laboratory**
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| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | | |
|---|---|---|---|
| TEST REPORT NO. | RIN/TR/SEPT-23/37 | DATE OF ISSUE | 27-10-23 |
| NAME OF CUSTOMER | GM(ENV.), WCL(HQ), NAGPUR | | |
| TEST REQUIRED | SPM: IS 5182 Part-4:1999(RA 2019), PM-10: IS-5182 Part 23:2006(RA 2017), PM2.5: USEPA Quality Assurance guidance document volume-II (part-II)-2.12:2016, NO2: IS 5182 Part-06:2006(2017), SO2:IS 5182 Part-2:2001(RA 2017) | | |
| SAMPLE DESCRIPTION | AIR SAMPLE | SAMPLING PLAN : | LQR 47 |
| SAMPLING METHOD : LSOP 4 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES: | | 15-09-23 TO 15-10-23 |

| SUBSTATION HLC I UG | | CHUA1 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01.09.2023 | 02.09.2023 | 282 | 181 | 59 | 27 | 18 | Cloudy Sky/Light Breeze |
| 17.09.2023 | 18.09.2023 | 269 | 170 | 53 | 24 | 15 | Clear Sky/Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| PIT OFFICE - HLC-I INCLINE | | CHUA2 | | | | | |
|---|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **SPM** | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 5 | 2 | 6 | 10 | |
| 01.09.2023 | 02.09.2023 | 280 | 179 | 57 | 24 | 19 | Cloudy Sky/Light Breeze |
| 17.09.2023 | 18.09.2023 | 275 | 172 | 52 | 21 | 13 | Clear Sky/Light Breeze |
| STANDARDS FOR COAL MINE, GSR 742(E), dt. 25$^{TH}$ September 2000 | | **600** | **300** | **-** | **120** | **120** | |

| HLC-III COLONY | | CHUA3 | | | | |
|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | ENVIRONMENT CONDITIONS (Sky/Wind) |
| | | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 2 | 6 | 10 | |
| 01.09.2023 | 02.09.2023 | 75 | 24 | 16 | 10 | Cloudy Sky/Light Breeze |
| 17.09.2023 | 18.09.2023 | 70 | 27 | 12 | BDL | Clear Sky/Light Breeze |
| NAAQS, 2009 | | **100** | **60** | **80** | **80** | |

| RAJIV GANDHI ENGG. COLLEGE | | CHUA4 | | | | |
|---|---|---|---|---|---|---|
| DATE(dd:mm:yy) OF SAMPLING | | PARAMETERS (24 hourly values in µg/m$^3$) | | | | Rainy/Windy |
| | | **$PM_{10}$** | **$PM_{2.5}$** | **$NO_2$** | **$SO_2$** | |
| FROM | TO | 5 | 2 | 6 | 10 | |
| 01.09.2023 | 02.09.2023 | 76 | 25 | 11 | BDL | Cloudy Sky/Light Breeze |
| 17.09.2023 | 18.09.2023 | 72 | 21 | 14 | 10 | Clear Sky/Light Breeze |
| NAAQS, 2009 | | **100** | **60** | **80** | **80** | |

Analysed by

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

| | | |
|---|---|---|
| SAMPLE DESCRIPTION | Water sample | |
| Test Required | pH: IS 3025 -Part 11:1983(RA 2017),TSS: IS 3025-Part 17:1984(RA 2017),COD: APHA (23rd Edition) 5220 C :2017,O &G: IS 3025-Part 39:1991(RA 2019) & BOD: IS 3025 (Part 44): 1993 (RA 2019) | |
| SAMPLING METHOD | LSOP 5 | PERIOD OF PERFORMANCE OF LAB ACTIVITIES : 15-09-23 TO 15-10-23 |

| MINE WATER DISCHARGE(HLP-III): CHUW1 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 02.09.2023 | 7.79 | 20 | 32 | BDL |
| 18.09.2023 | 7.54 | 16 | 24 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

| MINE WATER DISCHARGE(HLP-I): CHUW2 | | | | |
|---|---|---|---|---|
| DATE OF SAMPLE COLLECTION | ANALYSIS RESULTS | | | |
| | pH | TSS (in mg/l) | COD(in mg/l) | O & G(in mg/l) |
| DETECTION LIMIT | 2 | 10 | 4 | 2 |
| 02.09.2023 | 7.57 | 22 | 24 | BDL |
| 18.09.2023 | 7.27 | 26 | 32 | BDL |
| STANDARDS FOR COAL MINE, GSR 742E, dt. 25/09/2000 | 5.5 - 9.0 | 100 | 250 | 10 |

Analysed by

| Environment Laboratory CMPDI RI-IV, NAGPUR | Test Report | TC-7102 |
|---|---|---|

## NOISE LEVEL MONITORING DATA

| | |
|---|---|
| SAMPLE DESCRIPTION | NOISE SAMPLE |
| Test Required | CPCB PROCTOCOL FOR AMBIENT NOISE MEASUREMENT, JUNE-2015 |
| SAMPLING METHOD | LSOP 6 |

| FAN HOUSE-I: | | CHUN1 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| SEPT'23 | 09-09-23 | 67.6 | 66.5 |
| SEPT'23 | 25-09-23 | 67.5 | 66.6 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **75** | **70** |

| COLONY: | | CHUN2 | |
|---|---|---|---|
| MONTH | DATE OF SAMPLE COLLECTION | NOISE LEVEL IN dB(A) | |
| | | DAY TIME | NIGHT TIME |
| | DETECTION LIMIT | 20 | 20 |
| SEPT'23 | 09-09-23 | 42.5 | 41.9 |
| SEPT'23 | 25-09-23 | 43.6 | 42.5 |
| **NOISE POLLUTION (REGULATION AND CONTROL) RULES** | | **55** | **45** |

Ashwin B Wasnik
Reviewed by

Deepanshu Sahu
Authoriesed by

1. This report cannot be reproduced in part or full without written of the management.
2. Laboratory activities are performed at the Laboratory permanent facility that is ground floor, Environment Lab, CMPDI RI-IV, Nagpur.
3. This report refers to the values related to the items tested.

********** End of report **********

Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

# FORM V

## Environmental Audit Report for the financial Year ending the 31st March 2020

***Unique Application Number***
MPCB-ENVIRONMENT_STATEMENT-0000023618

***Submitted Date***
19-05-2020

### *Company Information*

***Company Name***
M/s Western Coalfields Limited, Hindustan Lalpeth Colliery 1 & 3

***Application UAN number***
MPCB-CONSENT-0000001997

***Address***
POST- HINDUSTAN LALPETH COLLIERY

***Plot no***
NA

***Taluka***
Chandrapur

***Village***
WCL-Chandrapur Area

***Capital Investment (In lakhs)***
2662.92

***Scale***
L.S.I.

***City***
Chandrapur

***Pincode***
442507

***Person Name***
Shri. R. K. Dhabaria

***Designation***
Sr. Manager

***Telephone Number***
8275967562

***Fax Number***
-

***Email***
managerhlc1@gmail.com

***Region***
SRO-Chandrapur

***Industry Category***
Red

***Industry Type***
R35 Mining and ore beneficiation

***Last Environmental statement submitted online***
yes

***Consent Number***
BO/JD(APC)/UAN No. 1997/R/CC-0241

***Consent Issue Date***
07.12.2017

***Consent Valid Upto***
31.03.2020

### *Product Information*

| ***Product Name*** | ***Consent Quantity*** | ***Actual Quantity*** | ***UOM*** |
|---|---|---|---|
| COAL | 0.18 | 0 | MT/A |

### *By-product Information*

| ***By Product Name*** | ***Consent Quantity*** | ***Actual Quantity*** | ***UOM*** |
|---|---|---|---|
| NA | - | - | CMD |

### *1) Water Consumption in m3/day*

| ***Water Consumption for*** | ***Consent Quantity in m3/day*** | ***Actual Quantity in m3/day*** |
|---|---|---|
| ***Process*** | 120 | 100 |
| ***Cooling*** | - | - |
| ***Domestic*** | 210 | 120 |
| ***All others*** | - | - |
| ***Total*** | 330 | 220 |

### *1) Effluent Generation in CMD / MLD*

| Particulars | Consent Quantity | Actual Quantity | UOM |
|---|---|---|---|
| Daily Trade Effluent | 655 | 600 | CMD |

### 2) Product Wise Process Water Consumption (cubic meter of process water per unit of product)

| Name of Products (Production) | During the Previous financial Year | During the current Financial year | UOM |
|---|---|---|---|
| Coal (Cubic Meter/Tonne) | 0 | 0 | CMD |

### 3) Raw Material Consumption (Consumption of raw material per unit of product)

| Name of Raw Materials | During the Previous financial Year | During the current Financial year | UOM |
|---|---|---|---|
| Explosives (KG/Tonne) | 0 | 0 | |

### 4) Fuel Consumption

| Fuel Name | Consent quantity | Actual Quantity | UOM |
|---|---|---|---|
| Diesel | 7.2 | 0 | KL/A |

### Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

#### [A] Water

| Pollutants Detail | Quantity of Pollutants discharged (kL/day) | Concentration of Pollutants discharged(Mg/Lit) Except PH,Temp,Colour | Percentage of variation from prescribed standards with reasons | | |
|---|---|---|---|---|---|
| | Quantity | Concentration | %variation | Standard | Reason |
| WATER REPORT ATTACHED IN STEP I | - | - | - | - | - |

#### [B] Air (Stack)

| Pollutants Detail | Quantity of Pollutants discharged (kL/day) | Concentration of Pollutants discharged(Mg/NM3) | Percentage of variation from prescribed standards with reasons | | |
|---|---|---|---|---|---|
| | Quantity | Concentration | %variation | Standard | Reason |
| NO AIR STACK MONITORING | - | - | - | - | - |

### HAZARDOUS WASTES

#### 1) From Process

| Hazardous Waste Type | Total During Previous Financial year | Total During Current Financial year | UOM |
|---|---|---|---|
| | NA | NA | KL/A |

#### 2) From Pollution Control Facilities

| Hazardous Waste Type | Total During Previous Financial year | Total During Current Financial year | UOM |
|---|---|---|---|
| | NA | NA | Ton/Y |

### SOLID WASTES

#### 1) From Process

| Non Hazardous Waste Type | Total During Previous Financial year | Total During Current Financial year | UOM |
|---|---|---|---|
| OVERBURDEN | NA | NA | CMD |

#### 2) From Pollution Control Facilities

| Non Hazardous Waste Type | Total During Previous Financial year | Total During Current Financial year | UOM |
|---|---|---|---|
| - | - | - | CMD |

#### 3) Quantity Recycled or Re-utilized within the unit

| Waste Type | Total During Previous Financial year | Total During Current Financial year | UOM |
|---|---|---|---|
| | - | - | CMD |

### Please specify the characteristics(in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

#### 1) Hazardous Waste

| Type of Hazardous Waste Generated | Qty of Hazardous Waste | UOM | Concentration of Hazardous Waste |
|---|---|---|---|
| | NA | KL/A | - |

#### 2) Solid Waste

| Type of Solid Waste Generated | Qty of Solid Waste | UOM | Concentration of Solid Waste |
|---|---|---|---|
| - | NA | CMD | - |

### Impact of the pollution Control measures taken on conservation of natural resources and consequently on the cost of production.

| Description | Reduction in Water Consumption (M3/day) | Reduction in Fuel & Solvent Consumption (KL/day) | Reduction in Raw Material (Kg) | Reduction in Power Consumption (KWH) | Capital Investment(in Lacs) | Reduction in Maintenance(in Lacs) |
|---|---|---|---|---|---|---|
| Impact of the pollution control measures | 0 | 0 | 0 | 922731 | 0 (Mine has been closed permanently since 12.10.2017 ) | - |

### Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.

#### [A] Investment made during the period of Environmental Statement

| Detail of measures for Environmental Protection | Environmental Protection Measures | Capital Investment (Lacks) |
|---|---|---|
| CAPITAL EXPENDITURE | AIR POLLUTION CONTROL, WATER POLLUTION CONTROL, PLANTATION | 0 (Mine has stopped working since 12.10.2017 & is preparing for permanent closure) |

#### [B] Investment Proposed for next Year

| Detail of measures for Environmental Protection | Environmental Protection Measures | Capital Investment (Lacks) |
|---|---|---|
| CAPITAL INVESTMENT | WATER POLLUTION CONTROL (Construction of STP for colony) | 0 |

### Any other particulars in respect of environmental protection and abatement of pollution.

#### Particulars

Documents as asked

#### Name & Designation

SHRI R. K. DHABARIA, SR. MANAGER

# REPORT ON

# MONITORING OF GROUND WATER LEVEL

# OF

# HINDUSTAN LALPETH UG I & II MINE, CHANDRAPUR AREA (M.S)

**WESTERN COALFIELDS LTD.**

**PERIOD- DEC 2022 (POST-MONSOON), JAN-FEB -2023 (WINTER) & MAY-2023 (PRE-MONSOON)**


## M/s Anacon Laboratories Pvt. Ltd., Nagpur

**MoEF&CC (GOI) and NABL Recognized Laboratory**
**ISO 9001:2015, ISO 14001:2015, ISO 45001:2018**
Lab. & Consultancy: FP-34, 35, Food Park,
MIDC, Butibori, Nagpur – 441122
Mob: +91-9372960077
**Email:** ***ngp@anacon.in***
**Website:** ***www.anaconlaboratories.com***



**Report No. ANqr /PD/20A/2023/199**


## 2022-23 & 2023-24

# Certificate

The Ground water Level monitoring has been carried out with due diligence and the Monitoring of Ground Water Level of all observation wells Report have been prepared as per the scope of work order no. वेकोलि/मुख्यालय/पर्यावरण/14-L/77 on date: 08.12.2022.

The report encompasses the Monitoring of Ground water level reports of observation wells pertaining to the HINDUSTAN LALPETH UG I & II MINE, of the Chandrapur District, Maharashtra.

Anacon Laboratories Pvt. Ltd. gratefully acknowledges the full cooperation rendered by concerned WCL Officials for timely completion of the project.

**Ajinkya Nakod**
(Geologist)

**Gyanchand Bohra**
NABET Accredited EIA Expert
for Hydrogeology & Geology

ANACON LABORATORIES PVT. LTD. NAGPUR

Nagpur.
August-2023

**(Dr. D. G. Garway)**
**Head of Organization**
**Anacon Laboratories Pvt. Ltd., Nagpur**

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## INTRODUCTION

WCL is one of the eight Subsidiary Companies of Coal India Limited (CIL) which is under administrative control of Ministry of Coal. The Company incorporated under the Companies Act, 1956 has its registered office at Coal Estate, Civil Lines, Nagpur–440001. WCL has been conferred "Mini-ratna" status on 15 March 2008. It has mining operation spread over the states of Maharashtra (in Nagpur, Chandrapur & Yeotmal Districts) and Madhya Pradesh (in Betul and Chhindawara Districts). It has been divided into 10 administrative areas. The Company is a major source of supplies of coal to the industries located in Western India in the States of Maharashtra, Madhya Pradesh, Gujarat and also in Southern India in the States of Andhra Pradesh, Tamil Nadu, Karnataka and Kerala. A large numbers of Power Houses under Maharashtra, Madhya Pradesh, Gujarat, Karnataka, Punjab and Uttar Pradesh - Electricity Boards are major consumers of its coal along with cement, steel, chemical, fertilizer, paper and brick Industries in these states.

M/s Anacon Laboratories Pvt. Ltd. has been awarded the Work of "Groundwater level Monitoring ( i.e. bore well / piezometer Water levels ) and Water quality analysis ( as per IS10500 ) for 76 projects / mines of WCL ( situated in the state of Madhya Pradesh – Chhindwara & Betul districts and Maharashtra – Nagpur, Chandrapur & Yeotmal districts) for one year as per condition stipulated in Environmental Clearance letters issued by MoEF & CC & NOC issued by CGWA" vide work order वेकोलि/मुख्यालय/पर्यावरण/14-L/77 on date: 08.12.2022.

This Ground Water Level Monitoring report is prepared for HINDUSTAN LALPETH UG I & II MINE,mines of Chandrapur area of WCL for 3 seasons i.e. DEC 2022(POST-MONSOON), JAN-FEB 2023 (WINTER) & MAY-2023 (PRE-MONSOON). These mine IS located in Chandrapur District of Maharashtra.

### GENERAL HYDROGEOLOGICAL CONDITION

The major water bearing formations in the district are Alluvium, Lower Gondwana Sandstones, Deccan Trap Basalt, Vindhyan Limestone and Archean metamorphic. Amongst these, the lower Gondwana Sandstones, particularly Kamthi Sandstone forms the most potential aquifer.

### A. HARD ROCK FORMATIONS

### ARCHEAN METAMORPHICS

Archeans, which comprise granite and granitic gneiss, occur in most of the eastern part of the district extending north-south from Nagbhid to Gondpipri. 6 These rocks are generally devoid of primary porosity, but weathering, jointing, fracturing, shearing etc., create secondary porosity, within which the ground water generally occurs in phreatic conditions. The depth of weathering ranges from 4 to 12 m bgl and dugwells are generally tapping this zone with yields of up to 30 m3 /day. Contrary to the general perception, the possibility of deep seated fracture zone exists in the area because of tectonic disturbances manifested in the form of dykes observed in the area. Therefore borewells in the depth range of 40-70 m bgl are also successful in this formation at suitable places with yield of 1000 to 35000 lph. High yielding dugwells are generally located in fractured granites.

### VINDHYAN LIMESTONE

In Vindhyans, Limestones are water bearing formation while Sandstone due to their hard and compact nature, has poor ground water potential. The Vindhyan sedimentares mainly occur in north central part of the district around Tadoba and Nagbhid in parts of Chimur, Sindewahi, Bhadravati and Nagbhid talukas and in south eastern part of the district in parts of Chandur and Rajura talukas. Limestones as such are massive but wherever they are cavernous and fractured they are capable of holding water and the ground water generally occurs under phreatic condition in these formations and the discharge in general is poor (up to 15 m3 /day). The borewells drilled by State Govt. agencies in the depth range of 30 to 40 m bgl are successful only at few places where discharge of 10000 lph or above has been observed.

**DECCAN TRAP BASALT**

Deccan Trap Basalt is observed in small area in the north eastern and south eastern peripheral parts of the district and does not form a promising aquifer in the district. Weathered, jointed and fractured Massive and Vesicular Basalt forms the aquifer in the area. Ground water occurs in phreatic conditions within the depth of 10-15 m, however, borewells drilled have shown presence of fracture zones and thus forming deeper confined and semi-confined aquifers at places. The dugwells yield varies from 15-30 m3 /day when favourably located, whereas borewells yield 1 to 3 lps.

**B. <u>SOFT ROCK FORMATIONS</u>**

**GONDWANA SANDSTONE**

Gondwana formation comprising of Kamthi and Barakar Sandstone and Maleri and Talchir Shale occupy north-south extending elongated stretch in cental and southern parts of the district in parts of Warora, Bhadravati, Chandrapur, Ballarpur, Rajura and Gondpipri talukas. Sandstone is usually friable and possesses primary porosity due to its granular nature. They are most productive water bearing formations in the district. The ground water occurs under phreatic as well as confined conditions in Kamthi Sandstone up to the depth of 80 to 120 m bgl with thickness varying from 34 to 102 m. Barakar Sandstone occurs below Kamthi formation and three granular zones are observed with cumulative thickness of about 72 m within a 300 m thick sandstone-shale sequence. Comparatively Kamthi Sandstone has more ground water potential with yields of up to 20 lps. The other Gondwana formations i.e., Maleri Series (upper Gondwana) and Talchirs (lower Gondwana) have very poor ground water potential and ground water occurs in phreatic condition.

**ALLUVIUM**

Alluvium of fluvial origin occurs in narrow patches along the banks of Wardha and Wainganga Rivers and consists of clay, silt with lenticular bodies of sand and gravel. Ground water generally occurs under phreatic conditions down to the depth of 10-15 m. The area in the north eastern part of the district near Brahmapuri along the western bank of Wainganga River and having a spread of about 100 sq. km. forms the most potential alluvial area. The Allluvium in this part is occurs down to 30-35 m and the basement is reported to be formed by Granitic Gneisses. The dugwells yield up to 50 m3 /day when favourably located, whereas shallow tubewells yield varies from 5 to 15 lps.

# HINDUSTAN LALPETH UG I & II MINE,

# CHANDRAPUR AREA

## WESTERN COALFIELDS LTD.

**PERIOD- DEC 2022(POST-MONSOON), JAN-FEB 2023 (WINTER) & MAY-2023 (PRE-MONSOON)**

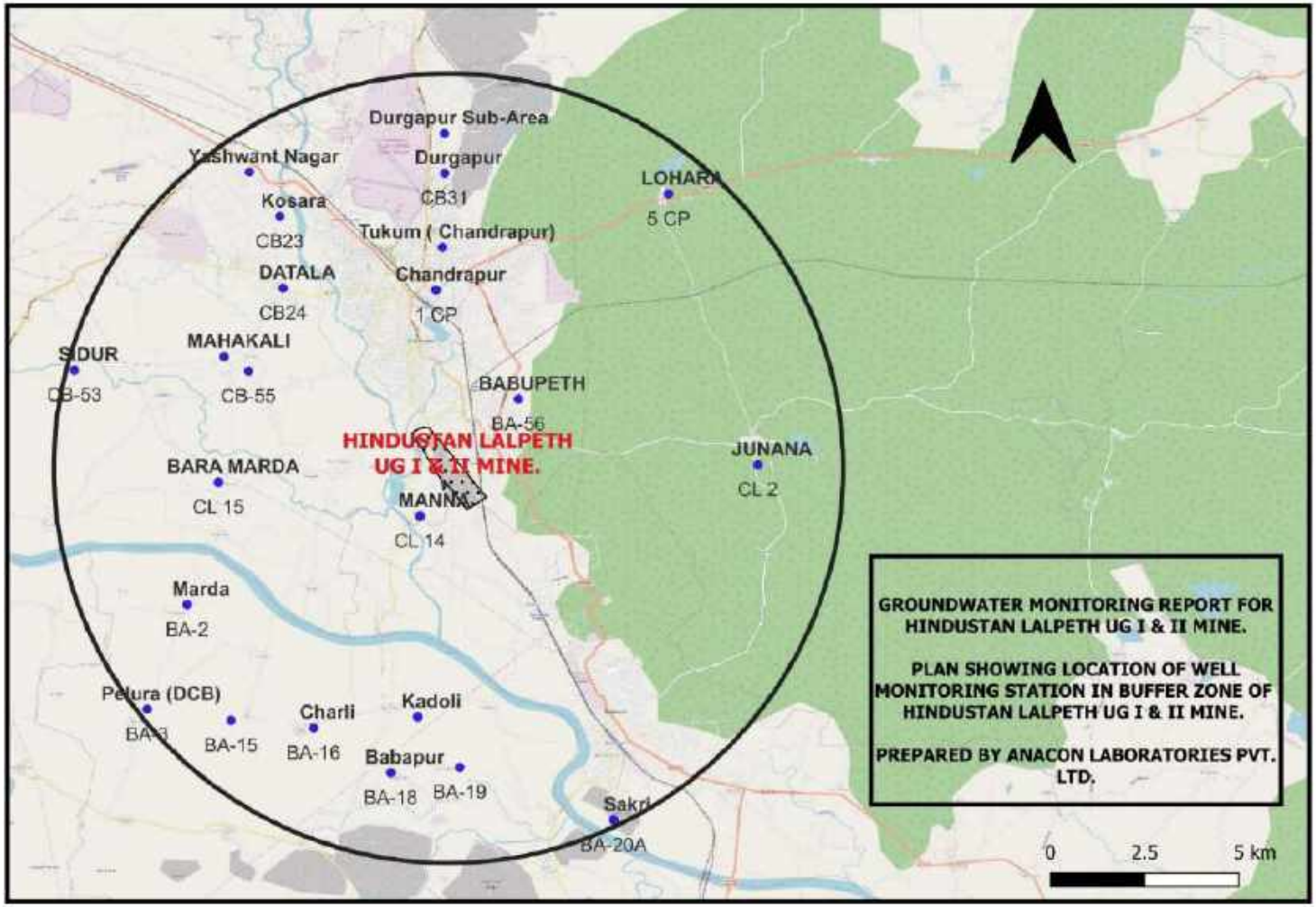


**FIGURE-V: GROUND WATER MONITORING STATION (OBSERVATION WELLS IN AND AROUND OF HINDUSTAN LALPETH UG I & II)**

**Table: I Ground Water Level Monitoring Data from Dugwells In Buffer Zone of Hindustan Lalpeth UG I & II Mine, Chandrapur Area, WCL**

| Sr. NO | Well No. | Name of village | Well location | LAT | LONG | R.L. in m | Well dia (m) | Well depth (m bmp) | Height of measuring point (m agl) | Depth to water level (m bgl) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Dec-22 | JAN-FEB-23 | May-23 | Utility / Owner | Formation Tapped |
| 1 | CB22 | Yashwant Nagar | Centre of village , near Zila Parishad school & Hanuman Mandir | 19°59'36.44" | 79°15'18.15" | 217 | 7.87 | 3.97 | 0.82 | 3.65 | 4.25 | 6.35 | agriculture | limestone |
| 2 | CB23 | Kosara | West of village , adjacent to road | 19°58'55.9" | 79°15'46.1" | 238 | 12.25 | 3.91 | 0.94 | 4.45 | 5.35 | 11.42 | agriculture | basalt |
| 3 | CB24 | DATALA | SE of village , in Shanti Kunj Nagar | 19°57'50.51" | 79°15'48.89" | 187 | 14.28 | 4.3 | 0.62 | 5.85 | 7.45 | 12.14 | agriculture | laterite |
| 4 | CB31 | Durgapur | East of Tadoba road , inside St. Mary's Convent compound | 19°59'35.39" | 79°18'16.18" | 198 | 11.47 | 3.27 | 0.45 | 3.85 | 4.85 | 10.15 | agriculture | basalt |
| 5 | CB32 | Durgapur Sub-Area | Trade Union office compound (INTUC), MQ type quarters | 20°0'11.63" | 79°18'15.98" | 243 | 8.93 | 2.34 | 0.72 | 7.35 | 7.9 | 7.28 | agriculture | limestone |
| 6 | CB33 | Tukum ( Chandrapur) | Adjacent (East) to Tadoba road in garden, near Petrol pump. | 19°58'27.68" | 79°18'14.23" | 212 | 9.85 | 3.3 | 0.77 | 7.25 | 8.25 | 9.10 | agriculture | basalt |
| 7 | CB-53 | SIDUR | SOUTH-EAST 100M FROM GP OFFICE. | 19°56'35.89" | 79°12'38.58" | 198 | 8.7 | 4.2 | 0.4 | 3.3 | 4.6 | 7.52 | domestic | basalt |

| Sr. NO | Well No. | Name of village | Well location | LAT | LONG | R.L. in m | Well dia (m) | Well depth (m bmp) | Height of measuring point (m agl) | Depth to water level (m bgl) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Dec-22 | JAN-FEB-23 | May-23 | Utility / Owner | Formation Tapped |
| 8 | CB-55 | DEWADA | EAST 1OOM FROM NIMKAR DAILY NEEDS ADJACENT TO THE ROAD. | 19°56'34.87" | 79°15'17.28" | 215 | 11.5 | 4.8 | 0.2 | 3.5 | 4.6 | 9.49 | domestic | basalt |
| 9 | 1 CP | Chandrapur | Infront of Telephone exchange LIC office | 19°57'48.74" | 79°18'8.45" | 223 | 8.41 | 2.73 | 0.61 | 3.65 | 6.95 | 7.25 | agriculture | laterite |
| 10 | 5 CP | LOHARA | Adjacent to Lohara Mul road Near Naka Bungalow | 19°59'16.4" | 79°21'40.41" | 215 | 8.2 | 2.29 | 0.61 | 5.45 | 7.7 | 7.95 | agriculture | basalt |
| 11 | CL 14 | MANNA | Inside village by side of house Bapuji Motghare | 19°54'22.62" | 79°17'53.69" | 230 | 11.17 | 3.51 | 0.45 | 1.85 | 7.35 | 10.15 | agriculture | laterite |
| 12 | CL 15 | BARA MARDA | At the junction of Marda Pipri road | 19°54'53.58" | 79°14'49.98" | 231 | 9.7 | 3.67 | 0.32 | 3.65 | 6.35 | 8.19 | agriculture | laterite |
| 13 | CL 2 | JUNANA | Forest colony | 19°55'9.4" | 79°23'1.99" | 185 | 14.4 | 1.26 | 0.7 | 8.15 | 9.25 | 11.42 | agriculture | limestone |
| 14 | PZ - 1 | MAHAKALI | Filter plant | 19°56'48" | 79°14'55" | 198 | 8.45 | 2.91 | 0.71 | 4.15 | 6.95 | 6.95 | agriculture | laterite |
| 15 | BA-2 | Marda | NW of village, outside | 19°53'1.9" | 79°14'21.4'' | 181 | 8.46 | 2.68 | 0.88 | 3.45 | 4.15 | 5.9 | Domestic | limestone |
| 16 | BA-3 | Pelura (DCB) | Eastern side of the village near Mr. Krishna Amne home | 19°51'26.4" | 79°13'45.1'' | 189 | 9.81 | 3.21 | 0.97 | 3.65 | 3.85 | 6.7 | Domestic | basalt |

| Sr. NO | Well No. | Name of village | Well location | LAT | LONG | R.L. in m | Well dia (m) | Well depth (m bmp) | Height of measuring point (m agl) | Depth to water level (m bgl) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Dec-22 | JAN-FEB-23 | May-23 | Utility / Owner | Formation Tapped |
| 17 | BA-15 | Nirli (DCB) | East side of village , about 20m west of the road to Didsi | 19°51'16.4" | 79°15'1.4'' | 229 | 15.45 | 2.84 | 0.41 | 4.15 | 4.35 | 9.7 | agriculture | laterite |
| 18 | BA-16 | Charli | Near Bajarang Bali Mandir, Southern edge of the village | 19°51'9.5" | 79°16'16.7'' | 234 | 14.83 | 4.28 | 0.77 | 3.45 | 3.5 | 10.8 | agriculture | basalt |
| 19 | BA-17 | Kadoli | East of village, outside near Mata mandir, 150 m S of Kadoli-Kolgaon Road | 19°51'19.4" | 79°17'51.7'' | 186 | 6.44 | 3.94 | 0.81 | 3.25 | 3.5 | 4 | agriculture | laterite |
| 20 | BA-18 | Babapur | N of the village near the temple | 19°50'28.6" | 79°17'27.1'' | 187 | 7.33 | 2.88 | 0.89 | 3 | 4.65 | 5.75 | agriculture | limestone |
| 21 | BA-19 | Manoli | E of the village near to Gram Panchayat office | 19°50'33.6" | 79°18'30.1'' | 191 | 9.26 | 2.31 | 0.71 | 4.35 | 5.15 | 6 | agriculture | basalt |
| 22 | BA-20A | Sakri | West of the village near to school | 19°49'45.5" | 79°20'50.3'' | 236 | 12.27 | 2.79 | 1.13 | 3.5 | 4.85 | 7.9 | Domestic | limestone |
| 23 | BA-56 | BABUPETH | NEAR KARANBE HOUSE ADJACENT TO KACCHA ROAD. | 19°56'9.25" | 79°19'23.56'' | 222 | 9.1 | 4 | 0.6 | 3.5 | 4.8 | 7.3 | Domestic | basalt |

# ANALYSIS REPORT

**Anacon Laboratories**

TC 5458

# Test Report

**ULR No.- TC545823000001925F**
**Test Report No.:** ALPL/18072023/08- 46

Dated 18.07.2023



| | | |
|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-46<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: 1 CP); (Chandrapur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 19.05.2023<br>Not Mentioned | Chandrapur |

**Tests Required:** Chemical Testing.

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 83.21 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 35.73 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 25.92 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.12 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 8.76 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.09 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 3.86 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 244 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 100.5 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs ● Liability of Anacon Labs is limited to invoiced amount only ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise ● #Permissible limit in absence of an alternate source for drinking water ● 'mg/l' is equivalent to 'ppm' ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Gadway
Deputy Quality Manager

----------END OF REPORT----------

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# *Test Report*

**ULR No.- TC5458230000001994F**
**Test Report No.:** ALPL/22072023/05- 1 Dated 22.07.2023 Page 1 of 1 **TC 5458**

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-1<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: BA-2), (Ballarpur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 23.05.2023<br>Not Mentioned | Marda |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 149.27 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 25.07 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 22.78 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.11 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 9.53 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.83 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 10.75 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 280.94 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.1 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 96.12 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL - 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.04 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs ● Liability of Anacon Labs is limited to invoiced amount only ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise ● #Permissible limit in absence of an alternate source for drinking water ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

for Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

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# *Test Report*

TC 5458

**ULR No.- TC545823000001994F**
**Test Report No.:** ALPL/22072023/05- 2 Dated 22.07.2023 Page 1 of 1

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-2<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID:BA-3); (Ballarpur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 23.05.2023<br>Not Mentioned | Pelura (DCB) |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 146.74 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 26.03 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 23.49 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.17 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 9.96 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.96 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 9.68 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 282 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 99.68 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.02 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Vande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

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# *Test Report*

**ULR No.- TC5458230000001994F**
**Test Report No.:** ALPL/22072023/05- 12 Dated 22.07.2023 Page 1 of 1 **TC 5458**

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-12<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of Analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: BA- 15); (Ballarpur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 25.05.2023<br>Not Mentioned | Nirli (DCB) |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 138.65 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 22.17 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 27.05 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.12 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 8.66 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.17 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 7.44 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 224 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 103.24 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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# *Test Report*

**ULR No.- TC545823000001994F**
**Test Report No.:** ALPL/22072023/05- 13 Dated 22.07.2023 Page 1 of 1 **TC 5458**

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-13<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of Analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: BA-16), (Ballarpur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 25.05.2023 / Not Mentioned | Charli |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 159.39 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 35.67 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 27.05 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.10 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 8.23 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.45 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 10.85 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 253 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 101.46 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs ● Liability of Anacon Labs is limited to invoiced amount only ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Funde
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

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# *Test Report*

TC 5458

ULR No.- TC545823000001994F
Test Report No.: ALPL/22072023/05- 14

Dated 22.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-14<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |
| **Sample Name**<br>Ground Water | **Sample Particulars/Details**<br>Ground Water (Sample ID: BA-17); (Ballarpur Area) | Purpose of analysis<br>Drinking | **Quantity Received**<br>1 Ltr |
| **Sample Collected By**<br>Mr. Akash Kirnake | **Sampling Date** 25.05.2023<br>**Sampling Time** Not Mentioned | **Sampling Location**<br>Kadoli | |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 124.55 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 28.92 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 27.76 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.23 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 8.66 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.05 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 9.35 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 314 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 105.02 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.02 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

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# *Test Report*

**ULR No.- TC545823000001994F**
**Test Report No.:** ALPL/22072023/05- 15 Dated 22.07.2023  **TC 5458**

| | | |
|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur,<br>WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-15<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: BA-18), (Ballarpur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 26.05.2023<br>Not Mentioned | Babapur |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 115.15 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 26.99 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 23.49 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.17 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 9.96 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 6.97 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 8.91 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 272 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 99.68 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garwny
Deputy Quality Manager

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# *Test Report*

**ULR No.- TC545823000001994F**
**Test Report No.:** ALPL/22072023/05- 16 Dated 22.07.2023 Page 1 of 1 **TC 5458**

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-16<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of Analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: BA-19); (Ballarpur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 26.05.2023<br>Not Mentioned | Manoli |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 77.55 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 20.24 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 24.26 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.24 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 9.10 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.57 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 7.57 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 321 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.1 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 97.9 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.04 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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# *Test Report*

**ULR No.- TC5458230000001994F**
**Test Report No.:** ALPL/22072023/05- 17 Dated 22.07.2023 Page 1 of 1 TC 5458

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-17<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |

| **Sample Name** | **Sample Particulars/Details** | **Purpose of Analysis** | **Quantity Received** |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: BA-20A); (Ballarpur Area) | Drinking | 1 Ltr |

| **Sample Collected By** | | **Sampling Location** |
|---|---|---|
| Mr. Akash Kirnake | **Sampling Date** 26.05.2023<br>**Sampling Time** Not Mentioned | Sakri |

**Tests Required:** Chemial Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| **I** | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 124.55 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 35.67 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 29.19 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.19 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 8.66 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.47 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 7.97 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 292 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.1 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 108.58 |
| **II** | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.02 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

NOTE: ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs ● Liability of Anacon Labs is limited to invoiced amount only ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise ● #Permissible limit in absence of an alternate source for drinking water ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only.

**Verified By**

Mangesh Pande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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**Anacon Laboratories**

# *Test Report*

TC 5458

**ULR No.- TC5458230000001994F**
**Test Report No.:** ALPL/22072023/05- 42 Dated 22.07.2023 

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/29062023/W-2/64-42<br>**Inward Date** 29.06.2023<br>**Reference** - | **Analysis Start** 29.06.2023<br>**Analysis End** 20.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: BA-56); (Ballarpur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 29.05.2023<br>Not Mentioned | Babupeth |

**Tests Required:** Chemial Testing

TEST RESULTS

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 126.9 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 42.42 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 25.63 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.11 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 7.80 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | 2.38 |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.44 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 10.38 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 1984 | 500 | 2000 | 209 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 96.12 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | BDL(DL- 0.01) |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The Submitted Sample complies with IS:10500:2012 for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Mr. Chinmay Garway
Deputy Quality Manager

---------END OF REPORT---------

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TC 5458

# Test Report

ULR No.- TC545823000001925F
Test Report No.: ALPL/18072023/08- 17

Dated 18.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** | ALPL/24062023/W-1/54-17 | **Analysis Start** 24.06.2023 |
| | **Inward Date** | 24.06.2023 | **Analysis End** 14.07.2023 |
| | **Reference** | - | |

| | | | |
|---|---|---|---|
| **Sample Name**<br>Ground Water | **Sample Particulars/Details**<br>Ground Water (Sample ID: CB22); (Chandrapur Area) | | **Sample Category** Water |
| **Sample Collected By**<br>Mr. Akash Kirnake | **Sampling Date** 15.05.2023<br>**Sampling Time** Not Mentioned | **Purpose of analysis**<br>Drinking | **Quantity Received**<br>1 Ltr |
| **Tests Required:** Chemical Testing. | | **Sampling Location**<br>Yashwant Nagar | |

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 81.64 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 43.39 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 30.72 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.15 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 2.33 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.92 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 7.32 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 220 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 86.4 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | BDL(DL- 0.01) |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 56) : 2003 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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TC 5458

# Test Report

ULR No.- TC545823000001925F
Test Report No.: ALPL/18072023/08- 18

Dated 18.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-18<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023 | |
| **Sample Name**<br>Ground Water | **Sample Particulars/Details**<br>Ground Water (Sample ID: CB23); (Chandrapur Area) | **Sample Category** Water | |
| **Sample Collected By**<br>Mr. Akash Kirnake | **Sampling Date** 16.05.2023<br>**Sampling Time** Not Mentioned | **Purpose of analysis**<br>Drinking | **Quantity Received**<br>1 Ltr |
| **Tests Required:** Chemical Testing. | | **Sampling Location**<br>Kosara | |

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 86.35 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 39.56 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 29.76 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.14 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 10.51 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.18 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 8.03 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 253 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 117.6 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 56) : 2003 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

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**Anacon Laboratories**

TC 5458

# Test Report

ULR No.- TC545823000001925F
Test Report No.: ALPL/18072023/08- 22

Dated 18.07.2023



| | | |
|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-22<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: CB24); (Chandrapur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 17.05.2023<br>Not Mentioned | Datala |

**Tests Required:** Chemical Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 80.07 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) ;1988 | 250 | 1000 | 34.45 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 21.12 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.12 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 11.68 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.92 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 6.98 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 223 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 100.08 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs ● Liability of Anacon Labs is limited to invoiced amount only ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise ● #Permissible limit in absence of an alternate source for drinking water ● 'mg/l' is equivalent to 'ppm' ● **BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Gadway
Deputy Quality Manager

----------END OF REPORT----------

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**Anacon Laboratories**

TC 5458

# *Test Report*

**ULR No.- TC545823000001925F**
**Test Report No.:** ALPL/18072023/08- 25

Dated 18.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-25<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water | |
| **Sample Name**<br>Ground Water | **Sample Particulars/Details**<br>Ground Water (Sample ID: CB31); (Chandrapur Area) | **Purpose of analysis**<br>Drinking | **Quantity Received**<br>1 Ltr |
| **Sample Collected By**<br>Mr. Akash Kirnake | **Sampling Date** 17.05.2023<br>**Sampling Time** Not Mentioned | **Sampling Location**<br>Durgapur | |
| **Tests Required:** Chemical Testing. | | | |

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 86.35 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 40.83 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 32.64 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.15 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 9.93 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition, 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.05 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 7.17 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 255 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 122.4 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminum (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | BDL(DL- 0.01) |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

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TC 5458

# Test Report

**ULR No.- TC545823000001925F**
**Test Report No.:** ALPL/18072023/08- 26

Dated 18.07.2023



| | | |
|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-26<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water |

| **Sample Name** | **Sample Particulars/Details** | **Purpose of analysis** | **Quantity Received** |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: CB32 ), (Chandrapur Area) | Drinking | 1 Ltr |

| **Sample Collected By** | | **Sampling Location** |
|---|---|---|
| Mr. Akash Kimake | **Sampling Date** 17.05.2023<br>**Sampling Time** Not Mentioned | Durgapur Sub- Area |

**Tests Required:** Chemical Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 84.78 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 39.56 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 29.76 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.14 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 12.27 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition, 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.82 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 7.50 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 254 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 124.8 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.02 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Gadway
Deputy Quality Manager

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TC 5458

# Test Report

**ULR No.- TC545823000001925F**
**Test Report No.:** ALPL/18072023/08- 28

Dated 18.07.2023



| | | |
|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-28<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water |

| **Sample Name** | **Sample Particulars/Details** | **Purpose of analysis** | **Quantity Received** |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: CB33), (Chandrapur Area) | Drinking | 1 Ltr |

| **Sample Collected By** | | **Sampling Location** |
|---|---|---|
| Mr. Akash Kirnake | **Sampling Date** 17.05.2023<br>**Sampling Time** Not Mentioned | Tukum (Chandrapur) |

**Tests Required:** Chemical Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 87.92 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 31.90 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 25.92 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.14 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 12.85 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.04 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 10.67 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 247 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 117.6 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | BDL(DL- 0.01) |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Gadway
Deputy Quality Manager

----------**END OF REPORT**----------

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TC 5458

# Test Report

ULR No.- TC545823000001925F
Test Report No.: ALPL/18072023/08- 33

Dated 18.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-33<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water | |

| | | | |
|---|---|---|---|
| **Sample Name**<br>Ground Water | **Sample Particulars/Details**<br>Ground Water (Sample ID: CB- 53); (Chandrapur Area) | **Purpose of analysis**<br>Drinking | **Quantity Received**<br>1 Ltr |
| **Sample Collected By**<br>Mr. Akash Kimake | **Sampling Date** 18.05.2023<br>**Sampling Time** Not Mentioned | **Sampling Location**<br>Sidur | |

**Tests Required:** Chemical Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 81.64 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 37.00 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 24 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.12 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 7.01 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.19 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 6.55 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 216 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 88.8 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Gurway
Deputy Quality Manager

----------END OF REPORT----------

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**Anacon Laboratories**

TC 5458

# *Test Report*

**ULR No.- TC545823000001925F**
**Test Report No.:** ALPL/18072023/08- 35

Dated 18.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-35<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: CB- 55); (Chandrapur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kimake | 18.05.2023<br>Not Mentioned | Dewada |

**Tests Required:** Chemical Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 80.07 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 39.56 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 20.16 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL - 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.13 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 6.42 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.05 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 5.68 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 203 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 76.8 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL - 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | BDL(DL- 0.01) |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit. ● DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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TC 5458

# *Test Report*

**ULR No.- TC545823000001925F**
**Test Report No.:** ALPL/18072023/08- 53

Dated 18.07.2023



| | | |
|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-53<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water |

| **Sample Name** | **Sample Particulars/Details** | **Purpose of analysis** | **Quantity Received** |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: CL 2), (Chandrapur Area) | Drinking | 1 Ltr |

| **Sample Collected By** | **Sampling Date** / **Sampling Time** | **Sampling Location** |
|---|---|---|
| Mr. Akash Kirnake | 20.05.2023 / Not Mentioned | Junana |

**Tests Required:** Chemical Testing.

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 97.34 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 40.83 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 24 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.18 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 8.18 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 7.98 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 5.28 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 239 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 93.6 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

per

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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TC 5458

# Test Report

ULR No.- TC545823000001925F
Test Report No.: ALPL/18072023/08- 50

Dated 18.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-50<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: CL 14); (Chandrapur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 20.05.2023<br>Not Mentioned | Manna |

**Tests Required:** Chemical Testing.

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 80.07 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 35.73 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 23.04 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL - 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.14 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 10.51 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.27 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 5.49 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 224 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 100.8 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

---------**END OF REPORT**---------

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TC 5458

# *Test Report*

**ULR No.- TC545823000001925F**
**Test Report No.:** ALPL/18072023/08- 52 Dated 18.07.2023 Page 1 of 1

| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-52<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: CL 15); (Chandrapur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 20.05.2023<br>Not Mentioned | Bara Marda |

**Tests Required:** Chemical Testing.

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 83.21 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 33.18 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 25.92 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.13 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 10.51 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.19 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 5.07 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 231 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 108 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report. ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

For
Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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TC 5458

# Test Report

ULR No.- TC545823000001925F
Test Report No.: ALPL/18072023/08- 47

Dated 18.07.2023



| | | | |
|---|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-47<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water | |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: 5 CP), (Chandrapur Area) | Drinking | 1 Ltr |

| Sample Collected By | | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | **Sampling Date** 20.05.2023<br>**Sampling Time** Not Mentioned | Lohara |

**Tests Required:** Chemical Testing

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| **I** | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 82.29 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 34.45 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 27.84 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL - 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.10 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 2.92 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL - 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 6.85 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 5.56 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 199 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.2 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 81.6 |
| **II** | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | 0.01 |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

**NOTE:** ● Please see watermark "Original Test Report" to confirm the authenticity of this report ● Results shall be referred to tested sample(s) and applicable to tested parameters only. ● Test report shall not be reproduced except in full without prior written approval of Anacon Labs. ● Liability of Anacon Labs is limited to invoiced amount only. ● Non-perishable and perishable sample(s) shall be disposed off after 30 days and 15 days respectively from the date of issue of Test Report, unless specified otherwise. ● #Permissible limit in absence of an alternate source for drinking water. ● 'mg/l' is equivalent to 'ppm'. ● **BDL- Below detection limit.** ● **DL- DL Indicates detection limit of instrument /method and shall be considered as 'absent'.**

**REMARKS:** As requested by the client, sample was tested for above parameters only. **The submitted Sample complies with IS:10500:2012, for tests conducted, indicating that it is fit for drinking purpose with respect to tested parameters.**

**Verified By**

for
Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------END OF REPORT----------

Thank you for instilling your trust and faith in our services. We cherish our relationship with you, and we put in a lot of hard work in making sure that you get a seamless experience at every stage of your interaction with us. In our constant endeavor towards ensuring that your next experienced will be significantly better than the current one, we welcome your feedback on **feedback@anacon.in**

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ANACON

TC 5458

# Test Report

ULR No.- TC545823000001925F
Test Report No.: ALPL/18072023/08- 54

Dated 18.07.2023



| | | |
|---|---|---|
| **Issued To :**<br>**M/s Western Coalfields Limited (WCL)**<br>Futala Road, Coal Estate, Civil Lines, Nagpur, WCL HQ (M.S), 440001 | **Sample Inward No.** ALPL/24062023/W-1/54-54<br>**Inward Date** 24.06.2023<br>**Reference** - | **Analysis Start** 24.06.2023<br>**Analysis End** 14.07.2023<br>**Sample Category** Water |

| Sample Name | Sample Particulars/Details | Purpose of analysis | Quantity Received |
|---|---|---|---|
| Ground Water | Ground Water (Sample ID: PZ- 1), (Chandrapur Area) | Drinking | 1 Ltr |

| Sample Collected By | Sampling Date / Sampling Time | Sampling Location |
|---|---|---|
| Mr. Akash Kirnake | 20.05.2023<br>Not Mentioned | Mahakali |

**Tests Required:** Chemical Testing.

**TEST RESULTS**

| S.N. | Test Parameter | Measurement Unit | Test Method | Requirement as per IS 10500 : 2012 (Drinking Water Specifications) Including Amendment No. 4 | | Test Result |
|---|---|---|---|---|---|---|
| | | | | Acceptable Limit | Permissible Limit # | |
| I | **Chemical Testing 1. Water** | | | | | |
| 1 | Alkalinity | mg/l | IS 3025 (Part 23) : 1986 | 200 | 600 | 78.5 |
| 2 | Colour | Hazen | IS 3025 (Part 4) : 2021 | 5 | 15 | 1 |
| 3 | Chloride (as Cl) | mg/l | IS 3025 (Part 32) :1988 | 250 | 1000 | 28.07 |
| 4 | Calcium (as Ca) | mg/l | IS 3025 (Part 40) : 1991 | 75 | 200 | 21.2 |
| 5 | Residual Chlorine | mg/l | IS 3025 (Part 26) : 2021 | 0.2 | 1 | BDL(DL- 0.1) |
| 6 | Fluoride (as F) | mg/l | IS 3025 (Part 60) : 2008 | 1.0 | 1.5 | 0.17 |
| 7 | Magnesium (as Mg) | mg/l | IS 3025 (Part 46) : 1994 | 30 | 100 | 8.76 |
| 8 | Nitrate (as $NO_3$) | mg/l | APHA method 23rd edition: 2017 | 45 | No relaxation | BDL(DL- 2) |
| 9 | Odour | - | IS 3025 (Part 5) : 2018 | Agreeable | Agreeable | Agreeable |
| 10 | pH | - | IS 3025 (Part 11) : 2022 | 6.5 to 8.5 | No relaxation | 8.12 |
| 11 | Sulphate (as $SO_4$) | mg/l | IS 3025 (Part 24) : 2022 | 200 | 400 | 5.32 |
| 12 | Total dissolved solids | mg/l | IS 3025 (Part 16) : 2023 | 500 | 2000 | 202 |
| 13 | Turbidity | NTU | IS 3025 (Part 10) : 1984 | 1 | 5 | 0.3 |
| 14 | Total hardness (as $CaCO_3$) | mg/l | IS 3025 (Part 21) : 2009 | 200 | 600 | 88.8 |
| II | **Chemical Testing 2. Residues In Water** | | | | | |
| 15 | Arsenic (as As) | mg/l | IS 3025 (Part 37) : 2022 | 0.01 | No relaxation | BDL (DL - 0.01) |
| 16 | Aluminium (as Al) | mg/l | IS 3025 (Part 2) : 2019 | 0.03 | 0.2 | BDL(DL- 0.01) |
| 17 | Boron (as B) | mg/l | IS 3025 (Part 2) : 2019 | 0.5 | 2.4 | BDL (DL - 0.1) |
| 18 | Copper (as Cu) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | 1.5 | BDL (DL - 0.03) |
| 19 | Cadmium (as Cd) | mg/l | IS 3025 (Part 2) : 2019 | 0.003 | No relaxation | BDL (DL - 0.001) |
| 20 | Iron (as Fe) | mg/l | IS 3025 (Part 2) : 2019 | 1.0 | No relaxation | BDL(DL - 0.01) |
| 21 | Lead (as Pb) | mg/l | IS 3025 (Part 2) : 2019 | 0.01 | No relaxation | BDL (DL - 0.001) |
| 22 | Manganese (as Mn) | mg/l | IS 3025 (Part 2) : 2019 | 0.1 | 0.3 | BDL (DL - 0.05) |
| 23 | Nickel (as Ni) | mg/l | IS 3025 (Part 2) : 2019 | 0.02 | No relaxation | BDL (DL - 0.01) |
| 24 | Selenium (as Se) | mg/l | IS 3025 (Part 56) : 2003 | 0.01 | No relaxation | BDL (DL- 0.001) |
| 25 | Total Chromium (as Cr) | mg/l | IS 3025 (Part 2) : 2019 | 0.05 | No relaxation | BDL (DL - 0.03) |
| 26 | Zinc (as Zn) | mg/l | IS 3025 (Part 2) : 2019 | 5 | 15 | BDL (DL - 0.1) |

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**Verified By**

Mangesh Fande
Technical Manager

Snehal Raut
Deputy Technical Manager

**Authorized Signatory**

Chinmay Garway
Deputy Quality Manager

----------**END OF REPORT**----------

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