3.0 Emissions Summary

This section summarizes emissions resulting from the increase in the annual movement of ore and waste rock material at the BCM.

For emission sources located within the pit influence boundary, PM_{10} emissions are calculated taking into account a pit escape factor of 20 percent. For PM less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$), the escape factor was determined to be 21 percent. These factors are based on *Airflow Patterns and Pit-Retention of Fugitive Dust for the Bingham Canyon Mine*, which predicts the escape fraction for different conditions at the BCM (Bhaskar and Tandon, 1996). A figure representing the current pit influence boundary is provided in Appendix B-3.

3.1 Emissions from Point Sources

Detailed emission calculations for the point sources are provided in Appendix B-1.

The existing in-pit ore crusher ventilation system is designed to handle 12,898 dscfm and operate 8,760 hours per year and is equipped with a baghouse for particulate control. The permitted grain loading for this baghouse is 0.016 gr/dscf. EPA's *AP-42, Fifth Edition*, Table B.2.2 Category 3 – Mechanically Generated Aggregate Material and Unprocessed Ores, shows PM_{10} to be 51% of the particle distribution and $PM_{2.5}$ to be 15%. Therefore $PM_{2.5}$ is estimated to be 29% of PM_{10} for operations including material handling and processing of aggregate and unprocessed ore such as milling, grinding, crushing, screening, conveying, cooling and drying. The existing in-pit crusher is located within the pit influence boundary; therefore, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit.

As part of this proposed modification, KUC will install a second in-pit ore crusher. The new in-pit ore crusher ventilation system will be designed to handle approximately 12,898 dscfm and operate 8,760 hours per year and will be equipped with a baghouse for particulate control. KUC is proposing a grain loading of 0.007 gr/dscf for the new baghouse. EPA's *AP-42, Fifth Edition*, Table B.2.2 Category 3 – Mechanically Generated Aggregate Material and Unprocessed Ores, shows PM_{10} to be 51% of the particle distribution and $PM_{2.5}$ to be 15%. Therefore $PM_{2.5}$ is estimated to be 29% of PM_{10} for operations including material handling and processing of aggregate and unprocessed ore such as milling, grinding, crushing, screening, conveying, cooling and drying. The second in-pit crusher will be located within the pit influence boundary; therefore, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit.

The ventilation system for transfer drop point C6/C7 is designed to handle 5,120 dscfm. The ventilation system for transfer drop point C7/C8 is designed to handle 3,168 dscfm. Both drop points operate 8,760 hours per year and are equipped with baghouses for particulate control. KUC is proposing to reduce the grain loading from 0.016 to

0.007 gr/dscf. Operations of the baghouses will not otherwise be affected by this proposed change in grain loading factor. EPA's *AP-42, Fifth Edition*, Table B.2.2 Category 3 – Mechanically Generated Aggregate Material and Unprocessed Ores, shows PM_{10} to be 51% of the particle distribution and $PM_{2.5}$ to be 15%. Therefore $PM_{2.5}$ is estimated to be 29% of PM_{10} for operations including material handling and processing of aggregate and unprocessed ore such as milling, grinding, crushing, screening, conveying, cooling and drying.

Both lime silos are designed to handle 616 dscfm and operate 8,760 hours per year and are equipped with fabric bin vent control units. The permitted grain loading for the fabric bin vent control units is 0.016 gr/dscf. EPA's *AP-42, Fifth Edition*, Table B.2.2 Category 4 – Mechanically Processed Ores and Nonmetallic Minerals, shows PM_{10} to be 85% of the particle distribution and $PM_{2.5}$ to be 30%. Therefore $PM_{2.5}$ is estimated to be 35% of PM_{10} for operations including material handling and processing of processed ores and nonmetallic minerals such as lime.

The sample preparation building is designed to handle 4,269 dscfm and operate 8 hours per day for a total of 2,920 hours per year and is equipped with a baghouse for particulate control. The permitted grain loading for the baghouse is 0.016 gr/dscf. Material handled during sample preparation is ore and waste rock material and size distribution is the same. EPA's *AP-42, Fifth Edition*, Table B.2.2 Category 3 – Mechanically Generated Aggregate Material and Unprocessed Ores, shows PM_{10} to be 51% of the particle distribution and $PM_{2.5}$ to be 15%. Therefore $PM_{2.5}$ is estimated to be 29% of PM_{10} for operations including material handling and processing of aggregate and unprocessed ore such as milling, grinding, crushing, screening, conveying, cooling and drying. The sample preparation building is located within the pit influence boundary; therefore, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit.

Table 3-1 summarizes the emissions after the proposed material-moved increase (future emissions) for point sources.

TABLE 3-1
Proposed Emissions from Point Sources Controlled by Baghouses

Emission Source	Hours of Operation per Year	Design Flow Rate (dscfm)	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Existing In-pit Crusher	8,760	12,898	1.55	0.48
New In-pit Crusher	8,760	12,898	0.68	0.21
Transfer Point C6/C7	8,760	5,120	1.35	0.40
Transfer Point C7/C8	8,760	3,168	0.83	0.24
Lime Silo (#1)	8,760	616	0.37	0.13
Lime Silo (#2)	8,760	616	0.37	0.13
Sample Preparation Building	2,920	4,269	0.17	0.05

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.2 Emissions from Fugitive Sources

3.2.1 Drilling and Blasting

With the proposed modification, the BCM will drill approximately 90,000 holes each year. The drilling is performed with water injection to control PM_{10} emissions with an efficiency of 90 percent historically. The BCM will conduct approximately 1,100 blasts each year, with an area of 57,500 square feet per average blast. For drilling operations, PM_{10} and $PM_{2.5}$ emissions were derived from the total PM emission factors estimated using methodology from the EPA's *AP-42, Fifth Edition*, Table 11.9-4 (EPA, 1998) and ratio of transfer particle size multipliers in AP-42, *Fifth Edition*, Table 13.2.4, page 4 (EPA, 2006). The ratio of transfer particle size multipliers in AP-42, *Fifth Edition*, Table 13.2.4 (EPA, 2006) are 0.74 for PM, 0.35 for PM_{10} and 0.053 for $PM_{2.5}$. Therefore, PM_{10} is estimated to be 47 percent of PM and $PM_{2.5}$ is estimated to be 15 percent of PM_{10}.. For blasting operations, PM_{10} and $PM_{2.5}$ emissions were estimated using emission factors from EPA's *AP-42, Fifth Edition*, Table 11.9-1 (EPA, 1998). Both drilling and blasting operations occur within the pit influence boundary; therefore, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit. Emissions from drilling and blasting are summarized in Table 3-2. Detailed emission calculations are provided in Appendix B-1.

TABLE 3-2
Proposed Emissions from Drilling and Blasting Operations

Source	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Drilling	0.55	0.09
Blasting	11.0	0.67

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.2.2 Material Movement

With the increase in material moved, 260,000,000 tpy of ore and waste rock combined will be loaded onto haultrucks and later transferred to different locations within the mine. Water and/or commercial dust suppressant is applied to loading and haulage surfaces year-round in accordance with the FDCP. Additionally, the inherent material characteristics, moisture content, and enclosures, where appropriate, minimize fugitive dust emissions. Emissions of PM_{10} and $PM_{2.5}$ resulting from the transfer of material are estimated using methodology from EPA's *AP-42, Fifth Edition*, Section 13.2.4 (EPA, 2006). For emission sources located within the pit influence boundary, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit. Emissions for the transfer sources previously discussed are summarized in Table 3-3. Detailed emission calculations are provided in Appendix B-1.

TABLE 3-3
Proposed Emissions from Ore and Waste Rock Transfers

Emission Source	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Haultruck Loading	1.71	0.27
Truck Dumping to Primary In-pit Crusher	0.56	0.09
Truck Dumping to Secondary In-pit Crusher	0.56	0.09
Truck Dumping at Stockpile	0.56	0.09
Existing In-pit Enclosed Transfer Points	1.68	0.27
Existing In-pit Enclosed Additional Transfer Points (from crusher relocation)	1.12	0.18
New In-pit Enclosed Transfer Points	1.68	0.27
Conveyor Transfer to Stacker	2.79	0.42
Drop to Coarse Ore Storage Pile	2.79	0.42
Coarse Ore to Reclaim Tunnel Vent	2.79	0.42
Truck Dumping of Waste Rock	57.5[a]	8.71

NOTES:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.
[a] KUC is proposing to use water application and incidental compaction from mobile equipment and dump maintenance practices to minimize emissions. These practices were not in place during the 1999 AO modification.

3.2.3 Low-grade Ore Stockpile

A low-grade ore stockpile is used at the BCM. Emissions of PM_{10} are estimated using methodology from the EPA's *AP-42, Fifth Edition*, Section 11.9.1 (EPA, 1998) and ratio of transfer particle size multipliers in AP-42, *Fifth Edition*, Table 13.2.4, page 4 (EPA, 2006). The ratio of transfer particle size multipliers in AP-42, *Fifth Edition*, Table 13.2.4 (EPA, 2006) are 0.74 for PM, 0.35 for PM_{10} and 0.053 for $PM_{2.5}$. Therefore, PM_{10} is estimated to be 47 percent of PM and $PM_{2.5}$ is estimated to be 15 percent of PM_{10}. Emissions are minimized by inherent material characteristics and mechanical compaction of the pile. Water application from passing trucks is used to further reduce emissions. The stockpile is located within the pit influence boundary; therefore, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit. Emissions from the stockpile are summarized in Table 3-4. Detailed emission calculations are provided in Appendix B-1.

TABLE 3-4
Proposed Emissions from Ore Stockpile

Emission Source	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Ore Stockpile	2.09	0.33

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.2.4 Disturbed Areas

As a result of increased annual material moved to 260,000,000 tons of ore and waste rock it is estimated, according to proposed mine plan, that approximately 565 total acres of land is disturbed per year. Of that total, 310 acres (55%) are within the Pit Influence Boundary.. Emissions of PM_{10} were derived from the total PM emission factors estimated using methodology from the EPA's *AP-42, Fifth Edition*, Table 11.9-4 (EPA, 1998) and ratio of transfer particle size multipliers in AP-42, *Fifth Edition*, Table 13.2.4, page 4 (EPA, 2006). The ratio of transfer particle size multipliers in AP-42, *Fifth Edition*, Table 13.2.4 (EPA, 2006) are 0.74 for PM, 0.35 for PM_{10} and 0.053 for $PM_{2.5}$. Therefore, PM_{10} is estimated to be 47 percent of PM and $PM_{2.5}$ is estimated to be 15 percent of PM_{10}. Since the emission source is partially located within the pit influence boundary, that portion of emissions is calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit. Emissions are summarized in Table 3-5. Detailed emission calculations are provided in Appendix B-1.

TABLE 3-5
Proposed Emissions from Disturbed Areas

Emission Source	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Disturbed Areas	40.6	8.75

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.2.5 Haulroads and Haultruck Emissions

Unpaved haulroads are used by haultrucks to transport the waste rock and ore from the mining areas to waste rock disposal areas, low-grade ore stockpile, or the in-pit crusher. With the proposed modification, the average unpaved haulroad distance for waste rock and ore will range from 4.5 miles round-trip to 8.3 miles round-trip over time as various areas are mined. The haulroads on which the haultrucks travel will be sprayed with water or commercial dust suppressants to control fugitive dust emissions throughout the year. Emissions of PM_{10} and $PM_{2.5}$ were estimated using methodology from EPA's *AP-42, Fifth Edition*, Section 13.2.2 (EPA, 2006). For the portion of haulroads located within the pit influence boundary, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit.

Projected peak year emissions for the haulroads both within and outside the pit influence boundary are summarized in Table 3-6. Per UDAQ policy, for haulroads within the pit influence boundary, a control efficiency of 75 percent is used for watering and road base application. For haulroads outside the pit influence boundary, a control efficiency of 85 percent is used for application of commercial dust suppressants. Detailed emission calculations are provided in Appendix B-1. KUC believes that control efficiency on the haulroads with frequent watering per *AP-42, Fifth Edition*, Section 13.2.2 (EPA, 2006) approaches 95 percent, but emissions summarized herein are based on UDAQ's default control factors, which are conservative.

It should be noted that open pit mine planning occurs in phases where relatively large tonnages of waste rock must be stripped early in a phase so that ore can be accessed in later years. The projections indicated in this NOI represent a high level of activity early in the mine plan phase. As activity reduces with time, the stripping ratio is reduced.

TABLE 3-6
Projected Fugitive Emissions from Haulroads

Emission Source	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Haulroads	1,054	108

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

It should be noted, that the daily vehicle miles traveled (VMT) used to calculate the PM_{10} emissions as an input for the AERMOD dispersion modeling analysis were based on the year 2016 material haulage of 260 million tons per year (tpy). Year 2016 is a projected peak year for emissions. The emission inventory in the notice of intent (NOI), submitted August 17, 2010, calculated 9,425,000 annual VMT that would be required by the haul trucks to move the maximum proposed 260 million tpy of ore and waste material. This translates to 25,822 VMT per day if the annual VMT were evenly distributed throughout the year. However, the AERMOD modeling analysis assumed a conservative 20% daily variability factor that was applied to the average daily emissions to account for variability of BCM operations. Therefore, PM_{10} emissions based on 30,986 VMT per day were modeled in AERMOD to demonstrate compliance with the 24-hr PM_{10} National Ambient Air Quality Standard (NAAQS).

It was also assumed for a conservative maximum emissions estimate, that all material was hauled in 240-ton trucks to the farthest destination. In reality, the average truck fleet size is larger than 240-tons and a percentage of material would be on shorter haulage routes. Daily variability in truck traffic is minimal and it isn't anticipated that truck traffic would ever reach the level at which it was modeled (30,986 VMT/day). What small amount of variability that would occur clearly would not lead to emissions that would result in an exceedance of the NAAQS. It is therefore demonstrated that the current daily limit of 30,000 VMT by primary ore and waste haul trucks is sufficient to demonstrate compliance with the 24-hour PM_{10} NAAQS.

Tailpipe emissions from the haultrucks are estimated using the NONROAD program as recommended by UDAQ. Emissions are estimated based on the EPA tier level of haultruck engines and the annual hours of operation for the haultrucks. The emissions estimation methodology using the NONROAD program is provided in Appendix A. Maximum PTE tailpipe emissions from the trucks hauling ore and waste rock are summarized in Table 3-7.

KUC periodically upgrades its haultruck fleet to take advantage of available higher-tier-level, lower-emitting engines. As noted from emissions summarized in Appendix A, tailpipe emissions from haultrucks are expected to decrease as new higher-tier-level trucks are phased into the BCM fleet.

TABLE 3-7
Projected Tailpipe Emissions from Haultrucks

Pollutant	Future Tailpipe Emissions (tpy)
PM_{10}	191
$PM_{2.5}$	186
SO_2	5.78
NO_X	5,134
Carbon Monoxide (CO)	1,400
VOC	259

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.2.6 Road-base Crushing and Screening Plant

The BCM has a semiportable plant that crushes and screens waste rock for use as base material on the unpaved haulroads. Application of road base on haulroads improves and enhances effectiveness of the fugitive control measures at the BCM. Fugitive emissions from the crushing, screening, and transfer (10 transfer points) operations are effectively controlled with water sprays and belt enclosures. The crushing/screening plant has a capacity of 700 tons per hour and operates no more than 4,500 hours per year, resulting in a maximum annual material throughput of 3,150,000 tpy. For each of these sources of fugitive dust, PM_{10} and $PM_{2.5}$ emissions were estimated using emission factors from EPA's *AP-42, Fifth Edition*, Table 11.19.2-2 (EPA, 2004) and are summarized in Table 3-8. Detailed emission calculations are provided in Appendix B-1. Since the emission source is located within the pit influence boundary, emissions are calculated with the pit escape factor. The pit escape factor represents the portion of the particulates not settling in the pit.

TABLE 3-8
Proposed Emissions from Road-base Crushing and Screening Plant

Source	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Crushing	0.17	0.03
Screening	0.23	0.02
Transfers	0.14	0.04

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.3 Sources with VOC Emissions

3.3.1 Maintenance Degreasing

Based on KUC records, approximately 500 gallons of cold solvent are used annually for maintenance degreasing. As a conservative estimate, it is assumed that the cold solvent has a VOC content of 100 percent. The VOC emissions resulting from maintenance degreasing were estimated based on the solvent properties and a material balance. Emissions from degreasers are summarized in Table 3-9. The PTE emission from this source will not change as a result of this permit modification.

TABLE 3-9
Emissions from Maintenance Degreasers

Emission Source	Future VOC Emissions (tpy)
Maintenance Degreasers	1.69

3.3.2 Fueling Stations

Gasoline and diesel use at the fueling stations after the proposed modification will be approximately 530,000 gallons of gasoline and approximately 55,000,000 gallons of diesel fuel during a peak year. The VOC emissions for the gasoline fueling stations are estimated using emission factors from EPA's *AP-42, Fifth Edition*, Table 5.2-7 (EPA, 2008). Volatile organic compound emissions from diesel fueling stations are estimated using emission factors from Colorado Department of Public Health and Environment's guidance on *Gasoline and Diesel Fuel Dispensing Stations*. Volatile organic compound emissions from the fueling stations are summarized in Table 3-10.

TABLE 3-10
Proposed Emissions from Fueling Stations

Emission Source	Future VOC Emissions (tpy)
Gasoline Fueling Stations	3.45
Diesel Fueling Stations	0.80

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.3.3 Solvent Extraction/Electrowinning Plant

The mixers and settlers of the SX/EW plant will have a combined total surface area of 1,100 square feet. Both will operate a maximum of 8,760 hours per year, have a pan rate of 0.00142 foot per 24 hours, and have covers to control VOC emissions with an efficiency of 80 percent. The BCM will have four organic surge and holding tanks with a combined total volume of 12,000 gallons. The tanks will be covered to control VOC emissions. Volatile organic compound emissions from the tanks were estimated using a volume ratio of the pilot plant emissions to the expanded plant emissions; pilot plant emissions were taken from a previous emission inventory. The raffinate and electrolyte circuits will have a combined average flow rate of 650 gpm and operate a maximum of 8,760 hours per year. Volatile organic compound emissions from the circuits were estimated with an assumption that up to 33 percent of the residual organic in the circuits is released to the atmosphere by evaporation or biodegradation. Volatile organic compound emissions from the SX/EW plant are summarized in Table 3-11. The PTE from this source will not change as a result of this modification.

TABLE 3-11
Emissions from the Solvent Extraction/Electrowinning Plant

Plant Operation	Future VOC Emissions (tpy)
Mixer/Settlers	2.92
Aqueous Flows	2.38
Tanks	0.07

The electrowinning acid mist eliminator at the SX/EW plant is designed to handle 6,377 dscfm and operate 8,760 hours per year. The sulfuric acid (H_2SO_4) emissions are estimated with the assumption that the exhaust gas has an H_2SO_4 concentration of 0.004 gr/dscf. Sulfuric acid emissions from the mist eliminator are summarized in Table 3-12.

TABLE 3-12
Emissions from the Electrowinning Acid Mist Eliminator

Emission Source	Future H_2SO_4 Emissions (tpy)
Electrowinning Acid Mist Eliminator	0.96

3.4 Support Equipment

3.4.1 Track Dozers, Rubber Tire Dozers, Graders, and Loaders

To support the proposed modification, the BCM will operate FELs, graders, track dozers, and rubber-tire dozers. Fugitive emissions of PM_{10} and $PM_{2.5}$ were estimated using emission factors from EPA's *AP-42, Fifth Edition*, Table 11.9-1 (EPA, 1998). Emissions from each of these sources are summarized in Table 3-13.

TABLE 3-13
Projected Fugitive Emissions from Support Equipment

Source	Future PM_{10} Emissions (tpy)	Future $PM_{2.5}$ Emissions (tpy)
Track Dozers	5.9	3.6
Rubber-tire Dozers	1.2	0.8
Graders	77.7	9.1
FELs	12.4	2.1

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

Tailpipe emissions from the support equipment are estimated using the NONROAD program. Emissions are estimated based on the EPA tier level of support equipment engines and the annual hours of operation for the equipment. The emissions estimation methodology using the NONROAD program is provided in Appendix A. Maximum peak year tailpipe PTE emissions from the support equipment are summarized in Table 3-14.

TABLE 3-14
Projected Tailpipe Emissions from Support Equipment

Pollutant	Future Emissions (tpy)
PM_{10}	36
$PM_{2.5}$	35
SO_2	0.78
NO_X	695
CO	272
VOC	43

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

3.5 Miscellaneous Emissions Sources

3.5.1 Emergency Generators

Four existing emergency generators and one proposed emergency generator, located at the mine, are fueled with LPG and have varying horsepower ratings. Each of the existing emergency generators is permitted to operate no more than 500 hours per year. The proposed emergency generator will operate no more than 100 hours per year. Actual hours of operation are expected to be limited to maintenance and testing activities for the existing (UDAQ, 2008) and proposed generators. Carbon monoxide (CO), NO_x, and total hydrocarbon (HC) emissions are based on manufacturer data. Volatile organic compound emissions are considered a subset of the total HC emissions. Sulfur dioxide and PM_{10} emissions were estimated using emission factors from the EPA's *AP-42, Fifth Edition*, Table 3.2-3 (EPA, 2000) for the existing generators (UDAQ, 2008), assuming a four-stroke, rich-burn, natural-gas–fueled engine. Sulfur dioxide and PM_{10} emissions for the proposed generator were estimated using EPA's NONROAD program. Emissions from the emergency generators are summarized in Table 3-15.

TABLE 3-15
Emissions from Emergency Generators

Generator Location	Emissions (tpy)				
	PM_{10}	SO_2	NO_x	CO	Total HC
Production Control Building	0.0006	0.00004	0.347	1.557	0.058
Mine Office	0.0005	0.00003	0.285	1.115	0.042
Lark Gate	0.001	0.00003	0.214	6.476	0.058
Galena Gulch	0.0004	0.00003	0.266	1.246	0.040
Dinkeyville Hill	0.0004	0.0001	0.054	0.212	0.01

3.6 Emissions Summary

Total PTE emissions from the BCM, after the increase in material moved, are summarized in Table 3-16.

TABLE 3-16
Proposed PTE Summary

Pollutant	Point Sources	Fugitives	Mobile Sources	Future BCM PTEs
PM_{10} (tpy)	6.28	1,279	228	1,513
$PM_{2.5}$ (tpy)	2.60	145	221	368
SO_2 (tpy)	0.0002		6.56	6.56
NO_x (tpy)	1.17		5,829	5,830
CO (tpy)	10.6		1,672	1,682
VOC (tpy)	0.20	11.3	302	314
PM_{10} + SO_2 + NO_x (tpy)	**7.44**			

NOTE:
Emissions shown are for a peak year annual material movement of 260,000,000 tpy.

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