

SIX MONTHLY COMPLIANCE REPORT OF ENVIRONMENT CLEARANCE (EC)

FOR

Jitpur Open Cast Coal Mine Project (2.5 MTPA)

At

**VILLAGE JITPUR, TEHSIL SUNDERPAHARI,
DISTRICT GODDA, JHARKHAND**

Submitted to:

**Regional Office, East Central Zone
Ministry of Environment & Forests,
Central Pollution Control Board, New Delhi &
Jharkhand State Pollution Control Board, Ranchi**



Submitted by:

**Corporate Environment Group
Adani Power (Mundra) Limited**

Adani Corporate House, Shantigram, S G Highway,
Ahmedabad, Gujarat

PERIOD: October'2020 – March'2021

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**Compliance status on Environmental Clearance
For Jitpur Open Cast Coal Mine of 2.5 MTPA**

Vide EC Letter No. J/11015/148/2008-IA (IIM) Dated- 18.05.2009 and
Subsequent Environment Clearance Transfer to APL on dated 06/07/2015

Si. No.	Conditions	Compliance Status
(i)	Mining shall not be carried out in forestland until forestry clearance is obtained.	Noted. Stage II Forest approval has been received on 03.05.2018. Mining will be carried out after final diversion in favour of APL.
(ii)	The plan for diversion and realignment of the nala and modification of the natural surface drainage and design of the diversion canal shall be done in consultation and approval of the concerned State Flood and irrigation Department. Dimension and depth of the nala should be finalized based on the peak flow of the water.	Compliance assured. The proposal has been prepared by M/s WAPCOS & submitted for approval to WRD, Govt. of Jharkhand.
(iii)	Top soil shall be stacked properly with proper slope at earmarked site(s) and shall not be kept active and shall be used for reclamation and development of green belt.	Noted, Compliance assured.
(iv)	OB shall be stacked at earmarked external OB dumpsite within ML area and shall be a maximum height of 40m only each. The ultimate slope of the dump shall not exceed 28° A minimum 100m distance shall be maintained between the OB dump and Kewari Nala and between the dump and Jitpur village. Monitoring and management of existing reclaimed dump sites shall continue until the vegetation becomes self-sustaining. Compliance status shall be submitted to the Ministry of Environment & Forests and its Regional office located at Bhubaneshwar on yearly basis.	Compliance assured. Mining will be carried out as per the approved Mining Plan & suggested action will be taken during operation of mine.
(v)	Catch drains and siltation ponds of appropriate size shall be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected shall be utilized for watering the mine area, roads, green belt development, etc. The drains shall be regularly desilted and maintained properly. Garland drains (size, gradient and length) and sump capacity shall be designed keeping 50%	Noted, Compliance assured, once the project take off.

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	safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity shall also provide adequate retention period to allow proper settling of silt material.	
(vi)	Dimension of the retaining wall at the toe of the dumps and OB benches within the mine to check run-off and siltation shall be based on the rainfall data.	Noted, Based on historical Rain fall data action shall be taken. Mining will be carried out as per the approved Mining Plan.
(vii)	Crushers at the CHP shall be operated with high efficiency bag filters, water sprinkling system shall be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, transfer points, etc.	Noted & Compliance assured. Crusher will be installed with dust extraction/suppression system.
(viii)	Drills shall be wet operated.	Compliance assured.
(ix)	Controlled blasting shall be practiced only during daytime with use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders shall be implemented.	Noted, Compliance assured, once the project take off.
(x)	Mineral transportation to linked TPP shall be by conveyors only.	Noted, Change in transportation system, if any, will be submitted to MoEF&CC for amendment.
(xi)	Area brought under afforestation shall not be less than 326.58 ha which includes reclaimed external OB dump (100 ha), backfilled area (153.47 ha), along ML boundary, along roads, green belt, in undisturbed areas and in colony by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha.	Noted, Compliance assured, once the project take off.
(xii)	A Progressive Mine Closure Plan shall be implemented for reclamation of quarry area of which 153.47 ha shall be backfilled and afforested by planting native plant species in consultation with the local DFO/Agriculture Department. The density of the trees shall be around 2500 plants per ha. The balance 141.34 ha of decoaled area being converted into a water reservoir shall gently sloped along the upper benches and stabilized and reclaimed with plantation.	Noted, Compliance assured. Mine closure plan has been approved.

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(xiii)	Conservation Plan for endangered species found in and around the project area shall be formulated and for the medicinal plants (in-situ and ex-situ) shall be prepared and implemented in consultation with the State Forest and Wildlife Departments. Separate funds shall be earmarked for implementation of the various activities there under and the status thereof shall be regularly reported to this Ministry and the MOEF Regional Office, Bhubaneshwar.	Wildlife Conservation plan prepared by Dr. D. S Srivastava Principal Investigator and Team of Nature Conservation Society. The Conservation plan submitting to PCCF for valuable suggestions & implementation. Copy of Wildlife Conservation plan had submitted with six monthly compliance report during the period of Oct'15 to March'2016. The Wildlife Conservation Plan has been approved by PCCF, Ranchi. Jharkhand.
(xiv)	No groundwater shall be used for mining operations. Additional water required, if any, shall be met by recycling/reuse of the water from the existing activities and from rainwater harvesting measures.	Noted & agreed
(xv)	Regular monitoring of groundwater level and quality shall be carried out by establishing a network of existing wells and construction of new peizometers, The monitoring for quantity shall 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 shall be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring.	Being Complied. Monitoring of ground water quality is being carried out by third party on monthly basis from existing wells and water level shall be carried out during operation phase. Monitoring report enclosed as Annexure -I . Piezometric wells shall be established, once the project takes off.
(xvi)	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicated decline in water table. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.	Noted, Compliance assured. The project management will supply water to nearby villages as and when required
(xvii)	ETP shall also be provided for workshop, and CHP. Effluents shall be treated to conform to prescribed standards, particularly for pH and TSS in case of discharge into any water course outside the lease.	Noted, Compliance assured, once the project take off.
(xviii)	An STP shall be provided for the township/colony to treat the domestic effluents to prescribed standards and for their reuse in project activities.	Noted, Compliance assured.

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(xix)	R&R shall be based on norms laid down/approval by the State Government and shall not be inferior to that in the National R&R Policy and shall be completed within a specified time-frame. R&R shall provide for a minimum outlay of Rs. 10 crores and Rs 2 crores as revenue expenditure and shall include specific income generation schemes.	Noted, Compliance assured. R&R will be carried out under the Land Acquisition, Resettlement & Rehabilitation Act' 2013. The final R&R package will be decided and awarded by the Government of Jharkhand.
(xx)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on a scale of 1: 50000) of the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years (for any one particular season which is consistent in the time series), and the report submitted to MoEF and its Regional office at Bhubaneshwar.	Noted, Compliance assured, once the project take off.
(xxi)	A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests for approval 5 years in advance of final mine closure for approval.	Noted, Compliance assured.
B.	General Conditions	Compliance Status
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	Noted, Compliance assured.
(ii)	No change in the calendar plan including excavation, quantum of mineral coal and waste shall be made.	Noted, Compliance assured.
(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring SPM, RPM, SO ₂ , NO _x and heavy metals such as Hg, Pb, Cr, As, etc. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	Being Complied Regular monitoring of PM ₁₀ , PM _{2.5} , SO ₂ & NO _x are being carried out as per frequency & monitoring results are well within the norm. Monitoring results are being submitted to MoEF&CC, CPCB & JSPCB along with compliance report. Ambient Air Quality monitoring stations established in consultation with Regional Officer, JSPCB. Environmental monitoring report enclosed as Annexure-I.
(iv)	Fugitive dust emissions (SPM and RSPM and heavy metals such as Hg, Pb, Cr., As, etc) from all the sources shall be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon	Noted, Compliance assured, once the project take off.

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	loading, dump trucks (loading and unloading) points shall be provided and properly maintained.	
(v)	Data on ambient air quality (SPM, RSPM, SO ₂ , NO _x and heavy metals such as Hg, Pb, Cr, As, etc)) shall be regularly submitted to the Ministry including its Regional Office at Bhubaneswar and to the State Pollution Control Board and the Central Pollution Control Board once in six months.	Being complied. Six monthly compliance report accordance to the Environmental clearance granted by MoEF&CC is being submitted on regular basis to MoEF&CC, CPCB & JSPCB. Last compliance reports for the period of April'2020 to September'2020 had been submitted vide our letter no. APL/Mine /EMD/EC/MoEF/131/11/20 dated 13/11/2020
(vi)	Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.	Noted, Compliance assured. Noise level monitoring is being carried out regularly and reports submitted to the Board. Please refer Annexure -I .
(vii)	Industrial wastewater (workshop and wastewater from the mine) shall 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 shall be installed before discharge of workshop effluents.	Noted, Compliance assured, once the project take off.
(viii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles covered with tarpaulins and optimally loaded. used for transporting the mineral shall be	Noted, Compliance assured, once the project take off.
(ix)	Environmental laboratory shall be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	Noted, Compliance assured, once the projects take off.
(x)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.	Noted, Compliance assured, during operation phase.

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(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the company	We have established Environment Management Cell with Senior Management at Corporate level. Site Environment Cell will be created once project is operational.
(xii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bhubaneshwar	Noted, Compliance assured
(xiii)	The Regional Office of this Ministry located at Bhubaneshwar 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	Noted We always extend full cooperation to the Scientists/Officers from Regional Office of the Ministry, MoEF&CC, CPCB & SPCB etc.
(xiv)	A copy of this will be marked to concerned Panchayat/ local NGO, if any, from whom any suggestion/ representation has been received while processing the proposal.	Complied
(xv)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tehsildar's Office for 30 days.	Complied
(xvi)	The Project authorities shall 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 The compliance status shall also be uploaded by the project authorities in their website and regularly updated at least once in six months so as to bring the same in the public domain. The data shall also be displayed at the entrance of the project premises and mines office and in corporate office.	Complied Advertised in two local newspapers. The EC is transferred from JSPL to APL. Compliance status updated on Company's website.

Application has already been made for name change of the project from Adani Power Limited to Adani Power (Mundra) Limited vide proposal no. IA/JH/CMIN/129973/2019 dated 19.02.2020



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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.

Sample No. : VEL/APL/M/01

Report No. : VEL/A/2012/01-08

Reporting Date : 04/01/2021

Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182

Name of Monitoring Location : BATHI TOLA (Core Zone)

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(mg/m ³)
03-12-2020	26.9	48.6	5.4	17.5	0.61
04-12-2020	25.4	49.7	5.1	12.5	0.54
10-12-2020	27.9	48.9	6.7	18.6	0.56
11-12-2020	28.3	53.2	5.2	16.4	0.59
17-12-2020	29.1	56.8	4.6	15.6	0.62
18-12-2020	30.4	58.6	6.8	17.5	0.53
24-12-2020	24.7	47.8	7.5	14.5	0.57
25-12-2020	23.8	45.9	6.6	12.9	0.66
Max.	30.4	58.6	7.5	18.6	0.66
Min.	23.8	45.9	4.6	12.5	0.53
Avg.	27.07	51.4	6	15.66	0.59
NAAQS@ Limit	60	100	80	80	4

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

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

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/02
Report No. : VEL/A/2012/09-16
Reporting Date : 04/01/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - JITPUR

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(mg/m ³)
03-12-2020	24.6	46.2	6.3	16.8	0.58
04-12-2020	24.9	47.7	5.7	14.7	0.61
10-12-2020	25.2	49.2	6.9	17.2	0.53
11-12-2020	26.7	48.2	5.3	17	0.67
17-12-2020	27.8	51.5	6.9	18.6	0.52
18-12-2020	23.1	44.6	6.4	15.2	0.68
24-12-2020	26.2	47.2	7.3	18.5	0.71
25-12-2020	22.2	42.4	5.2	14.1	0.48
Max.	27.8	51.5	7.3	18.6	0.71
Min.	22.2	42.4	5.2	14.1	0.48
Avg.	25.07	47.09	6.25	16.48	0.60
NAAQS@ Limit	60	100	80	80	4

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

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/03
Report No. : VEL/A/2012/17-23
Reporting Date : 04/01/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF&CC/IS-5182
Name of Monitoring Location : VILLAGE - PAHARPUR

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	($\mu\text{g}/\text{m}^3$)	(mg/m^3)
05-12-2020	22.6	43.1	5.9	12.4	0.66
07-12-2020	25.6	48.5	6.2	15.7	0.58
14-12-2019	24.5	46.7	6.9	14.9	0.46
15-12-2020	24.7	49.4	5.7	13.7	0.55
21-12-2020	26.2	44.7	6.4	16.8	0.57
26-12-2020	24.9	45.3	5.2	14.3	0.63
28-12-2020	29.1	42.1	7.5	13.7	0.54
29-12-2020	28.5	46.7	7.8	14.3	0.53
Max.	29.1	49.4	7.8	16.8	0.66
Min.	22.6	42.1	5.2	12.4	0.46
Avg.	25.78	45.80	6.46	14.50	0.56
NAAQS@ Limit	60	100	80	80	4

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

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
 Jitpur Open Cast Coal Mine (2.5 MTPA)
 Tehsil-Sunderpahari, District-Godda Jharkhand.
 Sample No. : VEL/APL/M/04
 Report No. : VEL/A/2012/24-30
 Reporting Date : 04/01/2021
 Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
 Name of Monitoring Location : VILLAGE - PAKERI

Sampling dates	PM 2.5	PM10	SO ₂	NO ₂	CO
	(µg/m ³)	(µg/m ³)	(µg/m ³)	(µg/m ³)	(mg/m ³)
05-12-2020	23.6	38.2	5.1	16.2	0.49
07-12-2020	29.7	53.3	6.8	12.7	0.54
14-12-2019	28.9	51.4	6.7	14.8	0.44
15-12-2020	23.7	43.8	5.3	13.2	0.62
21-12-2020	26.4	49.4	6.3	19.7	0.57
26-12-2020	21.2	40.3	6.9	16.8	0.55
28-12-2020	23.7	46.1	5.4	15.9	0.53
29-12-2020	25.8	49.5	5.8	14.2	0.55
Max.	29.7	53.3	6.9	19.7	0.62
Min.	21.2	38.2	5.1	12.7	0.44
Avg.	25.39	46.35	6.03	15.59	0.54
NAAQS@ Limit	60	100	80	80	4

Note: - ⁶⁶NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
 Jitpur Open Cast Coal Mine (2.5 MTPA)
 Tehsil-Sunderpahari, District-Godda Jharkhand.
 Sample No. : VEL/APL/M/05
 Report No. : VEL/A/ 2010/01-03
 Reporting Date : 04/01/2021
 Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
 Name of Monitoring Location : BATHI TOLA (Core Zone)

Sampling Dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO2 (µg/m ³)	NO2 (µg/m ³)	CO (mg/m ³)	Cr (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Cd (µg/m ³)	Hg (ng/m ³)	Pb (µg/m ³)
05-10-2020	26.2	55.3	6.7	12.3	0.68	BDL	BDL	BDL	BDL	BDL	BDL
10-10-2020	29.7	57.8	5.9	11.9	0.62	BDL	BDL	BDL	BDL	BDL	BDL
17-10-2020	22.6	44.5	8.9	15.6	0.51	BDL	BDL	BDL	BDL	BDL	BDL
Max.	29.7	57.8	8.9	15.6	0.68	BDL	BDL	BDL	BDL	BDL	BDL
Min.	22.6	44.5	5.9	11.9	0.51	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	26.16	51.98	7.26	13.46	0.60	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	--	20	6	--	--	1

Note: - @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
 BDL- Below Detection Limit.

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.

Sample No. : VEL/APL/M/06

Report No. : VEL/A/ 2010/04-06

Reporting Date : 04/01/2021

Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182

Name of Monitoring Location : VILLAGE - JITPUR

Sampling Dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO2 (µg/m ³)	NO2 (µg/m ³)	CO (mg/m ³)	Cr (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Cd (µg/m ³)	Hg (ng/m ³)	Pb (µg/m ³)
07-10-2020	23.7	45.2	6.7	15.4	0.53	BDL	BDL	BDL	BDL	BDL	BDL
14-10-2020	28.4	49.4	7.2	14.7	0.56	BDL	BDL	BDL	BDL	BDL	BDL
21-10-2020	24.1	47.5	7.8	14.8	0.72	BDL	BDL	BDL	BDL	BDL	BDL
Max.	28.4	49.4	7.8	15.4	0.72	BDL	BDL	BDL	BDL	BDL	BDL
Min.	23.7	45.2	6.7	14.7	0.53	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	25.66	47.34	7.24	15.00	0.61	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	--	20	6	--	--	1

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

BDL- Below Detection Limit.

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NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/07
Report No. : VEL/A/ 2010/07-09
Reporting Date : 04/01/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF&CC/IS-5182
Name of Monitoring Location : VILLAGE - PAHARPUR

Sampling Dates	PM 2.5 ($\mu\text{g}/\text{m}^3$)	PM10 ($\mu\text{g}/\text{m}^3$)	SO2 ($\mu\text{g}/\text{m}^3$)	NO2 ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)	Cr ($\mu\text{g}/\text{m}^3$)	Ni (ng/m^3)	As (ng/m^3)	Cd ($\mu\text{g}/\text{m}^3$)	Hg (ng/m^3)	Pb ($\mu\text{g}/\text{m}^3$)
09-10-2020	28.7	54.8	7.6	13.7	0.55	BDL	BDL	BDL	BDL	BDL	BDL
13-10-2020	27.6	51.7	6.7	14.9	0.66	BDL	BDL	BDL	BDL	BDL	BDL
19-10-2020	26.2	50.5	7.3	14.8	0.59	BDL	BDL	BDL	BDL	BDL	BDL
Max.	28.7	54.8	7.6	14.9	0.66	BDL	BDL	BDL	BDL	BDL	BDL
Min.	26.2	50.5	6.7	13.7	0.55	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	27.48	52.46	7.18	14.40	0.60	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	--	20	6	--	--	1

Note: - @NAAQ Standards – National Ambient Air Quality Standards: Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
BDL- Below Detection Limit.

ROMIL SINGH

ANALYST

(Tested By)

ARJUN RAWAT

(Checked By)



(Approved By)



Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/08
Report No. : VEL/A/ 2010/09-12
Reporting Date : 04/01/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - PAKERI

Sampling Dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO2 (µg/m ³)	NO2 (µg/m ³)	CO (mg/m ³)	Cr (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Cd (µg/m ³)	Hg (ng/m ³)	Pb (µg/m ³)
16-10-2020	24.7	41.8	6.7	13.7	0.51	BDL	BDL	BDL	BDL	BDL	BDL
23-10-2020	22.6	46.2	6.9	12.5	0.64	BDL	BDL	BDL	BDL	BDL	BDL
30-10-2020	21.7	43.7	6.1	13.6	0.62	BDL	BDL	BDL	BDL	BDL	BDL
Max.	24.7	46.2	6.9	13.7	0.64	BDL	BDL	BDL	BDL	BDL	BDL
Min.	21.7	41.8	6.1	12.5	0.51	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	23.08	43.94	6.54	13.20	0.58	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	--	20	6	--	--	1

Note: - @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
BDL- Below Detection Limit.

KOMAL SINGH
ANALYST
(Tested By)

ARJUN RAWAT

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

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Test Report

Sample No.: **VEL/APL/AN/01-06** Report No.: **VEL/N/2010/001-006**
Project Name: **M/s Adani Power (Mundra) Limited** Reporting Date: **04/01/2021**
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunder pahari, District-Godda
Jharkhand.
Testing Protocol/ Method: **As per CPCB/SPCB/MoEF & CC/IS-9989**

NOISE LEVEL MONITORING RESULTS

Location	Date of Monitoring	Noise Level in dB(A)	
		Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)
		Minimum-Maximum	Minimum-Maximum
CORE ZONE AREA (BATHI TOLA)	04/10/2020	47.9 - 57.5	31.9 - 47.3
Village-DAHUBERA	10/10/2020	41.4 - 54.9	35.4 - 50.4
Village-GAMARO	16/10/2020	45.6 - 64.7	32.6 - 49.6
Village-JITPUR	21/10/2020	42.4 - 63.8	37.8 - 54.3
Village-PAHARPUR	24/10/2020	43.6 - 59.5	38.2 - 45.5
Village-JIYAJORI	29/10/2020	49.4 - 62.6	39.3 - 49.2
CPCB Limits in dB(A*) Leq (Residential Area)		55.00	45.00

Note: Mine development is not started (Mine is not operational).

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Test Report

Sample Number: VEL/APL/W/01 **Report No.:** VEL/W/2010/17/001
Name & Address of the Party: M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal (2.5 MTPA)
Tehsil- Sunder pahari, District-Godda,
Jharkhand **Format No.:** 7.8 F-01
Party Reference No.: NIL
Reporting Date: 22/10/2020
Period of Analysis: 17/10/2020 to 22/10/2020
Receipt Date: 17/10/2020
Sampling Date: 15/10/2020
Sample Description: GROUND WATER **Sampling Quantity:** 2.0 Ltr
Sample Location: Village-BATHI TOLA **Sampling Type:** Grab
Sample Collected by: VardanEnvirolab Representative **Preservation:** Refrigerated
Parameter Required: As per Work Order
Sampling and Analysis Protocol: IS-10500-2012,APHA

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.92	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 5.0	NTU	5
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C. EDTA Titrimetric Method	176.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	62.86	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	158.31	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	48.55	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL (**DL 0.02 mg/l)		1
11.	#Cyanide as CN	APHA , 4500 CN- D	*BDL (**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	4.66	mg/l	100
13.	Total Dissolved Solids	APHA . 2540 C. Gravimetric Method	315.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	8.23	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.32	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	8.69	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.16	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA. 4500B C. Carmine Method	0.18	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l	No Relaxation

PRIYANKA
(Tested By)
ANALYST
Priyanka

ARJIIN RAWAT

(Checked By)
Arjiin Rawat

(Approved By)
[Signature]



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

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Test Report

Sample No.: VEL/APL/W/01				Report No: VEL/W/2010/17//001		
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source	
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002	
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	525	µS/cm	--	
23.	*Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0	
24.	Zinc as Zn	APHA . 3111 B, Direct Air, Acetylene Flame Method	0.32	mg/l	15	
25.	Copper as Cu	APHA . 3111 B, Direct Air, Acetylene Flame Method	0.10	mg/l	1.5	
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3	
27.	Cadmium as Cd	APHA . 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation	
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation	
29.	Selenium as Se	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation	
30.	Arsenic as As	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05	
31.	Mercury as Hg	APHA . 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation	
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample	
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample	

Note: - *These parameter are not covered in our NABL scope.
*BDL-Below Detection Limit, **DL- Detection Limit

PRIVANKA
(Tested By)
ANALYST
Priyanka

ARJUN RAWAT
(Checked By)
Arjun Rawat

VARDAN ENVIROLAB
GURUGRAM
(Approved By)
[Signature]

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Vardan EnviroLab

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Test Report

Sample Number:	VEL/APL/W/02	Report No.:	VEL/W/2010/17/002
Name & Address of the Party:	M/s Adani Power (Mundra) Limited Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village-JETKA TOLA	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnviroLab Representative	Period of Analysis:	17/10/2020 to 22/10/2020
Parameter Required:	As per Work Order	Receipt Date:	17/10/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	15/10/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.64	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold OdourMethod	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	191.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	66.74	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	176.54	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	52.18	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	⁺ Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	5.95	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	319.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.63	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.37	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	7.05	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.21	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.17	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

PRIYANKA
(Tested By)

ANALYST
Priyanka

ARJIIN RAWAT

(Checked By)

Arjiin Rawat

(Approved By)

Pratibha



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Sample No.: VEL/APL/W/02

Report No: VEL/W/2010/17/002

S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	532	µS/cm	--
23.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.23	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.12	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - #These parameter are not covered in our NABL scope.

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

(Tested By)
PRIVANKA
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Privanka

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Sample Number: VEL/APL/W/03 **Report No.:** VEL/W/2010/17/003
Name & Address of the Party: M/s Adani Power (Mundra) Limited **Format No.:** 7.8 F-01
Jitpur Open Cast Coal (2.5 MTPA) **Party Reference No.:** NIL
Tehsil- Sunder pahari, District-Godda, **Reporting Date:** 22/10/2020
Jharkhand **Period of Analysis:** 17/10/2020 to 22/10/2020
Sample Description: GROUND WATER **Receipt Date:** 17/10/2020
Sample Location: Village- RAMPUR **Sampling Date:** 15/10/2020
Sample Collected by: VardanEnviroLab Representative **Sampling Quantity:** 2.0 Ltr
Parameter Required: As per Work Order **Sampling Type:** Grab
Sampling and Analysis Protocol: IS-10500-2012,APHA **Preservation:** Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.53	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	2.1	NTU	5
4.	Odour	APHA, 2150 B , Threshold OdourMethod	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B. Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C. EDTA Titrimetric Method	142.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	44.62	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	127.18	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	30.76	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	⁻ Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B. Calculation Method	7.45	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	246.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.56	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.58	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	5.74	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.22	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C. Carmine Method	0.35	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B. Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

PRIVANKA
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Test Report

Sample No.: **VEL/APL/W/03**

Report No: **VEL/W/2010/17/003**

S.No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	410	µS/cm	--
23.	"Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.34	mg/l	15
25.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA . 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - These parameter are not covered in our NABL scope.

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

PRIYANKA
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Priyanka

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Arjun Rawat

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Test Report

Sample Number:	VEL/APL/W/04	Report No.:	VEL/W/2010/17/004
Name & Address of the Party:	M/s Adani Power (Mundra) Limited Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- KEROJORI BARA	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnvirolab Representative	Period of Analysis:	17/10/2020 to 22/10/2020
Parameter Required:	As per Work Order	Receipt Date:	17/10/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	15/10/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.69	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	1.4	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	205.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	76.38	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	186.57	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	61.52	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL (**DL 0.02 mg/l)	mg/l	1
11.	⁻ Cyanide as CN	APHA , 4500 CN- D	*BDL (**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	3.51	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	335.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	9.51	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.36	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	9.66	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.25	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.16	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l	No Relaxation

PRIYANKA
(Tested By)

ARJUN RAWAT
(Checked By)

(Approved By)



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

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Ph: 0124-4343750/752/753, 9810355569, 9953147268 E-mail: lab@vardanenvironet.com, bd@vardanenvironet.com



Vardan Envirolab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample No.: VEL/APL/W/04

Report No: VEL/W/2010/17/004

S.No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	558	µS/cm	--
23.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.32	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: #These parameter are not covered in our NABL scope.

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

ARJUN RAWAT

(Checked By)

(Approved By)

PRIYANKA
(Tested By)
ANALYST
Priyanka

Arjun Rawat

Arjun Rawat

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Sample Number:	VEL/APL/W/05	Report No.:	VEL/W/2010/17/005
Name & Address of the Party:	M/s Adani Power (Mundra) Limited Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- PAHARPUR	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnviroLab Representative	Period of Analysis:	17/10/2020 to 22/10/2020
Parameter Required:	As per Work Order	Receipt Date:	17/10/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	15/10/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.60	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	171.00	mg/l	600
7.	Calcium as Ca	APHA. 3500 Ca B. EDTA Titrimetric Method	61.95	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	152.64	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	49.07	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	3.99	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	291.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	8.16	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.62	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	7.96	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.16	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA. 4500B C. Carmine Method	0.19	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B. Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

Tested By
PRINVIKA
ANALYST
Payantia

Checked By
ARJUN RAWAT

(Signature of Arjun Rawat)

(Approved By)
(Signature and Stamp of Vardan EnviroLab)

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

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Vardan EnviroLab

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Test Report

Sample No.: **VEL/APL/W/05**

Report No: **VEL/W/2010/17/005**

S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	485	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.41	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.12	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: *These parameter are not covered in our NABL scope.

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

PRIYANKA
(Tested By)
ANALYST
Priyanka

ARJUN RAWAT
(Checked By)
Arjun Rawat

VARDAN ENVIROLAB
(Approved By)
[Signature]

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

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Test Report

Sample Number:	VEL/APL/W/06	Report No.:	VEL/W/2010/17/006
Name & Address of the Party:	M/s Adani Power (Mundra) Limited Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	GROUND WATER	Party Reference No.:	NIL
Sample Location:	Village- DAHUBERA	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnviroLab Representative	Period of Analysis:	17/10/2020 to 22/10/2020
Parameter Required:	As per Work Order	Receipt Date:	17/10/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	15/10/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.74	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold OdourMethod	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C. EDTA Titrimetric Method	178.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	63.76	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	159.25	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	47.22	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	⁻ Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	4.60	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	377.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	9.15	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.32	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	3.06	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B I,10 Phenanthroline Method	0.11	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.18	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

PRIYANKA
ANALYST
(Tested By)

Priyanka

ARJUN RAWAT
(Checked By)

Arjun Rawat

(Approved By)

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

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Test Report

Sample No.: VEL/APL/W/06

Report No: VEL/W/2010/17/006

S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	628	µS/cm	--
23.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.24	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mmg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - These parameter are not covered in our NABL scope.

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

(Tested By)
PRINYIKA
ANALYST
Prinyika

ARJUN RAWAT
(Checked By)
Arjun Rawat

(Approved By)
[Signature]

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

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Vardan EnviroLab

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Test Report

Sample Number:	VEL/APL/W/07	Report No.:	VEL/W/2010/17/007
Name & Address of the Party:	M/s Adani Power (Mundra) Limited Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	SURFACE WATER	Party Reference No.:	NIL
Sample Location:	Down Stream of Kewari Nala	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnviroLab Representative	Period of Analysis:	17/10/2020 to 22/10/2020
Parameter Required:	As per Work Order	Receipt Date:	17/10/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	15/10/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.69	--
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA, 2130 B, Nephelometric Method	7.9	NTU
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C. EDTA Titrimetric Method	132.00	mg/l
7.	Calcium as Ca	APHA, 3500 Ca B. EDTA Titrimetric Method	45.29	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	110.25	mg/l
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	32.54	mg/l
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	
11.	*Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	4.62	mg/l
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	224.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.54	mg/l
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	1.12	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	7.87	mg/l
17.	Iron as Fe	APHA , 3500-Fe B 1.10 Phenanthroline Method	0.30	mg/l
18.	Aluminium as Al	APHA , 3111 D. Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL(**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l

PRIYANKA
ANALYST
(Tested By)

Priyanka

ARJUN RAWAT
(Checked By)

Arjun Rawat

(Approved By)

[Signature]

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

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Vardan EnviroLab

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Test Report

Sample No.: VEL/APL/W/07

Report No: VEL/W/2010/17/007

S. No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	373	µS/cm
23.	#Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.49	mg/l
25.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mmg/l)	mg/l
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	Selenium as Se	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	Arsenic as As	APHA . 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	26.20	mg/l
32.	BOD (3 Days at 27°C)	APHA. 5210 C/ IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	6.3	mg/l

Note: - These parameter are not covered in our NABL scope.

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

PRIYANKA
(Tested By)
ANALYST

Priyanka

ARJIIN RAWAT
(Checked By)

Arjiin Rawat

VARDAN ENVIRONET
(Approved By)
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Test Report

Sample Number:	VEL/APL/W/08	Report No.:	VEL/W/2010/17/008
Name & Address of the Party:	M/s Adani Power (Mundra) Limited Jitpur Open Cast Coal (2.5 MTPA) Tehsil- Sunder pahari, District-Godda, Jharkhand	Format No.:	7.8 F-01
Sample Description:	SURFACE WATER	Party Reference No.:	NIL
Sample Location:	Up- Stream of Kewari Nala	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnviroLab Representative	Period of Analysis:	17/10/2020 to 22/10/2020
Parameter Required:	As per Work Order	Receipt Date:	17/10/2020
Sampling and Analysis Protocol:	IS-10500-2012,APHA	Sampling Date:	15/10/2020
		Sampling Quantity:	2.0 Ltr
		Sampling Type:	Grab
		Preservation:	Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.59	--
2.	Colour	APHA ,2120 B. Visual Comparison Method	*BDL(DL 5 Hazen)	Hazen
3.	Turbidity	APHA, 2130 B. Nephelometric Method	6.8	NTU
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	115.00	mg/l
7.	Calcium as Ca	APHA, 3500 Ca B. EDTA Titrimetric Method	40.37	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B. Titrimetric Method	91.49	mg/l
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	28.34	mg/l
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	
11.	*Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	3.47	mg/l
13.	Total Dissolved Solids	APHA , 2540 C. Gravimetric Method	211.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	9.22	mg/l
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.11	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	0.83	mg/l
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.35	mg/l
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL(**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B. Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l

PRIYANKA
(Tested By)

ANALYST
Priyanka

ARIIIN RAWAT
(Checked By)

Arin

(Approved By)

[Signature]

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

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Vardan EnviroLab

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Test Report

Sample No.: VEL/APL/W/08			Report No: VEL/W/2010/17/008	
S. No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	352	µS/cm
23.	# Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.48	mg/l
25.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	22.70	mg/l
32.	BOD (3 Days at 27°C)	APHA. 5210 C/ IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	5.8	mg/l

Note: -# These parameter are not covered in our NABL scope.

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

PRIYANICA
(Tested By)

Priyanka

ARJUN RAWAT

(Checked By)

Arjun Rawat

(Approved By)

[Signature]

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Sample Number:	VEL/APL/01	Report No.:	VEL/S/2010/17/001
Project:	M/s Adani Power (Mundra) Limited Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Project Site (BathiTola) Core Zone Area	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnviroLab Team	Period of Analysis:	17/10/2020 to 22/10/2020
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	17/10/2020
		Sampling Date:	15/10/2020
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.72	--
2.	Conductivity	IS:14767 by Conductivity meter	0.328	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Brown	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	31.50	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.43	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	62.00	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	50.42	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	59.64	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	82.45	kg./hec.
11.	Iron as Fe	USEPA 3050B	0.83	mg/100gm
12.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.58	%
13.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	36.12	mg/100gm
14.	Available Nitrogen as N	IS:14684 Distillation Method	173.15	kg./hec.
15.	Available Phosphorus (P)	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	43.00	kg./hec.
16.	Zinc as Zn	USEPA 3050B	0.46	mg/100gm
17.	Manganese as Mn	USEPA 3050B	0.79	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.36	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.34	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.89	mg/100gm
21.	Copper as Cu	USEPA 3050B	0.74	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.55	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK
SR. ANALYST

ARJUN RAWAT

(Checked By)

(Approved By)

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

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Test Report

Sample Number:	VEL/APL/02	Report No.:	VEL/S/2010/17/002
Project:	M/s Adani Power (Mundra) Limited Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Project Site (JetkaTola)	Reporting Date:	22/10/2020
Sample Collected by:	VardanEnviro Lab Team	Period of Analysis:	17/10/2020 to 22/10/2020
Sampling & Analysis Protocol:	IS 2720 & USDA	Receipt Date:	17/10/2020
		Sampling Date:	15/10/2020
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.76	--
2.	Conductivity	IS:14767 by Conductivity meter	0.322	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Red	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	20.15	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.26	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	45.15	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	42.00	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	51.37	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	84.52	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.64	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	28.16	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	210.45	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	11.28	kg./hec.
15.	Iron as Fe	USEPA 3050B	0.45	mg/100gm
16.	Zinc as Zn	USEPA 3050B	7.69	mg/100gm
17.	Manganese as Mn	USEPA 3050B	0.58	mg/100gm
18.	Chromium as Cr	USEPA 3050B	1.06	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.47	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.59	mg/100gm
21.	Copper as Cu	USEPA 3050B	2.10	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.78	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK
SR. ANALYST

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Test Report

Sample Number: **VEL/APL/03**
Project: **M/s Adani Power (Mundra) Limited
Jitpur Open cast coal (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda
Jharkhand**
Sample Description: **SOIL**
Sampling Location: **Village-Rampur**
Sample Collected by: **VardanEnviro Lab Team**
Sampling & Analysis Protocol: **IS 2720 & USDA**

Report No.: **VEL/S/2010/17/003**
Format No.: **7.8 F-01**
Party Reference No.: **NIL**
Reporting Date: **22/10/2020**
Period of Analysis: **17/10/2020 to 22/10/2020**
Receipt Date: **17/10/2020**
Sampling Date: **15/10/2020**
Type of Sampling: **Composite**
Sampling Quantity: **2.0 Kg**
Depth of Sampling: **30 cm**
Packing Status: **Temp Sealed**

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.71	--
2.	Conductivity	IS:14767 by Conductivity meter	0.331	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Red	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	26.60	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.33	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	49.57	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	41.04	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	52.93	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	105.48	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.75	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	32.61	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	232.00	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	21.16	kg./hec.
15.	Iron as Fe	USEPA 3050B	0.66	mg/100gm
16.	Zinc as Zn	USEPA 3050B	15.18	mg/100gm
17.	Manganese as Mn	USEPA 3050B	5.63	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.36	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.64	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.69	mg/100gm
21.	Copper as Cu	USEPA 3050B	2.31	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.45	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK
SR. ANALYST
(Tested By)

ARJUN RAWAT
(Checked By)



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

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Test Report

Sample Number: **VEL/APL/04**
Project: **M/s Adani Power (Mundra) Limited
Jitpur Open cast coal (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda
Jharkhand**
Sample Description: **SOIL**
Sampling Location: **Village-Kerojori Bara**
Sample Collected by: **Vardan Enviro Lab Team**
Sampling & Analysis Protocol: **IS 2720 & USDA**

Report No.: **VEL/S/2010/17/004**
Format No.: **7.8 F-01**
Party Reference No.: **NIL**
Reporting Date: **22/10/2020**
Period of Analysis: **17/10/2020 to 22/10/2020**
Receipt Date: **17/10/2020**
Sampling Date: **15/10/2020**
Type of Sampling: **Composite**
Sampling Quantity: **2.0 Kg**
Depth of Sampling: **30 cm**
Packing Status: **Temp Sealed**

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.65	--
2.	Conductivity	IS:14767 by Conductivity meter	0.326	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Brown	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	33.75	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.26	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	40.16	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	22.48	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	19.32	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	132.54	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.74	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	9.65	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	264.82	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	34.29	kg./hec.
15.	Zinc as Zn	USEPA 3050B	2.67	mg/100gm
16.	Manganese as Mn	USEPA 3050B	0.78	mg/100gm
17.	Chromium as Cr	USEPA 3050B	0.36	mg/100gm
18.	Lead as Pb	USEPA 3050B	0.31	mg/100gm
19.	Iron as Fe	USEPA 3050B	1.39	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.68	mg/100gm
21.	Copper as Cu	USEPA 3050B	1.47	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.59	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK
SR. ANALYST
(Tested By)
[Signature]

ARJUN RAWAT
(Checked By)
[Signature]

(Approved By)
[Signature]
LABORATORY AUTHORITY

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

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/01
Report No. : VEL/A/ 2101-2103/01-23
Reporting Date : 05/04/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : BATHI TOLA (Core Zone)

Sampling dates	PM 2.5 ($\mu\text{g}/\text{m}^3$)	PM10 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
01-01-2021	30.4	60.1	6.2	16.7	0.62
02-01-2021	32.4	62.6	5.7	14.6	0.59
08-01-2021	29.5	59.4	5.2	21.6	0.62
09-01-2021	31.9	66.2	6.1	16.7	0.66
15-01-2021	28.7	48.1	5.9	14.7	0.59
16-01-2021	29.2	46.1	6.7	16.4	0.51
22-01-2021	34.6	60.1	8.2	15.3	0.63
23-01-2021	36.3	59.2	7.6	14.1	0.66
05-02-2021	39.2	59.6	5.4	15.3	0.55
06-02-2021	42.1	65.3	6.7	14.2	0.68
12-02-2021	38.1	65.7	7.1	13.7	0.57
13-02-2021	40.1	70.1	6.6	12.8	0.53
19-02-2021	33.5	54.9	7.2	16.7	0.57
20-02-2021	31.8	69.8	5.9	11.8	0.56
26-02-2021	32.7	64.7	8.2	13.4	0.58
02-03-2021	36.8	54.8	5.9	12.7	0.53
03-03-2021	35.9	63.8	5.3	13.9	0.55
09-03-2021	31.5	60.2	7.9	12.1	0.63
10-03-2021	28.2	48.9	5.1	13.7	0.68
16-03-2021	31.2	65.1	6.8	10.7	0.64
17-03-2021	26.8	46.2	5.5	11.9	0.55
23-03-2021	35.6	62.4	6.6	14.9	0.59
24-03-2021	38.1	67.2	6.9	13.2	0.66
Max.	42.1	70.1	8.2	21.6	0.68
Min.	26.8	46.1	5.1	10.7	0.51
Avg.	33.74	59.87	6.48	14.54	0.60
NAAQS@ Limit	60	100	80	80	4

Note:- @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec. 3(1) 18.11.2009.

AMITABH DUBEY

(Tested By)

ARJUN RAWAT

(Checked By)

(Approved By)

PRAMP SINGH

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

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/02
Report No. : VEL/A/ 2101-2103/24-46
Reporting Date : 05/04/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - JITPUR

Sampling dates	PM 2.5 ($\mu\text{g}/\text{m}^3$)	PM10 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
01-01-2021	28.9	53.7	5.9	14.9	0.56
02-01-2021	30.4	59.8	7.2	20.2	0.62
08-01-2021	31.3	57.3	8.1	17.2	0.65
09-01-2021	29.2	48.3	7.7	18.3	0.66
15-01-2021	29.4	49.1	5.2	15.3	0.57
16-01-2021	38.3	60.8	6.6	21.6	0.62
22-01-2021	32.7	58.9	6.7	14.9	0.63
23-01-2021	36.1	52.7	8.1	16.8	0.67
05-02-2021	32.7	69.7	6.6	14.2	0.69
06-02-2021	33.9	52.9	7.1	20.7	0.59
12-02-2021	40.8	70.1	5.1	14.6	0.67
13-02-2021	42.3	47.1	6.8	15.3	0.58
19-02-2021	35.4	49.8	5.2	12.7	0.59
20-02-2021	33.7	62.1	5.7	13.9	0.57
26-02-2021	36.9	59.7	5.9	15.7	0.63
02-03-2021	36.7	51.9	6.2	13.7	0.58
03-03-2021	42.7	69.2	5.9	12.9	0.59
09-03-2021	26.9	42.7	5.3	15.9	0.66
10-03-2021	29.4	48.7	5.7	17.6	0.59
16-03-2021	29.7	49.6	6.1	15.9	0.6
17-03-2021	26.7	44.9	5.1	16.1	0.58
23-03-2021	29.2	43.8	5.9	17.4	0.56
24-03-2021	28.4	44.2	6.6	15.7	0.62
Max.	42.7	70.1	8.1	21.6	0.69
Min.	26.7	42.7	5.1	12.7	0.56
Avg.	33.24	54.39	6.32	16.23	0.61
NAAQS@ Limit	60	100	80	80	4

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

AMITABH DUBEY

SR. ANALYST
(Tested By)

[Signature]

ARJUN RAWAT

(Checked By)

[Signature]

APPROVED BY

(Approved By)

GAURAV
PRATAP SINGH

[Signature]

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/03
Report No. : VEL/A/ 2101-2103/47-69
Reporting Date : 05/04/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF&CC/IS-5182
Name of Monitoring Location : VILLAGE - PAHARPUR

Sampling dates	PM 2.5 ($\mu\text{g}/\text{m}^3$)	PM10 ($\mu\text{g}/\text{m}^3$)	SO ₂ ($\mu\text{g}/\text{m}^3$)	NO ₂ ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
04-01-2021	34.9	68.1	5.8	14.7	0.55
05-01-2021	30.7	59.1	7.1	15.6	0.56
11-01-2021	36.2	62.5	8.1	12.8	0.61
12-01-2021	34.8	58.3	6.7	12.3	0.68
18-01-2021	49.7	69.8	5.9	11.9	0.62
19-01-2021	29.8	61.6	8.9	15.6	0.51
25-01-2021	33.7	59.4	6.7	15.4	0.53
27-01-2021	48.7	68.3	7.2	14.7	0.56
08-02-2021	39.1	59.5	6.8	14.8	0.67
09-02-2021	46.8	52.7	8.2	15.9	0.51
15-02-2021	47.6	66.4	7.9	12.8	0.53
16-02-2021	48.7	73.8	7.1	13.7	0.66
22-02-2021	28.1	42.4	5.2	14.1	0.53
23-02-2021	37.6	43.7	5.9	13.6	0.51
25-02-2021	32.1	44.3	6.2	16.9	0.59
26-02-2021	22.6	40.1	5.9	12.4	0.61
06-03-2021	23.6	39.5	6.2	15.7	0.58
08-03-2021	24.9	36.7	6.9	14.9	0.46
13-03-2021	22.7	39.4	5.7	13.7	0.55
20-03-2021	34.2	34.7	6	16.8	0.57
22-03-2021	23.4	43.7	5.7	15.2	0.43
27-03-2021	22.7	46.8	6.2	18.9	0.57
30-03-2021	25.1	34.4	5.6	15.6	0.53
Max.	49.7	73.8	8.9	18.9	0.68
Min.	22.6	34.4	5.2	11.9	0.43
Avg.	34.00	52.54	6.64	14.75	0.56
NAAQS@ Limit	60	100	80	80	4

Note: - @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-soc-3(i)] 18.11.2009.

AMITABH DUBEY
(Tested By)

ADARSH KUMAR
(Checked By)

(Approved By)



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

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Vardan EnviroLab

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/04
Report No. : VEL/A/ 2101-2103/70-92
Reporting Date : 05/04/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - PAKERI

Sampling dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	CO (mg/m ³)
04-01-2021	32.6	66.2	6.9	12.5	0.54
05-01-2021	31.7	63.7	6.1	14.6	0.62
11-01-2021	36.9	68.6	5.4	17.5	0.61
12-01-2021	35.4	69.7	5.5	12.5	0.54
18-01-2021	35.9	68.9	6.7	18.6	0.56
19-01-2021	37.3	54.2	5.2	16.4	0.59
25-01-2021	39.1	63.8	5.9	15.6	0.62
27-01-2021	39.4	64.6	6.8	17.5	0.53
08-02-2021	31.7	52.8	7.9	14.5	0.57
09-02-2021	33.8	63.9	6.6	12.9	0.66
15-02-2021	34.6	62.1	6.9	17.6	0.67
16-02-2021	27.8	59.2	5.1	16.2	0.59
22-02-2021	25.4	51.8	6.8	12.7	0.63
23-02-2021	31.6	48.1	6.4	14.8	0.59
25-02-2021	38.1	52.1	5.3	13.2	0.62
26-02-2021	39.2	49.4	6.3	19.7	0.57
06-03-2021	32.4	58.3	6.9	16.8	0.55
08-03-2021	23.7	46.1	5.4	15.9	0.53
13-03-2021	28.4	49.9	6.8	16.4	0.42
20-03-2021	29.8	40.2	6.3	16.8	0.58
22-03-2021	35.6	43.7	5.7	14.7	0.61
27-03-2021	38.2	49.2	6.9	17.2	0.53
30-03-2021	36.7	63.8	5.3	17.2	0.53
Max.	39.4	69.7	7.9	19.7	0.67
Min.	23.7	40.2	5.1	12.5	0.42
Avg.	33.54	56.81	6.24	15.76	0.57
NAAQS@ Limit	60	100	80	80	4

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

AMITABH DUBEY

SR ANALYST
(Tested By)

ARJUN RAWAT

(Checked By)

GAURAV
(Approved By)



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

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Vardan EnviroLab

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/05
Report No. : VEL/A/ 2101/01-03
Reporting Date : 05/04/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : BATHI TOLA (Core Zone)

Sampling Dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	CO (mg/m ³)	Cr (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Cd (µg/m ³)	Hg (ng/m ³)	Pb (µg/m ³)
07-01-2021	21.6	55.7	6.2	15.2	0.64	BDL	BDL	BDL	BDL	BDL	BDL
14-01-2021	22.1	56.6	5.9	20.1	0.54	BDL	BDL	BDL	BDL	BDL	BDL
21-01-2021	24.5	58.5	8.5	18.9	0.55	BDL	BDL	BDL	BDL	BDL	BDL
Max.	24.5	58.5	8.5	20.1	0.64	BDL	BDL	BDL	BDL	BDL	BDL
Min.	21.6	55.7	5.9	15.2	0.54	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	22.86	57	7	17.9	0.582	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	--	20	6	--	--	1

Note: - @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
BDL- Below Detection Limit.

AMITABH DUBEY

(Tested By)

ARJUN RAWAT

(Checked By)

(Approved By)

PRATAP SINGH

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Report No. : Jitpur Open Cast Coal Mine (2.5 MTPA)
Sample No. : Tehsil-Sunderpahari, District-Godda Jharkhand.
Report No. : VEL/APL/M/06
Reporting Date : VEL/A/ 2101/04-06
Testing Protocol/Method : 05/04/2021
Name of Monitoring Location : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - JITPUR

Sampling Dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO ₂ (µg/m ³)	NO ₂ (µg/m ³)	CO (mg/m ³)	Cr (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Cd (µg/m ³)	Hg (ng/m ³)	Pb (µg/m ³)
07-01-2021	23.5	58.2	6.5	17.5	0.52	BDL	BDL	BDL	BDL	BDL	BDL
14-01-2021	26.2	62.3	6.9	18.6	0.59	BDL	BDL	BDL	BDL	BDL	BDL
21-01-2021	28.6	67.6	6.7	12.4	0.58	BDL	BDL	BDL	BDL	BDL	BDL
Max.	28.6	67.6	6.9	18.6	0.59	BDL	BDL	BDL	BDL	BDL	BDL
Min.	23.5	58.2	6.5	12.4	0.52	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	26.08	62.78	6.7	15.90	0.56	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	-	20	6	-	-	1

Note: - @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
 BDL- Below Detection Limit.

AMITABH DUBEY
 SR ANALYST
 (Tested By)

ARJUN RAWAT
 (Checked By)



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

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Vardan EnviroLab

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Sample No. : Jitpur Open Cast Coal Mine (2.5 MTPA)
Report No. : Tehsil-Sunderpahari, District-Godda Jharkhand.
Reporting Date : VEL/APL/M/07
Testing Protocol/Method : VEL/A/ 2101/07-09
Name of Monitoring Location : 05/04/2021
 As per CPCB/SPCB/MoEF&CC/IS-5182
 VILLAGE - PAHARPUR

Sampling Dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO2 (µg/m ³)	NO2 (µg/m ³)	CO (mg/m ³)	Cr (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Cd (µg/m ³)	Hg (ng/m ³)	Pb (µg/m ³)
06-01-2021	25.6	56.5	7.6	14.7	0.57	BDL	BDL	BDL	BDL	BDL	BDL
13-01-2021	24.2	54.5	6.1	13.6	0.51	BDL	BDL	BDL	BDL	BDL	BDL
28-01-2021	26.7	59.6	6.8	11.8	0.54	BDL	BDL	BDL	BDL	BDL	BDL
Max.	26.7	59.6	7.6	14.7	0.57	BDL	BDL	BDL	BDL	BDL	BDL
Min.	24.2	54.5	6.1	11.8	0.51	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	25.48	56.94	6.84	13.32	0.54	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	--	20	6	--	--	1

Note: - @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
 BDL- Below Detection Limit.

AMITABH DUBEY
 AR ANAND
 (Tested By)

ARJUN RAWAT
 (Checked By)

GAURAV
 KALAS SINGH
 (Approved By)

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

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Vardan EnviroLab

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Test Report

Project Name : M/s Adani Power (Mundra) Limited
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunderpahari, District-Godda Jharkhand.
Sample No. : VEL/APL/M/08
Report No. : VEL/A/ 2101/09-12
Reporting Date : 05/04/2021
Testing Protocol/Method : As per CPCB/SPCB/MoEF & CC/IS-5182
Name of Monitoring Location : VILLAGE - PAKERI

Sampling Dates	PM 2.5 (µg/m ³)	PM10 (µg/m ³)	SO2 (µg/m ³)	NO2 (µg/m ³)	CO (mg/m ³)	Cr (µg/m ³)	Ni (ng/m ³)	As (ng/m ³)	Cd (µg/m ³)	Hg (ng/m ³)	Pb (µg/m ³)
06-01-2021	28.7	60.2	8.5	16.9	0.65	BDL	BDL	BDL	BDL	BDL	BDL
13-01-2021	27.2	58.7	7.6	17.5	0.52	BDL	BDL	BDL	BDL	BDL	BDL
28-01-2021	29.5	69.2	6.8	15.6	0.56	BDL	BDL	BDL	BDL	BDL	BDL
Max.	29.5	69.2	8.5	17.5	0.65	BDL	BDL	BDL	BDL	BDL	BDL
Min.	27.2	58.7	6.8	15.6	0.52	BDL	BDL	BDL	BDL	BDL	BDL
Avg.	28.42	63.2	7.64	16.62	0.58	BDL	BDL	BDL	BDL	BDL	BDL
NAAQS@	60	100	80	80	4	--	20	6	--	--	1

Note: - @NAAQ Standards – National Ambient Air Quality Standards; Schedule-VII, [Rule 3 (3B)], [Part-II-sec.-3(i)] 18.11.2009.
BDL- Below Detection Limit.

AMITABH DUBEY
SR ANALYST
(Tested By)

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Sample No.: **VEL/APL/AN/01-06** Report No.: **VEL/AN/2101/001-006**
 Project Name: **M/s Adani Power (Mundra) Limited** Reporting Date: **05/04/2021**
Jitpur Open Cast Coal Mine (2.5 MTPA)
Tehsil-Sunder pahari, District-Godda
Jharkhand.
 Testing Protocol/ Method: **As per CPCB/SPCB/MoEF & CC/IS-9989:1981: RA (2014)**

NOISE LEVEL MONITORING RESULTS

Location	Date of Monitoring	Noise Level in dB(A)	
		Day Time (6:00 am to 10:00 pm)	Night Time (10:00 pm to 06:00 am)
		Minimum-Maximum	Minimum-Maximum
CORE ZONE AREA (BATHI TOLA)	04/01/2021	44.2 - 52.3	31.8 - 43.5
Village-DAHUBERA	10/01/2021	45.7 - 59.1	30.5 - 41.2
Village-GAMARO	16/01/2021	47.2 - 57.5	34.9 - 46.7
Village-JITPUR	21/01/2021	43.2 - 56.6	34.6 - 49.8
Village-PAHARPUR	24/01/2021	44.7 - 57.1	36.2 - 48.5
Village-JIJAJORI	29/01/2021	46.9 - 59.3	39.4 - 48.7
CPCB Limits in dB(A*) Leq (Residential Area)		55.00	45.00

Note: Mine development is not started (Mine is not operational).

AMITABH DUBEY

SR. ANALYST

(Tested By)

ARJUN RAWAT

(Checked By)

(Approved By)

QUALITY MANAGER



Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample Number: VEL/APL/W/01 **Report No.:** VEL/W/2101/20/001
Name & Address of the Party: M/s Adani Power (Mundra) Limited **Format No.:** 7.8 F-01
 Jitpur Open Cast Coal (2.5 MTPA) **Party Reference No.:** NIL
 Tehsil- Sunder pahari, District-Godda, **Reporting Date:** 24/01/2021
 Jharkhand **Period of Analysis:** 20/01/2021 to 24/01/2021
Sample Description: GROUND WATER **Receipt Date:** 20/01/2021
Sample Location: Village-BATHI TOLA **Sampling Date:** 18/01/2021
Sample Collected by: VardanEnviroLab Representative **Sampling Quantity:** 2.0 Ltr + 200 ml
Parameter Required: As per Work Order **Sampling Type:** Grab
Sampling and Analysis Protocol: IS-3025,APHA **Preservation:** Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 RA-2018 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.52	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL, 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 5.0	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	169.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	58.74	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	153.16	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	43.24	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)		1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	5.45	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	305.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	8.03	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.29	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	8.52	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.14	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.16	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

MAMTA NAYAK
(Tested By)
SR. ANALYST

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana

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Test Report

Sample No.: VEL/APL/W/01

Report No: VEL/W/2101/20/001

S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 RA-2018 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	485	µS/cm	—
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.28	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.08	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622:2009 : 1987, RA:2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622:2009 : 1987, RA:2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: These parameter are not covered in our NABL scope.

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

MAMTA NAYAK

SR. ANALYST

(Tested By)

ARJUN RAWAT

(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample Number: VEL/APL/W/02 Report No.: VEL/W/2101/20/002
 Name & Address of the Party: M/s Adani Power (Mundra) Limited
 Jitpur Open Cast Coal (2.5 MTPA)
 Tehsil- Sunder pahari, District-Godda,
 Jharkhand Format No.: 7.8 F-01
 Party Reference No.: NIL
 Reporting Date: 24/01/2021
 Period of Analysis: 20/01/2021 to 24/01/2021
 Sample Description: GROUND WATER Receipt Date: 20/01/2021
 Sample Location: Village-JETKA TOLA Sampling Date: 18/01/2021
 Sample Collected by: VardanEnviroLab Representative Sampling Quantity: 2.0 Ltr + 200 ml
 Parameter Required: As per Work Order Sampling Type: Grab
 Sampling and Analysis Protocol: IS-3025,APHA Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 RA-2018 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.62	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B, Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	182.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	55.98	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	161.34	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	46.22	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL (**DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL (**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	10.28	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	320.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.15	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.34	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	6.83	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.19	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.15	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l	No Relaxation

MAMTA NAYAK
 (Tested By)
 SR. ANALYST

ARJUN RAWAT
 (Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample No.: VEL/APL/W/02				Report No: VEL/W/2101/20/002	
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 RA-2018 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	510	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.21	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.10	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622:2009 : 1987, RA:2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622:2009 : 1987, RA:2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: These parameter are not covered in our NABL scope.

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

MAMTA NAYAK
SR. ANALYST

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample Number: VEL/APL/W/03 **Report No.:** VEL/W/2101/20/003
Name & Address of the Party: M/s Adani Power (Mundra) Limited **Format No.:** 7.8 F-01
 Jitpur Open Cast Coal (2.5 MTPA) **Party Reference No.:** NIL
 Tehsil- Sunder pahari, District-Godda, **Reporting Date:** 24/01/2021
 Jharkhand **Period of Analysis:** 20/01/2021 to 24/01/2021
Sample Description: GROUND WATER **Receipt Date:** 20/01/2021
Sample Location: Village- RAMPUR **Sampling Date:** 18/01/2021
Sample Collected by: VardanEnviroLab Representative **Sampling Quantity:** 2.0 Ltr + 200 ml
Parameter Required: As per Work Order **Sampling Type:** Grab
Sampling and Analysis Protocol: IS-3025,APHA **Preservation:** Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 RA-2018 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H' B Electrometric Method	7.49	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	2.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	132.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	41.38	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	142.16	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl B, Argentometric Method	33.81	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	6.99	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	295.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.43	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.55	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	5.63	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.19	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.25	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

MAMTA NAYAK

SR. ANALYST

ARJUN RAWAT

(Checked By)

(Approved By)

PRATAP SINGH

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample No.: VEL/APL/W/03

Report No: VEL/W/2101/20/003

S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 RA-2018 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	467	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.32	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622:2009 : 1987, RA:2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622:2009 : 1987, RA:2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - These parameter are not covered in our NABL scope.

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

MAMTA NAYAK

SR. ANALYST

ARJUN RAWAT

(Checked By)

GAURAV
(Analyzed By)

QUALITY MANAGER

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample Number: VEL/APL/W/04 Report No.: VEL/W/2101/20/004
 Name & Address of the Party: M/s Adani Power (Mundra) Limited Format No.: 7.8 F-01
 Jitpur Open Cast Coal (2.5 MTPA) Party Reference No.: NIL
 Tehsil- Sunder pahari, District-Godda, Reporting Date: 24/01/2021
 Jharkhand Period of Analysis: 20/01/2021 to 24/01/2021
 Sample Description: GROUND WATER Receipt Date: 20/01/2021
 Sample Location: Village- KEROJORI BARA Sampling Date: 18/01/2021
 Sample Collected by: VardanEnviroLab Representative Sampling Quantity: 2.0 Ltr + 200 ml
 Parameter Required: As per Work Order Sampling Type: Grab
 Sampling and Analysis Protocol: IS-3025,APHA Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 RA-2018 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.67	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	1.8	NTU	5
4.	Odour	APHA, 2150 B . Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	187.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	67.88	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	178.63	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	52.60	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	#Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	4.28	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C. Gravimetric Method	335.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	9.16	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.34	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) .Chromotropic Method	6.24	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.23	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.14	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

MAMTA NAYAK

SRINIVAS RAO

ARJUN RAWAT

(Checked By)

(Approved By)

PRATAP SINGH

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

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Vardan Envirolab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana

NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample No.: VEL/APL/W/04				Report No: VEL/W/2101/20/004	
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 RA-2018 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	518	µS/cm	1
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.27	mg/l	15
25.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA , 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622:2009 : 1987, RA:2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622:2009 : 1987, RA:2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - These parameter are not covered in our NABL scope.

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

MAMTA NAYAK
SR. ANALYST

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/APL/W/05 Report No.: VEL/W/2101/20/005
 Name & Address of the Party: M/s Adani Power (Mundra) Limited Format No.: 7.8 F-01
 Jitpur Open Cast Coal (2.5 MTPA) Party Reference No.: NIL
 Tehsil- Sunder pahari, District-Godda, Reporting Date: 24/01/2021
 Jharkhand Period of Analysis: 20/01/2021 to 24/01/2021
 Sample Description: GROUND WATER Receipt Date: 20/01/2021
 Sample Location: Village- PAHARPUR Sampling Date: 18/01/2021
 Sample Collected by: VardanEnviroLab Representative Sampling Quantity: 2.0 Ltr + 200 ml
 Parameter Required: As per Work Order Sampling Type: Grab
 Sampling and Analysis Protocol: IS-3025, APHA Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 RA-2018 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.55	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	137.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	51.32	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	134.68	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl B, Argentometric Method	45.26	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	%Cyanide as CN	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	2.18	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	285.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.26	mg/l	400
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	0.56	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) , Chromotropic Method	7.70	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.15	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.18	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

MAMTA NAYAK

(Tested By)

[Signature]

ARJUN RAWAT

(Checked By)

[Signature]



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample No.: VEL/APL/W/05				Report No.: VEL/W/2101/20/005	
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 RA-2018 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	460	µS/cm	2
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.37	mg/l	15
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.11	mg/l	1.5
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA, 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622:2009 : 1987, RA:2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622:2009 : 1987, RA:2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - These parameter are not covered in our NABL scope.
*BDL-Below Detection Limit, **DL- Detection Limit

MAMTA NAYAK

SR ANALYST

(Tested By)

ARJUN RAWAT

(Checked By)

(Approved By)

GAURAV KUMAR SINGH

QUALITY MANAGER

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/APL/W/06 **Report No.:** VEL/W/2101/20/006
Name & Address of the Party: M/s Adani Power (Mundra) Limited **Format No.:** 7.8 F-01
 Jitpur Open Cast Coal (2.5 MTPA) **Party Reference No.:** NIL
 Tehsil- Sunder pahari, District-Godda, **Reporting Date:** 24/01/2021
 Jharkhand
Sample Description: GROUND WATER **Period of Analysis:** 20/01/2021 to 24/01/2021
Sample Location: Village- DAHUBERA **Receipt Date:** 20/01/2021
Sample Collected by: Vardan EnviroLab Representative **Sampling Date:** 18/01/2021
Parameter Required: As per Work Order **Sampling Quantity:** 2.0 Ltr + 200 ml
Sampling and Analysis Protocol: IS-3025, APHA **Sampling Type:** Grab
Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit	Limits of IS:10500 - 2012 RA-2018 Permissible limit in the Absence of Alternate Source
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.69	--	No Relaxation
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen	15
3.	Turbidity	APHA, 2130 B, Nephelometric Method	< 0.5	NTU	5
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--	Agreeable
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--	Agreeable
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	170.00	mg/l	600
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	59.36	mg/l	200
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	163.02	mg/l	600
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	49.68	mg/l	1000
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	mg/l	1
11.	Cyanide as CN	APHA , 4500 CN-D	*BDL(**DL 0.05 mg/l)	mg/l	No Relaxation
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	5.32	mg/l	100
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	360.00	mg/l	2000
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	8.69	mg/l	400
15.	Fluoride as F ⁻	APHA , 4500-F- D, SPADNS Method	0.29	mg/l	1.5
16.	Nitrate as NO ₃	IS 3025 (P-34) , Chromotropic Method	2.78	mg/l	No Relaxation
17.	Iron as Fe	APHA , 3500-Fe B 1,10 Phenanthroline Method	0.09	mg/l	No relaxation
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	0.2
19.	Boron	APHA, 4500B C, Carmine Method	0.15	mg/l	1
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	No Relaxation

MAMTA NAYAK
(Tested By)

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana

NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample No.: VEL/APL/W/06				Report No: VEL/W/2101/20/006	
S. No	Parameter	Test-Method	Result	Unit	Limits of IS:10500-2012 RA-2018 Permissible limit in the Absence of Alternate Source
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l	0.002
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	585	µS/cm	--
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l	1.0
24.	Zinc as Zn	APHA , 3111 B, Direct Air, Acetylene Flame Method	0.22	mg/l	15
25.	Copper as Cu	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l	1.5
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	0.3
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l	No Relaxation
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l	No Relaxation
29.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	No Relaxation
30.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l	0.05
31.	Mercury as Hg	APHA , 3112 B, Cold Vapor AAS Method	*BDL (**DL 0.001 mg/l)	mg/l	No Relaxation
32.	Total Coliform	IS 1622:2009 : 1987, RA:2019	<2	MPN/100ml	Shall not be detectable in any 100 ml sample
33.	E. Coli	IS 1622:2009 : 1987, RA:2019	Absent	MPN/100ml	Shall not be detectable in any 100 ml sample

Note: - These parameter are not covered in our NABL scope.

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

MAMTA NAYAK
SRINIVAS
(Checked By)

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana

NABL Accredited | MoEF&CC Recognized | ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample Number: VEL/APL/W/07 Report No.: VEL/W/2101/20/007
 Name & Address of the Party: M/s Adani Power (Mundra) Limited Format No.: 7.8 F-01
 Jitpur Open Cast Coal (2.5 MTPA) Party Reference No.: NIL
 Tehsil- Sunder pahari, District-Godda, Reporting Date: 24/01/2021
 Jharkhand Period of Analysis: 20/01/2021 to 24/01/2021
 Sample Description: SURFACE WATER Receipt Date: 20/01/2021
 Sample Location: Down Stream of Kewari Nala Sampling Date: 18/01/2021
 Sample Collected by: VardanEnviroLab Representative Sampling Quantity: 2.0 Ltr + 200 ml
 Parameter Required: As per Work Order Sampling Type: Grab
 Sampling and Analysis Protocol: IS-3025,APHA Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.62	--
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL (**DL 5Hazen)	Hazen
3.	Turbidity	APHA, 2130 B, Nephelometric Method	7.4	NTU
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	141.00	mg/l
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	49.11	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	145.96	mg/l
9.	Chloride as Cl	APHA, 4500-Cl ⁻ B, Argentometric Method	35.80	mg/l
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL (**DL 0.02 mg/l)	mg/l
11.	Cyanide as CN	APHA , 4500 CN- D	*BDL (**DL 0.05 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	4.49	mg/l
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	254.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	7.69	mg/l
15.	Fluoride as F	APHA , 4500-F- D, SPADNS Method	1.20	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	7.93	mg/l
17.	Iron as Fe	APHA , 3500-Fe B I, 10 Phenanthroline Method	0.28	mg/l
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL (**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL (**DL 0.03 mg/l)	mg/l

MAMTA NAYAK

SR. ANALYST

ARJUN RAWAT

(Checked By)

(Approved By)

GAURAV

PRANAV SINGH

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample No.: VEL/APL/W/07			Report No: VEL/W/2101/20/007	
S.No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	423	µS/cm
23.	%Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA , 3111 B. Direct Air, Acetylene Flame Method	0.45	mg/l
25.	Copper as Cu	APHA , 3111 B. Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mmg/l)	mg/l
27.	Cadmium as Cd	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	Selenium as Se	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	Arsenic as As	APHA , 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	22.00	mg/l
32.	BOD (3 Days at 27°C)	APHA, 5210 C/ IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	6.5	mg/l

Note: - These parameter are not covered in our NABL scope.

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

MAMTA NAYAK
SR. JAWABDAR

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana

NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample Number: VEL/APL/W/08 Report No.: VEL/W/2101/20/008
 Name & Address of the Party: M/s Adani Power (Mundra) Limited Format No.: 7.8 F-01
 Jitpur Open Cast Coal (2.5 MTPA) Party Reference No.: NIL
 Tehsil- Sunder pahari, District-Godda, Reporting Date: 24/01/2021
 Jharkhand Period of Analysis: 20/01/2021 to 24/01/2021
 Sample Description: SURFACE WATER Receipt Date: 20/01/2021
 Sample Location: Up- Stream of Kewari Nala Sampling Date: 18/01/2021
 Sample Collected by: VardanEnviroLab Representative Sampling Quantity: 2.0 Ltr + 200 ml
 Parameter Required: As per Work Order Sampling Type: Grab
 Sampling and Analysis Protocol: IS-3025,APHA Preservation: Refrigerated

S. No.	Parameter	Test-Method	Result	Unit
1.	pH (at 25 °C)	APHA ,4500-H ⁺ B Electrometric Method	7.67	--
2.	Colour	APHA ,2120 B, Visual Comparison Method	*BDL(DL 5 Hazen)	Hazen
3.	Turbidity	APHA, 2130 B, Nephelometric Method	6.9	NTU
4.	Odour	APHA, 2150 B , Threshold Odour Method	Agreeable	--
5.	Taste	APHA , 2160 B, Threshold Test Method	Agreeable	--
6.	Total Hardness as CaCO ₃	APHA , 2340 C, EDTA Titrimetric Method	132.00	mg/l
7.	Calcium as Ca	APHA, 3500 Ca B, EDTA Titrimetric Method	44.69	mg/l
8.	Alkalinity as CaCO ₃	APHA , 2320 B, Titrimetric Method	162.18	mg/l
9.	Chloride as Cl ⁻	APHA, 4500-Cl ⁻ B, Argentometric Method	32.64	mg/l
10.	Residual Free Chlorine	APHA, 3500 Cl B Iodometric Method	*BDL(**DL 0.02 mg/l)	
11.	%Cyanide as CN ⁻	APHA , 4500 CN- D	*BDL(**DL 0.05 mg/l)	mg/l
12.	Magnesium as Mg	APHA , 3500 Mg B, Calculation Method	4.98	mg/l
13.	Total Dissolved Solids	APHA , 2540 C, Gravimetric Method	265.00	mg/l
14.	Sulphate as SO ₄	APHA , 4500 E, Turbidimetric Method	9.03	mg/l
15.	Fluoride as F ⁻	APHA , 4500-F- D, SPADNS Method	0.10	mg/l
16.	Nitrate as NO ₃	IS 3025 (P-34) ,Chromotropic Method	0.81	mg/l
17.	Iron as Fe	APHA , 3500-Fe B I,10 Phenanthroline Method	0.29	mg/l
18.	Aluminium as Al	APHA , 3111 D, Direct Nitrous Oxide- Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
19.	Boron	APHA, 4500B C, Carmine Method	*BDL(**DL 0.1 mg/l)	mg/l
20.	Total Chromium as Cr	APHA , 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l

MAMTA NAYAK
Sr. Analyst

ARJUN RAWAT
(Checked By)

(Approved By)

GAURAV
PRATAP SINGH

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001 | ISO 14001 | ISO 45001

Test Report

Sample No.: VEL/APL/W/08			Report No: VEL/W/2101/20/008	
S. No	Parameter	Test-Method	Result	Unit
21.	Phenolic Compounds	APHA, 5530 C Chloroform Extraction Method	*BDL(**DL 0.001 mg/l)	mg/l
22.	Electrical Conductivity	APHA, 2510 B, Conductivity Meter Method	442	µS/cm
23.	Anionic Detergents as MBAS	APHA, 5540 C MBAS Method	*BDL(**DL 0.02 mg/l)	mg/l
24.	Zinc as Zn	APHA, 3111 B, Direct Air, Acetylene Flame Method	0.46	mg/l
25.	Copper as Cu	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.03 mg/l)	mg/l
26.	Manganese as Mn	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
27.	Cadmium as Cd	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.06 mg/l)	mg/l
28.	Lead as Pb	APHA, 3111 B, Direct Air, Acetylene Flame Method	*BDL(**DL 0.13mg/l)	mg/l
29.	Selenium as Se	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
30.	Arsenic as As	APHA, 3114 B, Manual Hydride Generation	*BDL(**DL 0.01 mg/l)	mg/l
31.	COD	APHA 5220 B Open Reflux Method	24.00	mg/l
32.	BOD (3 Days at 27°C)	APHA, 5210 C/IS 3025 (Part 44)	<5.00	mg/l
33.	Dissolved Oxygen	APHA 4500 O B Iodometric Method	6.0	mg/l

Note: - These parameter are not covered in our NABL scope.
*BDL-Below Detection Limit, **DL- Detection Limit

MAMTA NAYAK
SR. ANALYST
(Tested By)

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana

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Test Report

Sample Number: **VEL/APL/01** Report No.: **VEL/S/2101/20/001**
 Project: **M/s Adani Power (Mundra) Limited** Format No.: **7.8 F-01**
Jitpur Open cast coal (2.5 MTPA) Party Reference No.: **NIL**
Tehsil-Sunderpahari, District-Godda Reporting Date: **24/01/2021**
Jharkhand Period of Analysis: **20/01/2021 to 24/01/2021**
 Sample Description: **SOIL** Receipt Date: **20/01/2021**
 Sampling Location: **Project Site (BathiTola) Core Zone Area** Sampling Date: **18/01/2021**
 Sample Collected by: **Vardan EnviroLab Team** Type of Sampling: **Composite**
 Sampling & Analysis Protocol: **IS 2720 & SOP** Sampling Quantity: **2.0 Kg**
 Depth of Sampling: **30 cm**
 Packing Status: **Temp Sealed**

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.68	--
2.	Conductivity	IS:14767 by Conductivity meter	0.318	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78, Issue No.-01 & Issue Date-14/02/2013	Yellowish Brown	--
5.	Water holding capacity	SOP , SP-81, Issue No.-01 & Issue Date-14/02/2013	32.62	%
6.	Bulk density	SOP , SP-80, Issue No.-01 & Issue Date-14/02/2013	1.35	gm/cc
7.	Chloride as Cl	SOP , SP-85, Issue No.-01 & Issue Date-14/02/2013	58.00	mg/100gm
8.	Calcium as Ca	SOP , SP-82, Issue No.-01 & Issue Date-14/02/2013	47.32	mg/100gm
9.	Sodium as Na	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	56.31	mg/100gm
10.	Potassium as K	SOP , SP-84, Issue No.-01 & Issue Date-14/02/2013	80.19	kg./hec.
11.	Iron as Fe	USEPA 3050B	2.42	mg/100gm
12.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.56	%
13.	Magnesium as Mg	SOP , SP-83, Issue No.-01 & Issue Date-14/02/2013	34.12	mg/100gm
14.	Available Nitrogen as N	IS:14684 Distillation Method	169.34	kg./hec.
15.	Available Phosphorus (P)	SOP , SP-86, Issue No.-01 & Issue Date-14/02/2013	39.00	kg./hec.
16.	Zinc as Zn	USEPA 3050B	0.44	mg/100gm
17.	Manganese as Mn	USEPA 3050B	0.76	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.32	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.31	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.86	mg/100gm
21.	Copper as Cu	USEPA 3050B	0.71	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.53	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK

SR. ANALYST

ARJUN RAWAT

(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Sample Number:	VEL/APL/02	Report No.:	VEL/S/2101/20/002
Project:	M/s Adani Power (Mundra) Limited Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Project Site (JetkaTola)	Reporting Date:	24/01/2021
Sample Collected by:	VardanEnviro Lab Team	Period of Analysis:	20/01/2021 to 24/01/2021
Sampling & Analysis Protocol:	IS 2720 & SOP	Receipt Date:	20/01/2021
		Sampling Date:	18/01/2021
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.72	--
2.	Conductivity	IS:14767 by Conductivity meter	0.319	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	--
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Red	--
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	34.12	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.28	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	46.34	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	43.00	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	52.63	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	83.15	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.62	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	26.54	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	208.32	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	24.60	kg./hec.
15.	Iron as Fe	USEPA 3050B	2.16	mg/100gm
16.	Zinc as Zn	USEPA 3050B	2.53	mg/100gm
17.	Manganese as Mn	USEPA 3050B	0.55	mg/100gm
18.	Chromium as Cr	USEPA 3050B	1.01	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.43	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.56	mg/100gm
21.	Copper as Cu	USEPA 3050B	1.98	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.76	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK

SP ANALYST
(Tested By)

ARJUN RAWAT

(Checked By)



(Approved By)

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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
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Test Report

Sample Number:	VEL/APL/03	Report No.:	VEL/S/2101/20/003
Project:	M/s Adani Power (Mundra) Limited Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Village-Rampur	Reporting Date:	24/01/2021
Sample Collected by:	Vardan Enviro Lab Team	Period of Analysis:	20/01/2021 to 24/01/2021
Sampling & Analysis Protocol:	IS 2720 & SOP	Receipt Date:	20/01/2021
		Sampling Date:	18/01/2021
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.67	
2.	Conductivity	IS:14767 by Conductivity meter	0.334	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Red	
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	29.20	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.32	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	50.36	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	42.15	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	53.82	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	103.16	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.62	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	31.46	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	224.00	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	26.00	kg./hec.
15.	Iron as Fe	USEPA 3050B	1.63	mg/100gm
16.	Zinc as Zn	USEPA 3050B	8.26	mg/100gm
17.	Manganese as Mn	USEPA 3050B	3.73	mg/100gm
18.	Chromium as Cr	USEPA 3050B	0.34	mg/100gm
19.	Lead as Pb	USEPA 3050B	0.66	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.71	mg/100gm
21.	Copper as Cu	USEPA 3050B	2.39	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.46	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK
Sr. Analyst
(Checked By)

ARJUN RAWAT
(Checked By)



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

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Vardan EnviroLab

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051, Haryana
NABL Accredited | MoEF&CC Recognized | ISO 9001|ISO 14001|ISO 45001

Test Report

Sample Number:	VEL/APL/04	Report No.:	VEL/S/2101/20/004
Project:	M/s Adani Power (Mundra) Limited Jitpur Open cast coal (2.5 MTPA) Tehsil-Sunderpahari, District-Godda Jharkhand	Format No.:	7.8 F-01
Sample Description:	SOIL	Party Reference No.:	NIL
Sampling Location:	Village-Kerojori Bara	Reporting Date:	24/01/2021
Sample Collected by:	VardanEnviro Lab Team	Period of Analysis:	20/01/2021 to 24/01/2021
Sampling & Analysis Protocol:	IS 2720 & SOP	Receipt Date:	20/01/2021
		Sampling Date:	18/01/2021
		Type of Sampling:	Composite
		Sampling Quantity:	2.0 Kg
		Depth of Sampling:	30 cm
		Packing Status:	Temp Sealed

S. No.	Parameter	Protocol	Result	Unit
1.	pH (at 25 °C)	IS : 2720 (P-26) by pH Meter	7.68	-
2.	Conductivity	IS:14767 by Conductivity meter	0.341	mS/cm
3.	Soil Texture	IS : 2720 (P-22, RA2003)	Silty Loam	-
4.	Color	SOP , SP-78,Issue No.-01& Issue Date-14/02/2013	Yellowish Brown	-
5.	Water holding capacity	SOP , SP-81,Issue No.-01& Issue Date-14/02/2013	34.92	%
6.	Bulk density	SOP , SP-80,Issue No.-01& Issue Date-14/02/2013	1.29	gm/cc
7.	Chloride as Cl	SOP , SP-85,Issue No.-01& Issue Date-14/02/2013	42.63	mg/100gm
8.	Calcium as Ca	SOP , SP-82,Issue No.-01& Issue Date-14/02/2013	21.45	mg/100gm
9.	Sodium as Na	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	20.13	mg/100gm
10.	Potassium as K	SOP , SP-84,Issue No.-01& Issue Date-14/02/2013	133.82	kg./hec.
11.	Organic Matter	IS:2720 (P-22) Titrimetric Method	0.68	%
12.	Magnesium as Mg	SOP , SP-83,Issue No.-01& Issue Date-14/02/2013	9.73	mg/100gm
13.	Available Nitrogen	IS:14684 Distillation Method	266.71	kg./hec.
14.	Available Phosphorus	SOP , SP-86,Issue No.-01& Issue Date-14/02/2013	31.12	kg./hec.
15.	Zinc as Zn	USEPA 3050B	2.72	mg/100gm
16.	Manganese as Mn	USEPA 3050B	1.71	mg/100gm
17.	Chromium as Cr	USEPA 3050B	0.37	mg/100gm
18.	Lead as Pb	USEPA 3050B	0.34	mg/100gm
19.	Iron as Fe	USEPA 3050B	1.42	mg/100gm
20.	Cadmium as Cd	USEPA 3050B	0.69	mg/100gm
21.	Copper as Cu	USEPA 3050B	1.49	mg/100gm
22.	Molybdenum as Mo	USEPA 3050B	0.62	mg/100gm

Note- SOP- Standard operating procedure

MAMTA NAYAK
SR ANALYST
(Tested By)

ARJUN RAWAT
(Checked By)



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