



# Royal

## Environment Auditing & Consultancy Service

303-304, Shivalik-7, B/s. Bal Adalat, Gondal Road, RAJKOT - 360 002.

Ph.: +91 281 2360695 ■ E-mail : royalsenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 754/09/2017-18

Date : 01/10/2017

### REPORT OF STACK EMISSION ANALYSIS

Name of company : Gallantt Metal Limited  
Survey No. 175/1,  
Near toll gate,  
Village : Samakhyali,  
Taluka : Bhachau,  
Kutch, Gujarat.

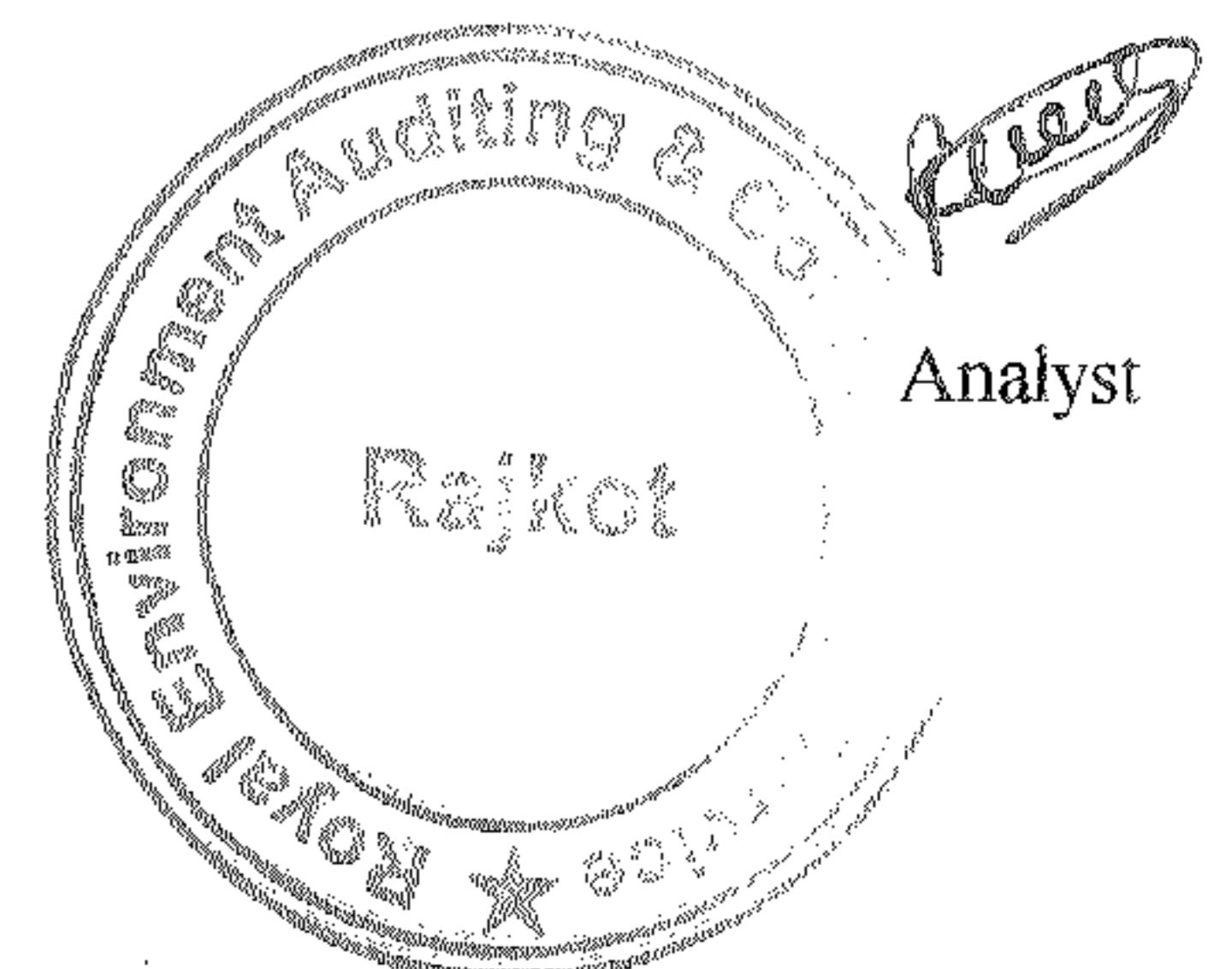
Sr. No.	Particulars	Unit	Stack - 1
01.	Date of sampling	---	23-09-2017
02.	Time of sampling	Hr	9.35
03.	Stack Attached to	---	<b>AFBC Boiler of Power Plant</b>
04.	Air Pollution Control Measures	---	ESP
05.	Stack Height	Meter	90
06.	Stack Diameter	Meter	3.8
07.	Ambient Temperature	Degree Centi.	29
08.	Stack Temperature	Degree Centi.	106
09.	Average Velocity of Flue Gases	M/Sec.	8.4
10.	Isokinetic flow rate for P.M. Sampling	LPM	19
11.	Gaseous Sampling Flow Rate	LPM	2.0
12.	<b>Permissible Limit for P.M.</b>	<b>mg/Nm<sup>3</sup></b>	<b>100</b>
13.	Measured Concentration of P.M.	mg/Nm <sup>3</sup>	67
14.	<b>Permissible Limit for SO<sub>2</sub></b>	<b>ppm</b>	<b>100</b>
15.	Measured Concentration of SO <sub>2</sub>	ppm	24.8
16.	<b>Permissible Limit for NOx</b>	<b>ppm</b>	<b>50</b>
17.	Measured Concentration of NOx	ppm	22.1
18.	<b>Permissible Limit for CO*</b>	---	---
19.	Measured Concentration of CO*	ppm	62

\*Permissible limit not specified in EC copy as well as in GPCB CC&A

Instruments used : Ecotech Stack Sampler, Model No. ESS 100

Calibration Due On. : 16/09/2018

Royal Environment Auditing & Consultancy Service



Analyst



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Ref. No. : 755/09/2017-18

Date : 01/10/2017

### REPORT OF STACK EMISSION ANALYSIS

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,

Near toll gate,

Village : Samakhyali,

Taluka : Bhachau,

Kutch, Gujarat.

Test Method : As per IS Standards - 11255 1/2/3/7

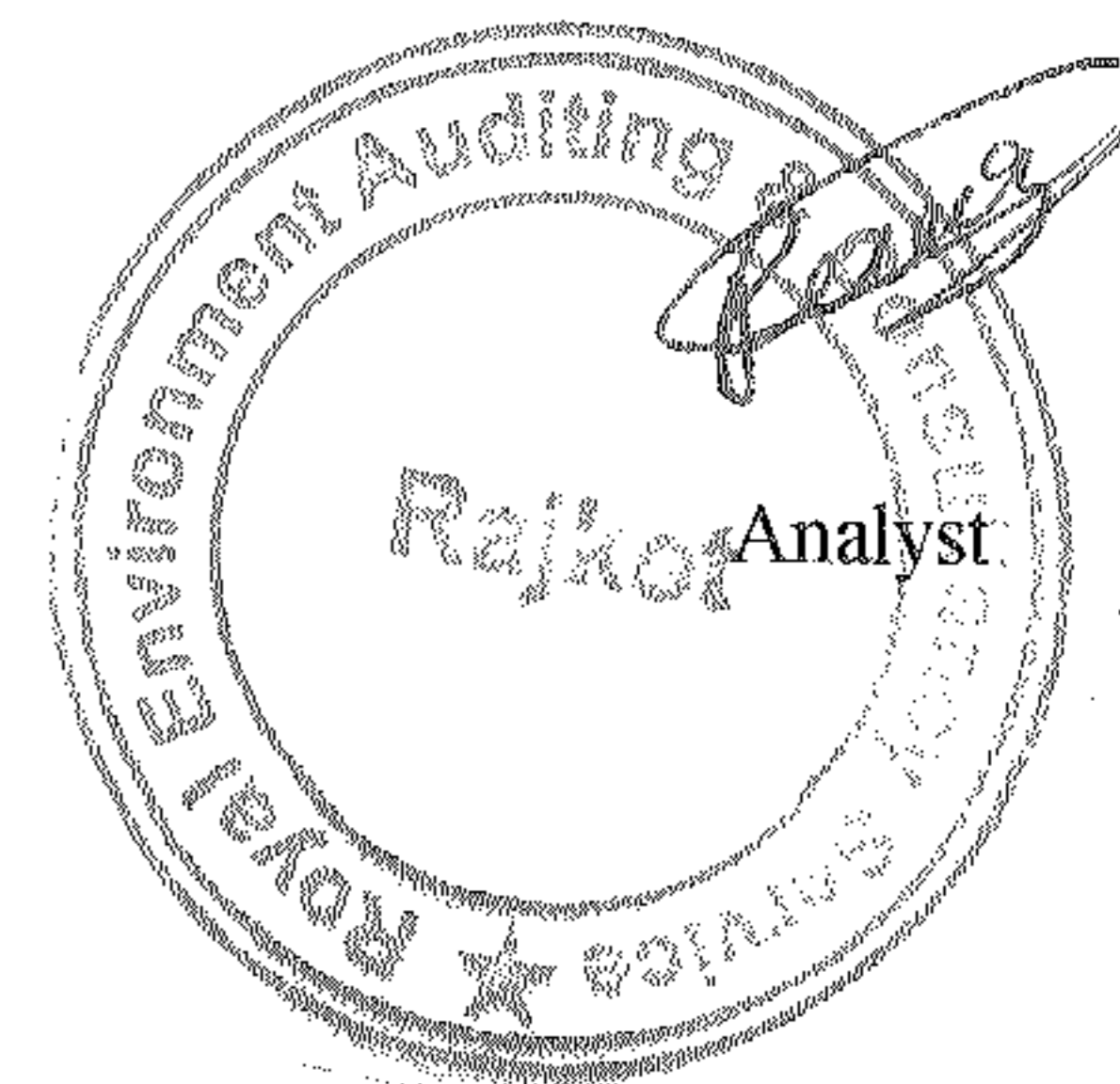
Sr. No.	Particulars	Unit	Stack - 3	Stack - 4	Stack - 5	Stack - 6
1	Date of sampling	---	23-09-2017	23-09-2017	23-09-2017	Not Running
2	Time of sampling	Hr	10.15	11.00	11.55	During Visit
3	Stack Attached to	---	Rotary Kiln 1, 2	Rotary Kiln - 3	Induction Furnace - 1, 2 & 3	Reheating Furnace
4	Air Pollution Control Measures	---	Recouperatur & ESP	Recouperatur & ESP	Cyclone Separator & Wet Scrubber	---
5	Stack Diameter	Meter	1.5	1.5	1.5	1.5
6	Stack Height	Meter	35	35	48	30
7	Stack Temperature	Degree Centi.	112	116	86	---
8	Ambient Temperature	Degree Centi.	30	32	33	---
9	Average Velocity of Flue Gases	M/Sec.	7.8	8.2	8.9	---
10	Isokinetic flow rate for P.M. Sampling	LPM	18	19	21	Not Running
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	During Visit
12	Permissible Limit for P.M.	mg/Nm <sup>3</sup>	100	100	50	100
13	Measured Concentration of P.M.	mg/Nm <sup>3</sup>	58	62	38	---
14	Permissible Limit for SO <sub>2</sub>	ppm	100	100	100	100
15	Measured Concentration of SO <sub>2</sub>	ppm	22.1	20.8	18.2	---
16	Permissible Limit for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	18.0	16.2	19.4	---
18.	Permissible Limit for CO*	---	---	---	---	---
19.	Measured Concentration of CO*	ppm	57.6	59.4	68.2	---

\*Permissible limit not specified in EC copy as well as in GPCB CC&A

Instruments used : Ecotech Stack Sampler, Model No. ESS 100

Calibration Due On. : 16/09/2018

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Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 723/07/2017-18

Date : 03/08/2017

### REPORT OF STACK EMISSION ANALYSIS

Name of company : Gallantt Metal Limited  
Survey No. 175/1,  
Near toll gate,  
Village : Samakhyali,  
Taluka : Bhachau,  
Kutch, Gujarat.

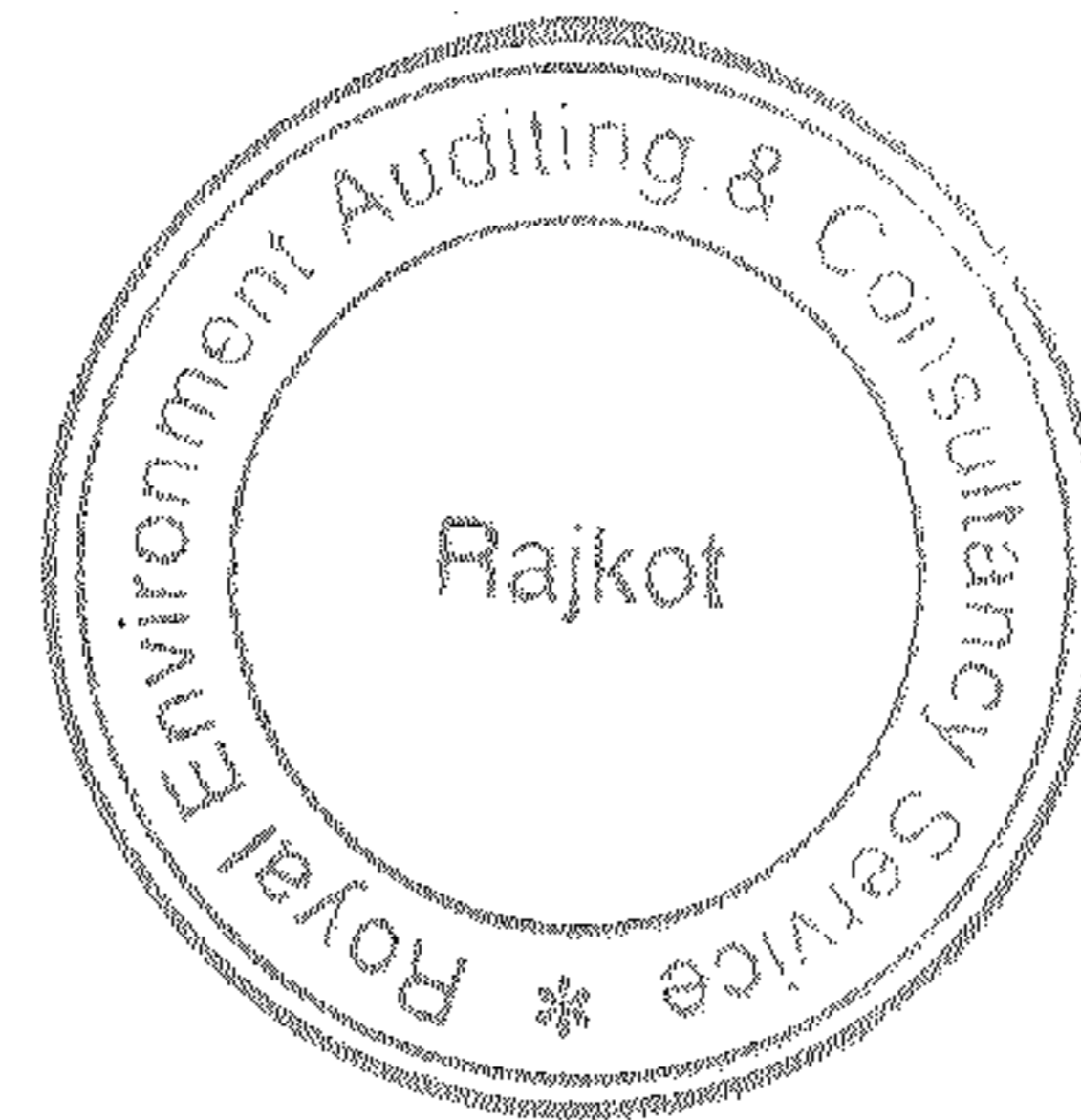
Sr. No.	Particulars	Unit	Stack - 1
01.	Date of sampling	---	27-07-2017
02.	Time of sampling	Hr	10.00
03.	Stack Attached to	---	AFBC Boiler of Power Plant
04.	Air Pollution Control Measures	---	ESP
05.	Stack Height	Meter	90
06.	Stack Diameter	Meter	3.8
07.	Ambient Temperature	Degree Centi.	28
08.	Stack Temperature	Degree Centi.	113
09.	Average Velocity of Flue Gases	M/Sec.	8.7
10.	Isokinetic flow rate for P.M. Sampling	LPM	17
11.	Gaseous Sampling Flow Rate	LPM	2.0
12.	Permissible Limit for P.M.	mg/Nm <sup>3</sup>	100
13.	Measured Concentration of P.M.	mg/Nm <sup>3</sup>	57
14.	Permissible Limit for SO <sub>2</sub>	ppm	100
15.	Measured Concentration of SO <sub>2</sub>	ppm	19.3
16.	Permissible Limit for NOx	ppm	50
17.	Measured Concentration of NOx	ppm	22.7
18.	Permissible Limit for CO*	---	---
19.	Measured Concentration of CO*	ppm	68

\*Permissible limit not specified in EC copy as well as in GPCB CC&A

Instruments used : Ecotech Stack Sampler, Model No. ESS 100

Calibration Due On. : 12/09/2017

Royal Environment Auditing & Consultancy Service



*M. Patel*  
Analyst



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Ph.: +91 281 2360695 ■ E-mail : royalservice@live.com ■ admin@royalconsultancy.com

Ref. No. : 725/07/2017-18

Date : 03/08/2017

### REPORT OF STACK EMISSION ANALYSIS

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,

Near toll gate,

Village : Samakhyali,

Taluka : Bhachau,

Kutch, Gujarat.

Test Method : As per IS Standards - 11255 1/2/3/7

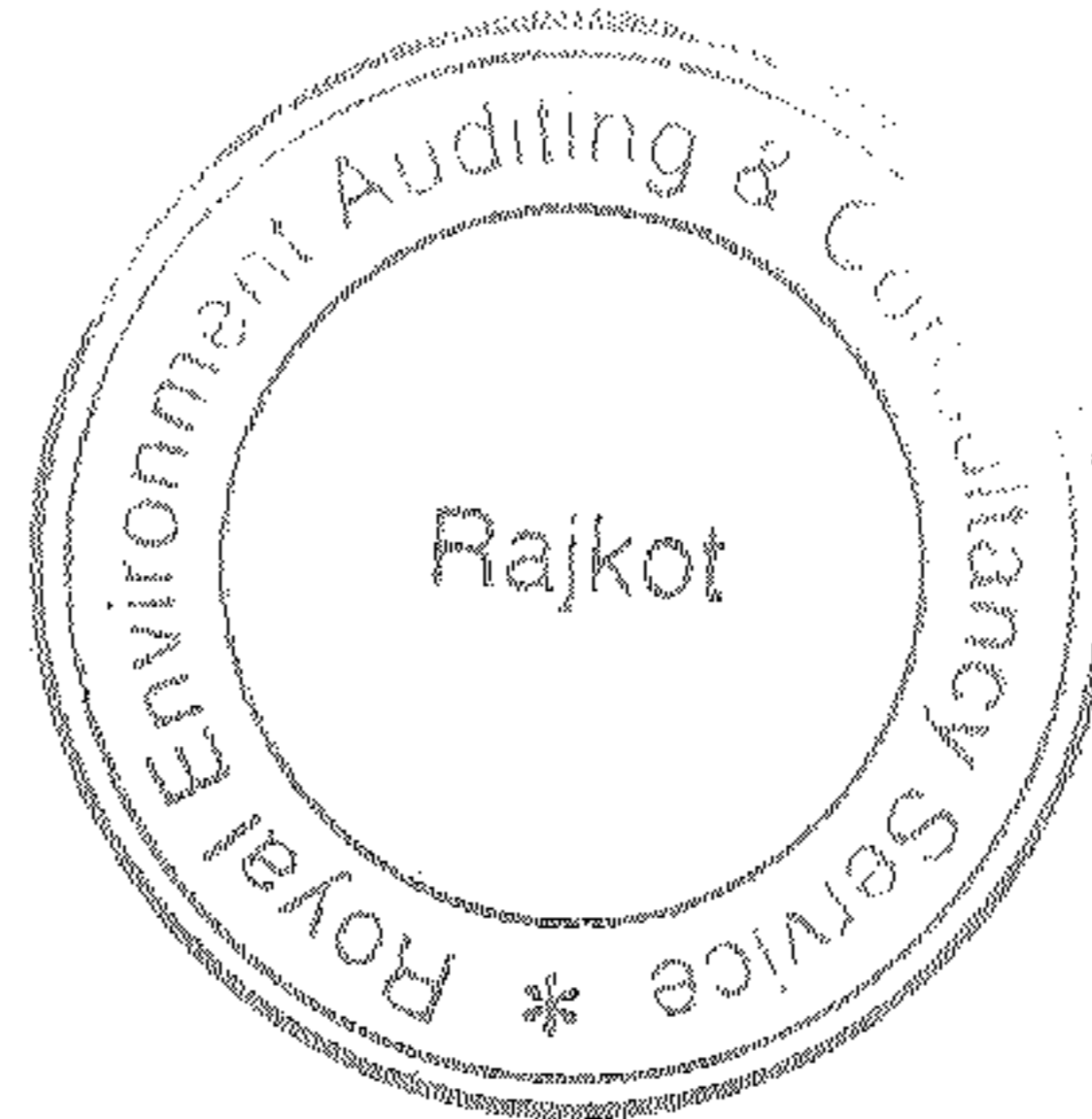
Sr. No.	Particulars	Unit	Stack - 3	Stack - 4	Stack - 5	Stack - 6
1	Date of sampling	---	27-07-2017	27-07-2017	27-07-2017	Not Running
2	Time of sampling	Hr	11.20	12.20	14.25	During Visit
3	Stack Attached to	---	Rotary Kiln 1, 2	Rotary Kiln 3	Induction Furnace - 1, 2 & 3	Reheating Furnace
4	Air Pollution Control Measures	---	Recouperatur & ESP	Recouperatur & ESP	Cyclone Separator & Wet Scrubber	---
5	Stack Diameter	Meter	1.5	1.5	1.5	1.5
6	Stack Height	Meter	35	35	48	30
7	Stack Temperature	Degree Centi.	118	114	71	---
8	Ambient Temperature	Degree Centi.	28	29	29	---
9	Average Velocity of Flue Gases	M/Sec.	8.5	8.1	7.7	---
10	Isokinetic flow rate for P.M. Sampling	LPM	17	19	16	Not Running
11	Gaseous Sampling Flow Rate	LPM	2.0	2.0	2.0	During Visit
12	Permissible Limit for P.M.	mg/Nm <sup>3</sup>	100	100	50	100
13	Measured Concentration of P.M.	mg/Nm <sup>3</sup>	59	53	37	---
14	Permissible Limit for SO <sub>2</sub>	ppm	100	100	100	100
15	Measured Concentration of SO <sub>2</sub>	ppm	20.4	18.9	22.4	---
16	Permissible Limit for Nox	ppm	50	50	50	50
17	Measured Concentration of Nox	ppm	23.7	23.9	19.6	---
18.	Permissible Limit for CO*	---	---	---	---	---
19.	Measured Concentration of CO*	ppm	62	57.5	73.9	---

\*Permissible limit not specified in EC copy as well as in GPCB CC&A

Instruments used : Ecotech Stack Sampler, Model No. ESS 100

Calibration Due On. : 12/09/2017

Royal Environment Auditing & Consultancy Service



*M. K. Mehta*  
Analyst



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Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Date : 03/08/2017

Ref. No. : 726/07/2017-18

### REPORT OF FUGITIVE EMISSION MONITORING

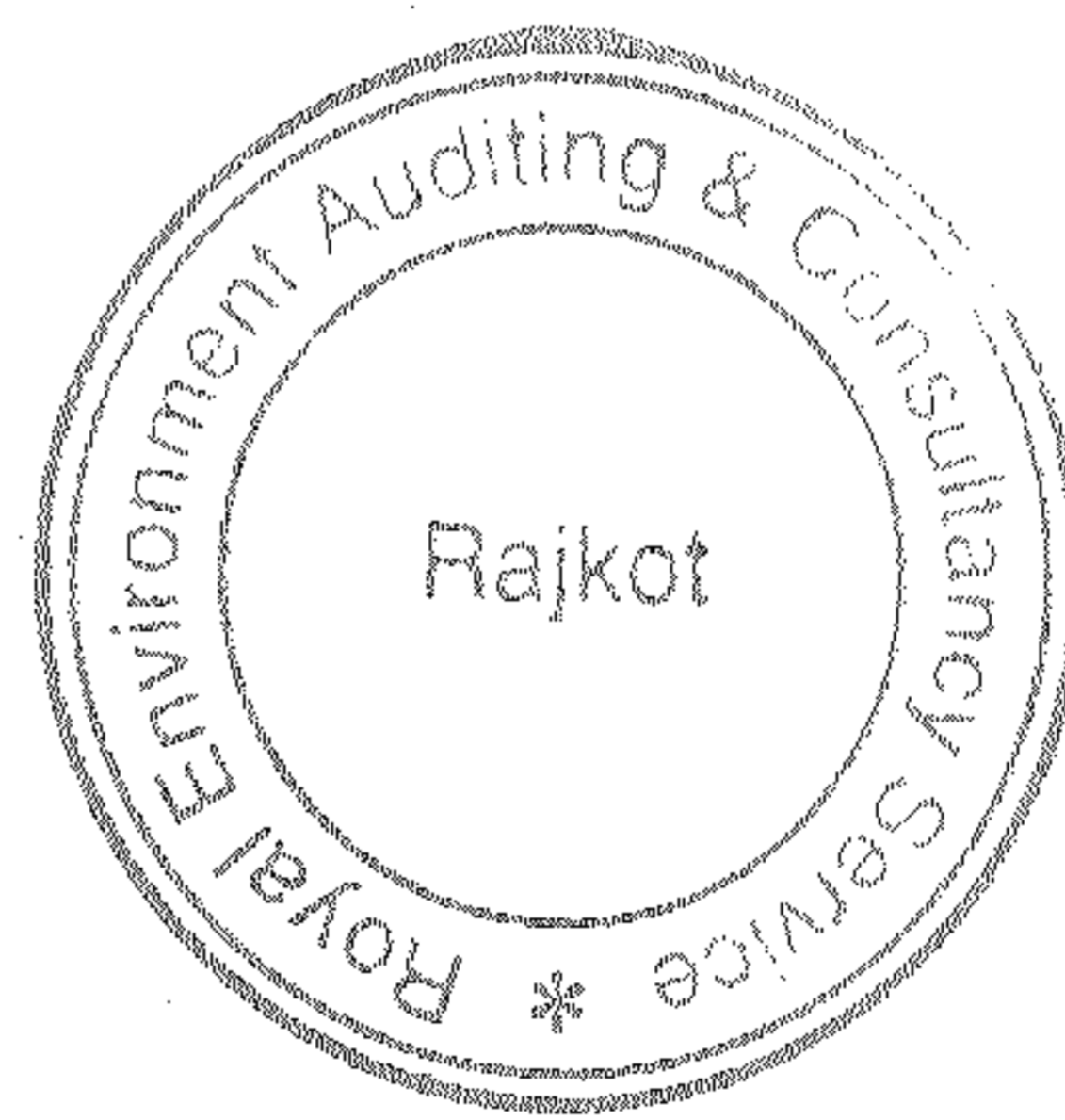
Name of company : **Gallantt Metal Limited**  
Survey No. 175/1,  
Near toll gate,  
Village : Samakhyali,  
Taluka : Bhachau,  
Kutch. Gujarat.

Sampling Site: Near raw material handling area

Sr. No.	Particulars	Unit	Location # 1	Location # 2	Location # 3	Location # 4
01.	Location of Sampling	---	Nr. Vagon trippler	Nr. Sreen area	Nr. Transfer point	Nr. Stock Bin area
02.	Date of sampling	---	26-07-2017	26-07-2017	26-07-2017	26-07-2017
03.	Time of sampling	Hr	8.30	8.45	9.00	9.15
04.	Dominant Wind Direction (From)	---	NE to SW	NE to SW	NE to SW	NE to SW
05.	Average Wind Speed	Km/Hr	5 to 14	5 to 14	5 to 14	5 to 14
06.	Average flow rate during sampling	m <sup>3</sup> /minute	1.06	1.11	1.09	1.12
07.	Permissible limit for SPM	µg/m <sup>3</sup>	3000	3000	3000	3000
08.	Measured Concentration of SPM	µg/m <sup>3</sup>	1812	1735	1529	1634

Instruments Used : Envirotech HVS APM 430 & Ecotech RDS - AAS 217

Calibration due on. 1) 05/05/2018



*[Signature]*  
Analyst

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Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 727/07/2017-18

Date : 03/08/2017

### REPORT OF FUGITIVE EMISSION MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,  
Near toll gate,  
Village : Samakhyali,  
Taluka : Bhachau,  
Kutch, Gujarat.

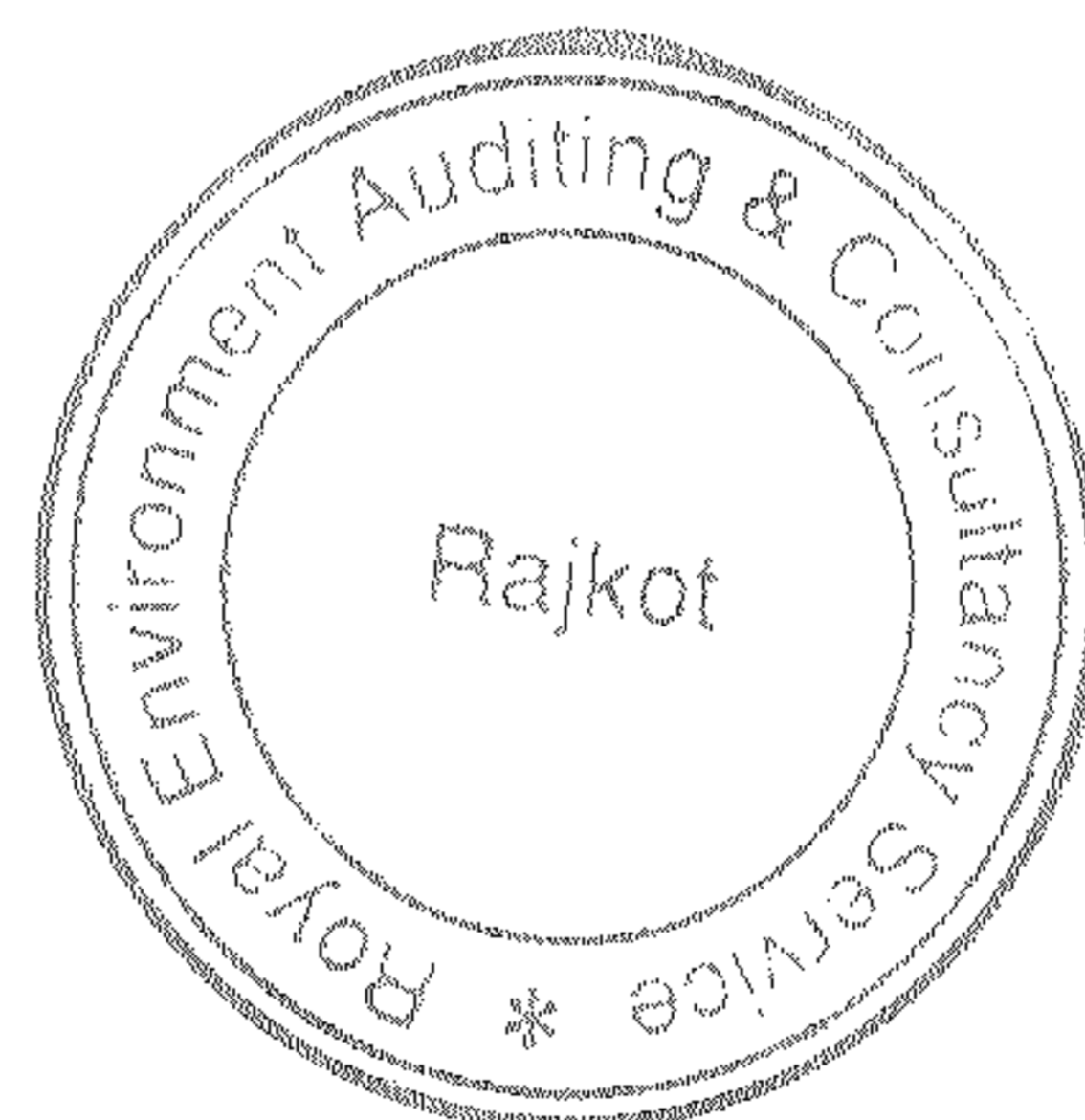
Sampling Site: Crusser area

Sr.No.	Particulars	Unit	Location # 5	Location # 6	Location # 7
01.	Location of Sampling	---	Nr. Crusser area	Nr. Vibrating screen	Nr. Transfer point
02.	Date of sampling	---	26-07-2017	26-07-2017	26-07-2017
03.	Time of sampling	Hr	17.20	17.35	17.50
04.	Dominant Wind Direction (From)	---	WWN	WWN	NE to SW
05.	Average Wind Speed	Km/Hr	5 to 16	5 to 16	5 to 16
06.	Average flow rate during sampling	m <sup>3</sup> /minute	1.11	1.16	1.12
07.	Permissible limit for SPM	µg/m <sup>3</sup>	3000	3000	3000
08.	Measured Concentration of SPM	µg/m <sup>3</sup>	1422	1682	1178

Instruments Used : Envirotech HVS APM 430 & Ecotech RDS - AAS 217

Calibration due on. 1) 05/05/2018

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*Mulcahy*  
Analyst



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Ref. No. : 728/07/2017-18

Date : 03/08/2017

### REPORT OF FUGITIVE EMISSION MONITORING

Name of company : **Gallantt Metal Limited**

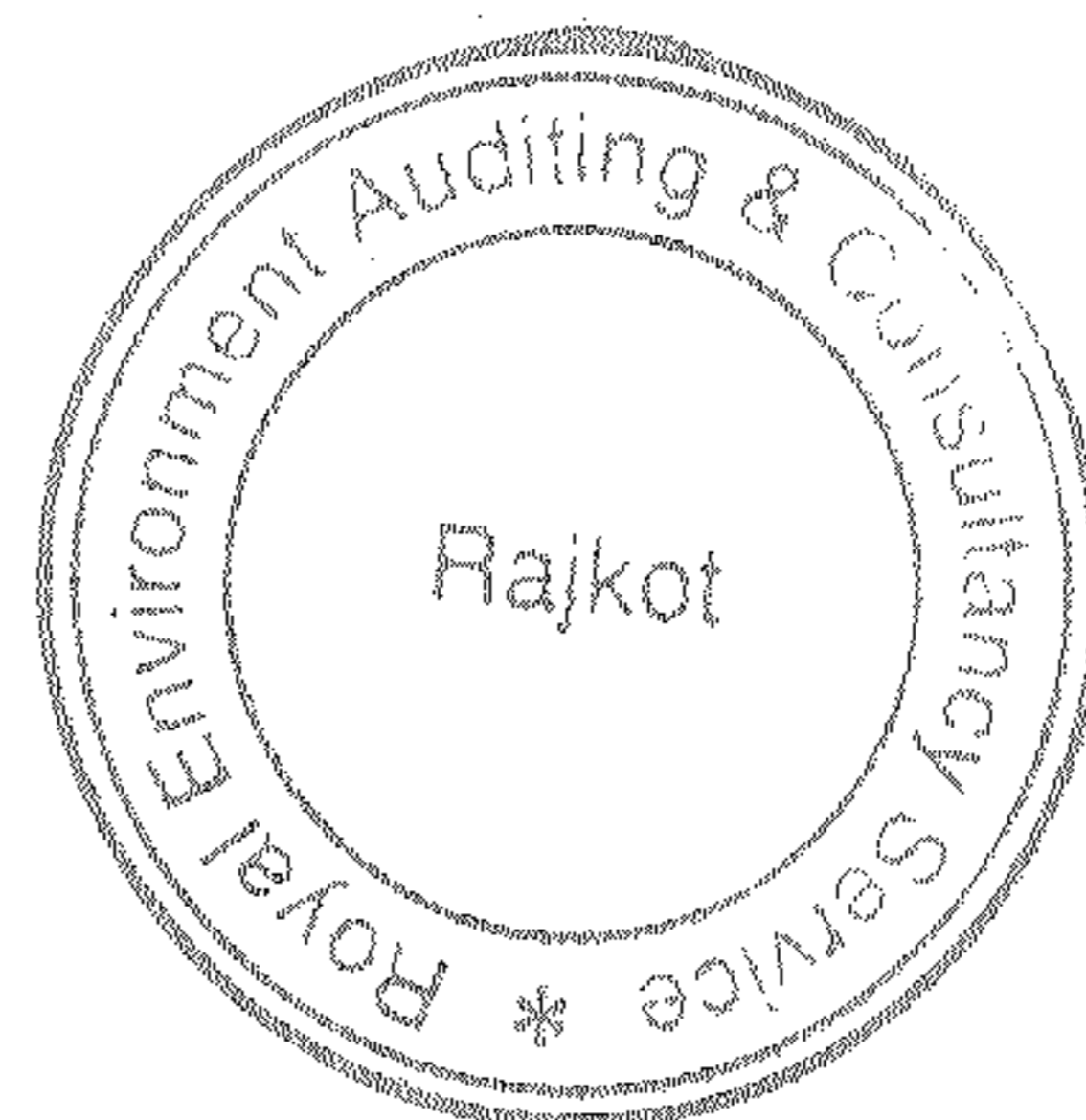
Survey No. 175/1,  
Near toll gate,  
Village : Samakhyali,  
Taluka : Bhachau,  
Kutch, Gujarat.

Sampling Site: Raw material feeder area

Sr. No.	Particulars	Unit	Location # 8	Location # 9	Location # 10
01.	Location of Sampling	---	Nr. Feeder area	Nr. mixing Feeder area	Nr. Transfer point
02.	Date of sampling	---	26-07-2017	27-07-2017	27-07-2017
03.	Time of sampling	Hr	18.05	8.45	9.00
04.	Dominant Wind Direction (From)	---	NE to SW	NE to SW	NE to SW
05.	Average Wind Speed	Km/Hr	5 to 16	6 to 17	6 to 17
06.	Average flow rate during sampling	m <sup>3</sup> /minute	1.12	1.16	1.08
07.	Permissible limit for SPM	µg/m <sup>3</sup>	3000	3000	3000
08.	Measured Concentration of SPM	µg/m <sup>3</sup>	1524	1722	1398

Instruments Used : Envirotech HVS APM 430 & Ecotech RDS - AAS 217

Calibration due on. 1) 05/05/2018



Royal Environment Auditing & Consultancy Service

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Ref. No. : 729/07/2017-18

Date : 03/08/2017

### REPORT OF FUGITIVE EMISSION MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,  
Near toll gate,  
Village : Samakhyali,  
Taluka : Bhachau,  
Kutch, Gujarat.

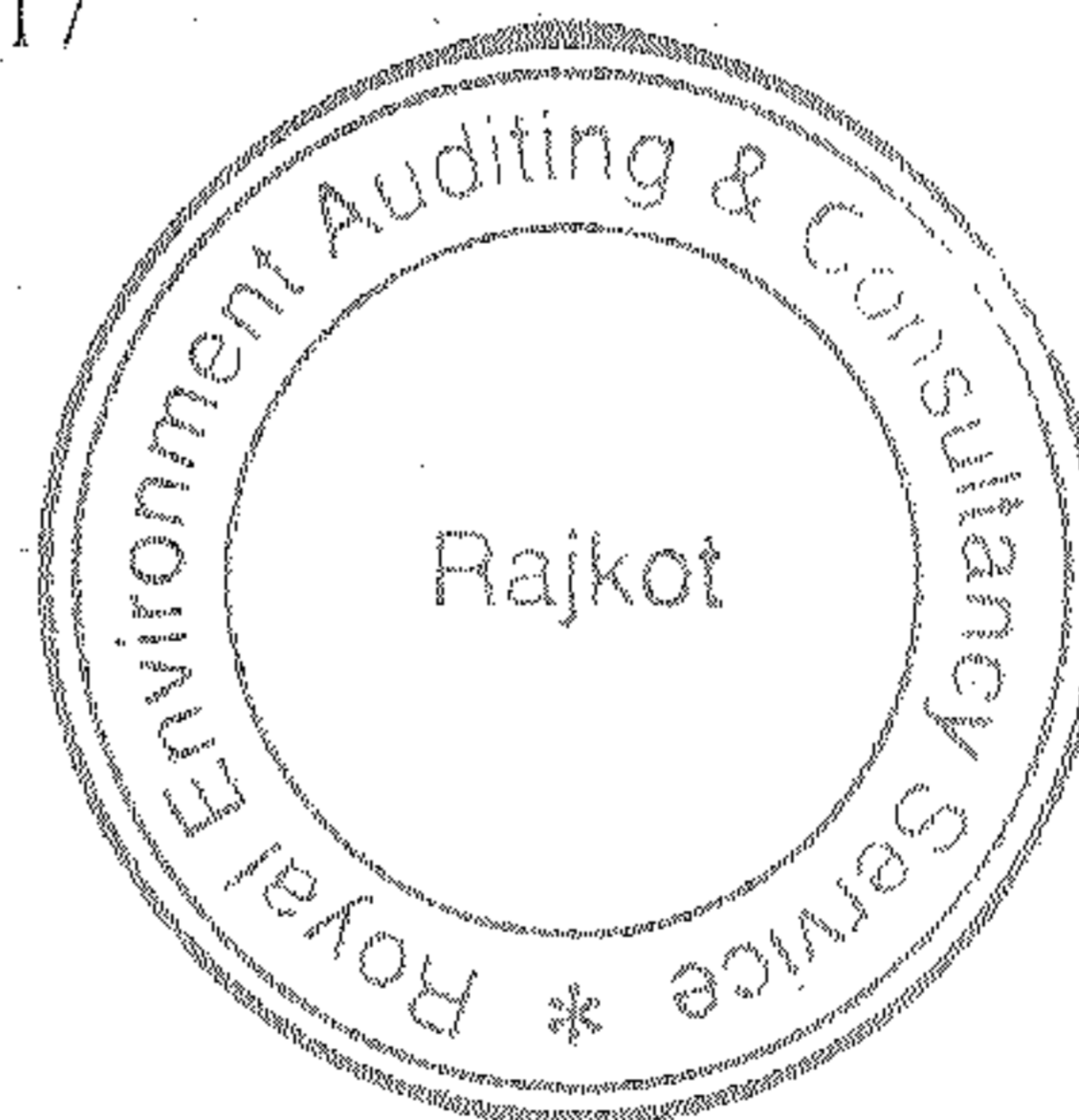
Sampling Site: Cooler Discharge Area

Sr. No.	Particulars	Unit	Location # 11	Location # 12
01.	Location of Sampling	---	Nr. Wagon tippler	Nr. Screen area
02.	Date of sampling	---	27-07-2017	27-07-2017
03.	Time of sampling	Hr	9.15	9.30
04.	Dominant Wind Direction (From)	---	NE to SW	NE to SW
05.	Average Wind Speed	Km/Hr	6 to 17	6 to 17
06.	Average flow rate during sampling	m <sup>3</sup> /minute	1.12	1.14
07.	Permissible limit for SPM	µg/m <sup>3</sup>	3000	3000
08.	Measured Concentration of SPM	µg/m <sup>3</sup>	1554	1438

Instruments Used : Envirotech HVS APM 430 & Ecotech RDS - AAS 217

Calibration due on. 1) 05/05/2018

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*[Signature]*  
Analyst





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Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Date : 03/08/2017

Ref. No. : 730/07/2017-18

### REPORT OF FUGITIVE EMISSION MONITORING

Name of company : **Gallantt Metal Limited**  
Survey No. 175/1,  
Near toll gate,  
Village : Samakhyali,  
Taluka : Bhachau,  
Kutch, Gujarat.

Sampling Site: Product Processing area

Sr. No.	Particulars	Unit	Location # 13	Location # 14	Location # 15	Location # 16
01.	Location of Sampling	---	Nr. Intermediate stock bin area	Nr. Screening plant	Nr. Magnetic saprating plant	Nr. Transfer plant
02.	Date of sampling	---	27-07-2017	27-07-2017	27-07-2017	27-07-2017
03.	Time of sampling	Hr	17.30	17.45	18.00	18.15
04.	Dominant Wind Direction (From)	---	NE to SW	NE to SW	NE to SW	NE to SW
05.	Average Wind Speed	Km/Hr	5 to 17	5 to 17	5 to 17	5 to 17
06.	Average flow rate during sampling	m <sup>3</sup> /minute	1.06	1.11	1.09	1.13
07.	Permissible limit for SPM	µg/m <sup>3</sup>	3000	3000	3000	3000
08.	Measured Concentration of SPM	µg/m <sup>3</sup>	1428	1356	1524	1676

Instruments Used : Envirotech HVS APM 430 & Ecotech RDS - AAS 217

Calibration due on. 1) 05/05/2018

*Dejadeja*  
Royal Environment Auditing & Consultancy Service



*Praveen*  
Analyst



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Ref. No. : 731/07/2017-18

Date : 03/08/2017

### REPORT OF FUGITIVE EMISSION MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,  
Near toll gate,  
Village : Samakhali,  
Taluka : Bhachau,  
Kutch, Gujarat.

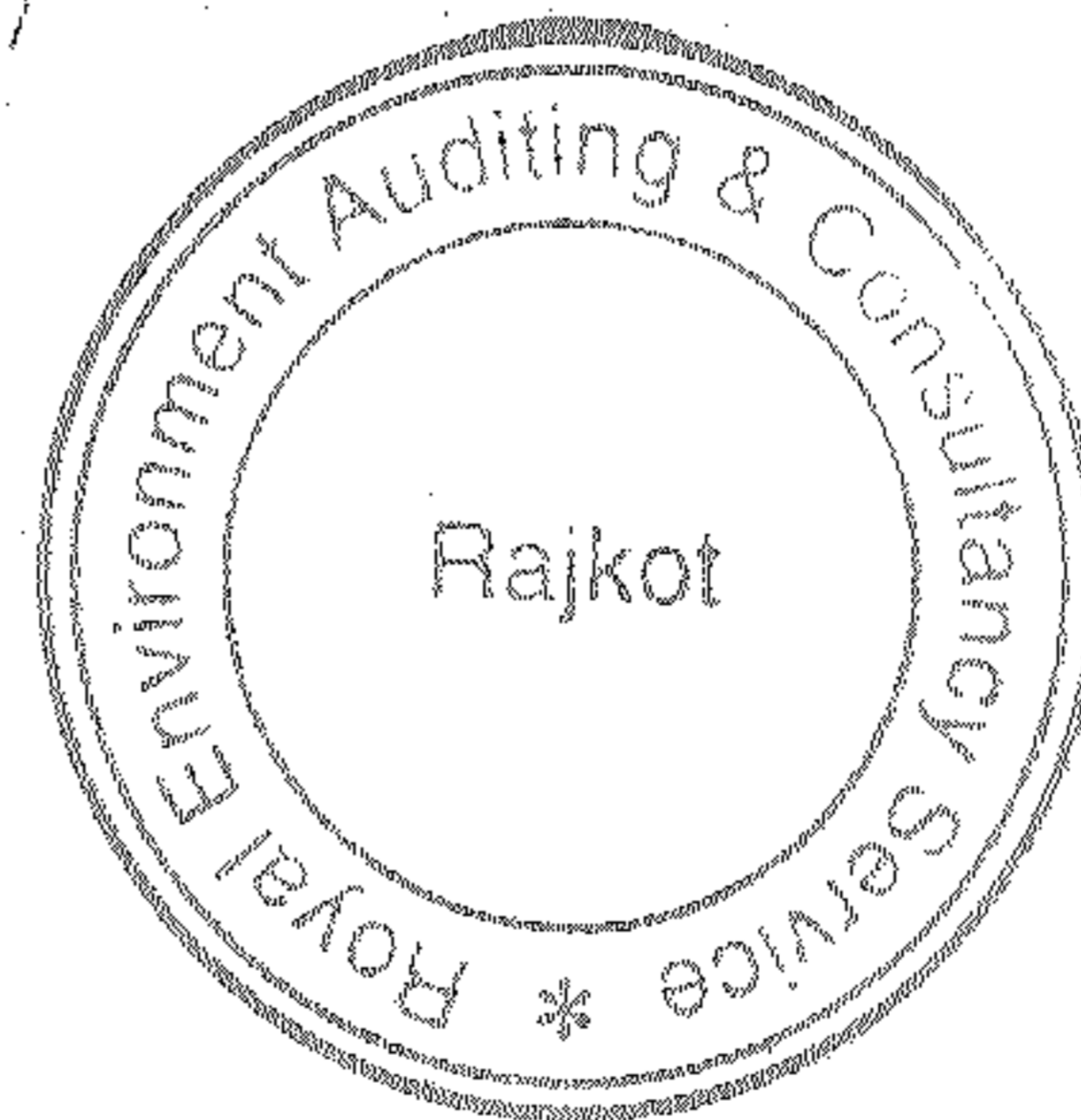
Sampling Site: Product Processing area

Sr. No.	Particulars	Unit	Location # 17	Location # 18	Location # 19
01.	Location of Sampling	---	Nr. Oversize discharge area	Nr. Product separation	Bagging area
02.	Date of sampling	---	28-07-2017	28-07-2017	28-07-2017
03.	Time of sampling	Hr	8.30	8.50	9.05
04.	Dominant Wind Direction (From)	---	NE to SW	NE to SW	NE to SW
05.	Average Wind Speed	Km/Hr	6 to 15	6 to 15	6 to 15
06.	Average flow rate during sampling	m <sup>3</sup> /minute	1.13	1.09	1.14
07.	Permissible limit for SPM	µg/m <sup>3</sup>	3000	3000	3000
08.	Measured Concentration of SPM	µg/m <sup>3</sup>	1429	1526	1634

Instruments Used : Envirotech HVS APM 430 & Ecotech RDS - AAS 217

Calibration due on. 1) 05/05/2018

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*[Signature]*  
Analyst



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Ph.: +91 281 2360695 ■ E-mail : royaleenvironment@live.com ■ admin@royalconsultancy.com

Ref. No. : 732/07/2017-18

Date : 03/08/2017

### REPORT OF AMBIENT AIR QUALITY MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,

Near toll gate,

Village : Samakhyali,

Taluka : Bhachau,

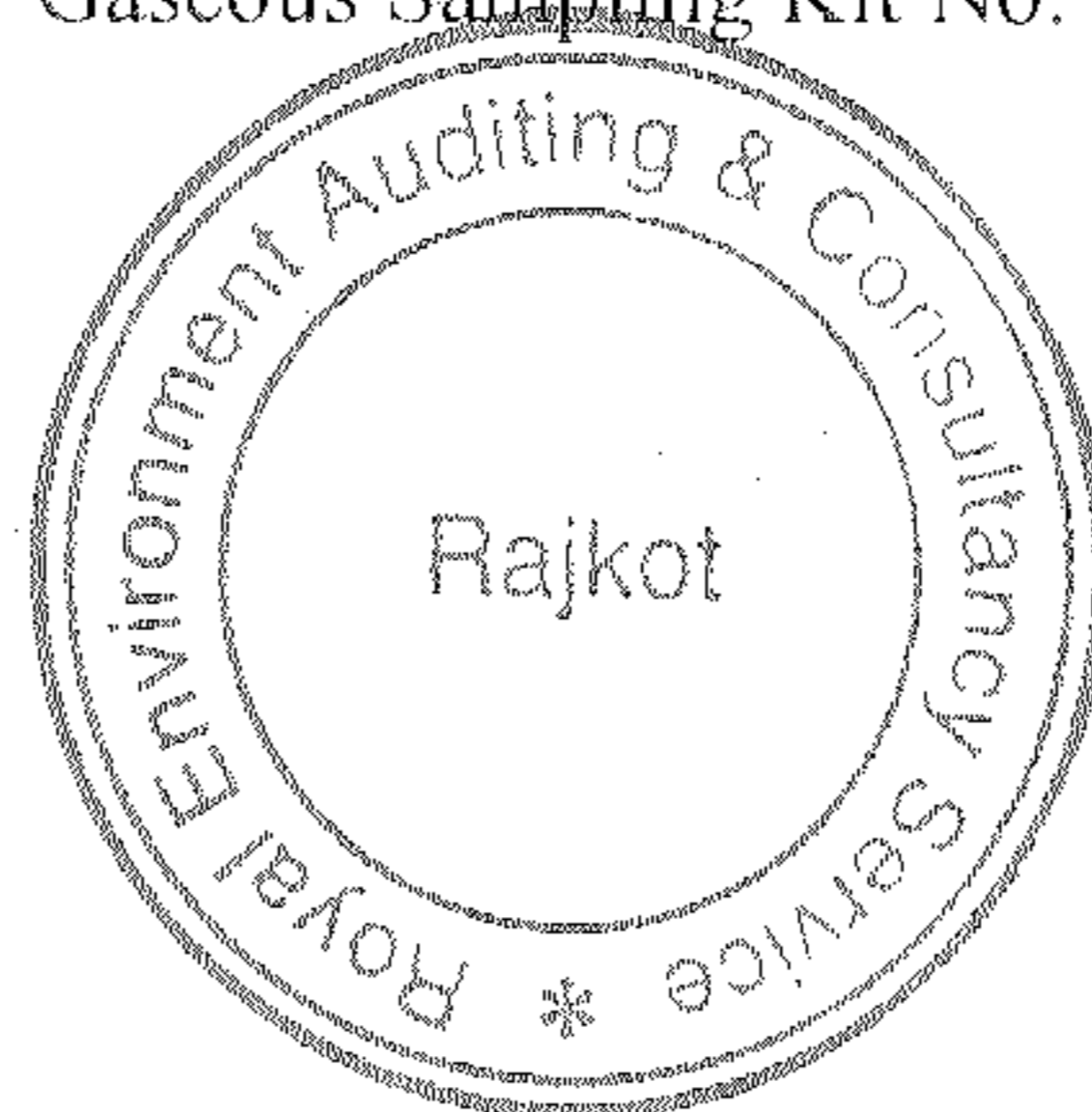
Kutch, Gujarat.

Sr. No.	Particulars	Unit	Location No. 1	Location No. 2
01.	Location of Sampling	---	Officer Colony	Main Security Gate
02.	Date of sampling	---	29-07-2017	29-07-2017
03.	Time of sampling	Hr	7.10	7.25
04.	Duration of Sampling	Min.	1440	1440
05.	Average Wind Speed	Km/Hr	7 to 15	7 to 15
06.	Average flow rate during sampling	m <sup>3</sup> /Hr	1.0	1.0
07.	Average flow rate for Gas sampling	LPM	0.2	0.2
08.	Permissible Limits of PM 2.5	µg/m <sup>3</sup>	60	60
09.	Measured Concentration of PM 2.5	µg/m <sup>3</sup>	26	29
10.	Permissible Limits of PM 10	µg/m <sup>3</sup>	100	100
11.	Measured Concentration of PM 10	µg/m <sup>3</sup>	53	58
14.	Permissible Limits of SOx	µg/m <sup>3</sup>	80	80
15.	Measured Concentration of SOx	µg/m <sup>3</sup>	11.9	10.7
16.	Permissible Limits of NOx	µg/m <sup>3</sup>	80	80
17.	Measured Concentration of NOx	µg/m <sup>3</sup>	17.6	18.4

Instrument used : 1) Ecotech make (RDS), Model No. APM - 217 BL, Gaseous Sampling Kit No. AAS 190

2) Ecotech make 2 Nos. PM 2.5 ,

Calibration due on : 1) 05/05/2018



Royal Environment Auditing & Consultancy Service

*M. Patel*  
Analyst

