

# EMISSION SOURCES - MAXIMUM ALLOWABLE EMISSION RATES

4682B/PSD-TX-761M1

This table lists the maximum allowable emission rates and all sources of air contaminants on the applicant's property covered by this permit. The emission rates shown are those derived from information submitted as part of the application for permit and are the maximum rates allowed for these facilities. Any proposed increase in emission rates may require an application for a modification of the facilities covered by this permit.

## AIR CONTAMINANTS DATA

| Emission<br>Point No. (1) | Source<br>Name (2)   | Air Contaminant<br>Name (3) | <u>Emission Rates*</u> |       |
|---------------------------|----------------------|-----------------------------|------------------------|-------|
|                           |                      |                             | #/hr                   | TPY   |
| 1L                        | USC Furnace L (5)    | VOC                         | 0.5                    | 2.2   |
|                           |                      | NOx                         | 27.3                   | 119.6 |
|                           |                      | SO2                         | 0.21                   | 0.92  |
|                           |                      | PM                          | 1.8                    | 7.9   |
|                           |                      | CO                          | 14.1                   | 61.8  |
| 1M                        | USC Furnace M (5)    | VOC                         | 0.5                    | 2.2   |
|                           |                      | NOx                         | 27.3                   | 119.6 |
|                           |                      | SO2                         | 0.21                   | 0.92  |
|                           |                      | PM                          | 1.8                    | 7.9   |
|                           |                      | CO                          | 14.1                   | 61.8  |
| 1N                        | USC Furnace N (6)    | VOC                         | 0.5                    | 2.2   |
|                           |                      | NOx                         | 27.3                   | 119.6 |
|                           |                      | SO2                         | 0.21                   | 0.92  |
|                           |                      | PM                          | 1.8                    | 7.9   |
|                           |                      | CO                          | 14.1                   | 61.8  |
| 9A                        | Decoking Cyclone (5) | PM                          | 9.0**                  | 3.7   |
|                           |                      | CO                          | 29.2**                 | 4.5   |
| 9B                        | Decoking Cyclone (5) | PM                          | 9.0**                  | 3.9   |
|                           |                      | CO                          | 29.2**                 | 5.1   |
| 45                        | Tank (6)             | VOC                         | 0.9                    | 3.8   |
|                           |                      | Benzene                     | 0.006                  | 0.025 |
|                           | Fugitives (4)        | VOC                         | 6.2                    | 27.2  |
|                           |                      | Benzene                     | 0.08                   | 0.35  |

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| Emission<br>Point No. (1) | Source<br>Name (2) | Air Contaminant<br>Name (3) | <u>Emission Rates*</u> |        |
|---------------------------|--------------------|-----------------------------|------------------------|--------|
|                           |                    |                             | #/hr                   | TPY    |
| 1A                        | USC Furnace A      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |

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| Emission<br>Point No. (1) | Source<br>Name (2) | Air Contaminant<br>Name (3) | <u>Emission Rates*</u> |        |
|---------------------------|--------------------|-----------------------------|------------------------|--------|
|                           |                    |                             | #/hr                   | TPY    |
| 1B                        | USC Furnace B      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |
| 1C                        | USC Furnace C      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |
| 1D                        | USC Furnace D      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |
| 1E                        | USC Furnace E      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |
| 1F                        | USC Furnace F      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |
| 1G                        | USC Furnace G      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |
| 1H                        | USC Furnace H      | VOC                         | 0.74                   | 3.24   |

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|---------------------------|--------------------|-----------------------------|------------------------|--------|
|                           |                    |                             | #/hr                   | TPY    |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |

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| Emission<br>Point No. (1) | Source<br>Name (2) | Air Contaminant<br>Name (3) | <u>Emission Rates*</u> |        |
|---------------------------|--------------------|-----------------------------|------------------------|--------|
|                           |                    |                             | #/hr                   | TPY    |
| 1K                        | USC Furnace K      | VOC                         | 0.74                   | 3.24   |
|                           |                    | NOx                         | 29.70                  | 130.09 |
|                           |                    | SO2                         | 51.40                  | 225.13 |
|                           |                    | PM                          | 1.37                   | 6.0    |
|                           |                    | CO                          | 1.97                   | 8.63   |
| 3A                        | VMR Furnace A      | VOC                         | 0.50                   | 2.19   |
|                           |                    | NOx                         | 20.00                  | 87.6   |
|                           |                    | SO2                         | 34.50                  | 151.11 |
|                           |                    | PM                          | 0.92                   | 4.03   |
|                           |                    | CO                          | 1.7                    | 7.5    |
| 3B                        | VMR Furnace B      | VOC                         | 0.50                   | 2.19   |
|                           |                    | NOx                         | 20.00                  | 87.6   |
|                           |                    | SO2                         | 34.50                  | 151.11 |
|                           |                    | PM                          | 0.92                   | 4.03   |
|                           |                    | CO                          | 1.7                    | 7.5    |
| 4A                        | HP Steam Boiler A  | VOC                         | 2.23                   | 9.77   |
|                           |                    | NOx                         | 133.70                 | 585.6  |
|                           |                    | SO2                         | 324.30                 | 1420.4 |
|                           |                    | PM                          | 32.20                  | 141.04 |
|                           |                    | CO                          | 7.2                    | 31.54  |
| 4B                        | HP Steam Boiler B  | VOC                         | 2.23                   | 9.77   |
|                           |                    | NOx                         | 133.70                 | 585.6  |
|                           |                    | SO2                         | 324.30                 | 1420.4 |
|                           |                    | PM                          | 32.20                  | 141.04 |
|                           |                    | CO                          | 7.2                    | 31.54  |
| 4C                        | HP Steam Boiler C  | VOC                         | 2.23                   | 9.77   |
|                           |                    | NOx                         | 133.70                 | 585.6  |
|                           |                    | SO2                         | 324.30                 | 1420.4 |
|                           |                    | PM                          | 32.20                  | 141.04 |
|                           |                    | CO                          | 7.2                    | 31.54  |
| 4D                        | HP Steam Boiler D  | VOC                         | 2.23                   | 9.77   |

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|---------------------------|--------------------|-----------------------------|------------------------|--------|--------|
|                           |                    |                             | #/hr                   | TPY    |        |
|                           |                    |                             | NOx                    | 133.70 | 585.6  |
|                           |                    |                             | SO2                    | 324.30 | 1420.4 |
|                           |                    |                             | PM                     | 32.20  | 141.04 |
|                           |                    |                             | CO                     | 7.2    | 31.54  |

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| Emission<br>Point No. (1) | Source<br>Name (2)    | Air Contaminant<br>Name (3) | <u>Emission Rates*</u> |        |
|---------------------------|-----------------------|-----------------------------|------------------------|--------|
|                           |                       |                             | #/hr                   | TPY    |
| 5A                        | Steam S. Heater A     | VOC                         | 0.67                   | 2.93   |
|                           |                       | NOx                         | 39.90                  | 174.80 |
|                           |                       | SO2                         | 96.80                  | 423.98 |
|                           |                       | PM                          | 9.61                   | 42.1   |
|                           |                       | CO                          | 2.6                    | 11.39  |
| 5B                        | Steam S. Heater B     | VOC                         | 0.67                   | 2.93   |
|                           |                       | NOx                         | 39.90                  | 174.80 |
|                           |                       | SO2                         | 96.80                  | 423.98 |
|                           |                       | PM                          | 9.61                   | 42.1   |
|                           |                       | CO                          | 2.6                    | 11.39  |
| 6                         | HDA Feed Heater       | VOC                         | 1.78                   | 7.80   |
|                           |                       | NOx                         | 18.00                  | 78.80  |
|                           |                       | PM                          | 0.51                   | 2.23   |
|                           |                       | CO                          | 1.32                   | 5.78   |
| 7                         | HDA Rec. Heater       | VOC                         | 0.02                   | 0.09   |
|                           |                       | NOx                         | 1.30                   | 5.69   |
|                           |                       | PM                          | 0.04                   | 0.18   |
|                           |                       | CO                          | 0.11                   | 0.48   |
| 8                         | Dryer Regen. Heater   | VOC                         | 0.08                   | 0.35   |
|                           |                       | NOx                         | 4.70                   | 20.59  |
|                           |                       | PM                          | 0.14                   | 0.61   |
|                           |                       | CO                          | 0.30                   | 1.31   |
| 8A                        | Cat. React. Furnace   | VOC                         | 0.11                   | 0.48   |
|                           |                       | NOx                         | 6.30                   | 27.59  |
|                           |                       | PM                          | 0.18                   | 0.79   |
|                           |                       | CO                          | 0.40                   | 1.75   |
| 31                        | 2nd Stage Feed Heater | VOC                         | 0.06                   | 0.26   |
|                           |                       | NOx                         | 3.30                   | 14.45  |
|                           |                       | PM                          | 0.09                   | 0.39   |
| 10, 11                    | Hot and Cold Flares   | VOC                         |                        | 3.00   |

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|---------------------------|--------------------|-----------------------------|------------------------|------|
|                           |                    |                             | #/hr                   | TPY  |
| 12                        | Cooling Tower      |                             | VOC                    | 3.00 |
| 13A, B, C                 | CPI Separators     |                             | VOC                    | 1.00 |



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|---------------------------|-------------------------------------|-----------------------------|------------------------|--------|
|                           |                                     |                             | #/hr                   | TPY    |
| 43                        | Fuel Oil Truck Loading              | VOC                         |                        | 4.90   |
|                           | All Flanges                         | VOC                         |                        | 5.00   |
|                           | All Pumps and Compressors           | VOC                         |                        | 0.25   |
|                           | All Valves                          | VOC                         |                        | 30.00  |
|                           | Maintenance (Painting)              | VOC                         |                        | 3.00   |
| 16                        | Naphtha Feed Tank                   | VOC                         |                        | 1.52+  |
| 17                        | Gas Oil Feed Tank                   | VOC                         |                        | 0.46+  |
| 18                        | Light Fuel Oil Tank                 | VOC                         |                        | 1.13+  |
| 19                        | Gasoline Tank                       | VOC                         |                        | 6.41+  |
| 20A, B                    | Heavy Oil Fuel Tanks                | VOC                         |                        | 8.38+  |
| 23A, B                    | Benzene Tanks                       | VOC                         |                        | 3.78+  |
| 24                        | C6-C8 Tank                          | VOC                         |                        | 2.01+  |
| 30A, B, C                 | Naphtha Feedstock Tanks             | VOC                         |                        | 42.82+ |
| 32                        | Lube Oil Tank                       | VOC                         |                        | 0.05+  |
| 33                        | Wash Oil Tank                       | VOC                         |                        | 0.56+  |
| 39A                       | Spent Caustic Gasoline<br>Wash Tank | VOC                         | 0.43                   | 0.40+  |
| 39B                       | Spent Caustic Gasoline<br>Wash Tank | VOC                         | 0.43                   | 0.40+  |
| 40                        | Recovered Oil Tank                  | VOC                         |                        | 0.10+  |
| 41                        | Froth Holding Tank                  | VOC                         |                        | 0.09+  |
| 42                        | Methanol Tank                       | VOC                         |                        | 0.10+  |

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|---------------------------|--------------------------|-----------------------------|------------------------|-------|
|                           |                          |                             | #/hr                   | TPY   |
| 50                        | Spent Caustic Wastewater | VOC                         | <0.01                  | <0.01 |
| 51                        | Spent Caustic Wastewater | VOC                         | <0.01                  | <0.01 |

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|---------------------------|----------------------------------|-----------------------------|------------------------|-----|-------|-------|
|                           |                                  |                             | #/hr                   | TPY |       |       |
| 52                        | Wastewater Tank                  |                             |                        | VOC | <0.01 | <0.01 |
| 53                        | Slop Oil Tank                    |                             |                        | VOC | 0.47  | 0.46  |
| FU-4                      | NESHAPS Fugitives (4)            |                             |                        | VOC | 0.56  | 2.46  |
| FU-5                      | Biphenyl Export<br>Fugitives (4) |                             |                        | VOC | 0.23  | 1.01  |

- (1) Emission point identification - either specific equipment designation or emission point number from plot plan.
- (2) Specific point source name. For fugitive sources use area name or fugitive source name.
- (3) VOC - volatile organic compounds as defined in General Rule 101.1  
NOx - total oxides of nitrogen  
SO2 - sulfur dioxide  
PM - particulate matter  
CO - carbon monoxide
- (4) Fugitive emissions are an estimate only and should not be considered as a maximum allowable emission rate.
- (5) Modified source.
- (6) New source.

\*\* Averaged over 12 hours.

+ The individual TPY emission rates for each storage tank may be exceeded as long as the aggregate emissions from all storage tanks do not exceed 71.41 TPY.

\* Emission rates are based on and the facilities are limited by the following maximum operating schedule:

Hrs/day\_\_\_Days/week\_\_\_Weeks/year\_\_\_or Hrs/year 8,760