

**AES MONG DUONG POWER CO.LTD.
MONG DUONG 2 BOT COAL-FIRED POWER PLANT**

---*---**

**APPENDIX
ENVIRONMENTAL MONITORING RESULTS FOR
ASH POND 2
MONG DUONG 2 BOT COAL-FIRED POWER PLANT
The first 6 months - 2023**



HA NOI, JULY – 2023

**AES MONG DUONG POWER CO.LTD.
MONG DUONG 2 BOT COAL-FIRED POWER PLANT**

---***---

APPENDIX
ENVIRONMENTAL MONITORING RESULTS FOR
ASH POND 2
MONG DUONG 2 BOT COAL-FIRED POWER PLANT
The first 6 months - 2023

Invested by
AES MONG DUONG POWER CO. LTD.



JOSEPH FRANK UDDO III
MANAGING DIRECTOR

Implemented by
BACH KHOA ENVIRONMENTAL
AMICABLE TECHNOLOGY, JSC.
(BKEST)



GIÁM ĐỐC
Nguyễn Ngọc Việt

HA NOI, JULY - 2023



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R301-C10 Building, Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi

Tel.: (84-24).38681686

Email: inest@hust.edu.vn

Fax: (84-24).38693551

http: //inest.hust.edu.vn

No: 05/12/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : January 31st, 2023
Type of Samples : Wastewater
Number of Samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCĐP 3:2020/QN (Column B)	
				AP-W1	AP-W2	C _(Column B)	C _{max}
1.	Temperature	°C	SMEWW 2550B:2017	18.5	17.5	40	40
2.	pH	-	TCVN 6492:2011	8.1	8.1	5.5 – 9.0	5.5 - 9.0
3.	Color (pH=7)	Pt/Co	TCVN 6185:2015	6	5	150	150
4.	TSS	mg/L	TCVN 6625:2000	7	<2	100	90
5.	BOD ₅	mg/L	TCVN 6001-1:2008	7	6	50	45
6.	COD	mg/L	SMEWW 5220C:2017	19	16	150	135
7.	Arsenic (As)	mg/L	EPA method 200.8	0.011	0.008	0.1	0.09
8.	Mercury(Hg)	mg/L	EPA method 200.8	<0.001	<0.001	0.01	0.009
9.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.5	0.45
10.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.1	0.09
11.	Chromium III	mg/L	EPA Method 200.8 & TCVN 6658:2000	0.0338	0.0180	1	0.9
12.	Chromium VI	mg/L	TCVN 6658:2000	<0.006	<0.006	0.1	0.09
13.	Copper (Cu)	mg/L	EPA method 200.8	0.0037	0.0036	2	1.8
14.	Zinc (Zn)	mg/L	EPA method 200.8	0.0057	0.0055	3	2.7
15.	Nikel (Ni)	mg/L	EPA method 200.8	0.0366	0.0311	0.5	0.45
16.	Manganese (Mn)	mg/L	EPA method 200.8	0.170	0.129	1	0.9
17.	Iron (Fe)	mg/L	EPA method 200.8	0.297	0.292	5	4.5
18.	Total mineral oil & grease	mg/L	SMEWW5520B&F:2017	<0.3	<0.3	10	9
19.	Residue Chlorine	mg/L	TCVN 6225-3:2011	<0.1	<0.1	2	1.8
20.	Sulfide (as H ₂ S)	mg/L	TCVN 6637:2000	<0.03	<0.03	0.5	0.45
21.	Total N	mg/L	TCVN 6638:2000	5.46	5.44	40	36
22.	Total P	mg/L	TCVN 6202:2008	0.02	0.02	6	5.4
23.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.11	0.11	10	9
24.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.52	1.48	10	9
25.	Total Cyanide (CN ⁻)	mg/L	SMEWW 4500 CN ⁻ C&E:2017	<0.002	<0.002	0.1	0.09



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R301-C10 Building, Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi

Tel.: (84-24).38681686

Email: inest@hust.edu.vn

Fax: (84-24).38693551

http: //inest.hust.edu.vn

No: 15/19/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : 22/02/2023
Type of Samples : Wastewater
Number of Samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCĐP 3:2020/QN	
				AP-W1	AP-W2	C _(Column B)	C _{max}
1.	Temperature	°C	SMEWW 2550B:2017	20.1	20.7	40	40
2.	pH	-	TCVN 6492:2011	8.0	7.9	5.5 – 9.0	5.5 - 9.0
3.	Color (pH=7)	Pt/Co	TCVN 6185:2015	8	7	150	150
4.	TSS	mg/L	TCVN 6625:2000	3	<2	100	90
5.	COD	mg/L	SMEWW 5220C:2017	22	19	150	135
6.	BOD ₅	mg/L	TCVN 6001-1:2008	8	7	50	45
7.	Arsenic (As)	mg/L	EPA method 200.8	<0.001	0.001	0.1	0.09
8.	Mercury(Hg)	mg/L	EPA method 200.8	<0.001	<0.001	0.01	0.009
9.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.5	0.45
10.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.1	0.09
11.	Chromium III	mg/L	EPA Method 200.8 & TCVN 6658:2000	0.009	<0.006	1	0.9
12.	Chromium VI	mg/L	TCVN 6658:2000	<0.006	<0.006	0.1	0.09
13.	Copper (Cu)	mg/L	EPA method 200.8	0.0011	0.001	2	1.8
14.	Zinc (Zn)	mg/L	EPA method 200.8	0.0043	0.0016	3	2.7
15.	Nikel (Ni)	mg/L	EPA method 200.8	0.0159	<0.0010	0.5	0.45
16.	Manganese (Mn)	mg/L	EPA method 200.8	0.0649	<0.0015	1	0.9
17.	Iron (Fe)	mg/L	EPA method 200.8	0.222	0.184	5	4.5
18.	Total mineral oil & grease	mg/L	SMEWW5520B&F:2017	<0.3	<0.3	10	9
19.	Residue Chlorine	mg/L	TCVN 6225-3:2011	<0.1	<0.1	2	1.8
20.	Sulfide (as H ₂ S)	mg/L	TCVN 6637:2000	<0.03	<0.03	0.5	0.45
21.	Total N	mg/L	TCVN 6638:2000	5.40	5.44	40	36
22.	Total P	mg/L	TCVN 6202:2008	0.12	0.06	6	5.4
23.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.18	0.15	10	9
24.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.50	1.45	10	9
25.	Total Cyanide (CN ⁻)	mg/L	SMEWW 4500 CN ⁻ C&E:2017	<0.002	<0.002	0.1	0.09



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R301-C10 Building, Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi

Tel.: (84-24).38681686

Email: inest@hust.edu.vn

Fax: (84-24).38693551

http: //inest.hust.edu.vn

No: 03/23/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : March 15th ,2023
Type of Samples : Wastewater
Number of Samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCĐP 3:2020/QN	
				AP-W1	AP-W2	C _(Column B)	C _{max}
1.	Temperature	°C	SMEWW 2550B:2017	22.3	22.6	40	40
2.	pH	-	TCVN 6492:2011	7.6	7.1	5.5 – 9.0	5.5 - 9.0
3.	Color (pH=7)	Pt/Co	TCVN 6185:2015	<5	<5	150	150
4.	TSS	mg/L	TCVN 6625:2000	<2	<2	100	90
5.	COD	mg/L	SMEWW 5220C:2017	19	16	150	135
6.	BOD ₅	mg/L	TCVN 6001-1:2008	7	6	50	45
7.	Arsenic (As)	mg/L	EPA method 200.8	0.013	0.012	0.1	0.09
8.	Mercury(Hg)	mg/L	EPA method 200.8	<0.001	<0.001	0.01	0.009
9.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.5	0.45
10.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.1	0.09
11.	Chromium III	mg/L	EPA Method 200.8 & TCVN 6658:2000	0.032	0.031	1	0.9
12.	Chromium VI	mg/L	TCVN 6658:2000	<0.006	<0.006	0.1	0.09
13.	Copper (Cu)	mg/L	EPA method 200.8	0.0033	0.0032	2	1.8
14.	Zinc (Zn)	mg/L	EPA method 200.8	0.0112	0.0057	3	2.7
15.	Nikel (Ni)	mg/L	EPA method 200.8	0.0447	0.0351	0.5	0.45
16.	Manganese (Mn)	mg/L	EPA method 200.8	0.0633	0.0607	1	0.9
17.	Iron (Fe)	mg/L	EPA method 200.8	1.49	1.49	5	4.5
18.	Total mineral oil & grease	mg/L	SMEWW5520B&F:2017	<0.3	<0.3	10	9
19.	Residue Chlorine	mg/L	TCVN 6225-3:2011	<0.1	<0.1	2	1.8
20.	Sulfide (as H ₂ S)	mg/L	TCVN 6637:2000	<0.03	<0.03	0.5	0.45
21.	Total N	mg/L	TCVN 6638:2000	4.73	4.51	40	36
22.	Total P	mg/L	TCVN 6202:2008	0.18	0.13	6	5.4
23.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.11	0.09	10	9
24.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.46	1.43	10	9
25.	Total Cyanide (CN ⁻)	mg/L	SMEWW 4500 CN ⁻ C&E:2017	<0.002	<0.002	0.1	0.09



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R301-C10 Building, Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi

Tel.: (84-24).38681686

Email: inest@hust.edu.vn

Fax: (84-24).38693551

http: //inest.hust.edu.vn

No: 04/23/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling area : Ash pond 2 - Mong Duong 2 Thermal Power Plant
Address : Mong Duong ward, Cam Pha city, Quang Ninh province
Sampling date : March 15th ,2023
Type of samples : Surface water in receiving resource
Number of samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCVN 10-MT: 2015/BTNMT
				SW1	SW2	
1.	Temperature	°C	SMEWW 2550B:2017	25.3	25.6	-
2.	pH	-	TCVN 6492:2011	7.4	7.6	6.5 – 8.5
3.	DO	mg/L	TCVN 7325:2016	8.2	8.6	-
4.	TSS	mg/L	TCVN 6625:2000	14	13	-
5.	Nitrite (NO ₂ ⁻)	mg/L	SMEWW 4500 NO ₂ ⁻ .B:2017	0.05	0.04	-
6.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.26	1.05	1.5
7.	COD	mg/L	SMEWW 5220C:2017	64	65	-
8.	BOD ₅	mg/L	TCVN 6001-1:2008	21	23	-
9.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.41	0.47	0.5
10.	Nitrat (NO ₃ ⁻ -N)	mg/L	SMEWW 4500 NO ₃ ⁻ .E:2017	0.39	0.48	-
11.	Chloride (Cl ⁻)	mg/L	TCVN 6194-1996	14,046	14,147	-
12.	PO ₄ ³⁻	mg/L	TCVN 6202:2008	0.03	0.02	0.5
13.	Total Cyanide	mg/L	SMEWW 4500 CN.C&E:2017	<0.002	<0.002	0.01
14.	Total oil and grease	mg/L	SMEWW 5520B&F:2017	<0.3	<0.3	1
15.	Coliform	MPN/ 100mL	TCVN 6187-2:1996	1,100	950	1.000
16.	Arsenic (As)	mg/L	EPA method 200.8	0.0020	0.0023	0.05
17.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.01
18.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.1
19.	Mercury (Hg)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.005
20.	Iron (Fe)	mg/L	EPA method 200.8	0.235	0.247	0.5
21.	Nickel (Ni)	mg/L	EPA method 200.8	0.0557	0.0538	-
22.	Manganese (Mn)	mg/L	EPA method 200.8	<0.0015	<0.0015	0.5
23.	Chromium VI	mg/L	TCVN 7939:2008	<0.006	<0.006	0.05
24.	Chromium (Cr)	mg/L	EPA method 200.8	0.030	0.033	0.5
25.	Copper (Cu)	mg/L	EPA method 200.8	<0.003	<0.003	1



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R301-C10 Building, Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi
Tel.: (84-24).38681686 Email: inest@hust.edu.vn Fax: (84-24).38693551 http://inest.hust.edu.vn

No: 05/23/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 Thermal Power Plant
Address : Mong Duong ward, Cam Pha city, Quang Ninh province
Sampling Date : March 15th, 2023
Type of Samples : Noise
Number of Samples : 01 sample

No.	Sampling positions	Measurement methods	Results			
			6h-21h		21h-6h	
			Leq (dBA)	Lmax (dBA)	Leq (dBA)	Lmax (dBA)
1.	AP2-N	TCVN 7878-2:2010	51	56	46	50
QCVN 26:2010/BTNMT			70	-	55	-

Notes:

- The result is valid only for samples at the monitoring time. Symbol (-): unstipulated;
- **QCVN 26:2010/BTNMT** – National Technical Regulation on noise
- Sampling positions

AP2-N: Wastewater treatment system

Coordinates

21° 6'43.23"N 107°21'15.47"E

Hanoi, March 24th, 2023

Centre for industrial environmental
monitoring and pollution control

School of Environmental Science and Technology

Director

MSc. Ton Thu Giang



VIỆN TRƯỞNG
PGS.TS. Nguyễn Thị Anh Tuyết



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY

Address: R301-C10 Building, Hanoi University of Science and Technology, Bach Khoa Ward, Hai Ba Trung Dist, Hanoi
 Tel.: (84-24).38681686 Email: inest@hust.edu.vn Fax: (84-24).38693551 http: //inest.hust.edu.vn



No: 06/23/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 Thermal Power Plant
 Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
 Sampling Date : March 15th ,2023
 Type of Samples : Ground Water
 Number of Samples : 04 samples

No.	Parameter	Units	Analytical methods	Results				QCVN 09-MT: 2015/BTNMT
				GW1	GW2	GW3	GW4	
1.	Temperature	°C	SMEWW 2550B:2017	22.4	24.5	24.2	24.5	-
2.	pH	-	TCVN 6492:2011	7.3	5.9	7.1	6.5	5.5 – 8.5
3.	DO	mg/L	TCVN 7325:2016	4.2	3.6	2.6	4.7	-
4.	Turbidity	NTU	TCVN 6184:2008	0.84	0.37	0.74	0.68	-
5.	TDS	mg/L	SOP-TDS	168	39	142	39	1,500
6.	COD (KMnO ₄)	mg/L	SMEWW 522C:2017	7	5	2	8	4
7.	BOD ₅	mg/L	TCVN 6001-1:2008	2	<1.0	<1.0	3	-
8.	Arsenic (As)	mg/L	EPA method 200.8	0.0020	0.0035	0.0060	0.0055	0.05
9.	Mercury(Hg)	mg/L	EPA method 200.8	<0.0005	<0.0005	<0.0005	<0.0005	0.001
10.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	<0.0005	0.0006	0.01
11.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	<0.0005	<0.0005	0.005
12.	Chromium (Cr)	mg/L	EPA method 200.8	0.006	<0.006	<0.006	<0.006	-
13.	Zinc (Zn)	mg/L	EPA method 200.8	0.055	0.021	0.016	0.020	3.0
14.	Iron (Fe)	mg/L	EPA method 200.8	1.100	0.132	0.292	0.120	5.0



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R301-C10 Building, Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi

Tel.: (84-24).38681686

Email: inest@hust.edu.vn

Fax: (84-24).38693551

http://inest.hust.edu.vn

No: 03/36/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : April 19th , 2023
Type of Samples : Wastewater
Number of Samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCĐP 3:2020/QN (Column B)	
				AP-W1	AP-W2	C _(Column B)	C _{max}
1.	Temperature	°C	SMEWW 2550B:2017	26.2	26.7	40	40
2.	pH	-	TCVN 6492:2011	7.9	7.8	5.5 – 9.0	5.5 - 9.0
3.	Color (pH=7)	Pt/Co	TCVN 6185:2015	5	<5	150	150
4.	TSS	mg/L	TCVN 6625:2000	6	3	100	90
5.	COD	mg/L	SMEWW 5220C:2017	19	15	150	135
6.	BOD ₅	mg/L	TCVN 6001-1:2008	7	6	50	45
7.	Arsenic (As)	mg/L	EPA method 200.8	0.007	0.009	0.1	0.09
8.	Mercury(Hg)	mg/L	EPA method 200.8	<0.001	<0.001	0.01	0.009
9.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.5	0.45
10.	Cadmium (Cd)	mg/L	EPA method 200.8	0.0010	<0.0005	0.1	0.09
11.	Chromium III	mg/L	EPA Method 200.8 & TCVN 6658:2000	0.0479	0.0452	1	0.9
12.	Chromium VI	mg/L	TCVN 6658:2000	<0.006	<0.006	0.1	0.09
13.	Copper (Cu)	mg/L	EPA method 200.8	0.0052	0.0021	2	1.8
14.	Zinc (Zn)	mg/L	EPA method 200.8	0.0082	0.0056	3	2.7
15.	Nikel (Ni)	mg/L	EPA method 200.8	0.0365	0.0346	0.5	0.45
16.	Manganese (Mn)	mg/L	EPA method 200.8	0.057	0.048	1	0.9
17.	Iron (Fe)	mg/L	EPA method 200.8	0.144	0.102	5	4.5
18.	Total mineral oil & grease	mg/L	SMEWW5520B&F:2017	<0.3	<0.3	10	9
19.	Residue Chlorine	mg/L	TCVN 6225-3:2011	<0.1	<0.1	2	1.8
20.	Sulfide (as H ₂ S)	mg/L	TCVN 6637:2000	<0.03	<0.03	0.5	0.45
21.	Total N	mg/L	TCVN 6638:2000	5.73	5.83	40	36
22.	Total P	mg/L	TCVN 6202:2008	0.06	0.05	6	5.4
23.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.39	0.34	10	9
24.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.46	1.42	10	9
25.	Total Cyanide (CN ⁻)	mg/L	SMEWW 4500 CN ⁻ C&E:2017	<0.002	<0.002	0.1	0.09



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY

Address: R303 , C10 Building - Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi
Tel.: (84-24).38681686 Email: inest@hust.edu.vn Fax: (84-24).38693551 http: //inest.hust.edu.vn



No: 21/46/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : 12/05/2023
Type of Samples : Wastewater
Number of Samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCDP 3:2020/QN	
				AP-W1	AP-W2	C _(Column B)	C _{max}
1.	Temperature	°C	SMEWW 2550B:2017	26.4	26.5	40	40
2.	pH	-	TCVN 6492:2011	8.1	8.1	5.5 – 9.0	5.5 - 9.0
3.	Color (pH=7)	Pt/Co	TCVN 6185:2015	7	6	150	150
4.	TSS	mg/L	TCVN 6625:2000	4	<2	100	90
5.	COD	mg/L	SMEWW 5220C:2017	48	22	150	135
6.	BOD ₅	mg/L	TCVN 6001-1:2008	17	8	50	45
7.	Arsenic (As)	mg/L	EPA method 200.8	0.0163	0.0143	0.1	0.09
8.	Mercury(Hg)	mg/L	EPA method 200.8	<0.001	<0.001	0.01	0.009
9.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.5	0.45
10.	Cadmium (Cd)	mg/L	EPA method 200.8	0.0008	<0.0005	0.1	0.09
11.	Chromium III	mg/L	EPA Method 200.8 & TCVN 6658:2000	0.0368	0.0325	1	0.9
12.	Chromium VI	mg/L	TCVN 6658:2000	<0.006	<0.006	0.1	0.09
13.	Copper (Cu)	mg/L	EPA method 200.8	0.0063	0.0035	2	1.8
14.	Zinc (Zn)	mg/L	EPA method 200.8	0.0074	0.0038	3	2.7
15.	Nikel (Ni)	mg/L	EPA method 200.8	0.0538	0.0516	0.5	0.45
16.	Manganese (Mn)	mg/L	EPA method 200.8	0.0682	0.0681	1	0.9
17.	Iron (Fe)	mg/L	EPA method 200.8	0.102	0.076	5	4.5
18.	Total mineral oil & grease	mg/L	SMEWW5520B&F:2017	<0.3	<0.3	10	9
19.	Residue Chlorine	mg/L	TCVN 6225-3:2011	<0.1	<0.1	2	1.8
20.	Sulfide (as H ₂ S)	mg/L	TCVN 6637:2000	<0.03	<0.03	0.5	0.45
21.	Total N	mg/L	TCVN 6638:2000	8.45	7.74	40	36
22.	Total P	mg/L	TCVN 6202:2008	0.06	0.10	6	5.4
23.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	1.63	1.46	10	9
24.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.52	1.48	10	9
25.	Total Cyanide (CN ⁻)	mg/L	SMEWW 4500 CN ⁻ .C&E:2017	<0.002	<0.002	0.1	0.09



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R303, C10 Building - Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi
Tel.: (84-24).38681686 Email: inest@hust.edu.vn Fax: (84-24).38693551 http://inest.hust.edu.vn

No: 05/52/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : June 19th, 2023
Type of Samples : Wastewater
Number of Samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCDP 3:2020/QN	
				AP-W1	AP-W2	C _(Column B)	C _{max}
1.	Temperature	°C	SMEWW 2550B:2017	29.8	30.7	40	40
2.	pH	-	TCVN 6492:2011	7.7	7.5	5.5 – 9.0	5.5 - 9.0
3.	Color (pH=7)	Pt/Co	TCVN 6185:2015	<5	<5	150	150
4.	TSS	mg/L	TCVN 6625:2000	<2	<2	100	90
5.	COD	mg/L	SMEWW 5220C:2017	17	13	150	135
6.	BOD ₅	mg/L	TCVN 6001-1:2008	6	5	50	45
7.	Arsenic (As)	mg/L	EPA method 200.8	0.013	0.012	0.1	0.09
8.	Mercury(Hg)	mg/L	EPA method 200.8	<0.001	<0.001	0.01	0.009
9.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.5	0.45
10.	Cadmium (Cd)	mg/L	EPA method 200.8	0.0012	<0.0005	0.1	0.09
11.	Chromium III	mg/L	EPA Method 200.8 & TCVN 6658:2000	0.038	0.034	1	0.9
12.	Chromium VI	mg/L	TCVN 6658:2000	<0.006	<0.006	0.1	0.09
13.	Copper (Cu)	mg/L	EPA method 200.8	0.0027	0.0022	2	1.8
14.	Zinc (Zn)	mg/L	EPA method 200.8	0.0051	0.0026	3	2.7
15.	Nikel (Ni)	mg/L	EPA method 200.8	0.0423	0.0290	0.5	0.45
16.	Manganese (Mn)	mg/L	EPA method 200.8	<0.0015	<0.0015	1	0.9
17.	Iron (Fe)	mg/L	EPA method 200.8	0.113	0.103	5	4.5
18.	Total mineral oil & grease	mg/L	SMEWW5520B&F:2017	<0.3	<0.3	10	9
19.	Residue Chlorine	mg/L	TCVN 6225-3:2011	<0.1	<0.1	2	1.8
20.	Sulfide (as H ₂ S)	mg/L	TCVN 6637:2000	<0.03	<0.03	0.5	0.45
21.	Total N	mg/L	TCVN 6638:2000	4.12	4.04	40	36
22.	Total P	mg/L	TCVN 6202:2008	0.13	0.09	6	5.4
23.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.18	0.14	10	9
24.	Fluoride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.09	1.09	10	9
25.	Total Cyanide (CN ⁻)	mg/L	SMEWW 4500 CN ⁻ C&E:2017	<0.002	<0.002	0.1	0.09
26.	Total Phenol	mg/L	SMEWW 5530 B&C:2017	0.018	<0.001	0.5	0.45
27.	Coliform	MPN/ 100mL	TCVN 6187-2:1996	750	640	5,000	5,000



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R303, C10 Building - Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi
Tel.: (84-24).38681686 Email: inest@hust.edu.vn Fax: (84-24).38693551 http: //inest.hust.edu.vn

No: 06/52/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling area : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling date : June 19th ,2023
Type of samples : Surface water in receiving resource
Number of samples : 02 samples

No.	Parameters	Unit	Analytical methods	Results		QCVN 10-MT: 2015/BTNMT
				SW1	SW2	
1.	Temperature	°C	SMEWW 2550B:2017	30.6	30.5	-
2.	pH	-	TCVN 6492:2011	7.7	7.6	6.5 – 8.5
3.	DO	mg/L	TCVN 7325:2016	7.6	7.8	-
4.	TSS	mg/L	TCVN 6625:2000	12	10	-
5.	Nitrite (NO ₂ ⁻)	mg/L	SMEWW 4500 NO ₂ ⁻ .B:2017	0.06	0.07	-
6.	Floride (F ⁻)	mg/L	SMEWW 4500-F ⁻ .B&D:2017	1.04	1.11	1.5
7.	COD	mg/L	SMEWW 5220C:2017	16	14	-
8.	BOD ₅	mg/L	TCVN 6001-1:2008	6	5	-
9.	Ammonium (NH ₄ ⁺)	mg/L	SMEWW 4500 NH ₃ .F:2017	0.36	0.41	0.5
10.	Nitrat (NO ₃ ⁻ -N)	mg/L	SMEWW 4500 NO ₃ ⁻ .E:2017	0.26	0.29	-
11.	Chloride (Cl ⁻)	mg/L	TCVN 6194-1996	8,150	7,516	-
12.	PO ₄ ³⁻	mg/L	TCVN 6202:2008	0.05	0.03	0.5
13.	Total Cyanide	mg/L	SMEWW 4500 CN.C&E:2017	<0.002	<0.002	0.01
14.	Total oil and grease	mg/L	SMEWW 5520B&F:2017	<0.3	<0.3	1
15.	Coliform	MPN/ 100mL	TCVN 6187-2:1996	750	720	1.000
16.	Arsenic (As)	mg/L	EPA method 200.8	0.0016	0.0015	0.05
17.	Cadmium (Cd)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.01
18.	Lead (Pb)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.1
19.	Mercury (Hg)	mg/L	EPA method 200.8	<0.0005	<0.0005	0.005
20.	Iron (Fe)	mg/L	EPA method 200.8	0.107	0.128	0.5
21.	Nickel (Ni)	mg/L	EPA method 200.8	0.0384	0.0389	-
22.	Manganese (Mn)	mg/L	EPA method 200.8	<0.0015	<0.0015	0.5
23.	Chromium VI	mg/L	TCVN 7939:2008	<0.006	<0.006	0.05
24.	Chromium (Cr)	mg/L	EPA method 200.8	0.025	0.028	0.5
25.	Copper (Cu)	mg/L	EPA method 200.8	<0.003	<0.003	1
26.	Zinc (Zn)	mg/L	EPA method 200.8	0.0043	0.0045	2



HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY SCHOOL OF ENVIRONMENTAL SCIENCE AND TECHNOLOGY



Address: R303, C10 Building - Hanoi University of Science and Technology, Bach Khoa Ward,
Hai Ba Trung Dist, Hanoi
Tel.: (84-24).38681686 Email: inest@hust.edu.vn Fax: (84-24).38693551 http://inest.hust.edu.vn

No: 07/52/TTQT-2023-EN

VILAS 406; VIMCERTS 055

ENVIRONMENTAL MONITORING RESULTS

Sampling Site : Ash pond 2 - Mong Duong 2 BOT Coal Fired Power Plant
Address : Cong Hoa commune – Cam Pha city – Quang Ninh province
Sampling Date : June 19th, 2023
Type of Samples : Noise
Number of Samples : 01 sample

No.	Sampling positions	Measurement methods	Results			
			6h-21h		21h-6h	
			Leq (dBA)	Lmax (dBA)	Leq (dBA)	Lmax (dBA)
1.	AP2-N	TCVN 7878-2:2010	55	61	47	53
QCVN 26:2010/BTNMT			70	-	55	-

Notes:

- The result is valid only for samples at the monitoring time. Symbol (-): unstipulated;
- **QCVN 26:2010/BTNMT** – National Technical Regulation on noise
- Sampling positions

AP2-N: Wastewater treatment system

Coordinates

21° 6'43.23"N 107°21'15.47"E

Hanoi, June 30th, 2023

Centre for industrial environmental
monitoring and pollution control

School of Environmental Science and Technology

Director

pp. 
MSc. Ton Thu Giang



VIỆN TRƯỞNG
PGS.TS. Nguyễn Thị Ánh Tuyết