ERRATA

COMBUSTION HUMAN HEALTH RISK ASSESSMENT
FOR
ANGUS CHEMICAL COMPANY
STERLINGTON, LOUISIANA

PREPARED BY

US EPA REGION 6
CENTER FOR COMBUSTION SCIENCE AND ENGINEERING
DALLAS, TEXAS

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Waste Feed Rates (g/s)

Metals of Concern	Recommended Risk-Based [1] Permit Limit Annual Average	"Normal Operations" Demonstrated via the Risk Burn [1] (3 Runs Data Average)
Antimony	**1.06E-2**	**1.33E-4**
Arsenic	**8.14E-4**	**ND [2] = 4.38E-6**
Barium	**1.77E-2**	**2.37E-5**
Beryllium	**1.49E-4**	**ND [2] = 2.19E-5**
Cadmium	**1.98E-4**	**2.89E-5**
Chromium, Total	**2.94E-5 [3]**	**ND [2] = 1.10E-5**
Lead	**3.18E-2**	**3.08E-4**
Mercury, Total	**ND @ 2.19E-6 [4]**	**ND [2] = 2.19E-6**
Nickel	**2.28E-5**	**2.28E-5**
Silver	**1.06E-4**	**ND [2] = 4.38E-6**
Selenium	**9.64E–6**	**9.64E–6**
Thallium	**1.77E-4**	**2.19E-5**

NOTES:

1. Recommended RCRA Permit Limits are based upon the annual average stack gas temperature of 453 K and an annual average stack gas flow rate of 11.7 m^3/s; these parameters were demonstrated during the risk burn.
2. **ND** means that the metal was ***not detected*** in the waste feed; the detection limit was used to calculate the emission rate shown.
3. Recommended RCRA Permit Limit for Total Chromium is actually based upon the assumption that Hexavalent Chromium is equal to 100% of the Total Chromium measured during the risk burn.
4. Mercury is not believed to be present in the waste feed, but the analytical method used in the risk burn did not provide low enough detection limits for comparison with a limit calculated below the EPA level of concern for this compound. The Risk-Based Annual Average RCRA Permit Limit for mercury is set at the detection limit known to be achievable based upon the current available EPA analytical method (demonstrated in the Risk Burn).

EPA back-calculated the risk-based annual average permit limits listed above from the Adjusted Tier I limit for each metal of concern and then *used the calculated limits in the risk assessment* in order to show permit protectiveness over the long term. Therefore, EPA recommends that LDEQ incorporate the annual average metal feed rate limits listed above into the RCRA permit.

Waste Feed Rates (g/s)

Metals of Concern	Adjusted Tier I Regulatory Permit Limit Maximum Allowable	Recommended Risk-Based [1] Permit Limit Annual Average	"Normal Operations" Demonstrated via the Risk Burn [1] (3 Runs Data Average)
Antimony	**1.06E-1**	**1.06E-2**	**1.33E-4**
Arsenic	**8.14E-4**	**8.14E-4**	**ND [2] = 4.38E-6**
Barium	**1.77E+1**	**1.77E-2**	**2.37E-5**
Beryllium	**1.49E-3**	**1.49E-4**	**ND [2] = 2.19E-5**
Cadmium	**1.98E-3**	**1.98E-4**	**2.89E-5**
Chromium, Total	**2.94E-4**	**2.94E-5 [3]**	**ND [2] = 1.10E-5**
Lead	**3.18E-2**	**3.18E-2**	**3.08E-4**
Mercury, Total	**2.83E-2**	**ND @ 2.19E-6 [4]**	**ND [2] = 2.19E-6**
Nickel	**Not Applicable**	**2.28E-5**	**ND [2] = 2.28E-5**
Silver	**1.06E+0**	**1.06E-4**	**ND [2] = 4.38E-6**
Selenium	**Not Applicable**	**9.64E-6**	**9.64E–6**
Thallium	**1.77E-1**	**1.77E-4**	**2.19E-5**

NOTES:

1. Recommended RCRA Permit Limits are based upon the annual average stack gas temperature of 453 K and an annual average stack gas flow rate of 11.7 m^3/s; these parameters were demonstrated during the risk burn. See the text discussion for further detail on the need to supplement the regulatory Tier limits for some metals shown above with lower risk-based limits (annual average).
2. **ND** means that the metal was ***not detected*** in the waste feed; the detection limit was used to calculate the emission rate shown.
3. Recommended RCRA Permit Limit for Total Chromium is actually based upon the assumption that Hexavalent Chromium is equal to 100% of the Total Chromium measured during the risk burn.
4. Mercury is not believed to be present in the waste feed, but the analytical method used in the risk burn did not provide low enough detection limits for comparison with a limit calculated below the EPA level of concern for this compound. The Risk-Based Annual Average RCRA Permit Limit for mercury is set at the detection limit known to be achievable based upon the current available EPA analytical method (demonstrated in the Risk Burn).

As the above comparison shows, Angus demonstrated during the risk burn that feed rate limits during "normal operations" fall below the recommended permit feed rate limits, with exception of mercury (see footnote 4, above). *Therefore, EPA used the calculated (or "recommended risk-based") permit limits in the final risk assessment model–along with actual emissions data for all*

the other COPCs being evaluated–in order to show permit protectiveness over the long term.