Annex - VII

Asia Enviro Lab

(An ISO 9001:2015, OHSAS 45001:2018, & ISO 14001: 2015 Certified Lab)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/3004/31	Reporting Date: 30/04/2020

Issued to:	
M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	**Sample I'd** : AEL/20/TP/3004/31 **Date** : 16.04.2020 **Period of testing** : 16.04.2020 – 17.04.2020

SAMPLE PARTICULARS:	
Type of Report	Ambient Noise
Protocol Used for Monitoring & Testing	IS: 4758/IS; 11446

Sl. No.	Location	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1.	Boiler Area	16.04.2020	74.6	73.6
2.	Turbine Floor	16.04.2020	74.2	73.4
3.	CHP Area	16.04.2020	74.7	72.4
4.	Ash Plant Area	16.04.2020	74.3	69.9
5.	Office Building	16.04.2020	69.9	64.7
6.	Canteen Premises	16.04.2020	65.7	60.5
7.	Security Gate	16.04.2020	70.7	63.6
8.	Kali Mandir Gobindpur	16.04.2020	70.6	61.5
9.	Gadra Collage	16.04.2020	68.6	62.6
10.	AVN School	16.04.2020	66.9	55.5
11.	Sharma School	16.04.2020	67.4	60.9
12.	Panchayat Bhavan	16.04.2020	69.5	62.4
13.	Gobindpur Market	16.04.2020	74.7	64.3
14.	Basic School	16.04.2020	70.1	64.7
15.	Subhash Nagar	16.04.2020	70.4	62.1
16.	Post Office Gadra	16.04.2020	70.6	63.2

*EPA-1986, PCLS/02/2010, Factories act [Chapter 104, Section 102(1)] Factories (Noise) Regulation.

Noise Limit as per CPCB		
Category of Area/Zone	Leq dB(A) Day Time	Leq dB(A) Night Time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

Checked By

Authorized Signatory

Note: 1. The result listed refer only to the tested samples and applicable parameters.
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Asia Enviro Lab

(An ISO 9001:2015 & OHSAS 45001:2018, NABL Certified Lab) (Lab Code-TC-6004)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/2905/25	Reporting Date: 29/05/2020

Issued to:	Sample I'd	: AEL/20/TP/2905/25
M/S TATA POWER COMPANY	Date	: 25.05.2020
Jojobera Power Plant, Jojobera		
Jamshedpur		

SAMPLE PARTICULARS:	
Type of Report	Ambient Noise
Protocol Used for Monitoring & Testing	IS: 4758/IS: 11446

Sl. No.	Location	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1.	Boiler Area	14.05.2020	74.4	73.1
2.	Turbine Floor	14.05.2020	74.7	73.6
3.	CHP Area	14.05.2020	74.6	72.5
4.	Ash Plant Area	14.05.2020	74.9	69.6
5.	Office Building	14.05.2020	68.5	63.4
6.	Canteen Premises	14.05.2020	66.5	61.8
7.	Security Gate	14.05.2020	74.2	65.8
8.	Kali Mandir Gobindpur	14.05.2020	73.5	65.9
9.	Gadra Collage	14.05.2020	63.6	60.4
10.	AVN School	14.05.2020	65.8	56.8
11.	Sharma School	14.05.2020	68.3	60.6
12.	Panchayat Bhavan	14.05.2020	66.8	61.8
13.	Gobindpur Market	14.05.2020	74.8	68.5
14.	Basic School	14.05.2020	69.7	61.5
15.	Subhash Nagar	14.05.2020	71.5	61.9
16.	Post Office Gadra	14.05.2020	70.8	62.9

*EPA-1986, PCLS/02/2010, Factories act [Chapter 104, Section 102(1)] Factories (Noise) Regulation.

Noise Limit as per CPCB		
Category of Area/Zone	Leq dB(A) Day Time	Leq dB(A) Night Time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

Checked By

Authorized Signatory

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Asia Enviro Lab

(An ISO 9001:2015, OHSAS 45001:2018 & ISO 14001:2015 Approved Lab)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/2906/17	Reporting Date: 29/06/2020

Issued to: **M/S TATA POWER COMPANY** Jojobera Power Plant, Jojobera Jamshedpur	**Sample I'd** : AEL/20/TP/2906/17 **Date** : 25.06.2020

SAMPLE PARTICULARS:	
Type of Report	Ambient Noise
Protocol Used for Monitoring & Testing	IS: 4758/IS: 11446

Sl. No.	Location	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1.	Boiler Area	10.06.2020	78.5	75.6
2.	Turbine Floor	10.06.2020	79.5	77.0
3.	CHP Area	10.06.2020	69.8	65.3
4.	Ash Plant Area	10.06.2020	78.5	75.8
5.	Office Building	10.06.2020	73.7	65.8
6.	Canteen Premises	10.06.2020	67.4	60.5
7.	Security Gate	10.06.2020	74.5	71.9
8.	Kali Mandir Gobindpur	10.06.2020	74.2	68.6
9.	Gadra Collage	10.06.2020	68.7	66.2
10.	AVN School	10.06.2020	67.6	65.3
11.	Sharma School	10.06.2020	68.4	66.8
12.	Panchayat Bhavan	10.06.2020	57.5	55.6
13.	Gobindpur Market	10.06.2020	81.8	73.6
14.	Basic School	10.06.2020	62.7	60.3
15.	Subhash Nagar	10.06.2020	75.8	70.6
16.	Post Office Gadra	10.06.2020	73.4	70.3

*EPA-1986, PCLS/02/2010, Factories act [Chapter 104, Section 102(1)] Factories (Noise) Regulation.

Noise Limit as per CPCB		
Category of Area/Zone	Leq dB(A) Day Time	Leq dB(A) Night Time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab,)

AEL

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/2907/25	Reporting Date: 29/07/2020

Issued to:	Sample I'd : AEL/20/TP/2907/25
M/S TATA POWER COMPANY	Date : 25.07.2020
Jojobera Power Plant, Jojobera	
Jamshedpur	

SAMPLE PARTICULARS:	
Type of Report	Ambient Noise
Protocol Used for Monitoring & Testing	IS: 4758/IS: 11446

Sl. No.	Location	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1.	Boiler Area	08.07.2020	77.8	74.7
2.	Turbine Floor	08.07.2020	79.1	78.4
3.	CHP Area	08.07.2020	70.3	67.4
4.	Ash Plant Area	08.07.2020	77.3	76.3
5.	Office Building	08.07.2020	72.4	64.2
6.	Canteen Premises	09.07.2020	68.3	60.9
7.	Security Gate	09.07.2020	75.8	72.6
8.	Kali Mandir Gobindpur	09.07.2020	73.1	65.3
9.	Gadra Collage	09.07.2020	64.7	63.5
10.	AVN School	09.07.2020	63.1	62.5
11.	Sharma School	10.07.2020	65.7	63.7
12.	Panchayat Bhavan	10.07.2020	58.6	56.1
13.	Gobindpur Market	10.07.2020	80.6	74.1
14.	Basic School	10.07.2020	63.7	61.8
15.	Subhash Nagar	10.07.2020	76.6	72.4
16.	Post Office Gadra	11.07.2020	74.1	71.6

*EPA-1986, PCLS/02/2010, Factories act [Chapter 104, Section 102(1)] Factories (Noise) Regulation.

Noise Limit as per CPCB		
Category of Area/Zone	Leq dB(A) Day Time	Leq dB(A) Night Time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

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Authorized Signatory

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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL& MOEF Approved Lab.)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/3108/39	Reporting Date: 31/08/2020

Issued to:	Sample I'd : AEL/20/TP/3108/39
M/S TATA POWER COMPANY	Date : 25.08.2020
Jojobera Power Plant, Jojobera	
Jamshedpur	

SAMPLE PARTICULARS:	
Type of Report	Ambient Noise
Protocol Used for Monitoring & Testing	IS: 4758/IS: 11446

Sl. No.	Location	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1.	Boiler Area	22.08.2020	74.9	69.1
2.	Turbine Floor	22.08.2020	74.1	69.4
3.	CHP Area	22.08.2020	71.5	68.3
4.	Ash Plant Area	22.08.2020	74.2	68.1
5.	Office Building	22.08.2020	71.8	63.5
6.	Canteen Premises	22.08.2020	67.9	61.3
7.	Security Gate	23.08.2020	74.3	69.1
8.	Kali Mandir Gobindpur	23.08.2020	70.3	63.6
9.	Gadra Collage	23.08.2020	62.9	57.1
10.	AVN School	23.08.2020	60.3	56.4
11.	Sharma School	23.08.2020	62.6	56.3
12.	Panchayat Bhavan	23.08.2020	54.4	51.3
13.	Gobindpur Market	24.08.2020	74.3	69.8
14.	Basic School	24.08.2020	61.6	58.9
15.	Subhash Nagar	24.08.2020	74.2	68.1
16.	Post Office Gadra	24.08.2020	73.5	69.2

*EPA-1986, PCLS/02/2010, Factories act [Chapter 104, Section 102(1)] Factories (Noise) Regulation.

Noise Limit as per CPCB		
Category of Area/Zone	Leq dB(A) Day Time	Leq dB(A) Night Time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

Checked By

Authorized Signatory

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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL& MOEF Approved Lab.)

AEL

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

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Test Report

Report No.: AEL/2020/TP/3009/24	Reporting Date: 30/09/2020

Issued to:	Sample I'd : AEL/20/TP/3009/24
M/S TATA POWER COMPANY	Date : 16.09.2020
Jojobera Power Plant, Jojobera	
Jamshedpur	

SAMPLE PARTICULARS:	
Type of Report	Ambient Noise
Protocol Used for Monitoring & Testing	IS: 4758/IS: 11446

Sl. No.	Location	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1.	Boiler Area	08.09.2020	74.2	69.8
2.	Turbine Floor	08.09.2020	74.8	69.8
3.	CHP Area	08.09.2020	72.4	67.1
4.	Ash Plant Area	08.09.2020	73.9	67.8
5.	Office Building	08.09.2020	70.1	62.8
6.	Canteen Premises	09.09.2020	69.3	62.5
7.	Security Gate	09.09.2020	74.7	69.2
8.	Kali Mandir Gobindpur	09.09.2020	71.8	64.2
9.	Gadra Collage	09.09.2020	64.2	59.5
10.	AVN School	09.09.2020	62.4	58.9
11.	Sharma School	10.09.2020	64.2	57.8
12.	Panchayat Bhavan	10.09.2020	51.4	50.8
13.	Gobindpur Market	10.09.2020	74.9	69.6
14.	Basic School	10.09.2020	60.4	57.5
15.	Subhash Nagar	10.09.2020	74.8	69.5
16.	Post Office Gadra	10.09.2020	73.7	69.9

*EPA-1986, PCLS/02/2010, Factories act [Chapter 104, Section 102(1)] Factories (Noise) Regulation.

Noise Limit as per CPCB		
Category of Area/Zone	Leq dB(A) Day Time	Leq dB(A) Night Time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

Checked By

Authorized Signatory

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Asia Enviro Lab

(An ISO 9001:2015, OHSAS 45001:2018, & ISO 14001: 2015 Certified Lab)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/3004/32	Reporting Date: 30/04/2020

Issued to:	
M/S TATA POWER COMPANY	**Sample I'd** : AEL/20/TP/3004/32
Jojobera Power Plant, Jojobera	**Date** : 16.04.2020
Jamshedpur	**Period of testing** : 16.04.2020 – 17.04.2020

SAMPLE PARTICULARS:	
Type of Report	Ambient Noise
Protocol Used for Monitoring & Testing	IS: 4758/IS: 11446

Sl. No.	Location	Monitoring Date	Leq dB(A) Day	Leq dB(A) Night
1	COOLING WATER AREA U-1	16.04.2020	64.9	60.4
2	COOLING WATER AREA U-2	16.04.2020	74.4	69.2
3	COOLING WATER AREA U-3	16.04.2020	65.6	61.2
4	COOLING WATER AREA U-4	16.04.2020	74.5	69.1
5	COOLING WATER AREA U-5	16.04.2020	74.3	69.9
6	FD FAN AREA U-1	16.04.2020	64.1	61.5
7	FD FAN AREA U-2	16.04.2020	74.5	69.4
8	FD FAN AREA U-3	16.04.2020	63.2	60.6
9	FD FAN AREA U-4	16.04.2020	74.5	69.5
10	FD FAN AREA U-5	16.04.2020	74.8	69.3
11	ID FAN AREA U-1	16.04.2020	61.6	59.3
12	ID FAN AREA U-2	16.04.2020	74.1	69.6
13	ID FAN AREA U-3	16.04.2020	62.8	50.3
14	ID FAN AREA U-4	16.04.2020	74.6	69.8
15	ID FAN AREA U-5	16.04.2020	74.7	69.2
16	TARBINE FLOOR U-1	16.04.2020	65.5	59.2
17	TARBINE FLOOR U-2	16.04.2020	74.6	68.6
18	TARBINE FLOOR U-3	16.04.2020	64.6	60.5
19	TARBINE FLOOR U-4	16.04.2020	74.9	69.8
20	TARBINE FLOOR U-5	16.04.2020	74.7	69.6
21	PA FAN AREA U-1	16.04.2020	63.4	60.2
22	PA FAN AREA U-2	16.04.2020	72.2	67.7

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Asia Enviro Lab

(An ISO 9001:2015, OHSAS 45001:2018, & ISO 14001: 2015 Certified Lab)

AEL

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

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23	PA FAN AREA U-3	16.04.2020	62.7	61.4
24	PA FAN AREA U-4	16.04.2020	73.9	67.8
25	PA FAN AREA U-5	16.04.2020	73.2	68.8
26	BOILER FEEDER FLR U-1	16.04.2020	64.6	61.6
27	BOILER FEEDER FLR U-2	16.04.2020	74.6	69.7
28	BOILER FEEDER FLR U-3	16.04.2020	63.3	61.1
29	BOILER FEEDER FLR U-4	16.04.2020	74.6	68.8
30	BOILER FEEDER FLR U-5	16.04.2020	74.4	69.5
31	5.5 meter below turbine flr area u-1	16.04.2020	64.3	62.6
32	5.5 meter below turbine flr area u-2	16.04.2020	74.3	68.8
33	5.5 meter below turbine flr area u-3	16.04.2020	63.8	61.6
34	5.5 meter below turbine flr area u-4	16.04.2020	74.4	69.8
35	5.5 meter below turbine flr area u-5	16.04.2020	74.8	69.2
36	COAL MILL AREA U-1	16.04.2020	71.7	62.7
37	COAL MILL AREA U-2	16.04.2020	74.3	69.4
38	COAL MILL AREA U-3	16.04.2020	70.7	63.6
39	COAL MILL AREA U-4	16.04.2020	73.7	68.1
40	COAL MILL AREA U-5	16.04.2020	73.9	69.3
41	JT-1	16.04.2020	74.9	69.5
42	DM PLANT 1 AND 2	16.04.2020	70.8	63.5
43	WAGON TRIPPLER -1	16.04.2020	64.1	55.7
44	WAGON TRIPPLER -2	16.04.2020	66.8	56.9
45	PRIMARY CRASHER HOUSE	16.04.2020	72.9	68.6
46	DG SET OUT SIDE	16.04.2020	74.8	69.6
47	TRANS FORMER AREA	16.04.2020	71.8	64.7
48	SECONDARY CRUSHER HOUSE	16.04.2020	74.1	69.5
49	CONTROL ROOM U-1	16.04.2020	62.7	55.2
50	CONTROL ROOM U-2	16.04.2020	66.2	56.8
51	CONTROL ROOM U-3	16.04.2020	62.8	57.8
52	CONTROL ROOM U-4	16.04.2020	65.2	62.7
53	CONTROL ROOM U-5	16.04.2020	64.8	56.8
54	DG SET INSIDE	16.04.2020	74.2	69.6
55	COMPRESURE ROOM	16.04.2020	74.6	69.4
56	BFP AREA U-1	16.04.2020	70.2	67.5
57	BFP AREA U-2	16.04.2020	74.5	68.5
58	BFP AREA U-3	16.04.2020	71.3	65.7
59	BFP AREA U-4	16.04.2020	73.9	68.4

Note: 1. The result listed refer only to the tested samples and applicable parameters.
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Asia Enviro Lab

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Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

60	BFP AREA U-5	16.04.2020	73.8	68.6
61	ESP AREA U-1	16.04.2020	71.7	64.7
62	ESP AREA U-2	16.04.2020	74.8	68.6
63	ESP AREA U-3	16.04.2020	69.9	63.7
64	ESP AREA U-4	16.04.2020	73.1	68.4
65	ESP AREA U-5	16.04.2020	73.7	67.9

*EPA-1986, PCLS/02/2010, Factories act [Chapter 104, Section 102(1)] Factories (Noise) Regulation.

Noise Limit as per CPCB		
Category of Area/Zone	Leq dB(A) Day Time	Leq dB(A) Night Time
Industrial	75	70
Commercial	65	55
Residential	55	45
Silence	50	40

Checked By

Authorized Signatory

Note: 1. The result listed refer only to the tested samples and applicable parameters.
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Annex - VIII

JOJOBERA POWER PLANT
AMBIENT AIR QUALITY (INSIDE)

Location : Above CLPH

		APR'20			MAY'20			JUNE'20			JULY'20			AUG'20			SEPT'20		
Parameter	unit	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Sulphur Dioxide(SO2)	µg/m3	17.46	42.44	28.36	20.23	35.12	25.42	20.78	43.87	27.94	17.23	28.33	22.22	16.43	25.50	21.10	20.40	38.57	28.49
Nitrogen Dioxide(NO2)	µg/m3	25.25	51.45	36.64	27.55	56.44	37.68	28.56	47.55	35.49	26.13	35.12	31.13	22.50	33.90	29.06	28.56	56.78	40.10
PM10	µg/m3	35.00	63.00	47.47	34.00	67.00	44.33	25.00	78.00	48.13	22.00	74.00	42.93	26.00	48.00	33.27	32.00	47.00	40.06
PM2.5	µg/m3	25.00	37.00	30.00	14.00	45.00	25.87	15.00	36.00	27.31	10.00	31.00	21.00	10.00	28.00	15.13	11.00	34.00	20.94
Ozone(O3)	µg/m3	12.50	17.45	15.14	12.60	24.32	16.54	13.60	22.75	16.12	12.45	18.50	15.32	12.12	16.42	14.02	13.45	19.56	15.67
Lead(Pd)	µg/m3	0.02	0.06	0.04	0.02	0.05	0.03	0.02	0.04	0.02	0.02	0.05	0.03	0.02	0.05	0.03	0.02	0.06	0.03
Carbon monoxide(CO)	mg/m3	0.23	0.65	0.43	0.32	0.75	0.53	0.31	0.85	0.55	0.37	0.77	0.53	0.31	0.77	0.50	0.24	0.86	0.52
Ammonia(NH3)	µg/m3	15.10	23.12	19.35	12.38	17.56	14.97	12.56	21.50	16.17	12.36	24.34	17.55	11.12	24.20	15.44	14.56	18.78	16.29
Benzene(C6H6)	µg/m3	1.54	2.05	1.86	1.45	2.26	2.01	1.35	2.37	1.99	2.02	2.17	2.09	2.01	2.17	2.07	1.86	2.17	2.06
Benzo(a)Pyrena(Bap)	ng/m3	0.34	0.76	0.55	0.26	0.86	0.46	0.26	0.88	0.51	0.24	0.86	0.53	0.43	0.82	0.54	0.36	0.68	0.52
Arsenic(As)	ng/m3	1.35	1.69	1.55	1.10	1.96	1.41	1.10	1.77	1.43	1.20	1.96	1.45	1.22	1.66	1.43	1.10	1.90	1.55
Nickel(Ni)	ng/m3	4.22	5.42	4.74	4.10	4.78	4.33	4.10	5.34	4.47	4.11	5.48	4.52	4.12	5.31	4.54	4.20	4.87	4.47

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JOJOBERA POWER PLANT

AMBIENT AIR QUALITY (INSIDE)

Location : Behind Middling Coal Shed

		APR'20			MAY'20			JUNE'20			JULY'20			AUG'20			SEPT'20		
Parameter	unit	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Sulphur Dioxide(SO2)	µg/m3	20.78	37.56	28.10	15.83	41.87	28.49	16.56	34.78	27.48	19.22	30.22	24.75	18.23	27.45	21.42	16.57	48.67	31.42
Nitrogen Dioxide(NO2)	µg/m3	28.56	44.24	36.38	25.67	59.87	38.17	23.62	49.66	37.40	30.56	47.14	35.11	25.67	38.67	31.56	28.55	49.67	40.42
PM10	µg/m3	36.00	71.00	48.13	27.00	88.00	51.13	28.00	66.00	50.38	26.00	79.00	45.53	17.00	42.00	32.27	29.00	65.00	45.13
PM2.5	µg/m3	20.00	39.00	28.40	13.00	67.00	29.53	12.00	38.00	27.19	11.00	34.00	22.67	11.00	22.00	18.33	13.00	40.00	24.38
Ozone(O3)	µg/m3	12.67	25.45	18.01	12.46	18.45	15.10	13.40	29.78	17.01	12.60	18.34	15.23	12.50	19.60	15.13	13.23	19.60	16.09
Lead(Pd)	µg/m3	0.02	0.07	0.04	0.02	0.06	0.03	0.02	0.07	0.03	0.02	0.05	0.03	0.02	0.07	0.03	0.02	0.06	0.02
Carbon monoxide(CO)	mg/m3	0.25	0.63	0.43	0.13	0.73	0.47	0.25	0.85	0.55	0.34	0.73	0.50	0.26	0.73	0.43	0.34	0.77	0.55
Ammonia(NH3)	µg/m3	13.35	24.34	16.69	13.30	22.60	17.00	12.66	24.30	18.30	14.56	18.57	16.50	14.10	21.65	17.90	13.30	21.47	16.20
Benzene(C6H6)	µg/m3	1.79	2.25	2.07	1.70	2.17	2.02	2.01	2.26	2.07	1.87	2.25	2.09	1.57	2.14	2.01	2.03	2.17	2.07
Benzo(a)Pyrena(Bap)	ng/m3	0.34	0.81	0.59	0.27	0.83	0.53	0.37	0.70	0.53	0.34	0.67	0.53	0.34	0.76	0.52	0.24	0.78	0.50
Arsenic(As)	ng/m3	1.31	1.87	1.57	1.20	1.78	1.51	1.10	1.76	1.46	1.20	1.74	1.46	1.20	1.67	1.48	1.16	1.90	1.48
Nickel(Ni)	ng/m3	4.26	5.70	4.90	4.10	4.86	4.42	4.20	4.78	4.47	4.10	4.87	4.35	4.10	4.88	4.42	4.10	4.76	4.41

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JOJOBERA POWER PLANT

AMBIENT AIR QUALITY (INSIDE)

Location : NEAR U#5 CT

		APR'20			MAY'20			JUNE'20			JULY'20			AUG'20			SEPT'20		
Parameter	unit	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Sulphur Dioxide(SO2)	µg/m3	13.35	56.56	29.05	16.56	41.29	28.55	17.56	48.54	30.08	19.78	31.15	22.42	14.24	24.67	18.93	14.56	34.78	24.35
Nitrogen Dioxide(NO2)	µg/m3	28.99	43.55	37.08	23.27	47.75	35.95	27.85	56.67	37.83	28.90	38.92	31.80	28.45	47.14	35.05	27.55	48.77	36.30
PM10	µg/m3	35.00	68.00	47.00	37.00	67.00	50.67	32.00	84.00	55.13	25.00	77.00	41.93	21.00	49.00	34.47	25.00	65.00	41.88
PM2.5	µg/m3	20.00	43.00	28.53	20.00	36.00	28.27	12.00	53.00	32.19	14.00	30.00	20.53	9.00	23.00	14.53	12.00	41.00	23.00
Ozone(O3)	µg/m3	12.45	26.45	17.08	12.30	29.78	16.57	13.47	19.67	15.98	12.50	18.66	15.19	12.34	17.34	15.23	13.67	27.46	17.13
Lead(Pd)	µg/m3	0.02	0.07	0.04	0.02	0.07	0.03	0.02	0.06	0.03	0.02	0.06	0.03	0.02	0.07	0.03	0.02	0.05	0.03
Carbon monoxide(CO)	mg/m3	0.33	0.67	0.48	0.22	0.77	0.49	0.34	0.67	0.46	0.26	0.73	0.48	0.23	0.78	0.47	0.26	0.62	0.43
Ammonia(NH3)	µg/m3	12.24	26.34	20.09	11.65	25.45	17.79	13.88	19.66	16.41	14.10	23.12	17.80	13.56	18.60	15.83	13.57	18.67	16.14
Benzene(C6H6)	µg/m3	1.78	2.44	2.15	1.77	2.17	2.06	1.57	2.17	1.91	1.56	2.19	2.01	1.89	2.12	2.04	1.73	2.12	2.01
Benzo(a)Pyrena(Bap)	ng/m3	0.45	0.86	0.65	0.43	0.78	0.57	0.43	0.89	0.63	0.34	0.76	0.53	0.45	0.75	0.56	0.42	0.68	0.55
Arsenic(As)	ng/m3	1.10	1.70	1.50	1.20	1.75	1.48	1.25	1.68	1.47	1.30	1.68	1.48	1.20	1.77	1.48	1.10	1.85	1.49
Nickel(Ni)	ng/m3	4.24	5.75	4.76	4.10	5.73	4.64	4.20	4.88	4.57	4.10	5.42	4.52	4.10	4.89	4.44	4.10	4.66	4.34

JOJOBERA POWER PLANT

AMBIENT AIR QUALITY (INSIDE)

Location : Wagon Tippler

		APR'20			MAY'20			JUNE'20			JULY'20			AUG'20			SEPT'20		
Parameter	unit	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Sulphur Dioxide(SO2)	µg/m3	18.97	48.67	29.77	15.83	48.54	32.90	16.56	43.34	26.35	20.45	30.66	24.63	16.99	23.80	19.75	21.15	45.22	31.26
Nitrogen Dioxide(NO2)	µg/m3	25.67	49.67	36.47	25.67	47.63	38.17	23.27	44.96	34.99	28.34	41.67	32.17	21.53	38.67	30.31	29.67	54.35	39.60
PM10	µg/m3	40.00	60.00	48.13	27.00	76.00	52.48	16.00	103.00	56.19	28.00	70.00	44.47	22.00	47.00	35.87	32.00	67.00	45.00
PM2.5	µg/m3	25.00	40.00	31.87	13.00	43.00	29.83	7.00	48.00	29.38	14.00	31.00	21.80	11.00	26.00	17.40	14.00	37.00	25.31
Ozone(O3)	µg/m3	12.60	17.56	15.03	11.34	29.78	18.12	11.33	18.46	14.74	12.14	18.57	15.30	12.50	24.32	15.89	12.45	24.34	17.65
Lead(Pd)	µg/m3	0.02	0.08	0.03	0.02	0.06	0.03	0.02	0.06	0.03	0.02	0.07	0.04	0.02	0.05	0.03	0.02	0.07	0.03
Carbon monoxide(CO)	mg/m3	0.34	0.85	0.51	0.13	0.78	0.46	0.13	0.72	0.53	0.24	0.65	0.48	0.23	0.73	0.51	0.24	0.74	0.48
Ammonia(NH3)	µg/m3	13.86	21.65	18.12	12.66	22.60	16.91	13.45	24.25	18.18	11.37	24.11	17.68	12.36	18.56	15.16	12.13	24.34	16.95
Benzene(C6H6)	µg/m3	1.39	2.13	1.96	1.35	2.16	1.94	2.02	2.19	2.09	1.77	2.26	1.99	1.57	2.26	2.04	1.89	2.37	2.13
Benzo(a)Pyrena(Bap)	ng/m3	0.34	0.78	0.56	0.34	0.86	0.53	0.34	0.75	0.56	0.43	0.89	0.64	0.32	0.86	0.49	0.43	0.76	0.58
Arsenic(As)	ng/m3	1.10	1.77	1.45	1.20	1.86	1.51	1.10	1.77	1.44	1.17	1.87	1.57	1.10	1.70	1.45	1.17	1.76	1.52
Nickel(Ni)	ng/m3	4.20	4.88	4.50	4.30	5.21	4.60	4.10	5.75	4.64	4.20	5.86	4.60	4.10	4.78	4.31	4.22	5.83	5.07

JOJOBERA POWER PLANT

AMBIENT AIR QUALITY (OUTSIDE)

Location : ASH POND																			
		APR'20			MAY'20			JUNE'20			JULY'20			AUG'20			SEPT'20		
Parameter	unit	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Sulphur Dioxide(SO2)	µg/m3	22.15	37.55	30.95	21.46	38.45	31.50	29.86	43.86	37.34	16.56	29.44	23.53	13.35	24.45	19.47	24.56	45.22	35.92
Nitrogen Dioxide(NO2)	µg/m3	34.35	47.56	39.06	29.23	48.67	41.12	38.97	59.87	48.81	27.87	40.34	33.36	28.66	38.34	32.82	34.16	54.35	43.69
PM10	µg/m3	28.00	55.00	41.33	31.00	64.00	47.38	43.00	85.00	61.89	27.00	83.00	45.00	32.00	54.00	39.75	32.00	63.00	44.60
PM2.5	µg/m3	17.00	32.00	23.56	18.00	36.00	26.25	12.00	41.00	29.22	12.00	38.00	23.78	15.00	27.00	19.38	13.00	26.00	19.10
Ozone(O3)	µg/m3	13.48	27.46	16.97	14.34	27.56	19.83	13.57	18.56	15.18	12.34	29.78	19.55	13.33	20.22	15.51	21.07	28.56	24.17
Lead(Pd)	µg/m3	0.02	0.06	0.03	0.02	0.06	0.03	0.02	0.05	0.03	0.02	0.06	0.04	0.02	0.05	0.03	0.02	0.07	0.03
Carbon monoxide(CO)	mg/m3	0.31	0.62	0.43	0.43	0.65	0.55	0.45	0.74	0.54	0.32	0.78	0.49	0.34	0.85	0.56	0.33	0.73	0.55
Ammonia(NH3)	µg/m3	12.56	18.67	16.15	13.37	26.40	19.04	18.65	27.45	22.60	12.66	23.45	18.11	14.33	26.34	18.20	13.45	18.66	15.97
Benzene(C6H6)	µg/m3	1.78	2.27	2.04	2.05	2.45	2.18	2.02	2.22	2.11	2.05	2.19	2.13	2.03	2.23	2.09	2.04	2.37	2.18
Benzo(a)Pyrena(Bap)	ng/m3	0.45	0.68	0.56	0.44	0.77	0.60	0.34	0.87	0.59	0.34	0.70	0.51	0.45	0.75	0.56	0.34	0.77	0.55
Arsenic(As)	ng/m3	1.10	1.87	1.56	1.35	1.96	1.56	1.34	1.97	1.58	1.32	1.76	1.52	1.10	1.66	1.33	1.34	1.86	1.57
Nickel(Ni)	ng/m3	4.20	4.77	4.45	4.36	5.48	4.85	5.45	5.97	5.76	4.35	5.34	4.75	4.10	4.70	4.40	4.22	5.70	4.88

JOJOBERA POWER PLANT

AMBIENT AIR QUALITY (OUTSIDE)

Location : GOVINDPUR

		APR'20			MAY'20			JUNE'20			JULY'20			AUG'20			SEPT'20		
Parameter	unit	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG
Sulphur Dioxide(SO2)	µg/m3	26.66	36.99	31.32	17.56	36.99	26.06	33.66	42.00	35.98	16.86	25.87	22.06	20.40	40.33	28.47	13.35	63.22	31.18
Nitrogen Dioxide(NO2)	µg/m3	34.16	47.63	39.08	27.85	47.63	35.19	37.98	47.63	41.72	30.43	39.77	32.50	29.67	45.31	36.53	31.44	49.78	38.32
PM10	µg/m3	30.00	67.00	40.50	28.00	56.00	42.63	40.00	76.00	54.78	30.00	71.00	43.44	27.00	51.00	39.13	36.00	61.00	46.10
PM2.5	µg/m3	18.00	30.00	22.63	16.00	42.00	27.75	21.00	42.00	29.00	16.00	33.00	22.56	11.00	30.00	18.75	13.00	36.00	24.70
Ozone(O3)	µg/m3	12.46	29.78	18.54	13.60	29.78	17.99	21.45	29.78	24.08	13.35	20.33	17.57	13.66	17.56	15.77	12.45	20.22	15.88
Lead(Pd)	µg/m3	0.02	0.06	0.04	0.02	0.04	0.02	0.02	0.05	0.03	0.02	0.06	0.03	0.02	0.08	0.04	0.02	0.06	0.03
Carbon monoxide(CO)	mg/m3	0.24	0.77	0.59	0.24	0.77	0.53	0.32	0.78	0.53	0.34	0.65	0.47	0.36	0.77	0.55	0.42	0.75	0.58
Ammonia(NH3)	µg/m3	13.67	22.22	18.21	13.30	21.50	15.92	12.56	17.89	14.90	13.34	18.56	15.65	14.35	21.47	16.75	12.33	21.34	17.03
Benzene(C6H6)	µg/m3	2.06	2.44	2.16	2.03	2.13	2.06	2.09	2.26	2.15	1.78	2.43	2.12	1.78	2.05	1.97	2.03	2.44	2.11
Benzo(a)Pyrena(Bap)	ng/m3	0.46	0.83	0.63	0.45	0.58	0.52	0.43	0.86	0.62	0.45	0.85	0.60	0.26	0.71	0.50	0.45	0.73	0.55
Arsenic(As)	ng/m3	1.20	1.75	1.44	1.10	1.75	1.35	1.23	1.86	1.51	1.21	1.75	1.45	1.20	1.79	1.54	1.20	1.85	1.53
Nickel(Ni)	ng/m3	4.25	4.86	4.53	4.10	4.86	4.33	4.25	5.27	4.76	4.10	5.38	4.54	4.13	4.62	4.37	4.10	4.77	4.48

Annex- IX

Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab,)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/2907/28	Reporting Date: 29/07/2020

Issued to:	
M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	**Sample I'd** : AEL/20/TP/2907/28 **Date** : 25.07.2020 **Period of testing** : 25.07.2020 - 29.07.2020

SAMPLE PARTICULARS:	
Type of Report	Ground Water
Location	Material Gate
Date of Sampling	11.07.2020

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (23rd Edition)2017, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.42
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.01
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	40.1
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.01
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.01
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.1
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.05
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.001
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.003
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.38
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.08
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	53.3
18.	Total Alkalinity as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	148.6
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

Checked By

Authorized Signatory

Note: 1. The result listed refer only to the tested samples and applicable parameters.
2. Sample will be destroyed one month from the date of issue of test certificate.
3. Any complaints about this report should be communicated within 7 days of issue of this report
4. The report is Not to be reproduced-wholly or in part and can Not be used as an evidence in the Court of law and should Not be used in any advertising Media without our special permission in writing.

Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab,)

AEL

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Report No.: AEL/2020/TP/2907/28 | **Reporting Date: 29/07/2020**

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	15.6
21.	Total Hardness as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 21-2013	164.4
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.1
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.05
24.	Nitrate as NO_3 in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	8.7
25.	Phenolic Compound as C_6H_5OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.002
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.002
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.05
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.05
29.	Polynuclear Arometic Hydrocarbons (as PAH in mg/l	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H_2S in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	<0.05
32.	Zinc as Zn in mg/l	0.2	No Relaxation	APHA (23rd Edition)2017, 6232 B	<0.10
33.	Nickel as Ni in mg/l	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.02
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	440
35.	Sulphate as SO_4 in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	15.4
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	2.0
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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Note: 1. The result listed refer only to the tested samples and applicable parameters.
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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab,)

Job Description - Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/2907/26	Reporting Date: 29/07/2020

Issued to:	Sample I'd : AEL/20/TP/2907/26
M/S TATA POWER COMPANY	Date : 25.07.2020
Jojobera Power Plant, Jojobera	Period of testing : 25.07.2020 - 29.07.2020
Jamshedpur	

SAMPLE PARTICULARS:	
Type of Report	Ground Water
Location	CHP
Date of Sampling	11.07.2020

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (23rd Edition)2017, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.59
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.01
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	49.4
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.01
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.01
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.1
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.05
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.001
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.003
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.48
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.11
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	65.6
18.	Total Alkalinity as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	168.8
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab,)

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Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Report No.: AEL/2020/TP/2907/26 | **Reporting Date: 29/07/2020**

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	12.9
21.	Total Hardness as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 21-2013	176.6
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.1
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.05
24.	Nitrate as NO_3 in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	9.9
25.	Phenolic Compound as C_6H_5OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.002
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.002
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.05
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.05
29.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H_2S in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	<0.05
32.	Zinc as Zn in mg/l	0.2	No Relaxation	APHA (23rd Edition)2017, 6232 B	<0.10
33.	Nickel as Ni in mg/l	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.02
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	471
35.	Sulphate as SO_4 in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	20.6
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	2.3
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/1	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/1	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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Test Report

Report No.: AEL/2020/TP/2907/27	Reporting Date: 29/07/2020

Issued to:	Sample I'd : AEL/20/TP/2907/27
M/S TATA POWER COMPANY	**Date** : 25.07.2020
Jojobera Power Plant, Jojobera	**Period of testing** : 25.07.2020 - 29.07.2020
Jamshedpur	

SAMPLE PARTICULARS:	
Type of Report	Ground Water
Location	Govindpur Village
Date of Sampling	11.07.2020

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (23rd Edition)2017, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.51
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.01
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	46.8
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.01
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.01
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.1
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.05
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.001
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.003
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.42
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.10
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	61.6
18.	Total Alkalinity as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	156.8
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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AEL

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Report No.: AEL/2020/TP/2907/27 | **Reporting Date: 29/07/2020**

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	12.8
21.	Total Hardness as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 21-2013	169.8
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.1
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.05
24.	Nitrate as NO_3 in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	9.2
25.	Phenolic Compound as C_6H_5OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.002
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.002
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.05
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.05
29.	Polynuclear Arometic Hydrocarbons (as PAH in mg/l	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H_2S in mg/l.	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	<0.05
32.	Zinc as Zn in mg/l	0.2	No Relaxation	APHA (23rd Edition)2017, 6232 B	<0.10
33.	Nickel as Ni in mg/l	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.02
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	456
35.	Sulphate as SO_4 in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	18.3
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	2.2
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab,)

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Test Report

Report No.: AEL/2020/TP/2907/29	Reporting Date: 29/07/2020

Issued to:	Sample I'd : AEL/20/TP/2907/29
M/S TATA POWER COMPANY	Date : 25.07.2020
Jojobera Power Plant, Jojobera	Period of testing : 25.07.2020 - 29.07.2020
Jamshedpur	

SAMPLE PARTICULARS:	
Type of Report	Ground Water
Location	Rampur Gitti Machine Area
Date of Sampling	11.07.2020

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (23rd Edition)2017, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.63
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.01
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	51.3
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.01
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.01
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.1
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.05
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.001
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.003
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.49
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.15
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	64.3
18.	Total Alkalinity as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	172.2
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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AEL

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

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Report No.: AEL/2020/TP/2907/29 | **Reporting Date: 29/07/2020**

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	13.1
21.	Total Hardness as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 21-2013	182.2
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.1
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.05
24.	Nitrate as NO_3 in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	10.3
25.	Phenolic Compound as C_6H_5OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.002
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.002
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.05
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.05
29.	Polynuclear Arometic Hydrocarbons (as PAH in mg/l	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H_2S in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	<0.05
32.	Zinc as Zn in mg/l	0.2	No Relaxation	APHA (23rd Edition)2017, 6232 B	<0.10
33.	Nickel as Ni in mg/l	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.02
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	462
35.	Sulphate as SO_4 in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2-D	23.3
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	2.8
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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Test Report

Report No.: AEL/2020/TP/2907/30	Reporting Date: 29/07/2020

Issued to:	
M/S TATA POWER COMPANY	**Sample I'd** : AEL/20/TP/2907/30
Jojobera Power Plant, Jojobera	**Date** : 25.07.2020
Jamshedpur	**Period of testing** : 25.07.2020 - 29.07.2020

SAMPLE PARTICULARS:	
Type of Report	Ground Water
Location	Jemco Ash Pond-1
Date of Sampling	11.07.2020

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (23rd Edition)2017, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.39
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.01
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	56.3
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.01
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.01
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.1
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.05
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.001
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.003
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.56
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.17
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	70.3
18.	Total Alkalinity as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	179.8
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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AEL

Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Report No.: AEL/2020/TP/2907/30 | **Reporting Date: 29/07/2020**

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	12.0
21.	Total Hardness as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 21-2013	190.2
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.1
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.05
24.	Nitrate as NO_3 in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	11.8
25.	Phenolic Compound as C_6H_5OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.002
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.002
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.05
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.05
29.	Polynuclear Arometic Hydrocarbons (as PAH in mg/l	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H_2S in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2- D	<0.05
32.	Zinc as Zn in mg/l	0.2	No Relaxation	APHA (23rd Edition)2017, 6232 B	<0.10
33.	Nickel as Ni in mg/l	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.02
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	486
35.	Sulphate as SO_4 in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2- D	26.7
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	3.1
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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Test Report

Report No.: AEL/2020/TP/2907/31	Reporting Date: 29/07/2020

Issued to:	
M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	**Sample I'd** : AEL/20/TP/2907/31 **Date** : 25.07.2020 **Period of testing** : 25.07.2020 - 29.07.2020

SAMPLE PARTICULARS:	
Type of Report	Ground Water
Location	Jemco Ash Pond-2
Date of Sampling	11.07.2020

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
1.	Color, Hazen	5	15	APHA (23rd Edition)2017, 2120 B	<5
2.	Taste	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
3.	Odour	Agreeable	Agreeable	IS 3025 (Part 5-1983 Rffm:2012	Agreeable
4.	pH analyzed at site	6.5-8.5	No Relaxation	IS 3025 (Part 11-1984 Rffm: 2012	7.14
5.	Anionic Detergents (as MBAS) in mg/l	0.2	1.0	IS 13428	<0.01
6.	Calcium as Ca in mg/l	75	200	IS 3025 (Part 40- 1991 Rffm: 2009	38.6
7.	Arsenic as As in mg/l	0.01	0.05	IS 3025 (Part 37-1988 Rffm: 2009	<0.01
8.	Lead as Pb in mg/l	0.01	No Relaxation	IS 3025 (Part 47-1994 Rffm: 2009	<0.01
9.	Mineral Oil	0.5	No Relaxation	IS 3025 (Part 39-1991 Rffm: 2009	<0.1
10.	Copper as Cu in mg/l	0.05	1.5	IS 3025 (Part 42 - 1992 Rffm:2009	<0.05
11.	Mercury as Hg in mg/l	0.001	No Relaxation	IS 3025 (Part 48-1994 Rffm: 2009	<0.001
12.	Cadmium as Cd in mg/l	0.003	No Relaxation	IS 3025 (Part 41-1992 Rffm: 2009	<0.003
13.	E. Coli MPN/100ml	Shall not be detectable in any 100ml sample		IS 1622:1981	Absent
14.	Fluoride as F in mg/l	1.0	1.5	IS 3025 (Part 60- 2008 Rffm: 2013	0.38
15.	Residual Free Chlorides in mg/l	0.2	1.0	IS 3025 (Part 26- 1986 Rffm:2009	<0.1
16.	Iron as Fe in mg/l	0.3	No Relaxation	IS 3025 (Part 53-1988 Rffm: 2009	0.07
17.	Chloride as Cl	250	1000	IS 3025 (Part 32-1988 Rffm: 2009	51.9
18.	Total Alkalinity as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 23- 1986 Rffm: 2009	158.8
19.	Aluminium as Al in mg/l	0.03	0.2	IS 3025 (Part 55- 2003	<0.01

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Report No.: AEL/2020/TP/2907/31 | **Reporting Date: 29/07/2020**

Chemical Analysis Result as per IS 10500 : 2012

Sl No	Parameter	Desir.Limit	Perms. Limit	Test Method	Result
20.	Magnesium as Mg in mg/l	30	100	IS 3025 (Part 46-1994 Rffm: 2009	15.9
21.	Total Hardness as $CaCO_3$ in mg/l	200	600	IS 3025 (Part 21-2013	162.2
22.	Boron as B in mg/l	0.5	1.0	IS 13428- 2005, Annex H	<0.1
23.	Manganese as Mn in mg/l	0.1	0.3	IS 3025 (Part 59 - 2006 Rffm:2012	<0.05
24.	Nitrate as NO_3 in mg/l	45	No Relaxation	IS 3025 (Part 34-1988 Rffm: 2009	7.8
25.	Phenolic Compound as C_6H_5OH in mg/l	0.001	0.002	IS 3025 (Part 43- 1992; Rffm:2003	<0.002
26.	Selenium as Se in mg/l	0.01	No Relaxation	IS 15303 - 2003; Rffm 2013	<0.002
27.	Total Chromium as Cr in mg/l	0.05	No Relaxation	IS 3025 (Part 52 - 2003 Rffm:2009	<0.05
28.	Cyanide as CN in mg/l	0.05	No Relaxation	IS 3025 (Part 27- 1986 Rffm: 2009	<0.05
29.	Polynuclear Aromatic Hydrocarbons (as PAH in mg/l	0.0001	No Relaxation	US EPA 8270C	<0.0001
30.	Turbidity in N.T.U	1	5	IS 3025 (Part 10-1984 Rffm: 2012	<1.0
31.	Sulphide as H_2S in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2- D	<0.05
32.	Zinc as Zn in mg/l	0.2	No Relaxation	APHA (23rd Edition)2017, 6232 B	<0.10
33.	Nickel as Ni in mg/l	0.02	No Relaxation	IS 13428 (Annex L- 2005	<0.02
34.	Total Dissolved Solids in mg/l	500	2000	IS 3025(Part 16- 1984 Rffm: 2012	406
35.	Sulphate as SO_4 in mg/l	0.05	No Relaxation	APHA (23rd Edition)2017, 4500S2- D	16.2
36.	Standard plate count MPN/100ml	--	--	IS 1622:1981	<5.0
37.	Sodium adsorption ratio	--	--	By Calculation	2.0
38.	Pesticides in ug/l	0.01	No Relaxation	US EPA	<0.01
39.	Radioactive materials Alpha emitters Bq/l	0.1	No Relaxation	IS 14194 (Part 2)	<0.1
40.	Radioactive materials Beta emitters Bq/l	1.0	No Relaxation	IS 14194 (Part 1)	<1.0

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Annex - X

STATUS REPORT ON AFFORSTATION PLAN

1. Trees planted : 24000 between June'2001 to Oct'2001
   Planted trees maintained up to March 2003
2. Planted 6521 trees between January 2003 to March 2003
3. Planted 1120 trees between April'2003 to September 2003
4. Planted 200 trees between April'2005 to September 2005
5. Planted 100 trees between October 2005 to March 2006 in phased manner
6. Planted 500 trees between April 2006 and September 2006.
7. Planted 500 trees between October 2006 to March 2007.
8. Planted 300 trees between April 2007 to September 2007
9. Planted 800 trees between October 2007 to March 2008
10. Planted 300 trees between April 2008 to September 2008
11. Planted 300 trees between Oct 2008 to March'2009
12. Planted 300 trees between April 2009 to Sept'2009
13. Planted 2000 trees between October 2009 to March 2010
14. Planted 3993 trees between April 2010 to September 2010
15 Planted 1007 trees between October 2010 to April 2011
16. Planted 400 trees between April 2011 to September 2011
17. Planted 400 trees between October 2011 to March 2012
18. Planted 400 trees between April 2012 to September 2012
19. Planted 50 trees between October 2012 to March 2013
20. Planted 250 trees between April 2013 to March 2014
21. Planted 350 trees between April 2014 to September 2014
22. Planted 300 trees between October 2014 to March 2015
23. Planted 1591 trees between April 2015 to March 2016
24. Planted 651 trees between April 2016 to September 2016
25. Planted 827 trees between October'2016 to March 2017
26. Planted 500 trees between April'17 to March'18.
27. Planted 560 trees between April'18 to March'19.
28. Planted 1150 trees between April'19 to March '20.
29. Planted 424 trees between April 20 to Sept 20

Total No. of sapling planted 49794 nos. till Sept '20.
Green Belt: 47.44 Acres
Green coverage: 33.17 %
TREE DENSITY = Approx. 1511 per Hectare

Source: (a) Third Party Tree Census of Jojobera Power Plant
(b) Species of plants taken up for forestation- Refer next page.

S. No.	Scientific Name	Common Name
Shrubs		
1	*Lagascea mollis*	American soft head
2	*Cassia tora*	Pot cassia
3	*Hibiscus rosasinensis*	Shoe flower
4	*Lantana camera*	Lantana
Trees		
5	*Shorea robusta*	Sal
6	*Tectona grandis*	Teak
7	*Butea monosperma*	Flame of the forest
8	*Dendrocalamus strictus*	Bans
9	*Polyalthia longifolia*	Mast tree
10	*Acacia nilotica*	Babul
11	*Dalbergia sisoo*	Sisoo
12	*Terminalia cremulata*	Senha
13	*Lagerstroemia parviflora*	Lendya
14	*Bauhinia variegate*	Kachnar
15	*Ficus Bengalensis*	Vad
16	*Ficus religiosa*	Peepal
17	*Feucana leucocephala*	Subabul
18	*Terminalia catappa*	Jungli Badam
19	*Anogeissus latifolia*	Dhaura
20	*Maduca indica*	Mohwa
21	*Albizia lebbeck*	Black sirish
22	*Emblica officinalis*	Amla
23	*Terminalia arjuna*	Arjuna

Annex- XI

Operational Expenditure for Environment during FY 2019-20 (Jojobera Station)			
Sl. No	Activity/Category	Condition reference	FY 2019-20 (In Rs.)
1	Environment Monitoring	EC unit 5 (iv)(v)(vii)(xvi)(xvii) ,CTO	3568235
2	Green Belt Development	EC unit 5 (xviii),CTO Unit	94400
3	O & M of ETP & STP	EC unit 5 (IX &X),CTO	2832000
4	O & M of CAAQMS	CTO unit 5 (i)	1751966
5	ETP Water treatment chemical cost		1056522
6	Online effluent monitoring system (Misc.)		11682
7	Online Monitoring system Stack & Ambient Air Quality		1260000
8	Leachate Test of Ash		83600
9	Mobile water sprinkler	EC unit 5 (xvii),CTO Unit 5 B (viii)	1502953
10	Anhydrous Ammonia for ESP conditioning	EC unit 5 (v)	451138
11	Ground water level monitoring		83544
12	Baseline test for NOx abatement		1473077
13	Misc. Environment Consultancy		1097400
13	Study for source of Lime for FGD		474950
Total Expenditure			**15741467**

Annex - XII

Asia Enviro Lab

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Test Report

Report No.: AEL/2020/TP/2907/34	Reporting Date: 29/07/2020

Issued to:	
M/S TATA POWER COMPANY	**Sample I'd** : AEL/20/TP/2907/34
Jojobera Power Plant, Jojobera	**Date** : 25.07.2020
Jamshedpur	**Period of testing** : 25.07.2020 - 29.07.2020

SAMPLE PARTICULARS:	
Type of Report	Pond Ash
Location	Pond#1
Date of Sampling	12.07.2020

Physical Analysis

Sl No.	Parameter	Units	Results
			Pond #1
1	Colour	--	Grey
2	Angle of internal friction	(Degree)	7.3
3	Max. Density	(kN/m^3)	14.2
4	Optimum moisture content (OMC)	%	29.6
5	Specific Gravity	-	3.5
6	Surface Area	(m^2/kg)	332
7	*Strength Cohesion	(kPa)	13.6
8	Lime Reactivity	(Kg/cm^2)	56.1
9	Permeability	(cm/sec)	$2.32x10^{-5}$

Chemical Analysis

Sl No.	Parameter	Units	Results
			Pond #1
1	LOI / Unburnt C	%	5.98/5.64
2	Silica as SiO_2	%	65
3	Fe_2O_3	%	6.2
4	TiO_2	%	0.56
5	$Al_2O_3+P_2O_5$	%	15.2
6	MgO+CaO	%	7.67
7	Chlorides	%	0.05
8	SO_3	%	0.67
9	Insoluble Residue	%	0.32
10	$Na_2O+K_2O+Li_2O$	%	0.76

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Report No.: AEL/2020/TP/2907/34 | **Reporting Date: 29/07/2020**

Size Distribution (In Micron)

Sl No.	Parameter	Units	Results
			Pond #1
1	Above 2000	%	Nil
2	2000-1000	%	Nil
3	1000-500	%	0.77
4	500-300	%	0.67
5	300-212	%	0.56
6	212-150	%	0.33
7	150-75	%	4.24
8	75-63	%	6.44
9	63-45	%	19.45
10	45-20	%	21.6
11	20-10	%	23.2
12	10-5	%	12.8
13	<5	%	3.3

Analysis of Waste Constituents (as per Hazardous Waste Management Rule)

Class A

Sl No.	Parameter	Units	Results
			Pond #1
A1	Antimony and Antimony Compounds	mg/kg	<0.04
A2	Arsenic and Arsenic Compounds	mg/kg	0.032
A3	Beryllium and Beryllium Compounds	mg/kg	<0.002
A4	Cadmium and cadmium compounds	mg/kg	<0.05
A5	Chromium (VI) Compounds	mg/kg	3.1
A6	Mercury and mercury compounds	mg/kg	<0.01
A7	Selenium and selenium compounds	mg/kg	<0.01
A8	Tellurium and tellurium compounds	mg/kg	<0.03
A9	Thallium and thallium compounds	mg/kg	<0.02
A10	Inorganic cyanide compounds	mg/kg	<0.02
A11	Metal carbonyls	mg/kg	Trace
A12	Naphthalene	mg/kg	<0.02
A13	Anthracene	mg/kg	<0.05
A14	Phenanthrene	mg/kg	<0.03
A15	Chrysene, benzo(a)anthracene, flouranthene,benzo(k)fluranthene,indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	mg/kg	0.02
A16	Halogenated Compounds of aromatic rings, e.g, polychlorinated biphenyls, polychloroterphynyls and their derivatives	mg/kg	1.2
A17	Halogenated aromatic compounds	mg/kg	4.3
A18	Benzene	mg/kg	<0.002
A19	Organo-Chlorine pesticides	mg/kg	<0.02
A20	Organo- tin compounds	mg/kg	2.7

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Report No.: AEL/2020/TP/2907/34	Reporting Date: 29/07/2020

Concentration Limit – 5000 mg/kg

Class B

Sl No.	Parameter	Units	Results
			Pond #1
B1	Chromium (II) compounds	mg/kg	67.7
B2	Cobalt compounds	mg/kg	7.6
B3	Copper compounds	mg/kg	41.6
B4	Lead and Lead compounds	mg/kg	15.3
B5	Molybdenum compounds	mg/kg	0.06
B6	Nickel compounds	mg/kg	22.7
B7	Inorganic Tin compounds	mg/kg	6.3
B8	Vanadium compounds	mg/kg	<0.02
B9	Tungsten compounds	mg/kg	<0.01
B10	Silver compounds	mg/kg	<0.01
B11	Hologenated aiiphatic compounds	mg/kg	0.7
B12	Organo phosphorus compounds	mg/kg	146
B13	Organic peroxides	mg/kg	0.65
B14	Organic nitro-and nitroso- compounds	mg/kg	0.77
B15	Organic azo and azooxy compounds	mg/kg	ND
B16	Nitriles	mg/kg	<2.0
B17	Amines	mg/kg	<4.0
B18	(Iso- and thio-) cyanates	mg/kg	<0.02
B19	Phenol and Phenolic compounds	mg/kg	5.7
B20	Mercaptans	mg/kg	<0.05
B21	Asbestos	mg/kg	<0.3
B22	Halogens- Silanes	mg/kg	ND
B23	Hydrazine(s)	mg/kg	<0.01
B24	Flourine	mg/kg	65
B25	Chlorine	mg/kg	145
B26	Bromine	mg/kg	22.8
B27	White and Red Phosphorus	mg/kg	29.11
B28	Ferro- silicate and alloys	mg/kg	3122
B29	Manganese- Silicate	mg/kg	1453
B30	Halogen Containing compounds which produce acidic vapours on contact with humid air or water , e.g, silicon tetrachloride, aluminum chloride, titanium tetrachloride.	mg/kg	1.21

Checked By

Authorized Signatory

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Asia Enviro Lab

(An ISO 9001:2015, 14001:2015, 45001:2018, NABL & MOEF Approved Lab,)

AEL Job Description : Environmental Testing, ETP/STP Manufacturing, ETP/STP Plant Operation Pollution NOC etc.

Lab - H1-837, Near Pollution Control Board, RIICO Indl. Area, Bhiwadi, Distt. Alwar (Rajasthan) - 301019

Ph. No. : 09694666022, 9466619911, 7737696987, Email : asiaenvirolab@gmail.com , Website : www.asiaenvirolab.com

Report No.: AEL/2020/TP/2907/34	Reporting Date: 29/07/2020

Concentration Limit – 20000 mg/kg

Class C

Sl No.	Parameter	Units	Results
			Pond #1
C1	Ammonia and ammonium compounds	mg/kg	443
C2	Inorganic peroxides	mg/kg	211
C3	Barium compounds except barium sulphate	mg/kg	200
C4	Fluorine compounds	mg/kg	67
C5	Phosphate compounds except phosphates of aluminum, calcium and iron	mg/kg	328
C6	Bromates, (hypo-bromites)	mg/kg	0.45
C7	Chlorates, (hypo- chlorates)	mg/kg	54
C8	Aromatic compounds other than those listed under A12 to A18	mg/kg	0.43
C9	Organic Silicone compounds	mg/kg	134
C10	Organic Sulphur compounds	mg/kg	76
C11	Iodates	mg/kg	3.1
C12	Nitrates, Nitrites	mg/kg	<3
C13	Sulphides	mg/kg	6.4
C14	Zinc compounds	mg/kg	65.8
C15	Salt of per-acids	mg/kg	265
C16	Acid amides	mg/kg	1.2
C17	Acid anhydrides	mg/kg	20.5

Concentration Limit – 20000 mg/kg

Class D

Sl No.	Parameter	Units	Results
			Pond #1
D1	Total Sulphur	mg/kg	1322
D2	Inorganic acids	mg/kg	1034
D3	Metal hydrogen sulphates	mg/kg	623
D4	Oxides and hydroxides except those of hydrogen, carbon, silicon, iron, aluminum, titanium, manganese, magnesium, calcium	mg/kg	10.7
D5	Total hydrocarbons other than those listed in A12 to A18	mg/kg	25.6
D6	Organic oxygen compounds	mg/kg	117
D7	Organic nitrogen compounds expressed as nitrogen	mg/kg	245
D8	Nitrides	mg/kg	7.8
D9	Hydrides	mg/kg	5.2

Remarks: Concentration of the components is within prescribed limits

Checked By

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Test Report

Report No.: AEL/2020/TP/2907/35	Reporting Date: 29/07/2020

Issued to:	
M/S TATA POWER COMPANY Jojobera Power Plant, Jojobera Jamshedpur	**Sample I'd** : AEL/20/TP/2907/35 **Date** : 25.07.2020 **Period of testing** : 25.07.2020 - 29.07.2020

SAMPLE PARTICULARS:	
Type of Report	Pond Ash
Location	Pond#2
Date of Sampling	11.07.2020

Physical Analysis

Sl No.	Parameter	Units	Results
			Pond #2
1	Colour	--	Grey
2	Angle of internal friction	(Degree)	6.8
3	Max. Density	(kN/m^3)	11.6
4	Optimum moisture content (OMC)	%	20.5
5	Specific Gravity	-	2.1
6	Surface Area	(m^2/kg)	234
7	*Strength cohesion	(kPa)	10.7
8	Lime Reactivity	(Kg/cm^2)	32.7
9	Permeability	(cm/sec)	2.45×10^{-5}

Chemical Analysis

Sl No.	Parameter	Units	Results
			Pond #2
1	LOI / Unburnt C	%	5.56/5.87
2	Silica as SiO_2	%	76
3	Fe_2O_3	%	7.6
4	TiO_2	%	0.45
5	$Al_2O_3+P_2O_5$	%	12.1
6	MgO+CaO	%	5.88
7	Chlorides	%	0.06
8	SO_3	%	0.56
9	Insoluble Residue	%	0.45
10	$Na_2O+K_2O+Li_2O$	%	0.32

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Size Distribution (In Micron)

Sl No.	Parameter	Units	Results
			Pond #2
1	Above 2000	%	Nil
2	2000-1000	%	Nil
3	1000-500	%	0.45
4	500-300	%	0.56
5	300-212	%	0.78
6	212-150	%	0.34
7	150-75	%	6.66
8	75-63	%	7.54
9	63-45	%	19.34
10	45-20	%	19.4
11	20-10	%	24.2
12	10-5	%	18.4
13	<5	%	5.3

Analysis of Waste Constituents (as per Hazardous Waste Management Rule)

Class A

Sl No.	Parameter	Units	Results
			Pond #2
A1	Antimony and Antimony Compounds	mg/kg	<0.04
A2	Arsenic and Arsenic Compounds	mg/kg	0.022
A3	Beryllium and Beryllium Compounds	mg/kg	<0.002
A4	Cadmium and cadmium compounds	mg/kg	<0.05
A5	Chromium (VI) Compounds	mg/kg	3.11
A6	Mercury and mercury compounds	mg/kg	<0.01
A7	Selenium and selenium compounds	mg/kg	<0.01
A8	Tellurium and tellurium compounds	mg/kg	<0.03
A9	Thallium and thallium compounds	mg/kg	<0.02
A10	Inorganic cyanide compounds	mg/kg	<0.02
A11	Metal carbonyls	mg/kg	Trace
A12	Naphthalene	mg/kg	<0.02
A13	Anthracene	mg/kg	<0.05
A14	Phenanthrene	mg/kg	<0.03
A15	Chrysene, benzo(a)anthracene, flouranthene,benzo(k)fluranthene,indeno(1,2,3-cd)pyrene and benzo(ghi)perylene	mg/kg	0.04
A16	Halogenated Compounds of aromatic rings, e.g, polychlorinated biphenyls, polychloroterphynyls and their derivatives	mg/kg	1.4
A17	Halogenated aromatic compounds	mg/kg	3.5
A18	Benzene	mg/kg	<0.002
A19	Organo-Chlorine pesticides	mg/kg	<0.02
A20	Organo- tin compounds	mg/kg	2.4

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Report No.: AEL/2020/TP/2907/35	Reporting Date: 29/07/2020

Concentration Limit – 5000 mg/kg

Class B

Sl No.	Parameter	Units	Results
			Pond #2
B1	Chromium (II) compounds	mg/kg	57.5
B2	Cobalt compounds	mg/kg	12.5
B3	Copper compounds	mg/kg	34.6
B4	Lead and Lead compounds	mg/kg	12.6
B5	Molybdenum compounds	mg/kg	0.06
B6	Nickel compounds	mg/kg	20.6
B7	Inorganic Tin compounds	mg/kg	4.2
B8	Vanadium compounds	mg/kg	<0.02
B9	Tungsten compounds	mg/kg	<0.01
B10	Silver compounds	mg/kg	<0.01
B11	Hologenated aiiphatic compounds	mg/kg	0.6
B12	Organo phosphorus compounds	mg/kg	134
B13	Organic peroxides	mg/kg	0.46
B14	Organic nitro-and nitroso- compounds	mg/kg	0.77
B15	Organic azo and azooxy compounds	mg/kg	ND
B16	Nitriles	mg/kg	<2.0
B17	Amines	mg/kg	<4.0
B18	(Iso- and thio-) cyanates	mg/kg	<0.02
B19	Phenol and Phenolic compounds	mg/kg	5.6
B20	Mercaptans	mg/kg	<0.05
B21	Asbestos	mg/kg	<0.3
B22	Halogens- Silanes	mg/kg	ND
B23	Hydrazine(s)	mg/kg	<0.01
B24	Flourine	mg/kg	67
B25	Chlorine	mg/kg	136
B26	Bromine	mg/kg	21.7
B27	White and Red Phosphorus	mg/kg	25.4
B28	Ferro- silicate and alloys	mg/kg	3244
B29	Manganese- Silicate	mg/kg	1564
B30	Halogen Containing compounds which produce acidic vapours on contact with humid air or water , e.g, silicon tetrachloride, aluminum chloride, titanium tetrachloride.	mg/kg	1.41

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AEL

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Report No.: AEL/2020/TP/2907/35 | **Reporting Date: 29/07/2020**

Concentration Limit – 20000 mg/kg

Class C

Sl No.	Parameter	Units	Results
			Pond #2
C1	Ammonia and ammonium compounds	mg/kg	455
C2	Inorganic peroxides	mg/kg	123
C3	Barium compounds except barium sulphate	mg/kg	154
C4	Fluorine compounds	mg/kg	102
C5	Phosphate compounds except phosphates of aluminum, calcium and iron	mg/kg	324
C6	Bromates, (hypo-bromites)	mg/kg	0.24
C7	Chlorates, (hypo- chlorates)	mg/kg	43
C8	Aromatic compounds other than those listed under A12 to A18	mg/kg	0.45
C9	Organic Silicone compounds	mg/kg	153
C10	Organic Sulphur compounds	mg/kg	76
C11	Iodates	mg/kg	3.3
C12	Nitrates, Nitrites	mg/kg	<3
C13	Sulphides	mg/kg	9.7
C14	Zinc compounds	mg/kg	73.7
C15	Salt of per-acids	mg/kg	377
C16	Acid amides	mg/kg	1.5
C17	Acid anhydrides	mg/kg	22.7

Concentration Limit – 20000 mg/kg

Class D

Sl No.	Parameter	Units	Results
			Pond #2
D1	Total Sulphur	mg/kg	1215
D2	Inorganic acids	mg/kg	1342
D3	Metal hydrogen sulphates	mg/kg	624
D4	Oxides and hydroxides except those of hydrogen, carbon, silicon, iron, aluminum, titanium, manganese, magnesium, calcium	mg/kg	11.6
D5	Total hydrocarbons other than those listed in A12 to A18	mg/kg	27.5
D6	Organic oxygen compounds	mg/kg	135
D7	Organic nitrogen compounds expressed as nitrogen	mg/kg	267
D8	Nitrides	mg/kg	9.4
D9	Hydrides	mg/kg	7.3

Remarks: Concentration of the components is within prescribed limits

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Annex - XIII

CSR Highlights from April 20 to September 20

Jojobera Power Plant , Tata Power Co Ltd , Jamshedpur

- Tata Power is mobilizing local women into **Self Help Groups. Total 169 SHG has** been formed and bank linkages has been provided for all these groups. Training and supports have been given to many of these SHG members Many women have started their own enterprises. Around 100 women are involved in vermi and mushroom production. Last month members of one group earned more than 6 lakh by cultivating and selling muskmelons.

- **Behavior Change Communication - Health & Sanitation:** Using CLTS approach more than 800 leach pit toilets have been constructed benefitting more than 600 people.Around 4585 people were sensitized by NGO on COVID-19. The community was targeted for the sanitization program on ill effects of Open defecations and more than 800 families were motivated to build household toilets using their own resources.
- **Solid Waste Management (Gadra)** – More than 325 HH have been segregating waste at HH level into organic and inorganic wastes under Solid Waste management project. The project is being managed by *Sun Sewa Urja Mahila Samiti* – an SHG promoted by Tata Power. The project is being implemented with the active involvement of PRI members. Organic Waste is being converted into manure and inorganic waste is safely disposed to waste aggregators.

- Three farmers groups comprising of 32 members have been organized into Farmers groups and collective farming on a 18 acre of land by consolidating small landholdings of different farmers have been practiced.

- Approximately 5500 students of 6 government schools were given continuous coaching support on English language and their learning level saw an overall improvement of18 %.

- On digtital education front 350 school students were oriented on basics of computer. The methodology was tab based learning in groups.

- Every month health camps were conducted (4 camps since April) which provided benefit to 650 people in the form of treatment and free medicines.

- Income generation training was given to 750 women on a number of skills – mushroom farming , vermi making , Poultry rearing , Backyard farming etc.
- Around 60 LED street lights have been distributed to different stakeholders for illumination benefitting around 5000 persons.

CSR highlights during Lockdown: CSR department took various measure to fight Covid pandemic focusing on most vulnerable and wage losers.

- **Awareness Generation:** Messages on handwashing, use of masks & social distancing was given using banners at 100 locations. Around 10000 leaflets with messages on COVID 19 was distributed. Messages were given on 3 aspects (a) to keep physical-distance(b) to wear face mask (c) to wash hands on every hour.
- **Food for the needy:** During lockdown phase many wage earners lost their livelihood.2000 most vulnerable families – daily wagers - identified from 12 panchayats were supported with dry ration for 2 week.
- Supply of disinfectant (bleaching powder) through local community leaders in different location and cleaning drive was conducted.
- **Linkages of SHGs with JSLPS:** SHGs formed by Tata Power have been given tasks of running Didi kitchen in 8 panchayats. Hot cooked food are being served under Chief Minister Didi kitchen Yojna. More than 1500 families were fed under this scheme.
- During lockdown online classes are being given to around 1000 students by NGO – ALIG educational welfare society. Online classes is not only helping students to continue their study but it has also improved digital proficiency of students.

- **Mask making by SHGs and Distribution:** SHGs formed under DHAAGA initiatives stitched masks. SHG have supplied 10000 masks to and earned incomes. Tata Power distributed masks during this period to different groups.

Annex XIV

Jojobera Power Plant,Tata Power, Jamshedpur

Fly Ash Genration & Utilisation (Station)

UNIT# 1 to 4																				
.	Apr-20					May-20					Jun-20					Station (Apr.-20 to June-20)				
Description	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL
Middling(as fired) -MT	786	9726	0	4352	14864	4287	1157	6246	6283	17973	10739	3855	1113	9251	24958	15812	14738	7359	19886	57795
Ib Valley & others (as fired) -MT	1052	21965	0	36864	59881	7886	6053	22553	42277	78769	16412	23212	42337	24694	106655	25350	51230	64890	103835	245305
TOTAL COAL -MT	1838	31691	0	41216	74745	12173	7210	28799	48560	96742	27151	27067	43450	33945	131613	41162	65968	72249	123721	303100
TOTAL ASH GEN-MT	723	11818	0	14798	27339	4824	2417	11144	17802	36187	10515	9999	15610	12992	49116	16062	24234	26754	45592	112642
Fly Ash Generated -MT	578	9454	0	11838	21871.2	3859	1934	8915	14242	28949.6	8412	7999	12488	10394	39293	12849.6	19387.2	21403	36473.6	90114
Bottom Ash Generated -MT	145	2364	0	2960	5467.8	965	483	2229	3560	7237.4	2103	2000	3122	2598	9823.2	3212	4846.8	5351	9118.4	22528
FLY ASH UTILISATION -MT	206	3375	0	4226	7808	2468	1237	5702	9109	18516.16	7908	7520	11740	9771	36939.16	10583	12132	17442	23106.26	63263
% FLY ASH UTILISATION	36	36	-	36	36	64	64	64	64	64	94	94	94	94	94	82	63	81	63	70
TOTAL ASH UTILISATION-MT	379	6193	0	7754	14326	4426	2218	10225	16333	33201.57	13387	12730	19873	16540	62529.58	18192	21139.96	30097.71	40627.60	110057
% TOTAL ASH UTILISATION	52	52	-	52	52	92	92	92	92	92	127	127	127	127	127	113	87	112	89	98

O P Gupta
Group Head- Ash Management

Vikrant Singh
Group Head-Planning

S.D. Bhattacharjee
Head- Chem. & Env.

S Mukherjee
Head - OPN & Ash Management

Abhijit Mandal
Chief - Opn. & Maint.

Jojobera Power Plant,Tata Power, Jamshedpur

Fly Ash Genration & Utilisation (Station)

UNIT# 1 to 4	Reports Unit # 1 to 4																			
	Jul-20					Aug-20					Sep-20					Station (July.-20 to Sep-20)				
Description	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL	UNIT# 1	UNIT# 2	UNIT# 3	UNIT# 4	TOTAL
Middling(as fired) -MT	4050	0	0	4540	8590	0	1617	0	8585	10202	5707	3623	5030	10989	25349	9757	5240	5030	24114	44141
Ib Valley & others (as fired) -MT	16345	44414	45625	43035	149419	26299	36260	50061	36383	149003	19414	33907	36815	33526	123662	62058	114581	132501	112944	422084
TOTAL COAL -MT	20395	44414	45625	47575	158009	26299	37877	50061	44968	159205	25121	37530	41845	44515	149011	71815	119821	137531	137058	466225
TOTAL ASH GEN-MT	7340	14677	16895	17178	56090	8320	12312	18400	16977	56009	7467	11152	13476	15676	47771	23127	38141	48771	49831	159870
Fly Ash Generated -MT	5672	11742	13516	13742	44872	6656	9850	14720	13582	44807.2	5974	8922	10781	12541	38217	18502	30513	39017	39865	127896
Bottom Ash Generated -MT	1468	2935	3379	3436	11218	1664	2462	3680	3395	11201.8	1493	2230	2695	3135	9554.2	4625	7628	9754	9966	31974
FLY ASH UTILISATION -MT	5319	10637	12244	12449	40650	4856	7186	10740	9909	32691.33	5977	8926	10786	12547	38235.9	16152	26749	33770	34905	111577
% FLY ASH UTILISATION	91	91	91	91	91	73	73	73	73	73	100	100	100	100	100	87	88	87	88	87
TOTAL ASH UTILISATION-MT	9682	19360	22286	22659	73988	7416	10975	16402	15133	49926.42	6623	9892	11953	13905	42372.9	24054	39670	50727	51829	166288
% TOTAL ASH UTILISATION	132	132	132	132	132	89	89	89	89	89	89	89	89	89	89	104	104	104	104	104

Rahul Pandey
Lead Associate - Ash Management

Vikrant Singh
Group Head-Planning

S.D. Bhattacharjee
Head- Chem. & Env.

S Mukherjee
Head - OPN & Ash Management

Abhijit Ain Das
Chief - Opn. & Maint.

Jojobera Power Plant,Tata Power, Jamshedpur

Fly Ash Genration & Utilisation (Station)

UNIT# 5				
	Apr-20	May-20	Jun-20	Apr-20to June-20
Description	UNIT# 5	UNIT# 5	UNIT# 5	TOTAL
Middling(as fired) -MT	44072	51695	37606	133373
Ib Valley & others (as fired) -MT	0	0	0	0
TOTAL COAL -MT	44072	51695	37606	133373
TOTAL ASH GEN-MT	17939	20733	15101	53773
Fly Ash Generated -MT	14351	16586	12081	43018
Bottom Ash Generated -MT	3588	4147	3020	10755
FLY ASH UTILISATION -MT	5123	10609	11357	27089
% FLY ASH UTILISATION	36	64	94	63
TOTAL ASH UTILISATION -MT	9400	19023	19225	47648
% TOTAL ASH UTILISATION	52	92	127	89

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Head - OPN & Ash Management

Abhijit Kr Das
Chief - Opn. & Maint.

Jojobera Power Plant,Tata Power, Jamshedpur

Fly Ash Genration & Utilisation (Station)

UNIT# 5				
	Jul-20	Aug-20	Sep-20	July-20 to Sep-20
Description	UNIT# 5	UNIT# 5	UNIT# 5	TOTAL
Middling(as fired) -MT	54936	55238	46576	156750
Ib Valley & others (as fired) -MT	0	0	0	0
TOTAL COAL -MT	54936	55238	46576	156750
TOTAL ASH GEN-MT	21665	21753	18331	61749
Fly Ash Generated -MT	17332	17402	14665	49400
Bottom Ash Generated -MT	4333	4351	3666	12350
FLY ASH UTILISATION -MT	15701	12697	14672	43070
% FLY ASH UTILISATION	91	73	100	87
TOTAL ASH UTILISATION -MT	28579	19391	16260	64229
% TOTAL ASH UTILISATION	132	89	89	104

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Lead Associate- Ash Management

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