

## APPENDIX D

### Summary of Assumptions Used in the Calculation of Maximum PM<sub>10</sub> Emissions

- 1.) The maximum area that could be disturbed in one day was estimated by calculating the area cleared per day based on the areas to be cleared in each of the construction areas (649 acres for the landing and recovery area, eight acres for the payload processing facility, and 14 acres for the launch site), and the estimated time to clear each of the construction areas (three months for the landing and recovery area, one month for the vehicle processing facility, and one month for the launch site). The estimated acres cleared per day was then doubled to account for the additional areas which would be disturbed in accessing the area being cleared to arrive at an estimate of the disturbed area per day (25 acres/day for the landing and recovery area, 0.925 acres/day for the vehicle processing facility, and 1.618 acres/day for the launch site). (Based on engineering estimates.)
- 2.) Emissions from diesel and gasoline engines were calculated based on AP-42 emission factors.
- 3.) An emission factor for heavy construction of 1.2 tons/ac/month was used. (AP-42)
- 4.) The daily emission factor for heavy construction was calculated by dividing the monthly emission factor by 30 days.
- 5.) The use of watering the construction surface would reduce particulate emissions by 50%. (AP-42)
- 6.) PM<sub>10</sub> were estimated to be 50% of the total PM<sub>30</sub>. (NTS EIS)
- 7.) The emission factor for off-road travel was calculated using an empirical expression given in AP-42.
- 8.) The maximum daily emissions for the three sites of construction were added together to calculate the maximum daily emissions. This was done to simulate emissions of construction was occurring at all three sites simultaneously.
- 9.) The type and number of construction equipment was provided by Kistler.
- 10.) Information about all other vehicular activities was obtained from Kistler or reasonably estimated based on the same assumptions used in the Transportation section.
- 11.) Emission factors for construction equipment and vehicles were from AP-42.
- 12.) The distance traveled by vehicles was assumed to be 65 miles, the distance from Mercury to the Kistler areas of activity.
- 13.) The EPA SCREEN3 model was used to calculate maximum downwind concentrations of PM<sub>10</sub>.
- 14.) The construction can be characterized as an area emissions sources for air modeling purposes.
- 15.) The size of the emission source was estimated to be equal to the maximum area that could be disturbed in a day.
- 16.) Average windspeed of 1.4 m/s (9.2 mph).
- 17.) Maximum weight of dust produced by construction activities was calculated as the product of the number of days of work per month, number of months of construction, and the maximum daily amount of dust produced.
- 18.) Six months = 26 weeks \* five work days/week = 130

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