



Royal

Environment Auditing & Consultancy Service

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

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

Ref. No. : 587/07/2016-17

Date : 31/07/2016

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 | --- | 25-07-2016 |
| 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 | 3.6 |
| 07. | Ambient Temperature | Degree Centi. | 35 |
| 08. | Stack Temperature | Degree Centi. | 120 |
| 09. | Average Velocity of Flue Gases | M/Sec. | 8.2 |
| 10. | Isokinetic flow rate for P.M. Sampling | LPM | 19 |
| 11. | Gaseous Sampling Flow Rate | LPM | 2.0 |
| 12. | Permissible Limit for P.M. | mg/Nm ³ | 100 |
| 13. | Measured Concentration of P.M. | mg/Nm ³ | 61 |
| 14. | Permissible Limit for SO ₂ | ppm | 100 |
| 15. | Measured Concentration of SO ₂ | ppm | 21.2 |
| 16. | Permissible Limit for NOx | ppm | 50 |
| 17. | Measured Concentration of NOx | ppm | 30.5 |

Instruments used : Ecotech Stack Sampler, Model No. ESS 100
Calibration Due On. : 25/09/2016

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Ref. No. : 589/07/2016-17

Date : 31/07/2016

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 | --- | 25-07-2016 | 25-07-2016 | 25-07-2016 | 25-07-2016 |
| 2 | Time of sampling | Hr | 11.00 | 12.00 | 14.00 | 15.00 |
| 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. | 119 | 117 | 80 | 114 |
| 8 | Ambicnt Temperature | Degree Centi. | 35 | 36 | 36 | 35 |
| 9 | Average Velocity of Flue Gases | M/Sec. | 9.7 | 9.3 | 9.5 | 9.1 |
| 10 | Isokinetic flow rate for P.M. Sampling | LPM | 19 | 18 | 18 | 19 |
| 11 | Gaseous Sampling Flow Rate | LPM | 2.0 | 2.0 | 2.0 | 2.0 |
| 12 | Permissible Limit for P.M. | mg/Nm ³ | 100 | 100 | 50 | 100 |
| 13 | Measured Concentration of P.M. | mg/Nm ³ | 57 | 55 | 29 | 60 |
| 14 | Permissible Limit for SO ₂ | ppm | 100 | 100 | 100 | 100 |
| 15 | Measured Concentration of SO ₂ | ppm | 14.5 | 11.2 | 13.5 | 11.0 |
| 16 | Permissible Limit for Nox | ppm | 50 | 50 | 50 | 50 |
| 17 | Measured Concentration of Nox | ppm | 20.8 | 26.8 | 18.5 | 11.2 |

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

Calibration Due On. : 25/09/2016

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Ref. No. : 590/07/2016-17

Date : 31/07/2016

REPORT OF FUGITIVE EMISSION MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,

Near toll gate,

Village : Samakhyali,

Taluka : Bhachau,

Kutch, Gujarat.

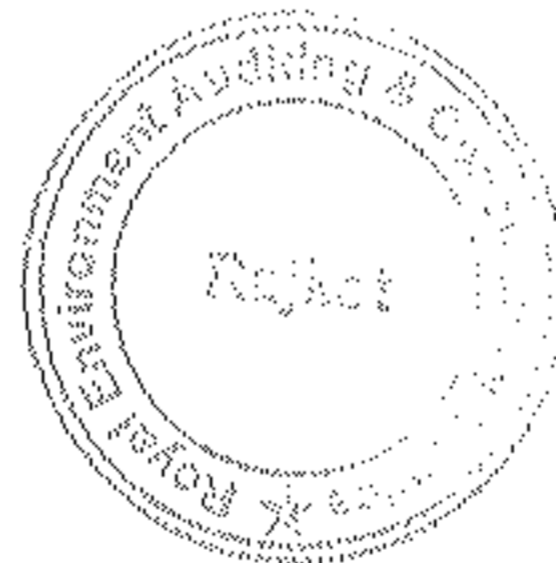
Sampling Site: Near raw material handling area

| Sr. No. | Particulars | Unit | Location # 1 | Location # 2 | Location # 3 | Location # 4 |
|---------|-----------------------------------|------------------------|-------------------|----------------|--------------------|--------------------|
| 01. | Location of Sampling | --- | Nr. Vagon tripler | Nr. Sreen area | Nr. Transfer point | Nr. Stock Bin area |
| 02. | Date of sampling | --- | 25-07-2016 | 25-07-2016 | 25-07-2016 | 25-07-2016 |
| 03. | Time of sampling | Hr | 9.15 | 9.25 | 9.35 | 9.45 |
| 04. | Dominant Wind Direction (From) | --- | NE to SW | NE to SW | NE to SW | NE to SW |
| 05. | Average Wind Speed | Km/Hr | 4 to 15 | 4 to 15 | 4 to 15 | 2 to 10 |
| 06. | Average flow rate during sampling | m ³ /minute | 1.12 | 1.18 | 1.11 | 1.12 |
| 07. | Permissible limit for SPM | µg/m ³ | 3000 | 3000 | 3000 | 3000 |
| 08. | Measured Concentration of SPM | µg/m ³ | 2012 | 2217 | 2315 | 2116 |

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

Calibration due on. 1) 15/05/2017

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

Ref. No. : 592/07/2016-17

Date : 31/07/2016

REPORT OF FUGITIVE EMISSION MONITORING

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,

Near toll gate,

Village : Samakhyali,

Taluka : Bhachau,

Kutch, Gujarat.

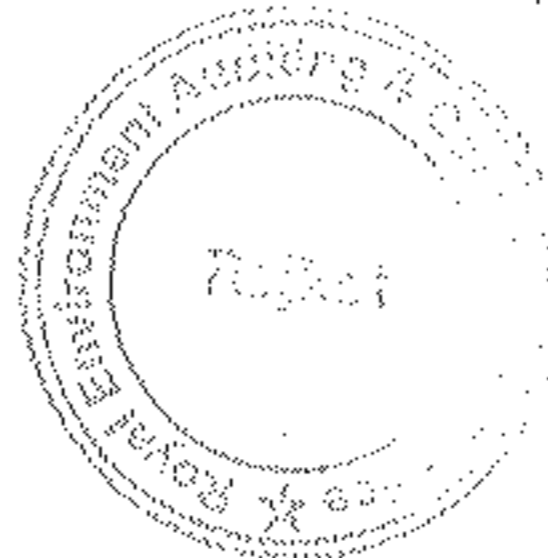
Sampling Site: Raw material feeder area

| 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 | --- | 25-07-2016 | 25-07-2016 | 25-07-2016 |
| 03. | Time of sampling | Hr | 18.10 | 18.30 | 18.45 |
| 04. | Dominant Wind Direction (From) | --- | NE to SW | NE to SW | NE to SW |
| 05. | Average Wind Speed | Km/Hr | 2 to 10 | 2 to 10 | 2 to 10 |
| 06. | Average flow rate during sampling | m ³ /minute | 1.12 | 1.05 | 1.17 |
| 07. | Permissible limit for SPM | µg/m ³ | 3000 | 3000 | 3000 |
| 08. | Measured Concentration of SPM | µg/m ³ | 2086 | 1853 | 2058 |

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

Calibration due on. 1) 15/05/2017

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Ref. No. : 591/07/2016-17

Date : 31/07/2016

REPORT OF FUGITIVE EMISSION MONITORING

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

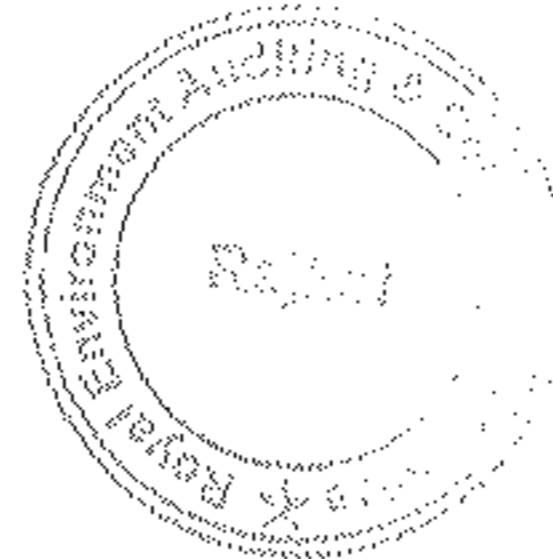
Sampling Site: Crusser area

| 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 | --- | 25-07-2016 | 25-07-2016 | 25-07-2016 |
| 03. | Time of sampling | Hr | 10.00 | 17.35 | 17.50 |
| 04. | Dominant Wind Direction (From) | --- | NE to SW | NE to SW | NE to SW |
| 05. | Average Wind Speed | Km/Hr | 3 to 12 | 4 to 12 | 3 to 10 |
| 06. | Average flow rate during sampling | m ³ /minute | 1.11 | 1.05 | 1.14 |
| 07. | Permissible limit for SPM | µg/m ³ | 3000 | 3000 | 3000 |
| 08. | Measured Concentration of SPM | µg/m ³ | 2019 | 2115 | 1993 |

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

Calibration due on. 1) 15/05/2017

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Ref. No. : 593/07/2016-17

Date : 31/07/2016

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 | --- | 26-07-2016 | 26-07-2016 |
| 03. | Time of sampling | Hr | 9.00 | 9.20 |
| 04. | Dominant Wind Direction (From) | --- | NE to SW | NE to SW |
| 05. | Average Wind Speed | Km/Hr | 2 to 10 | 2 to 10 |
| 06. | Average flow rate during sampling | m ³ /minute | 1.11 | 1.00 |
| 07. | Permissible limit for SPM | µg/m ³ | 3000 | 3000 |
| 08. | Measured Concentration of SPM | µg/m ³ | 2115 | 1993 |

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

Calibration due on. 1) 15/05/2017

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Ref. No. : 594/06/2016-17

Date : 31/07/2016

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 | --- | 26-07-2016 | 26-07-2016 | 26-07-2016 | 26-07-2016 |
| 03. | Time of sampling | Hr | 9.40 | 10.00 | 10.15 | 17.45 |
| 04. | Dominant Wind Direction (From) | --- | NE to SW | NE to SW | NE to SW | NE to SW |
| 05. | Average Wind Speed | Km/Hr | 4 to 14 | 4 to 14 | 4 to 14 | 4 to 10 |
| 06. | Average flow rate during sampling | m ³ /minute | 1.15 | 1.00 | 1.19 | 1.14 |
| 07. | Permissible limit for SPM | µg/m ³ | 3000 | 3000 | 3000 | 3000 |
| 08. | Measured Concentration of SPM | µg/m ³ | 2215 | 2117 | 1959 | 2016 |

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

Calibration due on. 1) 15/05/2017

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Ref. No. : 595/07/2016-17

Date : 31/07/2016

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 # 17 | Location # 18 | Location # 19 |
|---------|-----------------------------------|------------------------|-----------------------------|------------------------|---------------|
| 01. | Location of Sampling | --- | Nr. Oversize discharge area | Nr. Product separation | Bagging area |
| 02. | Date of sampling | --- | 26-07-2016 | 26-07-2016 | 26-07-2016 |
| 03. | Time of sampling | Hr | 18.00 | 18.10 | 18.30 |
| 04. | Dominant Wind Direction (From) | --- | NE to SW | NE to SW | NE to SW |
| 05. | Average Wind Speed | Km/Hr | 4 to 14 | 4 to 14 | 4 to 14 |
| 06. | Average flow rate during sampling | m ³ /minute | 1.14 | 1.16 | 1.13 |
| 07. | Permissible limit for SPM | µg/m ³ | 3000 | 3000 | 3000 |
| 08. | Measured Concentration of SPM | µg/m ³ | 1859 | 2213 | 1756 |

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

Calibration due on, 1) 15/05/2017

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Ref. No. : 596/07/2016-17

Date : 31/07/2016

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 | --- | 27-07-2016 | 27-07-2016 |
| 03. | Time of sampling | Hr | 8.30 | 8.45 |
| 04. | Duration of Sampling | Min. | 1440 | 1440 |
| 05. | Average Wind Speed | Km/Hr | 4 to 14 | 4 to 14 |
| 06. | Average flow rate during sampling | m ³ /Hr | 1.1 | 1.0 |
| 07. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 |
| 08. | Permissible Limits of PM 2.5 | µg/m ³ | 60 | 60 |
| 09. | Measured Concentration of PM 2.5 | µg/m ³ | 37 | 41 |
| 10. | Permissible Limits of PM 10 | µg/m ³ | 100 | 100 |
| 11. | Measured Concentration of PM 10 | µg/m ³ | 57 | 53 |
| 14. | Permissible Limits of SOx | µg/m ³ | 80 | 80 |
| 15. | Measured Concentration of SOx | µg/m ³ | 9.6 | 11.4 |
| 16. | Permissible Limits of NOx | µg/m ³ | 80 | 80 |
| 17. | Measured Concentration of NOx | µg/m ³ | 19.5 | 21.3 |

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) 15/05/2017

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Ref. No. : 597/07/2016-17

Date : 31/07/2016

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. 3 | Location No. 4 |
|---------|-------------------------------------|--------------------|-----------------|------------------|
| 01. | Location of Sampling | --- | B/h. Kiln 1 & 2 | Nr. Furnace Area |
| 02. | Date of sampling | --- | 27-07-2016 | 27-07-2016 |
| 03. | Time of sampling | Hr | 9.00 | 9.15 |
| 04. | Duration of Sampling | Min. | 1440 | 1440 |
| 05. | Average Wind Speed | Km/Hr | 4 to 14 | 4 to 14 |
| 06. | Average flow rate during sampling | m ³ /Hr | 1.1 | 1.1 |
| 07. | Average flow rate for Gas sampling | LPM | 0.2 | 0.2 |
| 08. | Permissible Limits of PM 2.5 | µg/m ³ | 60 | 60 |
| 09. | Measured Concentration of PM 2.5 | µg/m ³ | 38 | 42 |
| 10. | Permissible Limits of PM 10 | µg/m ³ | 100 | 100 |
| 11. | Measured Concentration of PM 10 | µg/m ³ | 49 | 61 |
| 14. | Permissible Limits of SOx | µg/m ³ | 80 | 80 |
| 15. | Measured Concentration of SOx | µg/m ³ | 15.6 | 12.7 |
| 16. | Permissible Limits of NOx | µg/m ³ | 80 | 80 |
| 17. | Measured Concentration of NOx | µg/m ³ | 16.4 | 18.3 |

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) 15/05/2017

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Ref. No. : 598/07/2016-17

Date : 31/07/2016

AMBIENT NOISE LEVEL MEASUREMENT

Name of company : **Gallantt Metal Limited**

Survey No. 175/1,

Near toll gate,

Village : Samakhyali,

Taluka : Bhachau,

Kutch, Gujarat.

| Sr. No. | Location of Sampling | Noise Level Avg. in dB (A) | |
|---------|---------------------------|---------------------------------------|---|
| | | 26-07-2016 | 26-07-2016 |
| | Date of sampling | 26-07-2016 | 26-07-2016 |
| | Time of sampling | Day Time 6.00 AM - 10.00 PM | Night Time 10.00 PM - 6.00 AM |
| | Permissible Limits | 75.0 | 70.0 |
| 01. | Near Main Gate | 65.7 | 63.5 |
| 02. | Rolling Mill Area | 73.5 | 67.2 |
| 03. | Induction Furnace | 69.4 | 63.2 |
| 04. | Reheating Furnace | 66.8 | 62.4 |
| 05. | Rotary Kiln | 71.6 | 65.8 |
| 06. | Power Plant | 70.2 | 64.2 |

Instruments used : Sound level meter, Model : SL - 4030 (Lutron Make)

Range : A - 30 to 80 dB, B-50 to 100 dB, C-80 to 130 dB.

Recalibration is Due On : 25/09/2016

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