United States
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Office of Air Quality
Planning And Standards
Research Triangle Park, NC 27711

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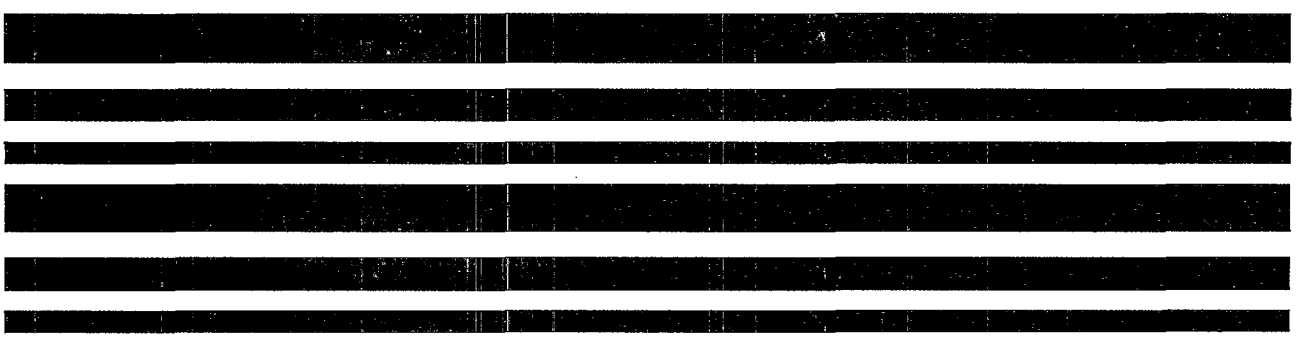
AIR

EPA

# Air Emissions Species Manual

## Volume II
## Particulate Matter Species Profiles

## Second Edition



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January 1990

# Air Emissions Species Manual

## Volume: II Particulate Matter Species Profiles

## Second Edition

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## FOREWORD

This report is the result of a cooperative effort between the Office of Air Quality Planning and Standards' Air Quality Management Division (AQMD) and the Office of Research and Development's Air and Energy Engineering Research Laboratory (AEERL). The overall management of the program was the responsibility of AQMD. AEERL was responsible for the development of selected VOC species profiles as well as program review.

## ABSTRACT

The U. S. Environmental Protection Agency (EPA) has several ongoing activities that require speciated volatile organic compound (VOC) or particulate matter (PM) profiles from several source categories. In 1980, EPA published the "Volatile Organic Compound (VOC) Species Data Manual, Second Edition" (EPA-450/4-80-015) which provided VOC species profiles for some emission source categories. In 1985, EPA published the "Receptor Model Source Composition Library" (EPA-450/4-85/002) which contained particulate matter (PM) species profiles for several source categories. More recently, EPA published the "Air Emission Species Manual - Volume I, Volatile Organic Compound (VOC) Species Profiles" (EPA-450/2-88-033a) and the "Air Emissions Species Manual - Volume II, Particulate Matter Species Profiles" (EPA-450/2-88-033b). These documents represent expansions of the 1980 and 1985 VOC and PM species profile document.

In 1989 EPA updated the VOC and PM profile data bases by adding in new profiles and making necessary revisions to existing profiles. These updates are contained in the document "Addendum to the Air Emissions Species Manual" (EPA-450/2-88-003c). The objective of the current study is to produce a second edition of the "Air Emissions Species Manual" (EPA-450/2-88-003a,b) that incorporates and contains all the updates specified in the "Addendum ..." document.

The updated VOC species profile data base is contained in Volume I of this document. The VOC profile data base includes VOC profiles from primarily three sources: (1) the 1980 VOC Data Manual, (2) new VOC profiles developed from readily available existing data, and (3) new VOC profiles developed from original data as a result of the VOC speciation field sampling program. In addition to the VOC profiles, Volume I contains profile assignments that link a profile to a source category. For categories where profile data are not available, the profile assignments are based on engineering judgement.

The revised PM species profile data base is contained in Volume II of this document. It was developed from multiple sources of information. Many PM profiles were extracted from the Source Composition Library with minor changes in format to facilitate inclusion of additional information in the

profiles. A large number of PM profiles were developed by contacting researchers working in the areas of PM species profile development and source receptor modeling. These researchers were questioned regarding the availability of PM species profile data that were not already contained in the Source Composition Library or the Air Emissions Species Manual. New species profiles were developed from data submitted by the researchers for a variety of source categories. A limited number of new PM profiles developed from literature review are also included in the PM data base. As in the VOC profile data base, the PM data base also contains profile assignments.

# VOLUME II - PARTICULATE MATTER (PM) SPECIES PROFILES

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# EXECUTIVE SUMMARY

The U. S. Environmental Protection Agency (EPA) has several activities that require speciated particulate matter (PM) or volatile organic compound (VOC) profiles from several source categories. Some of these activities are preparation of air toxics and acid precipitation emission inventories, acid precipitation modeling studies, receptor modeling, and ozone strategy development. In an effort to update the available speciated PM profile data base, EPA conducted studies to update the "Receptor Model Source Composition Library" (EPA-450/4-85-002) and produced a revision entitled "Air Emissions Species Manual - Volume II, Particulate Matter Species Profiles" (EPA-450/2-88-003b). Similarly for VOC emissions, EPA has performed studies to revise the "Volatile Organic Compound Species Data Manual - Second Edition" (EPA-450/4-80-015) and provide an updated version in the "Air Emissions Species Manual - Volume I, Volatile Organic Compound Species Profiles" (EPA-450/2-88-003a). The Air Emissions Species Manual (Volumes I and II) was recently updated by the document "Addendum to the Air Emissions Species Manual (EPA-450/2-88-003c). The update took the form of adding in new PM and VOC profiles to the speciation data base and making revisions to several existing VOC profiles.

The objective of the current study was to produce a second edition of the Air Emissions Species Manual for PM that contains all existing profile data and those data contained in the "Addendum" document (EPA-450/2-88-003c). The second edition of the PM Manual contains profiles derived from the Source Composition Library, profiles developed from data collected from researchers working in the areas of PM speciation and source receptor modeling, and a limited number of profiles developed from published literature.

Each PM profile in this document contains the following information:

Profile name
Profile number
Profile data quality
Control device identification

Reference(s)
Data source
Source Classification Code (SCC)
Mass fraction data
Species identification: species identified by Chemical Abstract System (CAS) number, species number, and species name
Composition data in weight percent for four size ranges: 0-2.5 um, 2.5-10 um, 0-10 um, and total particulate measured
Uncertainty associated with composition data for four size ranges: 0-2.5 um, 2.5-10 um, 0-10 um, and total particulate measured
Date

The new information in the profiles consist of mass fraction data; CAS numbers; composition data for the 0-10 um size range; and uncertainty associated with the 0-10 um size range.

In addition to the PM profiles, this document contains PM profile assignments for all SCC's and area source codes in the National Emissions Data System. Ideally, each source category would be characterized by an original PM profile. However, the number of source categories to be characterized is much greater than the available profiles. Therefore, profile assignments that involve linking a PM profile to a source category that does not have an original profile assignment are made using engineering judgement. This is especially important in applications such as emission inventory development in air toxics and acid precipitation areas and acid precipitation modeling studies.

For several SCC's, profile assignments using engineering judgement were not possible; however, in such cases, industry-specific average profiles were developed from original profiles representing other SCC's within the same industry group. These profiles are intended for use only if there is no other information available. In addition, a "zero" profile which is an overall average of all the profiles in the data base was developed. This profile is intended for use only in cases where nonzero emissions are reported for SCC's designated as having "zero" or "negligible" particulate matter emission factors.

# SECTION 1
# INTRODUCTION

The U. S. Environmental Protection Agency (EPA) has several ongoing activities that require speciated particulate matter (PM) and volatile organic compound (VOC) profiles from several source categories. Some of these activities include receptor modeling, preparation of acid precipitation and air toxics emission inventories, acid precipitation modeling studies, and ozone strategy development.

As part of an effort to update the available speciated VOC and PM profile data bases, EPA has conducted several studies to update the "Volatile Organic Compound Species Data Manual - Second Edition" (EPA-450/4-80-015) and the "Receptor Model Source Composition Library" (EPA-450/4-85-002). These updates produced two new species profile documents entitled "Air Emissions Species Manual - Volume I, Volatile Organic Compound Species Profiles" (EPA-450/2-88-003a) and "Air Emissions Species Manual - Volume II, Particulate Matter Species Profiles" (EPA-450/2-88-003b). Recently, the Air Emissions Species Manual was updated by the document "Addendum to the Air Emissions Species Manual" (EPA-450/2-88-003c). In the "Addendum" document, 158 new PM profiles, spanning different 14 source categories, were added to the PM speciation data base, eight new VOC profiles were added for the oil production source category, and minor revisions were made to three existing VOC profiles for unleaded gasoline vehicles. The three existing profiles affected were 1101, 1203, and 1204.

In the PM area, the objective of the current study is to produce a second edition of the "Air Emissions Species Manual - Volume II, Particulate Matter Species Profiles" (EPA-450/2-88-003a). This second edition incorporates and contains all of the updated information specified in the "Addendum..." document, in addition to all of the profile data in the 1988 PM Species Manual.

Composition data are reported for four size ranges: 0-2.5 um, 2.5-10 um, 0-10 um, and total particulate measured. In addition, uncertainties associated with composition data of each size interval are reported when

available. The size interval 0-10 um is of particular interest in $PM_{10}$ source apportionment studies and in modeling efforts under the National Acid Precipitation Assessment Program (NAPAP). When data for the 0-10 um interval were not reported by the sources listed, they were calculated from data for the 0-2.5 um and 2.5-10 um intervals according to procedures outlined in the Source Composition Library (refer to Appendix B). Uncertainty values for the 0-10 um size range are also calculated, when sufficient data were available, based on the methodology discussed in the Source Composition Library (see Appendix B). This appendix also contains a procedure that may be used to estimate composition data for the 2.5-6 um and 6-10 um size intervals from data for the 2.5-10 um size interval.

In addition to the composition data, mass fraction data (i.e., fraction of mass of particulate emissions within a given size range) are also presented in the profiles. These data are provided for the following size intervals: 0-2.5 um, 0-6 um, and 0-10 um. About half of the mass fraction data were obtained from AP-42 (see Appendix C).

In the PM data base, several individual profiles were available for each of several source categories. In these cases, profiles for the same category were grouped together to form a composite profile. These profiles would be useful in applications such as acid precipitation modeling studies where national average values are desired. Individual profiles used in developing the composite profile are reported as well as the composite profile since the individual profile may be applicable in a specific situation (region, fuel, product, etc.).

To provide the user/reader with guidance on the overall quality of data contained in a given profile, each profile is ranked A, B, C, D, or E, similar to the ranking scheme used in AP-42.[1] The overall quality ratings reflect the uncertainties associated with composition data, mass fraction data, calculational procedures (associated with the 0-10 um range), and assumptions about composition of size fractions to fill data gaps. A more detailed discussion on profile data quality is contained in Section 2.

The activities where PM species profiles are applied may employ source classification codes (SCC's) for representing point sources and the National Emissions Data System (NEDS) area source codes for representing area sources. Ideally, each source category/source code would be characterized by an

appropriate PM profile. Since there are much fewer species profiles than source categories, a PM profile for one category is assigned to other categories that are judged to be similar to the source category(ies) having an original profile. This document contains PM profile assignments for all SCC's and applicable NEDS area source codes. In addition, profile assignments are provided for additional area source codes used in the NAPAP efforts. In cases where there were more than one profile (including a composite profile) characterizing a source category, profile assignments were based on the composite profile. For some source categories characterized by more than one profile, composite profiles were not developed. These profiles represented data based on different control devices. Therefore, they were all included in the profile assignments. A file containing control device codes for each profile was developed for use in identifying the type of control device used. Development of PM profile assignments is discussed further in Appendix E. Also included in this appendix are the listings of the PM profile assignments for point and area sources.

For several SCC's, profile assignment using engineering judgement was not possible. In such cases, industry-specific average profiles were developed from original profiles representing other SCC's within the same industry group. These profiles have numbers starting with 9 and are recommended for use only if there is no other information available. Another profile developed using engineering judgement was the "zero" profile (Profile 00000). This profile is an overall average of all the PM profiles in the data base. It is intended for use only as a default profile in applications where nonzero emissions are reported for those SCC's designated as having zero or negligible emission factors in the Criteria Pollutant Emission Factor Document.[2] Such applications may involve preparation of air toxics and acid precipitation emission inventories and acid precipitation modeling studies. The industry-specific average profiles and the "zero" profile are presented in Appendix D.

This document is divided into three sections. Section 1 contains this introduction. Section 2 describes the PM species profile format and discusses the applicability of PM profiles. Section 3 contains the profiles for both point and area sources, followed by the list of references. There are seven appendices that provide additional information:

Appendix A - Listing of PM Profiles
Appendix B - PM Profile Calculations
Appendix C - Particle Size Distribution Data
Appendix D - Industry-Specific Average PM Profiles and "Zero" Profile
Appendix E - PM Profile Assignments
Appendix F - Reactivity Fractions for the Alkaline Elements (Ca, Mg, Na, and K)
Appendix G - Data File Description

REFERENCES FOR SECTION 1

1. U. S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, AP-42. Fourth Edition. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1985; Supplement A, October 1986; Supplement B, September 1988.

2. U. S. Environmental Protection Agency. Criteria Pollutant Emission Factors for the 1985 NAPAP Emissions Inventory. EPA-600/7-87-015. Office of Research and Development, Air and Energy Engineering Research Laboratory, Research Triangle Park, North Carolina. May 1987.

# SECTION 2
# PM SPECIES PROFILE FORMAT AND APPLICATION

## 2.1 PM SPECIES PROFILE FORMAT

Table 2-1 is an example of the format used in presenting the PM profiles in this document. This format is similar to that used in the Receptor Model Source Composition Library except for a few changes. Composition data and uncertainty information are reported in the Source Composition Library for size intervals 0-2.5 um, 2.5-10 um, and total particulate measured. In addition to these data, the PM profiles in the current document contain composition data for the 0-10 um size interval and uncertainty information for the 0-10 um interval. The size interval 0-10 um is of particular interest in $PM_{10}$ source apportionment studies and in modeling and emission inventory preparation efforts under NAPAP. Therefore, composition data for this size range are also included in this document.

Another data item that is included in the profiles in this document is particle size distribution data (i.e., fraction of mass in a given size interval). The particle size distribution data can be used in estimating size-specific particulate emission rates in preparation of emission inventories. When combined with the composition data from the profiles, these data can be used to estimate size-specific and speciated particulate emission rates. In this document, size distribution data are coupled with the source profiles from the Source Composition Library to develop composition data for the 0-10 um size interval.

The profile ratings used in the Source Composition Library were adopted as data quality indicators. These ratings, however, were modified to take into account the uncertainties associated with mass fraction data, calculational procedures used for the 0-10 um size interval, and also assumptions used in filling data gaps. As shown in Table 2-1, a dual data quality indicator is used for the profiles from the Source Composition Library. The first quality indicator is the rating as it appears in the

# TABLE 2-1. SAMPLE PROFILE

PM Profile Speciation Report

---

Profile Name : Municipal Incinerator (Philadelphia)
Profile Number : 17105
Data Quality : B/D

---

Control Device : ESP(Inoperative)
Reference(s) : 52
Data Source : Dilution sampler. Representative sample from group of 10.

SCC Assignments: 50100101

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.260 | 0.310 | 0.380 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.819 | 0.117 | 5.827 | 0.466 | 2.400 | 0.657 | 2.400 | 0.000 |
| 7440-21-3 | 14 | Si | 1.442 | 0.067 | 8.570 | 0.581 | 3.693 | 0.931 | 3.693 | 0.000 |
| 7723-14-0 | 15 | P | 0.543 | 0.098 | 0.894 | 0.299 | 0.654 | 0.238 | 0.654 | 0.000 |
| 7704-34-9 | 16 | S | 1.906 | 0.301 | 3.487 | 0.601 | 2.405 | 0.599 | 2.405 | 0.000 |
| 7782-50-5 | 17 | Cl | 21.299 | 0.985 | 16.678 | 2.218 | 19.840 | 3.100 | 19.840 | 0.000 |
| 7440-09-7 | 19 | K | 6.464 | 0.305 | 4.491 | 0.640 | 5.841 | 0.903 | 5.841 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.223 | 0.030 | 5.870 | 0.381 | 2.006 | 0.626 | 2.006 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.012 | 0.003 | 1.097 | 0.069 | 0.355 | 0.116 | 0.355 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.001 | 0.024 | 0.008 | 0.008 | 0.006 | 0.008 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.001 | 0.111 | 0.009 | 0.045 | 0.012 | 0.045 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.018 | 0.001 | 0.091 | 0.008 | 0.041 | 0.011 | 0.041 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.279 | 0.013 | 1.874 | 0.129 | 0.783 | 0.204 | 0.783 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.032 | 0.002 | 0.085 | 0.010 | 0.049 | 0.011 | 0.049 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.148 | 0.007 | 0.053 | 0.015 | 0.118 | 0.019 | 0.118 | 0.000 |
| 7440-66-6 | 30 | Zn | 11.503 | 0.525 | 4.012 | 0.918 | 9.137 | 1.383 | 9.137 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.016 | 0.011 | 0.000 | 0.022 | 0.011 | 0.017 | 0.011 | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.031 | 0.000 | 0.071 | 0.000 | 0.053 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.003 | 0.011 | 0.003 | 0.020 | 0.003 | 0.016 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 0.563 | 0.027 | 0.375 | 0.057 | 0.504 | 0.078 | 0.504 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.016 | 0.002 | 0.005 | 0.008 | 0.013 | 0.006 | 0.013 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.009 | 0.002 | 0.023 | 0.008 | 0.013 | 0.006 | 0.013 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.014 | 0.000 | 0.039 | 0.000 | 0.028 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.036 | 0.003 | 0.003 | 0.023 | 0.026 | 0.016 | 0.026 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.284 | 0.016 | 0.024 | 0.049 | 0.202 | 0.045 | 0.202 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.829 | 0.041 | 0.004 | 0.089 | 0.568 | 0.105 | 0.568 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.442 | 0.028 | 0.086 | 0.113 | 0.330 | 0.091 | 0.330 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.029 | 0.000 | 0.242 | 0.014 | 0.167 | 0.014 | 0.000 |

---

# TABLE 2-1. SAMPLE PROFILE (Continued)

PM Profile Speciation Report - continued (profile 17105)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | 0.009 | 0.004 | 0.011 | 0.012 | 0.010 | 0.009 | 0.010 | 0.000 |
| 7439-92-1 | 82 | Pb | 8.116 | 0.371 | 2.428 | 0.633 | 6.320 | 0.961 | 6.320 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 55.046 | | 56.126 | | 55.389 | | 55.389 | |

Source Composition Library, followed by the modified quality indicator. The presence of a single data quality indicator indicates the profile was developed during the current study. Each of the entries in Table 2-1 is described below:

Profile Name: The profile name is the descriptor used for the applicable source category.

Profile Number: This is a unique number assigned to each profile. Profiles are coded into four groups as follows: combustion sources (10000 series), industrial processes (20000 series), mobile sources (30000 series), and area sources (40000 series). New PM profiles developed during this study are also coded according to this general scheme. Composite profiles developed during this study from individual profiles are assigned profile numbers in the same series. For example, the profile Unpaved Roads - Composite is developed from Profiles 41201, 41203, and 41204 and assigned the number 41220. The industry-specific average profiles developed from available profiles to characterize source categories for which no data are available are assigned profile numbers beginning with 9. There are 16 such profiles (90001 through 90016) and they are presented in Appendix D. Profile 00000 is an overall average of the profiles in the data base. It is intended for use as a default profile in applications where nonzero emissions are reported for those SCC's designated as having zero or negligible emission factors in the Criteria Pollutant Emission Factor Document.[1] Profile 00000 is also presented in Appendix D.

Profile Data Quality: Dual data quality indicators are used in the profiles contained in this document (e.g., C/D). The first quality indicator is the profile rating as reported in the Source Composition Library. The second quality indicator is the modified rating assigned in this document. For a profile obtained from the Source Composition Library, the rating was modified to include the data quality associated with size distribution data and any assumptions associated with developing the composition data for the 0-10 um size interval and filling data gaps. The guidelines used in assigning data quality indicators were somewhat subjective. For those profiles that were not extracted from the Source Composition Library, a single data quality indicator is included.

It was assumed that the procedures for calculating composition data for the 0-10 um size interval using mass fraction data would lower the overall profile data quality by one level. Additional assumptions about missing data (e.g., no data reported for the 0-2.5 um size interval) would also lower the data quality by one or two levels. For example, Profile 29301 (Primary Lead Smelting - Slag Pouring) has a profile rating of "C" in the Source Composition Library. The mass fraction data for this profile has a data quality indicator of "E." For this profile, composition data for the 0-2.5 um and 2.5-10 um size intervals were not reported. To fill these two data gaps, it was assumed that the composition data for these two intervals are the same as the one for the total particulate measured. Thus, the data quality assigned to Profile 29301 in this document was modified as "E." Specifically, each data quality indicator represents the following:

Data Quality A: Composition and mass fraction data obtained for the size intervals 0-2.5 um, 2.5-10 um, and total particulate measured from several sources using sound sampling and analytical methodology. Profiles are considered representative and recommended for use.

Data Quality B: Composition and mass fraction data obtained for the size intervals 0-2.5 um, 2.5-10 um, and total particulate measured from a few sources using a generally sound methodology.

Data Quality C: Composition data obtained for the size intervals 0-2.5 um, 2.5-10 um, and total particulate measured from a few sources using a generally sound methodology and mass fraction data of below average quality; or composition data obtained for two of the three size intervals 0-2.5 um, 2.5-10 um, and total particulate measured from a large number of sources using a sound methodology coupled with mass fraction data of below average quality.

Data Quality D: Composition data obtained for size intervals 0-2.5 um, 2.5-10 um, and total particulate measured obtained from a limited number of sources using uncertain or undocumented methodology coupled with mass fraction data of average or below average quality; or composition data obtained for two of the three size intervals 0-2.5 um, 2.5-10 um, and total particulate measured from a few sources using a generally sound methodology coupled with mass fraction data of poor quality.

Data Quality E: Composition data obtained for the size intervals 0-2.5 um, 2.5-10 um, and total particulate measured from a single source using poorly documented methodology coupled with mass fraction data of poor quality; or composition data obtained for two of the three size intervals 0-2.5 um, 2.5-10 um, and total particulate measured from a limited number of sources using poorly documented methodology coupled with mass fraction data of poor quality; or composition data obtained for one of the three size intervals 0-2.5 um, 2.5-10 um, and total particulate measured coupled with mass fraction data of poor quality; or industry-specific average profiles; profiles with "E" rating are recommended for use only if there is no other information available.

Control Device: This entry is used to indicate if the profile data represent an emission stream downstream or upstream of a control device (if present). The downstream composition and size distribution of particulate emissions would be affected by the presence of a control device.

Reference(s): This entry identifies the primary reference(s) used in development of the profiles. The reference list is the same as that contained

in the Source Composition Library except for additional references used in developing the new profiles. If more detailed information is required about the data contained in the profile, the user/reader should consult these reference(s).

Data Source: This entry briefly describes the basis of the composition data used in the profile (e.g., number of tests, sources and samples, sampling and analytical methods, how data were composited, etc.). More detailed information about the data used can be obtained from the references indicated in the profile.

SCC: This entry is the code for the source category for which the profile was originally developed. These codes are obtained from NEDS for point sources (1-01-001-01 through 5-03-900-10) and area sources (01 through 64). Area source codes from 65 through 115 developed under NAPAP are also considered. A listing of area source codes included in this document and their descriptions is presented in Appendix E.

Mass Fraction Data: Size distribution data (i.e., the fraction of mass [particulate emissions] contained within a specific size range) are reported in this entry. Three size ranges are considered: 0-2.5 um, 0-6 um, and 0-10 um. Mass fraction data for 0-2.5 um and 0-10 um size ranges are used to estimate composition data for the 0-10 um size range. Mass fraction data for the 0-6 um interval are presented as additional information. A large proportion of the mass fraction data was obtained from AP-42.[2] A detailed description of the mass fraction data (how data were compiled, data quality, references, etc.) used in this document is included in Appendix C.

One area of concern is that the mass distribution data and the source profiles used to estimate composition of the 0-10 um size range are not from the same data set and represent data collected from different emission sources. This introduces an additional source of uncertainty in the calculations of composition data for the 0-10 um size interval.

Species Identification: Each species in the profile data is identified by a species number, species name, and CAS number. In general, the species number is the atomic number for the element. Other species are arbitrarily assigned the numbers starting with 200 (e.g., total carbon - 200; organic carbon - 201; elemental carbon - 202; sulfate ion - 203, etc.). The CAS numbers for the species were obtained from the Registry of Toxic Effects of

Chemical Substances (1983 Supplement to the 1981-82 edition).

The species listed in Table 2-1 are those that are most commonly reported in the literature. As indicated in the Source Composition Library, for those profiles that include other key species, any standard component may be deleted to permit inclusion of a nonstandard component. Therefore, some variability exists in the profile format with respect to the list of species considered.

Composition Data: In a typical profile, composition data expressed as weight percent are presented for four size ranges: 0-2.5 um, 2.5-10 um, 0-10 um, and total particulate measured. Values for the 0-2.5 um, 2.5-10 um, and total particulate measured are based on actual data and are extracted directly from the Source Composition Library, where available. Values for the 0-10 um size interval are derived from calculations based on the methodology described in the Source Composition Library (refer to Appendix B). In each profile, footnote (1) indicates that the information for a specific size interval is extracted from the Source Composition Library. Footnote (2) indicates that the data are based on calculations described in Appendix B.

In some cases, profile data were not complete, i.e., data were only reported for one or two size intervals. In these cases, engineering judgement was used to fill the data gaps. For example, in Profile 17106 (Municipal Incinerator - Composite), composition data are reported only for the total particulate measured as indicated by footnote (1) for the last column in the profile. In absence of other information, it was assumed that the composition data for the 0-2.5 um and 2.5-10 um size intervals were the same as that for the total particulate measured. This assumption is indicated by footnote (3) for these two size intervals. The following symbols are used in the composition data: NA (not analyzed), NE (not estimated), and < (below the detection limit). The NE symbol is used in cases where a specific calculation could not be carried out due to missing data (e.g., NA, <).

Following the data tabulation, the percent of mass accounted for by the composition data under each size interval is presented. This value is based on the summation of weight percentages of the species in a given column. The sum does not include oxygen, hydrogen, nitrogen, water, or other components that were not included in the analysis. In some profiles, the summation of weight percentages may be greater than 100 due to double counting

(e.g., sulfur/sulfate, total carbon/elemental carbon/organic carbon, etc.). Failure to include the carbonaceous, oxygen, and hydrogen components in the aerosol characterization is often the largest source of unexplained mass.

Since the composition data in weight percentages are associated with a specific size interval, it is not possible to add the percentages for a particular species across size intervals. For example, in Table 2-1, the percentages for Al in the 0-2.5 um, 2.5-10 um, and 0-10 um size intervals are 0.819, 5.827, and 2.400; and $0.819 + 5.827 \neq 2.400$.

Uncertainty: The uncertainty associated with composition data for the size ranges 0-2.5 um, 2.5-10 um, and the total particulate measured are based on either the estimated analytical precision of the measurement (single sample) or the standard deviation of the data sets. The uncertainty associated with the 0-10 um size range is calculated according to the procedure outlined in the Source Composition Library (refer to Appendix B). As Table 2-1 shows, the footnotes for the uncertainty columns indicate whether they are based on data (i.e., extracted from the Source Composition Library) or calculated. In many cases, uncertainties were either not reported or not known by the authors. The abbreviations used for uncertainty values include NR (not reported) and NE.

Date: This entry will be used to indicate the date the profile was last reviewed/updated by EPA.

## 2.2 LIMITATIONS OF DATA

As indicated in the Source Composition Library and in the first edition of the Air Emissions Species Manual, the reader/user should be aware of the limitations of each data set, specifically with respect to measurements of carbonaceous emissions and volatile elements (e.g., Pb, As, Hg, etc.) that partially exist in the gaseous phase at high stack temperatures. Unless special precautions such as dilution source sampling, aircraft or balloon methods are exercised, these components will not be accurately represented in the data. In addition, many of the studies from literature do not report a sufficiently broad range of particulate matter components to account for the majority of the mass, typically due to the specific sampling and analytical protocols employed. Therefore, studies that use these source profiles

(e.g., receptor modeling) may be unable to apportion all of the ambient aerosol mass accurately. Thus, the user/reader is cautioned to use these profiles with discretion. The profile data should be carefully reviewed to ensure that they represent the sources being studied reasonably well.

In estimating composition data for the 0-10 um size interval, size distribution data were combined with composition data reported for the 0-2.5 um and 2.5-10 um size intervals. The size distribution data and the composition data from the source profiles represent data collected from different emission sources. Therefore, this introduces an additional source of uncertainty in calculating composition data for the 0-10 um size interval.

In several profiles from the Source Composition Library, composition data information for one or two size intervals were not reported. To increase the usefulness of the profiles, certain assumptions were employed to fill these data gaps.

- If data were reported for a single size interval, it was assumed that data for the other two intervals were the same. Values for the 0-10 um size interval were also assumed to be the same.
- If data for the 0-2.5 um size interval were missing, it was assumed the data for the 2.5-10 um size interval could be substituted and vice versa. Values for the 0-10 um size interval were also assumed to be the same.
- If data for the total particulate measured were not reported, assume the estimated data for the 0-10 um size fraction can be substituted.

Since the chemical composition of particulate emissions of many sources is a function of particle size, application of data based on total particulate measured to particulate mass in the fine particle fraction (0-2.5 um) or coarse particle fraction (2.5-10 um) may affect the validity of the analysis. Where such an assumption is made, it is indicated with a footnote in each profile.

As pointed out in the Source Composition Library, the user/reader should be aware of the potential variability in the chemical composition of emissions, both within a source group and between similar sources. Due to limited availability of high-quality, size-resolved profile data sets, an

indepth evaluation of the magnitude of profile variability is not possible. However, comparisons of profiles based on literature on the total particulate measured indicate that profile variability is dependent on the chemical composition of fuels or process materials, volatility, and sampling and analytical procedures.

Profiles for individual sources may vary considerably from the values provided in this document. Source-specific data from local sources are therefore preferable to the use of literature data and are recommended, particularly for regulatory applications. Nevertheless, preliminary analyses based on source profiles in this document may be adequate to meet a number of objectives. The reader/user must ultimately assess whether the data in the document are appropriate for use in any particular application.

## 2.3 PM SPECIES PROFILE APPLICATION

There are several ongoing EPA activities that require speciated PM data as an input parameter. These activities include preparation of air toxics emission inventories, receptor modeling, preparation of acid precipitation inventories, and acid precipitation modeling studies. This section briefly discusses how to use this document. It also provides a specific example to illustrate how to use PM species profiles in preparation of an air toxics emission inventory.

### 2.3.1 Document Guide

In addition to the profiles contained in Section 3, this document includes PM profile assignments for point and area source categories in Appendix E. Tables E-1 and E-2 in Appendix E contain the PM profile assignments for point and area sources, respectively. To identify the applicable profile for a given source category, the user/reader should refer to Tables E-1 and E-2. The actual profile is contained in Section 3 and its location in Section 3 can be identified from a numerical listing in Table A-1 in Appendix A.

### 2.3.2 Example of Use of a Profile

A hypothetical example will be used to describe how profiles might be applied: a State air pollution control agency is developing an air toxics emission inventory for the State. An earlier study conducted for the State has identified a list of potentially toxic species from several emission sources. The emission rates of these individual species will be used as an input to the proposed air toxics regulatory program for the State. The proposed program advocates regulating particulate species in the fine fraction (i.e., <2.5 um).

The PM profiles can identify the relative amounts of individual particulate species within specified size intervals in a given emission stream. In most cases, emission factors are available for total particulate matter where the elemental breakdown is not specified (e.g., AP-42, Criteria Pollutant Emission Factor Document). The information contained in this document supplements the general emissions data in AP-42 or the Criteria Pollutant Emission Factor Document.[1,2] For a given source category, the appropriate PM species profile should be identified using Appendix E and the total particulate emission factor should be multiplied by the weight fractions for each species in a given size interval as given in the profile to determine size-specific individual emission factors.

In this example, cadmium is one of the species on a State's list and emissions from a municipal waste incinerator are of concern. The incinerator burns routine residential and commercial refuse and is uncontrolled. Since the species profiles are keyed off of SCC, the first task is to determine the SCC for the municipal waste incinerator. The SCC and PM emission factor for a specific category can be obtained from the National Emissions Data System (NEDS) or the Criteria Pollutant Emission Factor Document. These materials would indicate that the appropriate SCC for municipal incinerators is 5-01-001-01. The reader/user can then refer to the SCC/profile list in Appendix E to identify which profiles correspond to the subject SCC. For 5-01-001-01, three profiles, 17106, 17107 and 17108, are listed in Appendix E and the document page numbers of each are given. At this point, the reader/user should review all of the candidate profiles to see which best corresponds to the particular source in question. A review of the "Control Device" field

shows that there is only one profile specifically for uncontrolled incinerators. This would be Profile 17108. A review of the "Species" field indicates that cadmium is contained in the profile. If there had been more than one profile applicable to this situation, the reader/user could have consulted the "Data Source" field for more refined information on which to made a profile selection, or the original references(s) on which the profiles were based could be consulted. In cases with multiple potentially applicable profiles, the "Data Quality" field may also be useful in selecting the most preferred profile.

In Profile 17108, the weight percentage of cadmium (Cd) under the "0-2.5 um" column is 0.110 and the fraction of mass associated with this size interval is 0.26. Applying the weight fraction of cadmium to the total particulate emissions of 1,500,000 lb/yr for the incinerator, cadmium emissions in the fine fraction are estimated as 1,500,000 x 0.0011 x 0.26 = 429 lb/yr. The uncertainty associated with the cadmium weight percentage is reported as 0.060 percent in the profile. From this information, a range for cadmium emissions can be specified as follows:

$$1{,}500{,}000 \times 0.26 \times (0.0011 - 0.0006) = 195 \text{ lb/yr}$$
$$1{,}500{,}000 \times 0.26 \times (0.0011 + 0.0006) = 663 \text{ lb/yr}$$

Thus, the annual cadmium emissions in the 0-2.5 um size range may be expected to range from 195 to 662 lb/yr, with a mean of 429 lb/yr.

## 2.4 REFERENCES FOR SECTION 2


1. U. S. Environmental Protection Agency. Criteria Pollutant Emission Factors for the 1985 NAPAP Emissions Inventory. EPA-600/7-87-015. Office of Research and Development, Air and Energy Engineering Research Laboratory, Research Triangle Park, North Carolina. May 1987.

2. U. S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, AP-42. Fourth Edition. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1985; Supplement A, October 1986; Supplement B, September 1988.

## SECTION 3
## PM SPECIES PROFILES - POINT AND AREA SOURCES

This section contains the 302 PM profiles grouped in 20 separate subsections according to source categories. The profiles representing point sources are presented first, followed by those representing area sources. The following list can be used to identify and locate the profiles for each source category group. Individual profiles within each source category group are presented in numerical order.

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## 3.1 EXTERNAL COMBUSTION BOILERS

External combustion sources include utility, industrial, commercial and institutional boilers; commercial and domestic combustion units; process heaters, furnaces, and kilns. Coal, oil, and natural gas are the major fossil fuels used by these sources.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Plant
Profile Number : 11201
Data Quality : B/D

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Control Device : ESP
Reference(s) : 52
Data Source : Dilution train samples. Representative sample from set of nine.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

---

Total Particulate Matter -

| CAS Number | Specie Num | Specie Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 15.679 | 0.789 | 14.205 | 0.742 | 14.843 | 1.377 | 14.843 | 0.000 |
| 7440-21-3 | 14 | Si | 23.837 | 1.192 | 22.872 | 1.191 | 23.290 | 2.150 | 23.290 | 0.000 |
| 7723-14-0 | 15 | P | 0.620 | 0.114 | 0.279 | 0.060 | 0.427 | 0.070 | 0.427 | 0.000 |
| 7704-34-9 | 16 | S | 3.305 | 0.180 | 0.656 | 0.043 | 1.803 | 0.221 | 1.803 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.094 | 0.041 | 0.102 | 0.013 | 0.099 | 0.020 | 0.099 | 0.000 |
| 7440-09-7 | 19 | K | 1.304 | 0.069 | 1.436 | 0.076 | 1.379 | 0.127 | 1.379 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.235 | 0.080 | 1.514 | 0.080 | 1.393 | 0.129 | 1.393 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.967 | 0.050 | 1.008 | 0.053 | 0.990 | 0.091 | 0.990 | 0.000 |
| 7440-62-2 | 23 | V | 0.079 | 0.007 | 0.066 | 0.006 | 0.072 | 0.007 | 0.072 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.058 | 0.004 | 0.051 | 0.003 | 0.054 | 0.005 | 0.054 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.043 | 0.003 | 0.046 | 0.003 | 0.045 | 0.004 | 0.045 | 0.000 |
| 7439-89-6 | 26 | Fe | 8.491 | 0.428 | 9.524 | 0.496 | 9.077 | 0.831 | 9.077 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.049 | 0.004 | 0.032 | 0.002 | 0.039 | 0.004 | 0.039 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.031 | 0.003 | 0.027 | 0.002 | 0.029 | 0.003 | 0.029 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.069 | 0.005 | 0.045 | 0.003 | 0.055 | 0.006 | 0.055 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.027 | 0.003 | 0.021 | 0.002 | 0.024 | 0.003 | 0.024 | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.081 | 0.006 | 0.036 | 0.003 | 0.055 | 0.006 | 0.055 | 0.000 |
| 7782-49-2 | 34 | Se | 0.036 | 0.003 | 0.005 | 0.001 | 0.018 | 0.003 | 0.018 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.009 | 0.002 | 0.012 | 0.001 | 0.011 | 0.001 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.124 | 0.007 | 0.159 | 0.009 | 0.144 | 0.013 | 0.144 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.076 | 0.003 | 0.035 | 0.007 | 0.053 | 0.006 | 0.053 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.022 | 0.010 | 0.002 | 0.004 | 0.011 | 0.005 | 0.011 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.012 | 0.013 | 0.000 | 0.006 | 0.005 | 0.006 | 0.005 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.020 | 0.011 | 0.008 | 0.006 | 0.009 | 0.006 | 0.000 |
| 7440-36-0 | 51 | Sb | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 11201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.000 | 0.098 | 0.098 | 0.040 | 0.056 | 0.046 | 0.056 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.006 | < | 0.003 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.036 | 0.006 | 0.025 | 0.003 | 0.030 | 0.004 | 0.030 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 56.284 | | 52.267 | | 54.008 | | 54.008 | |

PM Profile Speciation Report

---

Profile Name : Coal-Fired Power Plant
Profile Number : 11202
Data Quality : D

---

Control Device : Uncontrolled(1)
Reference(s) : 62,63
Data Source : Data taken from Reference 62. For details, consult Referene 63.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.060 0.170 0.230

---

Total Particulate Matter -

| | | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Species | | | | | | | | | |
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.300 | 0.020 | 0.410 | 0.020 | 0.381 | 0.021 | 0.382 | 0.020 |
| 7429-90-5 | 13 | Al | 13.400 | 1.500 | 18.400 | 2.700 | 17.096 | 1.591 | 17.104 | 2.114 |
| 7440-21-3 | 14 | Si | 21.800 | 1.600 | 18.500 | 2.800 | 19.361 | 1.761 | 19.356 | 2.246 |
| 7723-14-0 | 15 | P | 0.620 | 0.060 | 0.220 | 0.040 | 0.324 | 0.035 | 0.324 | 0.038 |
| 7704-34-9 | 16 | S | 3.400 | 0.600 | 0.540 | 0.070 | 1.286 | 0.204 | 1.282 | 0.189 |
| 7782-50-5 | 17 | Cl | 0.020 | 0.011 | 0.103 | 0.005 | 0.081 | 0.006 | 0.082 | 0.005 |
| 7440-09-7 | 19 | K | 1.200 | 0.090 | 1.330 | 0.080 | 1.296 | 0.075 | 1.296 | 0.078 |
| 7440-70-2 | 20 | Ca | 1.400 | 0.500 | 2.300 | 0.300 | 2.065 | 0.217 | 2.067 | 0.265 |
| 7440-22-2 | 21 | Sc | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-32-6 | 22 | Ti | 1.100 | 0.100 | 1.300 | 0.200 | 1.248 | 0.119 | 1.248 | 0.157 |
| 7440-62-2 | 23 | V | 0.051 | 0.014 | 0.043 | 0.009 | 0.045 | 0.007 | 0.045 | 0.008 |
| 7440-47-3 | 24 | Cr | 0.036 | 0.012 | 0.019 | 0.001 | 0.023 | 0.004 | 0.023 | 0.003 |
| 7439-96-5 | 25 | Mn | 0.028 | 0.001 | 0.022 | 0.001 | 0.024 | 0.002 | 0.024 | 0.001 |
| 7439-89-6 | 26 | Fe | 7.200 | 0.400 | 8.100 | 0.400 | 7.865 | 0.411 | 7.867 | 0.418 |
| 7440-48-4 | 27 | Co | 0.009 | 0.001 | 0.008 | 0.000 | 0.008 | 0.001 | 0.008 | 0.001 |
| 7440-02-0 | 28 | Ni | 0.038 | 0.005 | 0.032 | 0.002 | 0.034 | 0.003 | 0.034 | 0.002 |
| 7440-50-8 | 29 | Cu | 0.029 | 0.002 | 0.024 | 0.001 | 0.025 | 0.002 | 0.025 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.039 | 0.005 | 0.028 | 0.002 | 0.031 | 0.003 | 0.031 | 0.002 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | 0.016 | 0.006 | NE | 0.000 | 0.012 | 0.005 |
| 7440-38-2 | 33 | As | 0.061 | 0.008 | 0.020 | 0.007 | 0.031 | 0.005 | 0.031 | 0.006 |
| 7782-49-2 | 34 | Se | 0.024 | 0.002 | 0.002 | 0.000 | 0.008 | 0.001 | 0.008 | 0.001 |
| 7726-95-6 | 35 | Br | 0.003 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.018 | 0.008 | 0.012 | 0.001 | 0.013 | 0.003 | 0.013 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.129 | 0.006 | 0.123 | 0.025 | 0.125 | 0.015 | 0.125 | 0.019 |
| 7440-67-7 | 40 | Zr | 0.063 | 0.014 | 0.042 | 0.014 | 0.047 | 0.009 | 0.047 | 0.011 |
| 7439-98-7 | 42 | Mo | 0.017 | 0.006 | 0.007 | 0.001 | 0.010 | 0.002 | 0.010 | 0.002 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.300 | 0.190 | 0.094 | 0.016 | 0.148 | 0.052 | 0.147 | 0.051 |
| 7439-91-0 | 57 | La | 0.011 | 0.001 | 0.013 | 0.001 | 0.013 | 0.002 | 0.013 | 0.001 |
| 7440-45-1 | 58 | Ce | 0.017 | 0.001 | 0.019 | 0.001 | 0.018 | 0.002 | 0.018 | 0.001 |
| 7440-00-8 | 60 | Nd | 0.007 | 0.002 | 0.007 | 0.001 | 0.007 | 0.001 | 0.007 | 0.001 |
| 7440-19-9 | 62 | Sm | 0.002 | 0.000 | 0.003 | 0.000 | 0.002 | 0.001 | 0.002 | 0.000 |
| 7440-53-1 | 63 | Eu | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-54-2 | 64 | Gd | NR | 0.000 | 0.004 | 0.002 | NE | 0.000 | 0.003 | 0.001 |
| 7440-27-9 | 65 | Tb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 11202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-64-4 | 70 | Yb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-94-3 | 71 | Lu | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-25-7 | 73 | Ta | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-33-7 | 74 | W | 0.002 | 0.001 | 0.001 | 0.000 | 0.002 | 0.001 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.041 | 0.004 | 0.026 | 0.001 | 0.030 | 0.003 | 0.030 | 0.002 |
| 7440-29-1 | 90 | Th | 0.002 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 | 0.003 | 0.000 |
| | 201 | OC | 0.890 | 0.120 | 2.000 | 0.100 | 1.710 | 0.088 | 1.712 | 0.095 |
| | 203 | SO4 | 11.900 | 0.600 | 2.400 | 0.200 | 4.878 | 0.482 | 4.863 | 0.397 |
| TOTALS: | | | 64.165 | | 56.180 | | 58.247 | | 58.253 | |

(1) No control specified; thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

---

Profile Name : Coal-Fired Power Plant
Profile Number : 11203
Data Quality : C

---

Control Device : Cyclonic Precipitator
Reference(s) : 64,65
Data Source : Sampled with an Andersen impactor. Analyzed using AAS, dc AES, X-ray spectrometry, and spark-source MS.

SCC Assignments: 10100201

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.610 | 0.840 | 0.930 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.006 | 0.000 | 0.004 | 0.000 | 0.005 | 0.005 | 0.005 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.463 | 0.093 | 1.064 | 0.213 | 0.804 | 0.157 | 0.958 | 0.192 |
| 7429-90-5 | 13 | Al | 13.600 | 2.720 | 18.948 | 3.790 | 16.633 | 2.998 | 18.004 | 3.601 |
| 7440-21-3 | 14 | Si | 27.000 | 5.400 | 31.714 | 6.394 | 29.674 | 5.273 | 30.882 | 6.176 |
| 7704-34-9 | 16 | S | 40.933 | 2.047 | 11.096 | 0.555 | 24.011 | 2.735 | 16.362 | 0.818 |
| 7440-09-7 | 19 | K | 3.400 | 0.170 | 4.653 | 0.233 | 4.111 | 0.342 | 4.432 | 0.222 |
| 7440-70-2 | 20 | Ca | 3.400 | 0.170 | 4.653 | 0.233 | 4.111 | 0.342 | 4.432 | 0.222 |
| 7440-32-6 | 22 | Ti | 1.247 | 0.062 | 1.182 | 0.059 | 1.210 | 0.111 | 1.193 | 0.060 |
| 7440-62-2 | 23 | V | 0.050 | 0.008 | 0.026 | 0.004 | 0.036 | 0.010 | 0.030 | 0.005 |
| 7440-47-3 | 24 | Cr | 0.353 | 0.071 | 0.069 | 0.014 | 0.192 | 0.044 | 0.119 | 0.024 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.002 | 0.020 | 0.001 | 0.033 | 0.009 | 0.025 | 0.001 |
| 7439-89-6 | Zo | Fe | 15.667 | 3.133 | 13.741 | 2.748 | 14.575 | 2.530 | 14.081 | 2.816 |
| 7440-48-4 | 27 | Co | 0.013 | 0.004 | 0.008 | 0.002 | 0.010 | 0.005 | 0.009 | 0.003 |
| 7440-02-0 | 28 | Ni | 0.173 | 0.035 | 0.054 | 0.011 | 0.106 | 0.025 | 0.075 | 0.015 |
| 7440-50-8 | 29 | Cu | 0.030 | 0.006 | 0.034 | 0.007 | 0.032 | 0.008 | 0.033 | 0.007 |
| 7440-66-6 | 30 | Zn | 1.300 | 0.390 | 0.838 | 0.251 | 1.038 | 0.255 | 0.919 | 0.276 |
| 7440-38-2 | 33 | As | 0.180 | 0.036 | 0.089 | 0.018 | 0.128 | 0.027 | 0.106 | 0.021 |
| 7782-49-2 | 34 | Se | 0.007 | 0.001 | 0.002 | 0.000 | 0.004 | 0.003 | 0.003 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.004 | 0.001 | 0.002 | 0.000 | 0.003 | 0.002 | 0.002 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.006 | 0.002 | 0.003 | 0.001 | 0.004 | 0.003 | 0.003 | 0.001 |
| 7440-28-0 | 81 | Tl | 0.008 | 0.002 | 0.005 | 0.002 | 0.006 | 0.004 | 0.006 | 0.002 |
| 7439-92-1 | 82 | Pb | 0.163 | 0.033 | 0.135 | 0.027 | 0.147 | 0.029 | 0.140 | 0.028 |
| | 200 | TC | 0.640 | 0.128 | 0.669 | 0.134 | 0.656 | 0.118 | 0.664 | 0.133 |
| TOTALS: | | | 108.695 | | 89.010 | | 97.530 | | 92.484 | |

(1) Calculated based on methodology in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

---

Profile Name : Coal-Fired Power Plant
Profile Number : 11204
Data Quality : C

---

Control Device : ESP
Reference(s) : 64,66
Data Source : Sampled with a SASS train. Analyzed using XRF, INAA, and FAA.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

---

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-23-5 | 11 | Na | 0.996 | 0.286 | 0.853 | 0.200 | 0.915 | 0.197 | 0.864 | 0.186 |
| 7429-90-5 | 13 | Al | 11.567 | 6.345 | 11.597 | 4.237 | 11.584 | 4.010 | 11.579 | 3.947 |
| 7440-21-3 | 14 | Si | 17.795 | 9.090 | 22.000 | 7.996 | 20.180 | 6.728 | 21.683 | 7.426 |
| 7704-34-9 | 16 | S | 3.959 | 1.521 | 1.126 | 0.420 | 2.352 | 0.759 | 1.339 | 0.405 |
| 7440-09-7 | 19 | K | 1.954 | 0.442 | 1.740 | 0.311 | 1.833 | 0.318 | 1.756 | 0.289 |
| 7440-70-2 | 20 | Ca | 6.495 | 1.191 | 8.418 | 1.100 | 7.586 | 1.043 | 8.273 | 1.022 |
| 7440-22-2 | 21 | Sc | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.906 | 0.227 | 0.702 | 0.157 | 0.790 | 0.160 | 0.717 | 0.146 |
| 7440-47-3 | 24 | Cr | 0.027 | 0.009 | 0.018 | 0.003 | 0.022 | 0.008 | 0.019 | 0.003 |
| 7439-96-5 | 25 | Mn | 0.097 | 0.027 | 0.077 | 0.017 | 0.086 | 0.021 | 0.078 | 0.016 |
| 7439-89-6 | 26 | Fe | 10.445 | 1.393 | 10.754 | 0.995 | 10.620 | 1.196 | 10.731 | 0.926 |
| 7440-48-4 | 27 | Co | 0.004 | 0.001 | 0.003 | 0.001 | 0.003 | 0.002 | 0.003 | 0.001 |
| 7440-02-0 | 28 | Ni | 0.017 | 0.003 | 0.011 | 0.001 | 0.014 | 0.005 | 0.012 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.014 | 0.004 | 0.009 | 0.002 | 0.011 | 0.005 | 0.009 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.225 | 0.029 | 0.136 | 0.013 | 0.175 | 0.027 | 0.143 | 0.013 |
| 7440-55-3 | 31 | Ga | 0.013 | 0.004 | 0.006 | 0.002 | 0.009 | 0.005 | 0.007 | 0.001 |
| 7440-56-4 | 32 | Ge | 0.018 | 0.005 | 0.012 | 0.003 | 0.015 | 0.006 | 0.013 | 0.003 |
| 7440-38-2 | 33 | As | NR | 0.000 | 0.005 | 0.001 | NE | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-17-7 | 37 | Rb | 0.014 | 0.002 | 0.010 | 0.001 | 0.012 | 0.004 | 0.010 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.148 | 0.021 | 0.135 | 0.019 | 0.141 | 0.023 | 0.136 | 0.018 |
| 7440-43-9 | 48 | Cd | NR | 0.000 | 0.001 | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-31-5 | 50 | Sn | 0.002 | 0.000 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 0.001 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 0.001 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.722 | 0.095 | 0.410 | 0.039 | 0.545 | 0.074 | 0.434 | 0.036 |
| 7439-91-0 | 57 | La | 0.010 | 0.003 | 0.008 | 0.002 | 0.009 | 0.004 | 0.008 | 0.002 |
| 7440-45-1 | 58 | Ce | 0.015 | 0.005 | 0.013 | 0.003 | 0.014 | 0.005 | 0.013 | 0.003 |
| 7440-19-9 | 62 | Sm | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-53-1 | 63 | Eu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-27-9 | 65 | Tb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-64-4 | 70 | Yb | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-25-7 | 73 | Ta | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 11204)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-33-7 | 74 | W | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.114 | 0.016 | 0.075 | 0.007 | 0.092 | 0.016 | 0.078 | 0.007 |
| 7440-29-1 | 90 | Th | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7440-61-1 | 92 | U | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| TOTALS: | | | 55.570 | | 58.132 | | 57.021 | | 57.918 | |

(1) Calculated based on methodology described in the Air Emission Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Plant
Profile Number : 11205
Data Quality : C

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Control Device : ESP
Reference(s) : 64,67
Data Source : Plant A sampled with EPA Method 5 and Andersen impactor.
Analyzed using XRF and INAA.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.168 | 0.025 | 0.384 | 0.059 | 0.291 | 0.047 | 0.316 | 0.039 |
| 7439-95-4 | 12 | Mg | 1.656 | 0.331 | 3.770 | 0.479 | 2.855 | 0.399 | 3.103 | 0.310 |
| 7429-90-5 | 13 | Al | 10.018 | 1.503 | 23.103 | 3.535 | 17.439 | 2.687 | 18.971 | 2.371 |
| 7440-21-3 | 14 | Si | 17.120 | 2.568 | 40.031 | 6.108 | 30.114 | 4.637 | 32.796 | 4.100 |
| 7704-34-9 | 16 | S | 0.501 | 0.050 | 0.405 | 0.135 | 0.447 | 0.101 | 0.435 | 0.091 |
| 7440-09-7 | 19 | K | 1.136 | 0.170 | 2.180 | 0.573 | 1.728 | 0.403 | 1.850 | 0.389 |
| 7440-70-2 | 20 | Ca | 0.575 | 0.058 | 0.750 | 0.215 | 0.674 | 0.154 | 0.146 | 1.022 |
| 7440-32-6 | 22 | Ti | 0.614 | 0.092 | 1.435 | 0.261 | 1.080 | 0.193 | 1.176 | 0.176 |
| 7440-62-2 | 23 | V | 0.051 | 0.005 | 0.067 | 0.009 | 0.060 | 0.011 | 0.062 | 0.006 |
| 7440-47-3 | 24 | Cr | 0.064 | 0.013 | 0.065 | 0.021 | 0.065 | 0.018 | 0.065 | 0.014 |
| 7439-96-5 | 25 | Mn | 0.023 | 0.003 | 0.030 | 0.010 | 0.027 | 0.009 | 0.040 | 0.006 |
| 7439-89-6 | 26 | Fe | 2.330 | 0.350 | 3.523 | 0.708 | 3.007 | 0.535 | 3.146 | 0.472 |
| 7440-02-0 | 28 | Ni | 0.028 | 0.007 | 0.017 | 0.007 | 0.022 | 0.008 | 0.020 | 0.004 |
| 7440-50-8 | 29 | Cu | 0.023 | 0.003 | 0.030 | 0.008 | 0.027 | 0.008 | 0.028 | 0.006 |
| 7440-66-6 | 30 | Zn | 0.039 | 0.006 | 0.086 | 0.026 | 0.066 | 0.019 | 0.071 | 0.018 |
| 7440-38-2 | 33 | As | 0.062 | 0.009 | 0.030 | 0.010 | 0.044 | 0.012 | 0.040 | 0.006 |
| 7782-49-2 | 34 | Se | 0.014 | 0.004 | 0.005 | 0.002 | 0.009 | 0.005 | 0.008 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.016 | 0.009 | 0.024 | 0.008 | 0.021 | 0.008 | 0.022 | 0.004 |
| TOTALS: | | | 34.438 | | 75.935 | | 57.976 | | 62.295 | |

(1) Calculated based on methodology described in the Air Emission Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Plant
Profile Number : 11206
Data Quality : C

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Control Device : ESP
Reference(s) : 64,67
Data Source : Plant B sampled with EPA Method 5 and Andersen impactor.
Analyzed using XRF and INAA.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.076 | 0.009 | 0.146 | 0.025 | 0.116 | 0.021 | 0.109 | 0.011 |
| 7439-95-4 | 12 | Mg | 0.673 | 0.336 | 1.649 | 0.716 | 1.227 | 0.501 | 1.128 | 0.282 |
| 7429-90-5 | 13 | Al | 4.093 | 1.023 | 10.730 | 9.702 | 7.857 | 6.420 | 7.189 | 4.493 |
| 7440-21-3 | 14 | Si | 6.550 | 2.129 | 17.729 | 15.948 | 12.890 | 10.569 | 11.765 | 7.353 |
| 7704-34-9 | 16 | S | 0.199 | 0.066 | 0.402 | 0.634 | 0.314 | 0.419 | 0.294 | 0.033 |
| 7782-50-5 | 17 | Cl | 0.051 | 0.006 | 0.023 | 0.022 | 0.035 | 0.017 | 0.038 | 0.009 |
| 7440-09-7 | 19 | K | 0.393 | 0.099 | 0.927 | 0.235 | 0.696 | 0.169 | 0.642 | 0.096 |
| 7440-70-2 | 20 | Ca | 0.234 | 0.070 | 0.373 | 0.179 | 0.313 | 0.125 | 0.299 | 0.075 |
| 7440-32-6 | 22 | Ti | 0.260 | 0.105 | 0.589 | 0.292 | 0.447 | 0.201 | 0.413 | 0.124 |
| 7440-62-2 | 23 | V | 0.020 | 0.014 | 0.023 | 0.029 | 0.022 | 0.021 | 0.022 | 0.011 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.017 | 0.041 | 0.035 | 0.030 | 0.025 | 0.027 | 0.014 |
| 7439-96-5 | 25 | Mn | 0.015 | 0.014 | 0.017 | 0.030 | 0.016 | 0.021 | 0.016 | 0.012 |
| 7439-89-6 | 26 | Fe | 0.953 | 0.238 | 2.390 | 0.911 | 1.768 | 0.621 | 1.623 | 0.406 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.008 | 0.023 | 0.028 | 0.017 | 0.019 | 0.016 | 0.012 |
| 7440-50-8 | 29 | Cu | 0.015 | 0.014 | 0.017 | 0.030 | 0.016 | 0.021 | 0.016 | 0.012 |
| 7440-66-6 | 30 | Zn | 0.015 | 0.014 | 0.029 | 0.028 | 0.023 | 0.020 | 0.022 | 0.011 |
| 7440-38-2 | 33 | As | 0.015 | 0.011 | 0.017 | 0.029 | 0.016 | 0.020 | 0.016 | 0.012 |
| 7782-49-2 | 34 | Se | 0.010 | 0.007 | 0.000 | 0.014 | 0.004 | 0.010 | 0.005 | 0.005 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.011 | 0.005 |
| TOTALS: | | | 13.597 | | 35.125 | | 25.807 | | 23.651 | |

(1) Calculated based on methodology described in the Air Emission Species Manual, Volume II.

PM Profile Speciation Report

---

Profile Name : Coal-Fired Power Plant
Profile Number : 11207
Data Quality : C

---

Control Device : ESP
Reference(s) : 64,67
Data Source : Plant C sampled with EPA Method 5 and Andersen impactor.
Analyzed using XRF and INAA.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %Wt | unc | %Wt | unc | %Wt | unc | %Wt | unc |
| 7440-23-5 | 11 | Na | 0.231 | 0.058 | 0.366 | 0.115 | 0.308 | 0.084 | 0.310 | 0.063 |
| 7439-95-4 | 12 | Mg | 2.027 | 0.507 | 3.021 | 0.854 | 2.591 | 0.632 | 2.607 | 0.451 |
| 7429-90-5 | 13 | Al | 12.030 | 3.308 | 15.144 | 4.078 | 13.796 | 3.199 | 13.847 | 1.939 |
| 7440-21-3 | 14 | Si | 21.689 | 5.422 | 25.945 | 6.975 | 24.103 | 5.442 | 24.172 | 3.379 |
| 7704-34-9 | 16 | S | 0.362 | 0.109 | 0.327 | 0.126 | 0.342 | 0.101 | 0.342 | 0.058 |
| 7440-09-7 | 19 | K | 1.420 | 0.403 | 1.512 | 0.437 | 1.472 | 0.356 | 1.473 | 0.191 |
| 7440-70-2 | 20 | Ca | 0.636 | 0.184 | 0.562 | 0.186 | 0.594 | 0.156 | 0.593 | 0.077 |
| 7440-32-6 | 22 | Ti | 0.808 | 0.173 | 1.173 | 0.274 | 1.015 | 0.210 | 1.021 | 0.143 |
| 7440-62-2 | 23 | V | 0.036 | 0.008 | 0.036 | 0.010 | 0.036 | 0.010 | 0.036 | 0.004 |
| 7440-47-3 | 24 | Cr | 0.041 | 0.014 | 0.026 | 0.013 | 0.032 | 0.013 | 0.033 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.028 | 0.008 | 0.006 | 0.013 | 0.016 | 0.011 | 0.015 | 0.007 |
| 7439-89-6 | 26 | Fe | 2.690 | 1.009 | 3.192 | 1.118 | 2.975 | 0.884 | 2.983 | 0.498 |
| 7440-02-0 | 28 | Ni | 0.021 | 0.004 | 0.021 | 0.016 | 0.021 | 0.012 | 0.021 | 0.009 |
| 7440-50-8 | 29 | Cu | 0.027 | 0.008 | 0.018 | 0.010 | 0.022 | 0.010 | 0.022 | 0.005 |
| 7440-66-6 | 30 | Zn | 0.028 | 0.008 | 0.028 | 0.011 | 0.028 | 0.010 | 0.028 | 0.006 |
| 7440-38-2 | 33 | As | 0.034 | 0.009 | 0.002 | 0.007 | 0.016 | 0.009 | 0.015 | 0.002 |
| 7782-49-2 | 34 | Se | 0.006 | 0.002 | 0.003 | 0.002 | 0.004 | 0.003 | 0.004 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.009 | 0.008 | 0.036 | 0.012 | 0.024 | 0.009 | 0.025 | 0.006 |
| TOTALS: | | | 42.123 | | 51.418 | | 47.395 | | 47.547 | |

(1) Calculated based on methodology described in the Air Emission Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Plant
Profile Number : 11208
Data Quality : E

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Control Device : ESP
Reference(s) : 64,68
Data Source : Samples collected isokinetically using bag filters.Analyzed by AAS and XRF.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

---

Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 9.200 | 0.000 | 9.200 | 0.000 | 9.200 | 0.000 | 9.200 | 0.497 |
| 7439-89-6 | 26 | Fe | 7.400 | 0.000 | 7.400 | 0.000 | 7.400 | 0.000 | 7.400 | 0.400 |
| 7440-50-8 | 29 | Cu | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.005 |
| 7440-66-6 | 30 | Zn | 0.037 | 0.000 | 0.037 | 0.000 | 0.037 | 0.000 | 0.037 | 0.001 |
| 7440-38-2 | 33 | As | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7782-49-2 | 34 | Se | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.247 | 0.000 | 0.247 | 0.000 | 0.247 | 0.000 | 0.247 | 0.008 |
| 7440-65-5 | 39 | Y | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.001 |
| 74400-30-1 | 41 | Nb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7439-98-7 | 42 | Mo | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.002 |
| TOTALS: | | | 16.991 | | 16.991 | | 16.991 | | 16.991 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Coal-Fired Power Plant
Profile Number : 11209
Data Quality : E

---

Control Device : Wet Scrubber
Reference(s) : 64,68
Data Source : Samples collected isokinetically using alundum thimbles backed up with wet impingers. Anlyzed by AAS and XRF.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.510 0.620 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 7.400 | 0.000 | 7.400 | 0.000 | 7.400 | 0.000 | 7.400 | 0.999 |
| 7439-89-6 | 26 | Fe | 4.900 | 0.000 | 4.900 | 0.000 | 4.900 | 0.000 | 4.900 | 0.300 |
| 7440-50-8 | 29 | Cu | 0.029 | 0.000 | 0.029 | 0.000 | 0.029 | 0.000 | 0.029 | 0.010 |
| 7440-66-6 | 30 | Zn | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.012 |
| 7440-38-2 | 33 | As | 0.028 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 | 0.028 | 0.008 |
| 7782-49-2 | 34 | Se | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.011 |
| 7440-17-7 | 37 | Rb | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.247 | 0.000 | 0.247 | 0.000 | 0.247 | 0.000 | 0.247 | 0.004 |
| 7440-65-5 | 39 | Y | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.002 |
| 7440-67-7 | 40 | Zr | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.001 |
| 74400-30-1 | 41 | Nb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7439-98-7 | 42 | Mo | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.002 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.034 | 0.000 | 0.034 | 0.000 | 0.034 | 0.000 | 0.034 | 0.008 |
| TOTALS: | | | 12.771 | | 12.771 | | 12.771 | | 12.771 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Plant
Profile Number : 11210
Data Quality : E

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Control Device : ESP
Reference(s) : 64,69
Data Source : Samples collected isokinetically using EPA train with 12-minute runs. Analyzed by AAS and INAA.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(1) %wt | 0-2.5 um(1) unc | 2.5-10 um(1) %wt | 2.5-10 um(1) unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-23-5 | 11 | Na | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.130 |
| 7439-95-4 | 12 | Mg | 3.300 | 0.000 | 3.300 | 0.000 | 3.300 | 0.000 | 3.300 | 0.800 |
| 7429-90-5 | 13 | Al | 19.700 | 0.000 | 19.700 | 0.000 | 19.700 | 0.000 | 19.700 | 6.500 |
| 7440-09-7 | 19 | K | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.500 |
| 7440-70-2 | 20 | Ca | 2.600 | 0.000 | 2.600 | 0.000 | 2.600 | 0.000 | 2.600 | 0.600 |
| 7440-22-2 | 21 | Sc | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.007 |
| 7440-32-6 | 22 | Ti | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.700 |
| 7440-62-2 | 23 | V | 0.062 | 0.000 | 0.062 | 0.000 | 0.062 | 0.000 | 0.062 | 0.021 |
| 7440-47-3 | 24 | Cr | 0.061 | 0.000 | 0.061 | 0.000 | 0.061 | 0.000 | 0.061 | 0.016 |
| 7439-96-5 | 25 | Mn | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.064 |
| 7439-89-6 | 26 | Fe | 11.700 | 0.000 | 11.700 | 0.000 | 11.700 | 0.000 | 11.700 | 7.300 |
| 7440-48-4 | 27 | Co | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.008 |
| 7440-02-0 | 28 | Ni | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.005 |
| 7440-50-8 | 29 | Cu | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.002 |
| 7440-38-2 | 33 | As | 0.048 | 0.000 | 0.048 | 0.000 | 0.048 | 0.000 | 0.048 | 0.019 |
| 7782-49-2 | 34 | Se | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.014 |
| 7440-24-6 | 38 | Sr | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.040 |
| 7440-74-6 | 49 | In | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-36-0 | 51 | Sb | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.005 |
| 7440-39-3 | 56 | Ba | 0.160 | 0.000 | 0.160 | 0.000 | 0.160 | 0.000 | 0.160 | 0.020 |
| 7439-91-0 | 57 | La | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.004 |
| 7440-45-1 | 58 | Ce | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.006 |
| 7440-19-9 | 62 | Sm | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 |
| 7440-53-1 | 63 | Eu | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7429-91-6 | 66 | Dy | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.002 |
| 7440-29-1 | 90 | Th | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.002 |
| TOTALS: | | | 41.342 | | 41.342 | | 41.342 | | 41.342 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Plant
Profile Number : 11211
Data Quality : E

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Control Device : Uncontrolled
Reference(s) : 64,70
Data Source : Samples collected with a University of Washington Mark 10 impactor and an MRI Model 1502 impactor. Analyzed by INAA and XRF.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.060 0.170 0.230

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 9.325 | 0.000 | 9.325 | 0.000 | 9.325 | 0.000 | 9.325 | 1.119 |
| 7440-09-7 | 19 | K | 0.423 | 0.000 | 0.423 | 0.000 | 0.423 | 0.000 | 0.423 | 0.051 |
| 7440-70-2 | 20 | Ca | 2.883 | 0.000 | 2.883 | 0.000 | 2.883 | 0.000 | 2.883 | 0.346 |
| 7440-22-2 | 21 | Sc | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.429 | 0.000 | 0.429 | 0.000 | 0.429 | 0.000 | 0.429 | 0.052 |
| 7440-62-2 | 23 | V | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.023 | 0.000 | 0.023 | 0.000 | 0.023 | 0.000 | 0.023 | 0.003 |
| 7439-89-6 | 26 | Fe | 2.761 | 0.000 | 2.761 | 0.000 | 2.761 | 0.000 | 2.761 | 0.331 |
| 7440-55-3 | 31 | Ga | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.135 | 0.000 | 0.135 | 0.000 | 0.135 | 0.000 | 0.135 | 0.135 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.190 | 0.000 | 0.190 | 0.000 | 0.190 | 0.000 | 0.190 | 0.023 |
| 7439-91-0 | 57 | La | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 |
| 7440-45-1 | 58 | Ce | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.001 |
| 7440-19-9 | 62 | Sm | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-27-9 | 65 | Tb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-25-7 | 73 | Ta | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-29-1 | 90 | Th | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| TOTALS: | | | 16.205 | | 16.205 | | 16.205 | | 16.205 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Plant
Profile Number : 11212
Data Quality : E

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Control Device : ESP
Reference(s) : 64,71
Data Source : Samples collected using ASTM sampling train; two data sets consisting of three 4 to 5-hr runs per set. Analyzed by XRF, GC, flameless AAS, and INAA.

SCC Assignments: 10100203

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.360 0.560 0.680

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(1) %wt | 0-2.5 um(1) unc | 2.5-10 um(1) %wt | 2.5-10 um(1) unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-23-5 | 11 | Na | 1.129 | 0.000 | 1.129 | 0.000 | 1.129 | 0.000 | 1.129 | 0.068 |
| 7429-90-5 | 13 | Al | 7.576 | 0.000 | 7.576 | 0.000 | 7.576 | 0.000 | 7.576 | 0.379 |
| 7440-09-7 | 19 | K | 2.424 | 0.000 | 2.424 | 0.000 | 2.424 | 0.000 | 2.424 | 0.152 |
| 7440-70-2 | 20 | Ca | 3.182 | 0.000 | 3.182 | 0.000 | 3.182 | 0.000 | 3.182 | 0.152 |
| 7440-22-2 | 21 | Sc | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 |
| 7440-32-6 | 22 | Ti | 0.985 | 0.000 | 0.985 | 0.000 | 0.985 | 0.000 | 0.985 | 0.152 |
| 7440-62-2 | 23 | V | 0.121 | 0.000 | 0.121 | 0.000 | 0.121 | 0.000 | 0.121 | 0.015 |
| 7440-47-3 | 24 | Cr | 0.089 | 0.000 | 0.089 | 0.000 | 0.089 | 0.000 | 0.089 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.006 |
| 7439-89-6 | 26 | Fe | 15.152 | 0.000 | 15.152 | 0.000 | 15.152 | 0.000 | 15.152 | 0.758 |
| 7440-48-4 | 27 | Co | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.591 | 0.000 | 0.591 | 0.000 | 0.591 | 0.000 | 0.591 | 0.045 |
| 7440-38-2 | 33 | As | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.003 |
| 7782-49-2 | 34 | Se | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.003 |
| 7440-36-0 | 51 | Sb | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 |
| 7440-46-2 | 55 | Cs | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.075 | 0.000 | 0.075 | 0.000 | 0.075 | 0.000 | 0.075 | 0.011 |
| 7439-91-0 | 57 | La | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.001 |
| 7440-19-9 | 62 | Sm | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-53-1 | 63 | Eu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-25-7 | 73 | Ta | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.065 | 0.000 | 0.065 | 0.000 | 0.065 | 0.000 | 0.065 | 0.003 |
| 7440-29-1 | 90 | Th | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| TOTALS: | | | 31.548 | | 31.548 | | 31.548 | | 31.548 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : External Combustion - Coal-Fired Composite
Profile Number : 11213
Data Quality : E

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Control Device : Two bag filters, one ESP, and two uncontrolled.
Reference(s) : 64,72
Data Source : Composite of five coal fired plants in Japan. Samples collected on on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10100201

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.290 | 0.500 | 0.670 |

Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.970 | 0.000 | 0.970 | 0.000 | 0.970 | 0.000 | 0.970 | 0.000 |
| 7429-90-5 | 13 | Al | 2.600 | 0.000 | 2.600 | 0.000 | 2.600 | 0.000 | 2.600 | 0.000 |
| 7704-34-9 | 16 | S | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.100 | 0.000 | 1.100 | 0.000 | 1.100 | 0.000 | 1.100 | 0.000 |
| 7440-09-7 | 19 | K | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.300 | 0.000 | 2.300 | 0.000 | 2.300 | 0.000 | 2.300 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 |
| 7440-62-2 | 23 | V | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 |
| 7440-48-4 | 27 | Co | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.000 |
| 7440-38-2 | 33 | As | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7726-95-6 | 35 | Br | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 |
| 7439-91-0 | 57 | La | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.200 | 0.000 | 0.000 |
| TOTALS: | | | 12.444 | | 12.444 | | 12.444 | | 12.244 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Uncontrolled Coal-fired Power Plant Composite
Profile Number : 11214
Data Quality : E

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Control Device : Uncontrolled
Reference(s) :
Data Source : Profile represents a composite of Profiles 11202 and 11211 - uncontrolled utility boiler, wet bottom design, firing pulverized bituminous coal.

SCC Assignments: 10100201

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.060 | 0.170 | 0.465 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 11.363 | 0.000 | 13.863 | 0.000 | 13.211 | 0.000 | 13.215 | 0.000 |
| 7440-09-7 | 19 | K | 0.812 | 0.000 | 0.877 | 0.000 | 0.860 | 0.000 | 0.860 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.142 | 0.000 | 2.592 | 0.000 | 2.474 | 0.000 | 2.475 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.765 | 0.000 | 0.865 | 0.000 | 0.839 | 0.000 | 0.839 | 0.000 |
| 7440-62-2 | 23 | V | 0.030 | 0.000 | 0.026 | 0.000 | 0.027 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.026 | 0.000 | 0.023 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.981 | 0.000 | 5.431 | 0.000 | 5.313 | 0.000 | 5.314 | 0.000 |
| 7440-38-2 | 33 | As | 0.032 | 0.000 | 0.012 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 |
| 7782-49-2 | 34 | Se | 0.013 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.132 | 0.000 | 0.129 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.245 | 0.000 | 0.142 | 0.000 | 0.169 | 0.000 | 0.169 | 0.000 |
| 7439-91-0 | 57 | La | 0.008 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.013 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7440-19-9 | 62 | Sm | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-27-9 | 65 | Tb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-29-1 | 90 | Th | 0.002 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| TOTALS: | | | 20.571 | | 23.995 | | 23.102 | | 23.081 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Coal-fired Power Plant/ESP Composite
Profile Number : 11215
Data Quality : D

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Control Device : ESP
Reference(s) :
Data Source : Profile represents a composite of Profiles 11204, 11205, 11206, 11207, 11208, 11210, and 11212.

SCC Assignments: 10100201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.290 0.500 0.670

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7440-23-5 | 11 | Na | 0.480 | 0.000 | 0.526 | 0.000 | 0.507 | 0.000 | 0.501 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.914 | 0.000 | 2.935 | 0.000 | 2.493 | 0.000 | 2.555 | 0.000 |
| 7429-90-5 | 13 | Al | 10.598 | 0.000 | 13.864 | 0.000 | 12.450 | 0.000 | 12.580 | 0.000 |
| 7440-21-3 | 14 | Si | 15.789 | 0.000 | 26.426 | 0.000 | 21.822 | 0.000 | 22.604 | 0.000 |
| 7704-34-9 | 16 | S | 1.255 | 0.000 | 0.565 | 0.000 | 2.864 | 0.000 | 0.603 | 0.000 |
| 7440-09-7 | 19 | K | 1.421 | 0.000 | 1.665 | 0.000 | 1.559 | 0.000 | 1.558 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.287 | 0.000 | 2.648 | 0.000 | 2.492 | 0.000 | 2.516 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.896 | 0.000 | 1.114 | 0.000 | 1.020 | 0.000 | 1.019 | 0.000 |
| 7440-62-2 | 23 | V | 0.058 | 0.000 | 0.062 | 0.000 | 0.060 | 0.000 | 0.061 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.049 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.047 | 0.000 | 0.041 | 0.000 | 0.044 | 0.000 | 0.044 | 0.000 |
| 7439-89-6 | 26 | Fe | 7.239 | 0.000 | 7.730 | 0.000 | 6.089 | 0.000 | 7.534 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.019 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 | 0.017 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.022 | 0.000 | 0.021 | 0.000 | 0.022 | 0.000 | 0.021 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.156 | 0.000 | 0.151 | 0.000 | 0.153 | 0.000 | 0.149 | 0.000 |
| 7440-38-2 | 33 | As | 0.036 | 0.000 | 0.023 | 0.000 | 0.031 | 0.000 | 0.030 | 0.000 |
| 7782-49-2 | 34 | Se | 0.011 | 0.000 | 0.008 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.033 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 |
| TOTALS: | | | 42.315 | | 57.883 | | 51.719 | | 51.886 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Coal- and Refuse Derived Fuel (RDF)-Fired Power Plant
Profile Number : 11301
Data Quality : D

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Control Device : ESP
Reference(s) : 64,66
Data Source : Sampled with a SASS train. Analyzed using XRF, INAA, and FAA.

SCC Assignments: 10100201, 10101201

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.290 | 0.500 | 0.670 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.809 | 0.317 | 0.736 | 0.165 | 0.768 | 0.187 | 0.741 | 0.155 |
| 7429-90-5 | 13 | Al | 9.701 | 5.609 | 11.202 | 4.135 | 11.021 | 3.728 | 11.100 | 3.866 |
| 7440-21-3 | 14 | Si | 17.639 | 10.198 | 20.550 | 7.367 | 20.200 | 6.705 | 20.352 | 6.889 |
| 7704-34-9 | 16 | S | 4.687 | 2.129 | 1.480 | 0.527 | 1.866 | 1.030 | 1.706 | 0.512 |
| 7440-09-7 | 19 | K | 2.165 | 0.648 | 1.753 | 0.265 | 1.803 | 0.368 | 1.782 | 0.251 |
| 7440-70-2 | 20 | Ca | 6.570 | 2.148 | 7.971 | 1.166 | 7.802 | 1.320 | 7.875 | 1.095 |
| 7440-22-2 | 21 | Sc | 0.002 | 0.001 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.830 | 0.292 | 0.683 | 0.148 | 0.701 | 0.173 | 0.694 | 0.139 |
| 7440-47-3 | 24 | Cr | 0.036 | 0.013 | 0.021 | 0.003 | 0.023 | 0.009 | 0.022 | 0.003 |
| 7439-96-5 | 25 | Mn | 0.122 | 0.045 | 0.088 | 0.019 | 0.092 | 0.028 | 0.090 | 0.018 |
| 7439-89-6 | 26 | Fe | 13.323 | 3.728 | 12.899 | 1.047 | 12.950 | 2.018 | 12.933 | 1.008 |
| 7440-48-4 | 27 | Co | 0.004 | 0.002 | 0.003 | 0.001 | 0.003 | 0.003 | 0.003 | 0.001 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.005 | 0.011 | 0.001 | 0.012 | 0.005 | 0.012 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.018 | 0.006 | 0.009 | 0.002 | 0.010 | 0.006 | 0.010 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.496 | 0.134 | 0.201 | 0.018 | 0.236 | 0.072 | 0.222 | 0.019 |
| 7440-55-3 | 31 | Ga | 0.015 | 0.007 | 0.006 | 0.002 | 0.007 | 0.006 | 0.007 | 0.001 |
| 7440-56-4 | 32 | Ge | 0.022 | 0.008 | 0.011 | 0.003 | 0.012 | 0.007 | 0.012 | 0.003 |
| 7440-38-2 | 33 | As | 0.008 | 0.003 | 0.005 | 0.001 | 0.005 | 0.004 | 0.006 | 0.001 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.010 | 0.003 | 0.009 | 0.002 | 0.009 | 0.004 | 0.009 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.115 | 0.042 | 0.083 | 0.016 | 0.087 | 0.025 | 0.085 | 0.015 |
| 7440-43-9 | 48 | Cd | 0.010 | 0.003 | 0.002 | 0.000 | 0.003 | 0.004 | 0.003 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.008 | 0.002 | 0.003 | 0.001 | 0.004 | 0.003 | 0.004 | 0.001 |
| 7440-36-0 | 51 | Sb | 0.007 | 0.002 | 0.004 | 0.001 | 0.004 | 0.003 | 0.004 | 0.001 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.344 | 0.092 | 0.201 | 0.019 | 0.218 | 0.052 | 0.211 | 0.019 |
| 7439-91-0 | 57 | La | 0.009 | 0.004 | 0.007 | 0.002 | 0.007 | 0.004 | 0.007 | 0.001 |
| 7440-45-1 | 58 | Ce | 0.015 | 0.006 | 0.011 | 0.002 | 0.011 | 0.005 | 0.011 | 0.002 |
| 7440-19-9 | 62 | Sm | 0.002 | 0.001 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-53-1 | 63 | Eu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-27-9 | 65 | Tb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-64-4 | 70 | Yb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-25-7 | 73 | Ta | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 11301)

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-33-7 | 74 | W | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.253 | 0.068 | 0.112 | 0.010 | 0.129 | 0.039 | 0.122 | 0.011 |
| 7440-29-1 | 90 | Th | 0.002 | 0.001 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7440-61-1 | 92 | U | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| TOTALS: | | | 57.246 | | 58.071 | | 57.993 | | 58.033 | |

(1) Calculated based on methodology in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11501
Data Quality : B/D

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Control Device : Mechanical collector
Reference(s) : 52
Data Source : Dilution train sample. Representative sample from set of nine. Plant burns No. 6 fuel oil.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 1.468 | 0.068 | 10.126 | 0.992 | 3.785 | 1.286 | 3.785 | 0.000 |
| 7440-21-3 | 14 | Si | 2.512 | 0.115 | 20.321 | 1.909 | 7.278 | 2.542 | 7.278 | 0.000 |
| 7723-14-0 | 15 | P | 1.012 | 0.184 | 2.484 | 1.140 | 1.406 | 0.890 | 1.406 | 0.000 |
| 7704-34-9 | 16 | S | 11.027 | 0.513 | 9.718 | 2.498 | 10.677 | 2.410 | 10.677 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.129 | 0.000 | 0.601 | 0.000 | 0.450 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.217 | 0.011 | 0.386 | 0.386 | 0.262 | 0.287 | 0.262 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.353 | 0.110 | 10.805 | 1.141 | 4.615 | 1.420 | 4.615 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.129 | 0.129 | 1.122 | 0.110 | 0.395 | 0.171 | 0.395 | 0.000 |
| 7440-62-2 | 23 | V | 1.504 | 0.069 | 1.944 | 0.370 | 1.622 | 0.375 | 1.622 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.051 | 0.090 | 0.127 | 0.050 | 0.071 | 0.077 | 0.071 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.039 | 0.002 | 0.069 | 0.015 | 0.047 | 0.014 | 0.047 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.043 | 0.094 | 3.715 | 0.578 | 2.490 | 0.614 | 2.490 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 2.036 | 0.093 | 1.208 | 0.422 | 1.814 | 0.400 | 1.814 | 0.000 |
| 7440-50-8 | 29 | Cu | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 1.095 | 0.050 | 0.710 | 0.231 | 0.992 | 0.220 | 0.992 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.010 | 0.002 | 0.030 | 0.015 | 0.015 | 0.012 | 0.015 | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.007 | 0.022 | 0.053 | 0.012 | 0.039 | 0.012 | 0.000 |
| 7782-49-2 | 34 | Se | 0.003 | 0.002 | 0.000 | 0.010 | 0.002 | 0.007 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.004 | 0.002 | 0.010 | 0.009 | 0.006 | 0.007 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.003 | 0.001 | 0.000 | 0.007 | 0.002 | 0.005 | 0.002 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.031 | 0.002 | 0.159 | 0.020 | 0.065 | 0.022 | 0.065 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.003 | 0.004 | 0.166 | 0.047 | 0.047 | 0.039 | 0.047 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.169 | 0.008 | 0.085 | 0.050 | 0.147 | 0.042 | 0.147 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.002 | 0.003 | 0.000 | 0.050 | 0.001 | 0.037 | 0.001 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.019 | 0.005 | 0.000 | 0.070 | 0.014 | 0.051 | 0.014 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.074 | 0.010 | 0.230 | 0.145 | 0.116 | 0.109 | 0.116 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 11501)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.219 | 0.025 | 0.000 | 0.358 | 0.160 | 0.264 | 0.160 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.012 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.423 | 0.065 | 0.422 | 0.278 | 1.155 | 0.260 | 1.155 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 27.454 | | 63.859 | | 37.196 | | 37.196 | |

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11502
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,73
Data Source : Samples collected using EPA Method 5 probe and PTFE bag.
Method of elemental analysis not given.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 3.906 | 0.000 | 3.906 | 0.000 | 3.906 | 0.000 | 3.906 | 0.200 |
| 7439-95-4 | 12 | Mg | 18.380 | 0.000 | 18.380 | 0.000 | 18.380 | 0.000 | 18.380 | 0.919 |
| 7429-90-5 | 13 | Al | 1.249 | 0.000 | 1.249 | 0.000 | 1.249 | 0.000 | 1.249 | 0.060 |
| 7440-21-3 | 14 | Si | 0.310 | 0.000 | 0.310 | 0.000 | 0.310 | 0.000 | 0.310 | 0.020 |
| 7723-14-0 | 15 | P | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.001 |
| 7704-34-9 | 16 | S | 12.317 | 0.000 | 12.317 | 0.000 | 12.317 | 0.000 | 12.317 | 0.609 |
| 7440-09-7 | 19 | K | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.006 |
| 7440-70-2 | 20 | Ca | 0.999 | 0.000 | 0.999 | 0.000 | 0.999 | 0.000 | 0.999 | 0.050 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7440-62-2 | 23 | V | 2.268 | 0.000 | 2.268 | 0.000 | 2.268 | 0.000 | 2.268 | 0.110 |
| 7440-47-3 | 24 | Cr | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7439-89-6 | 26 | Fe | 0.609 | 0.000 | 0.609 | 0.000 | 0.609 | 0.000 | 0.609 | 0.031 |
| 7440-48-4 | 27 | Co | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7440-02-0 | 28 | Ni | 1.658 | 0.000 | 1.658 | 0.000 | 1.658 | 0.000 | 1.658 | 0.080 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7440-66-6 | 30 | Zn | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7440-65-5 | 39 | Y | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 74400-30-1 | 41 | Nb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |

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PM Profile Speciation Report - continued (profile 11502)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(2) %wt | 0-2.5 um(2) unc | 2.5-10 um(2) %wt | 2.5-10 um(2) unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-28-0 | 81 | Tl | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.015 |
| 7440-29-1 | 90 | Th | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-61-1 | 92 | U | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| | 200 | TC | 12.387 | 0.000 | 12.387 | 0.000 | 12.387 | 0.000 | 12.387 | 0.619 |
| | 203 | SO4 | 36.861 | 0.000 | 36.861 | 0.000 | 36.861 | 0.000 | 36.861 | 1.838 |
| | 204 | NO3 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| TOTALS: | | | 91.764 | | 91.764 | | 91.764 | | 91.764 | |

(1) No control specified; thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name . : Oil-Fired Power Plant
Profile Number : 11503
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,73
Data Source : Samples collected using EPA Method 5 probe and PTFE bag.
Method of elemental analysis not given.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.299 | 0.000 | 0.299 | 0.000 | 0.299 | 0.000 | 0.299 | 0.015 |
| 7439-95-4 | 12 | Mg | 3.403 | 0.000 | 3.403 | 0.000 | 3.403 | 0.000 | 3.403 | 0.170 |
| 7429-90-5 | 13 | Al | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7440-21-3 | 14 | Si | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 |
| 7723-14-0 | 15 | P | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7704-34-9 | 16 | S | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.200 |
| 7440-09-7 | 19 | K | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |
| 7440-70-2 | 20 | Ca | 0.309 | 0.000 | 0.309 | 0.000 | 0.309 | 0.000 | 0.309 | 0.016 |
| 7440-32-6 | 22 | Ti | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7440-62-2 | 23 | V | 6.667 | 0.000 | 6.667 | 0.000 | 6.667 | 0.000 | 6.667 | 0.333 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7439-89-6 | 26 | Fe | 0.399 | 0.000 | 0.399 | 0.000 | 0.399 | 0.000 | 0.399 | 0.020 |
| 7440-48-4 | 27 | Co | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.848 | 0.000 | 0.848 | 0.000 | 0.848 | 0.000 | 0.848 | 0.043 |
| 7440-50-8 | 29 | Cu | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 74400-30-1 | 41 | Nb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7439-91-0 | 57 | La | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 11503)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(2) %wt | 0-2.5 um(2) unc | 2.5-10 um(2) %wt | 2.5-10 um(2) unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7440-29-1 | 90 | Th | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-61-1 | 92 | U | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 200 | TC | 68.862 | 0.000 | 68.862 | 0.000 | 68.862 | 0.000 | 68.862 | 3.443 |
| | 203 | SO4 | 11.976 | 0.000 | 11.976 | 0.000 | 11.976 | 0.000 | 11.976 | 0.599 |
| | 204 | NO3 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.001 |
| TOTALS: | | | 97.305 | | 97.305 | | 97.305 | | 97.305 | |

(1) No control specified; thus, assumed uncontrolled.

(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11504
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,73
Data Source : Samples collected using EPA Method 5 probe and PTFE bag.
Method of elemental analysis not given.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.500 | 0.000 | 0.500 | 0.000 | 0.500 | 0.000 | 0.500 | 0.025 |
| 7439-95-4 | 12 | Mg | 5.942 | 0.000 | 5.942 | 0.000 | 5.942 | 0.000 | 5.942 | 0.297 |
| 7429-90-5 | 13 | Al | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.020 |
| 7440-21-3 | 14 | Si | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 |
| 7723-14-0 | 15 | P | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7704-34-9 | 16 | S | 13.766 | 0.000 | 13.766 | 0.000 | 13.766 | 0.000 | 13.766 | 0.688 |
| 7440-09-7 | 19 | K | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |
| 7440-70-2 | 20 | Ca | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |
| 7440-22-2 | 21 | Sc | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-62-2 | 23 | V | 10.204 | 0.000 | 10.204 | 0.000 | 10.204 | 0.000 | 10.204 | 0.510 |
| 7440-47-3 | 24 | Cr | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7439-89-6 | 26 | Fe | 0.410 | 0.000 | 0.410 | 0.000 | 0.410 | 0.000 | 0.410 | 0.021 |
| 7440-48-4 | 27 | Co | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7440-02-0 | 28 | Ni | 1.291 | 0.000 | 1.291 | 0.000 | 1.291 | 0.000 | 1.291 | 0.065 |
| 7440-50-8 | 29 | Cu | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7440-55-3 | 31 | Ga | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 |
| 7440-38-2 | 33 | As | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7440-65-5 | 39 | Y | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 74400-30-1 | 41 | Nb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |

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PM Profile Speciation Report - continued (profile 11504)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(2) %wt | 0-2.5 um(2) unc | 2.5-10 um(2) %wt | 2.5-10 um(2) unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 |
| 7440-45-1 | 58 | Ce | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-33-7 | 74 | W | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-28-0 | 81 | Tl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-29-1 | 90 | Th | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-61-1 | 92 | U | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 200 | TC | 21.509 | 0.000 | 21.509 | 0.000 | 21.509 | 0.000 | 21.509 | 1.080 |
| | 203 | SO4 | 41.216 | 0.000 | 41.216 | 0.000 | 41.216 | 0.000 | 41.216 | 2.061 |
| | 204 | NO3 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| TOTALS: | | | 96.011 | | 96.011 | | 96.011 | | 96.011 | |

(1) No control specified; thus, assumed uncontrolled.

(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11505
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,73
Data Source : Samples collected using EPA Method 5 probe and PTFE bag.
Method of elemental analysis not given.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 1.995 | 0.000 | 1.995 | 0.000 | 1.995 | 0.000 | 1.995 | 0.100 |
| 7439-95-4 | 12 | Mg | 2.494 | 0.000 | 2.494 | 0.000 | 2.494 | 0.000 | 2.494 | 0.130 |
| 7429-90-5 | 13 | Al | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-21-3 | 14 | Si | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7723-14-0 | 15 | P | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7704-34-9 | 16 | S | 19.196 | 0.000 | 19.196 | 0.000 | 19.196 | 0.000 | 19.196 | 0.960 |
| 7440-09-7 | 19 | K | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |
| 7440-70-2 | 20 | Ca | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-62-2 | 23 | V | 12.821 | 0.000 | 12.821 | 0.000 | 12.821 | 0.000 | 12.821 | 0.639 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7439-89-6 | 26 | Fe | 0.479 | 0.000 | 0.479 | 0.000 | 0.479 | 0.000 | 0.479 | 0.024 |
| 7440-48-4 | 27 | Co | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7440-02-0 | 28 | Ni | 2.275 | 0.000 | 2.275 | 0.000 | 2.275 | 0.000 | 2.275 | 0.110 |
| 7440-50-8 | 29 | Cu | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-66-6 | 30 | Zn | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-55-3 | 31 | Ga | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 |
| 7440-38-2 | 33 | As | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7440-65-5 | 39 | Y | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 74400-30-1 | 41 | Nb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 11505)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(2) %wt | 0-2.5 um(2) unc | 2.5-10 um(2) %wt | 2.5-10 um(2) unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |
| 7439-91-0 | 57 | La | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-33-7 | 74 | W | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-28-0 | 81 | Tl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-29-1 | 90 | Th | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-61-1 | 92 | U | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| | 200 | TC | 1.497 | 0.000 | 1.497 | 0.000 | 1.497 | 0.000 | 1.497 | 0.075 |
| | 203 | SO4 | 57.468 | 0.000 | 57.468 | 0.000 | 57.468 | 0.000 | 57.468 | 2.873 |
| | 204 | NO3 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| TOTALS: | | | 99.060 | | 99.060 | | 99.060 | | 99.060 | |

(1) No control specified; thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11506
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,73
Data Source : Samples collected using EPA Method 5 probe and PTFE bag.
Method of elemental analysis not given.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.001 |
| 7439-95-4 | 12 | Mg | 2.400 | 0.000 | 2.400 | 0.000 | 2.400 | 0.000 | 2.400 | 0.120 |
| 7429-90-5 | 13 | Al | 1.420 | 0.000 | 1.420 | 0.000 | 1.420 | 0.000 | 1.420 | 0.071 |
| 7440-21-3 | 14 | Si | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.011 |
| 7723-14-0 | 15 | P | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.005 |
| 7704-34-9 | 16 | S | 16.432 | 0.000 | 16.432 | 0.000 | 16.432 | 0.000 | 16.432 | 0.822 |
| 7440-09-7 | 19 | K | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.006 |
| 7440-70-2 | 20 | Ca | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.016 |
| 7440-32-6 | 22 | Ti | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.007 |
| 7440-62-2 | 23 | V | 1.100 | 0.000 | 1.100 | 0.000 | 1.100 | 0.000 | 1.100 | 0.055 |
| 7440-47-3 | 24 | Cr | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7439-89-6 | 26 | Fe | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.020 |
| 7440-48-4 | 27 | Co | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7440-02-0 | 28 | Ni | 0.350 | 0.000 | 0.350 | 0.000 | 0.350 | 0.000 | 0.350 | 0.018 |
| 7440-50-8 | 29 | Cu | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-66-6 | 30 | Zn | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7440-55-3 | 31 | Ga | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 |
| 7440-65-5 | 39 | Y | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 74400-30-1 | 41 | Nb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.002 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.002 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 |
| 7439-91-0 | 57 | La | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.002 |

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PM Profile Speciation Report - continued (profile 11506)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(2) %wt | 0-2.5 um(2) unc | 2.5-10 um(2) %wt | 2.5-10 um(2) unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.005 |
| 7440-33-7 | 74 | W | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-28-0 | 81 | Tl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7440-29-1 | 90 | Th | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-61-1 | 92 | U | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 200 | TC | 14.501 | 0.000 | 14.501 | 0.000 | 14.501 | 0.000 | 14.501 | 0.730 |
| | 203 | SO4 | 49.205 | 0.000 | 49.205 | 0.000 | 49.205 | 0.000 | 49.205 | 2.460 |
| TOTALS: | | | 87.168 | | 87.168 | | 87.168 | | 87.168 | |

(1) No control specified; thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11507
Data Quality : C

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Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Twenty five samples from four boilers collected over a 6-day period.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.097 | 0.139 | 1.063 | 0.594 | 0.155 | 0.528 | 0.155 | 0.000 |
| 7440-21-3 | 14 | Si | 0.263 | 0.152 | 1.448 | 0.467 | 0.334 | 0.435 | 0.334 | 0.000 |
| 7723-14-0 | 15 | P | 0.026 | 0.032 | 0.087 | 0.091 | 0.029 | 0.083 | 0.029 | 0.000 |
| 7704-34-9 | 16 | S | 11.858 | 1.071 | 10.758 | 3.227 | 11.792 | 3.227 | 11.792 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.144 | 0.122 | 1.056 | 0.629 | 0.199 | 0.555 | 0.199 | 0.000 |
| 7440-09-7 | 19 | K | 0.149 | 0.068 | 0.165 | 0.127 | 0.150 | 0.124 | 0.150 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.609 | 0.172 | 0.978 | 0.268 | 0.631 | 0.285 | 0.631 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.045 | 0.016 | 0.128 | 0.065 | 0.050 | 0.062 | 0.050 | 0.000 |
| 7440-62-2 | 23 | V | 0.519 | 0.146 | 0.381 | 0.105 | 0.511 | 0.157 | 0.511 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.024 | 0.164 | 0.061 | 0.057 | 0.062 | 0.057 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.017 | 0.007 | 0.107 | 0.063 | 0.023 | 0.059 | 0.023 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.267 | 0.675 | 1.254 | 0.600 | 1.266 | 0.734 | 1.266 | 0.000 |
| 7440-02-0 | 28 | Ni | 1.115 | 0.425 | 0.728 | 0.111 | 1.092 | 0.353 | 1.092 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.007 | 0.007 | 0.021 | 0.034 | 0.008 | 0.031 | 0.008 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.100 | 0.030 | 0.050 | 0.039 | 0.097 | 0.044 | 0.097 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.005 | 0.004 | 0.007 | 0.011 | 0.005 | 0.011 | 0.005 | 0.000 |
| 7440-38-2 | 33 | As | 0.025 | 0.008 | 0.019 | 0.029 | 0.025 | 0.027 | 0.025 | 0.000 |
| 7782-49-2 | 34 | Se | 0.002 | 0.002 | 0.034 | 0.031 | 0.004 | 0.029 | 0.004 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.002 | 0.053 | 0.058 | 0.004 | 0.052 | 0.004 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.003 | 0.028 | 0.050 | 0.002 | 0.044 | 0.002 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.001 | 0.002 | 0.021 | 0.041 | 0.002 | 0.036 | 0.002 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.005 | 0.029 | 0.057 | 0.002 | 0.050 | 0.002 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.006 | 0.013 | 0.006 | 0.021 | 0.006 | 0.021 | 0.006 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.001 | 0.000 | 0.180 | 0.000 | 0.154 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.001 | 0.005 | 0.096 | 0.145 | 0.007 | 0.125 | 0.007 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.005 | 0.007 | 0.218 | 0.247 | 0.018 | 0.214 | 0.018 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.002 | 0.003 | 0.227 | 0.193 | 0.015 | 0.169 | 0.015 | 0.000 |
| 7440-74-6 | 49 | In | 0.003 | 0.005 | 0.293 | 0.263 | 0.020 | 0.228 | 0.020 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.001 | 0.218 | 0.326 | 0.013 | 0.281 | 0.013 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.007 | 0.598 | 0.770 | 0.038 | 0.662 | 0.038 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.134 | 0.996 | 1.449 | 0.060 | 1.247 | 0.060 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.244 | 1.728 | 2.660 | 0.104 | 2.288 | 0.104 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.019 | 0.018 | 0.001 | 0.017 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.032 | 0.014 | 0.136 | 0.164 | 0.038 | 0.143 | 0.038 | 0.000 |
| | 201 | OC | 5.000 | 2.500 | 44.000 | 16.500 | 7.300 | 14.614 | 7.300 | 0.000 |

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PM Profile Speciation Report - continued (profile 11507)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(2) %wt | Total Measured(2) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 202 | EC | 12.800 | 9.300 | 18.700 | 15.000 | 13.200 | 14.659 | 13.200 | 0.000 |
| TOTALS: | | | 34.151 | | 85.814 | | 37.258 | | 37.258 | |

(1) No control specified: thus, assumed uncontrolled.

(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11508
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Unspecified methodology.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 2.600 | 0.600 | 2.500 | 1.100 | 2.594 | 1.093 | 2.594 | 0.000 |
| 7429-90-5 | 13 | Al | 0.420 | 0.080 | 3.700 | 0.300 | 0.602 | 0.398 | 0.602 | 0.000 |
| 7440-21-3 | 14 | Si | 1.900 | 0.600 | 8.200 | 1.500 | 2.250 | 1.507 | 2.250 | 0.000 |
| 7723-14-0 | 15 | P | 1.500 | 0.400 | 2.300 | 0.200 | 1.544 | 0.420 | 1.544 | 0.000 |
| 7704-34-9 | 16 | S | 11.000 | 2.000 | 9.000 | 1.000 | 10.889 | 2.155 | 10.889 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.018 | 0.008 | 0.160 | 0.090 | 0.026 | 0.082 | 0.026 | 0.000 |
| 7440-09-7 | 19 | K | 0.160 | 0.050 | 0.350 | 0.050 | 0.171 | 0.074 | 0.171 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.400 | 0.900 | 7.600 | 3.800 | 3.633 | 3.387 | 3.633 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.050 | 0.050 | 0.690 | 0.140 | 0.086 | 0.145 | 0.086 | 0.000 |
| 7440-62-2 | 23 | V | 1.100 | 0.300 | 1.500 | 0.800 | 1.122 | 0.740 | 1.122 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.022 | 0.001 | 0.065 | 0.016 | 0.024 | 0.022 | 0.024 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.035 | 0.004 | 0.057 | 0.018 | 0.036 | 0.022 | 0.036 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.500 | 0.200 | 2.900 | 0.400 | 1.578 | 0.468 | 1.578 | 0.000 |
| 7440-48-4 | 27 | Co | 0.075 | 0.014 | 0.100 | 0.020 | 0.076 | 0.030 | 0.076 | 0.000 |
| 7440-02-0 | 28 | Ni | 1.500 | 0.500 | 2.100 | 0.200 | 1.533 | 0.468 | 1.533 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.098 | 0.032 | 0.140 | 0.020 | 0.100 | 0.040 | 0.100 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.200 | 0.300 | 1.600 | 0.500 | 1.222 | 0.516 | 1.222 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.001 | 0.004 | 0.003 | 0.003 | 0.005 | 0.003 | 0.000 |
| 7782-49-2 | 34 | Se | 0.002 | 0.001 | 0.003 | 0.001 | 0.002 | 0.003 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.011 | 0.006 | 0.002 | 0.001 | 0.011 | 0.006 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.016 | 0.005 | 0.100 | 0.013 | 0.021 | 0.024 | 0.021 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.021 | 0.021 | 0.200 | 0.110 | 0.031 | 0.100 | 0.031 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.087 | 0.018 | 0.077 | 0.022 | 0.086 | 0.031 | 0.086 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.034 | 0.022 | NR | 0.000 | 0.032 | 0.016 | 0.032 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.035 | 0.038 | 0.012 | 0.013 | 0.034 | 0.031 | 0.034 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.186 | 0.009 | 0.550 | 0.260 | 0.206 | 0.232 | 0.206 | 0.000 |
| 7439-91-0 | 57 | La | 0.012 | 0.002 | 0.170 | 0.020 | 0.021 | 0.033 | 0.021 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.008 | 0.002 | 0.058 | 0.007 | 0.011 | 0.017 | 0.011 | 0.000 |
| 7440-00-8 | 60 | Nd | 0.003 | 0.000 | 0.050 | 0.021 | 0.005 | 0.023 | 0.005 | 0.000 |
| 7440-19-9 | 62 | Sm | 0.000 | 0.000 | 0.004 | 0.001 | 0.001 | 0.004 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.800 | 0.600 | 3.000 | 0.400 | 1.867 | 0.636 | 1.867 | 0.000 |
| | 201 | OC | 3.200 | 0.500 | 12.000 | 8.000 | 3.689 | 6.924 | 3.689 | 0.000 |
| | 202 | EC | 7.700 | 1.500 | 21.000 | 1.000 | 8.439 | 2.241 | 8.439 | 0.000 |
| | 203 | SO4 | 40.000 | 3.000 | 47.000 | 4.000 | 40.389 | 6.763 | 40.389 | 0.000 |
| TOTALS: | | | 79.696 | | 127.192 | | 82.334 | | 82.334 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-Fired Power Plant
Profile Number : 11509
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Unspecified methodology.

SCC Assignments: 10100401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 3.100 | 0.900 | 4.400 | 4.300 | 3.152 | 3.768 | 3.152 | 0.000 |
| 7429-90-5 | 13 | Al | 0.890 | 0.070 | 9.700 | 1.400 | 1.242 | 1.410 | 1.242 | 0.000 |
| 7440-21-3 | 14 | Si | 2.600 | 0.400 | 22.000 | 6.000 | 3.376 | 5.404 | 3.376 | 0.000 |
| 7723-14-0 | 15 | P | 1.000 | 0.100 | 1.700 | 0.600 | 1.028 | 0.549 | 1.028 | 0.000 |
| 7704-34-9 | 16 | S | 13.000 | 1.000 | 9.200 | 4.000 | 12.848 | 3.815 | 12.848 | 0.000 |
| 7782-50-5 | 17 | Cl | NR | 0.000 | 0.430 | 0.260 | 0.017 | 0.228 | 0.017 | 0.000 |
| 7440-09-7 | 19 | K | 0.210 | 0.030 | 0.340 | 0.110 | 0.215 | 0.108 | 0.215 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.100 | 0.900 | 16.000 | 2.000 | 2.656 | 2.201 | 2.656 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.120 | 0.020 | 1.000 | 0.200 | 0.155 | 0.197 | 0.155 | 0.000 |
| 7440-62-2 | 23 | V | 1.900 | 0.300 | 1.000 | 1.800 | 1.864 | 1.571 | 1.864 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.022 | 0.007 | 0.041 | 0.013 | 0.023 | 0.018 | 0.023 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.023 | 0.008 | 0.062 | 0.017 | 0.025 | 0.023 | 0.025 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.600 | 0.400 | 3.200 | 0.500 | 1.664 | 0.603 | 1.664 | 0.000 |
| 7440-48-4 | 27 | Co | 0.110 | 0.010 | 0.120 | 0.030 | 0.110 | 0.037 | 0.110 | 0.000 |
| 7440-02-0 | 28 | Ni | 1.900 | 0.200 | 1.800 | 0.500 | 1.896 | 0.517 | 1.896 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.110 | 0.050 | 0.800 | 0.800 | 0.138 | 0.690 | 0.138 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.730 | 0.290 | 0.840 | 0.110 | 0.734 | 0.258 | 0.734 | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.001 | 0.008 | 0.007 | 0.006 | 0.008 | 0.006 | 0.000 |
| 7782-49-2 | 34 | Se | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.004 | 0.000 | 0.007 | 0.004 | 0.005 | 0.006 | 0.005 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.028 | 0.007 | 0.150 | 0.040 | 0.033 | 0.044 | 0.033 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.016 | 0.013 | 0.190 | 0.050 | 0.023 | 0.053 | 0.023 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.160 | 0.020 | 0.240 | 0.160 | 0.163 | 0.143 | 0.163 | 0.000 |
| 7440-22-4 | 47 | Ag | NR | 0.000 | 0.010 | 0.004 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.021 | 0.008 | 0.330 | 0.310 | 0.033 | 0.269 | 0.033 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.097 | 0.008 | 0.064 | 0.034 | 0.096 | 0.035 | 0.096 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.130 | 0.005 | 0.940 | 0.060 | 0.162 | 0.106 | 0.162 | 0.000 |
| 7439-91-0 | 57 | La | 0.042 | 0.003 | 0.590 | 0.140 | 0.064 | 0.136 | 0.064 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.034 | 0.002 | 0.350 | 0.020 | 0.047 | 0.048 | 0.047 | 0.000 |
| 7440-00-8 | 60 | Nd | 0.022 | 0.002 | 0.270 | 0.030 | 0.032 | 0.046 | 0.032 | 0.000 |
| 7440-19-9 | 62 | Sm | 0.002 | 0.000 | 0.028 | 0.007 | 0.003 | 0.012 | 0.003 | 0.000 |
| 7440-53-1 | 63 | Eu | NR | 0.000 | 0.001 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-27-9 | 65 | Tb | NR | 0.000 | 0.001 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.000 | 0.200 | 0.650 | 0.340 | 0.986 | 0.349 | 0.986 | 0.000 |
| 7440-29-1 | 90 | Th | NR | 0.000 | 0.002 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 11509)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(2) %wt | Total Measured(2) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 1.000 | 0.500 | 26.000 | 16.000 | 2.000 | 13.833 | 2.000 | 0.000 |
| | 202 | EC | 0.220 | 0.170 | 1.100 | 1.100 | 0.255 | 0.955 | 0.255 | 0.000 |
| | 203 | SO4 | 45.000 | 7.000 | 40.000 | 30.000 | 44.800 | 26.756 | 44.800 | 0.000 |
| TOTALS: | | | 77.198 | | 143.566 | | 79.853 | | 79.853 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-fired Power Plant Composite
Profile Number : 11510
Data Quality : E

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Control Device : Uncontrolled
Reference(s) :
Data Source : Profile represents a composite of Profiles 11502, 11503, 11504, 11505, 11506, 11507, 11508, and 11509.

SCC Assignments: 10100401

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.520 | 0.580 | 0.710 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 0.567 | 0.000 | 2.199 | 0.000 | 0.641 | 0.000 | 0.641 | 0.000 |
| 7440-21-3 | 14 | Si | 0.718 | 0.000 | 4.079 | 0.000 | 0.868 | 0.000 | 0.868 | 0.000 |
| 7723-14-0 | 15 | P | 0.324 | 0.000 | 0.519 | 0.000 | 0.333 | 0.000 | 0.333 | 0.000 |
| 7704-34-9 | 16 | S | 12.696 | 0.000 | 11.834 | 0.000 | 12.655 | 0.000 | 12.655 | 0.000 |
| 7440-09-7 | 19 | K | 0.134 | 0.000 | 0.176 | 0.000 | 0.136 | 0.000 | 0.136 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.005 | 0.000 | 3.313 | 0.000 | 1.106 | 0.000 | 1.106 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.056 | 0.000 | 0.256 | 0.000 | 0.065 | 0.000 | 0.065 | 0.000 |
| 7440-62-2 | 23 | V | 4.572 | 0.000 | 4.493 | 0.000 | 4.570 | 0.000 | 4.570 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.044 | 0.000 | 0.066 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.027 | 0.000 | 0.046 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.833 | 0.000 | 1.206 | 0.000 | 0.851 | 0.000 | 0.851 | 0.000 |
| 7440-02-0 | 28 | Ni | 1.367 | 0.000 | 1.381 | 0.000 | 1.368 | 0.000 | 1.368 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.047 | 0.000 | 0.140 | 0.000 | 0.051 | 0.000 | 0.051 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.265 | 0.000 | 0.322 | 0.000 | 0.268 | 0.000 | 0.268 | 0.000 |
| 7440-38-2 | 33 | As | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.005 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.003 | 0.000 | 0.009 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.023 | 0.000 | 0.051 | 0.000 | 0.025 | 0.000 | 0.025 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.007 | 0.000 | 0.051 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.037 | 0.000 | 0.046 | 0.000 | 0.037 | 0.000 | 0.037 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.007 | 0.000 | 0.079 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.019 | 0.000 | 0.086 | 0.000 | 0.023 | 0.000 | 0.023 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.082 | 0.000 | 0.353 | 0.000 | 0.096 | 0.000 | 0.096 | 0.000 |
| 7439-91-0 | 57 | La | 0.011 | 0.000 | 0.315 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.408 | 0.000 | 0.527 | 0.000 | 0.415 | 0.000 | 0.415 | 0.000 |
| TOTALS: | | | 23.259 | | 31.558 | | 23.637 | | 23.637 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Wood-Fired Boiler
Profile Number : 11801
Data Quality : B/D

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Control Device : Multicyclone
Reference(s) : 21
Data Source : Sampled with a stage virtual impactor.

SCC Assignments: 10100902

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.160 0.270 0.320

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | 0.150 | 0.050 | 0.110 | 0.041 | 0.130 | 0.035 | 0.130 | 0.000 |
| 7440-23-5 | 11 | Na | 3.400 | 2.900 | 0.690 | 0.960 | 2.045 | 1.547 | 2.045 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 1.000 | 0.460 | 0.170 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.240 | 0.180 | 0.280 | 0.090 | 0.260 | 0.104 | 0.260 | 0.000 |
| 7440-21-3 | 14 | Si | 0.760 | 0.370 | 0.960 | 0.140 | 0.860 | 0.216 | 0.860 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 8.800 | 2.400 | 0.590 | 0.090 | 4.695 | 1.353 | 4.695 | 0.000 |
| 7782-50-5 | 17 | Cl | 9.500 | 4.900 | 0.830 | 0.760 | 5.165 | 2.569 | 5.165 | 0.000 |
| 7440-09-7 | 19 | K | 22.400 | 11.200 | 1.300 | 0.210 | 11.850 | 5.821 | 11.850 | 0.000 |
| 7440-70-2 | 20 | Ca | 5.600 | 4.000 | 5.200 | 0.520 | 5.400 | 2.088 | 5.400 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.060 | 0.097 | 0.080 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.002 | 0.005 | 0.003 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.006 | 0.007 | 0.001 | 0.011 | 0.003 | 0.011 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.510 | 0.340 | 0.290 | 0.040 | 0.400 | 0.176 | 0.400 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.260 | 0.880 | 0.920 | 0.220 | 1.090 | 0.467 | 1.090 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.006 | 0.004 | < | 0.005 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.120 | 0.060 | 0.023 | 0.004 | 0.071 | 0.031 | 0.071 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.730 | 0.340 | 0.039 | 0.005 | 0.385 | 0.178 | 0.385 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.055 | 0.030 | 0.001 | 0.001 | 0.028 | 0.016 | 0.028 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 11801)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.420 | 0.220 | 0.020 | 0.003 | 0.220 | 0.114 | 0.220 | 0.000 |
| | 201 | OC | NA | 0.000 | 11.100 | 5.400 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | 4.300 | 1.400 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | 33.800 | 9.000 | 1.500 | 0.370 | 17.650 | 5.100 | 17.650 | 0.000 |
| | 204 | NO3 | 0.510 | 0.230 | 0.200 | 0.130 | 0.355 | 0.138 | 0.355 | 0.000 |
| TOTALS: | | | 88.276 | | 28.922 | | 50.615 | | 50.615 | |

PM Profile Speciation Report

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Profile Name : External Combustion Boiler - Coal-Slurry Fired
Profile Number : 12201
Data Quality : D

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Control Device : Uncontrolled
Reference(s) : 61
Data Source : Boiler flue gas SASS train samples analyzed for 73 elements by spark source mass spectroscopy and atomic absorption spectroscopy.

SCC Assignments: 10200213

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.310 0.340 0.370

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-93-2 | 3 | Li | 0.007 | 0.000 | 0.003 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.120 | 0.000 | 0.001 | 0.000 | 0.101 | 0.000 | 0.101 | 0.000 |
| 7782-41-4 | 9 | F | 0.180 | 0.000 | 0.016 | 0.000 | 0.153 | 0.000 | 0.153 | 0.000 |
| 7440-23-5 | 11 | Na | 3.460 | 0.000 | 0.820 | 0.000 | 3.032 | 0.000 | 3.032 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.450 | 0.000 | 0.120 | 0.000 | 0.396 | 0.000 | 0.396 | 0.000 |
| 7429-90-5 | 13 | Al | 7.330 | 0.000 | 3.130 | 0.000 | 6.649 | 0.000 | 6.649 | 0.000 |
| 7440-21-3 | 14 | Si | 12.400 | 0.000 | 6.060 | 0.000 | 11.372 | 0.000 | 11.372 | 0.000 |
| 7723-14-0 | 15 | P | 0.280 | 0.000 | 0.160 | 0.000 | 0.261 | 0.000 | 0.261 | 0.000 |
| 7704-34-9 | 16 | S | 0.520 | 0.000 | 0.550 | 0.000 | 0.525 | 0.000 | 0.525 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.840 | 0.000 | 0.041 | 0.000 | 0.710 | 0.000 | 0.710 | 0.000 |
| 7440-09-7 | 19 | K | 0.450 | 0.000 | 0.210 | 0.000 | 0.411 | 0.000 | 0.411 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.238 | 0.000 | 0.440 | 0.000 | 0.271 | 0.000 | 0.271 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.006 | 0.000 | 0.001 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.450 | 0.000 | 0.250 | 0.000 | 0.418 | 0.000 | 0.418 | 0.000 |
| 7440-62-2 | 23 | V | 0.040 | 0.000 | 0.018 | 0.000 | 0.036 | 0.000 | 0.036 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.002 | 0.000 | 0.017 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.053 | 0.000 | 0.009 | 0.000 | 0.046 | 0.000 | 0.046 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.050 | 0.000 | 2.410 | 0.000 | 3.784 | 0.000 | 3.784 | 0.000 |
| 7440-48-4 | 27 | Co | 0.003 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.048 | 0.000 | 0.003 | 0.000 | 0.041 | 0.000 | 0.041 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.007 | 0.000 | 0.011 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.007 | 0.000 | 0.009 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.043 | 0.000 | 0.002 | 0.000 | 0.036 | 0.000 | 0.036 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.005 | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-38-2 | 33 | As | 0.044 | 0.000 | 0.003 | 0.000 | 0.037 | 0.000 | 0.037 | 0.000 |
| 7782-49-2 | 34 | Se | 0.003 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 0.003 | 0.000 | 0.004 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.000 | 0.004 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.030 | 0.000 | 0.100 | 0.000 | 0.041 | 0.000 | 0.041 | 0.000 |
| 7440-65-5 | 39 | Y | 0.012 | 0.000 | 0.008 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.005 | 0.000 | 0.023 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 74400-30-1 | 41 | Nb | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.008 | 0.000 | 0.007 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |

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PM Profile Speciation Report - continued (profile 12201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-18-8 | 44 | Ru | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-16-6 | 45 | Rh | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 13494-80-9 | 52 | Te | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7553-56-2 | 53 | I | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.160 | 0.000 | 0.100 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 |
| 7439-91-0 | 57 | La | 0.005 | 0.000 | 0.008 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.006 | 0.000 | 0.009 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-10-0 | 59 | Pr | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-00-8 | 60 | Nd | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-19-9 | 62 | Sm | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-53-1 | 63 | Eu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-54-2 | 64 | Gd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-27-9 | 65 | Tb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-91-6 | 66 | Dy | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-60-0 | 67 | Ho | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-52-0 | 68 | Er | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-30-4 | 69 | Tm | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-64-4 | 70 | Yb | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-94-3 | 71 | Lu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-25-7 | 73 | Ta | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-33-7 | 74 | W | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-15-5 | 75 | Re | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-04-2 | 76 | Os | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-88-5 | 77 | Ir | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-06-4 | 78 | Pt | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-57-5 | 79 | Au | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-28-0 | 81 | Tl | 0.001 | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.008 | 0.000 | 0.015 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-69-9 | 83 | Bi | 0.000 | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-29-1 | 90 | Th | 0.001 | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-61-1 | 92 | U | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 31.288 | | 14.591 | | 28.574 | | 28.574 | |

PM Profile Speciation Report

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Profile Name : External Combustion - Kerosene-Fired Boiler Composite
Profile Number : 12301
Data Quality : E

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Control Device : Uncontrolled
Reference(s) : 64,72
Data Source : Composite of three kerosene-fired boilers in Japan. Samples collected on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10200500

Mass Fraction Data - Size Interval (um) : (0-2.5)(1) (0-6)(1) (0-10)(1)
Mass Fraction : 0.120 0.300 0.500

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.600 | 0.000 | 0.600 | 0.000 | 0.600 | 0.000 | 0.600 | 0.000 |
| 7704-34-9 | 16 | S | 1.400 | 0.000 | 1.400 | 0.000 | 1.400 | 0.000 | 1.400 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.360 | 0.000 | 0.360 | 0.000 | 0.360 | 0.000 | 0.360 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 |
| 7440-62-2 | 23 | V | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 |
| 7440-48-4 | 27 | Co | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 4.700 | 0.000 | 4.700 | 0.000 | 4.700 | 0.000 | 4.700 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 9.582 | | 9.582 | | 9.582 | | 9.582 | |

(1) Mass fraction data for uncontrolled distillate oil firing.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Wood-Fired Boiler
Profile Number : 12704
Data Quality : B/D

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Control Device : Wet Scrubber
Reference(s) : 49
Data Source : Average of 3 replicates. Dilution sampler with 2-stage virtual impactor.

SCC Assignments: 10200902

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.980 0.980 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.020 | 0.020 | 0.020 | 0.000 | 0.020 | 0.020 | NA | 0.000 |
| 7440-42-8 | 5 | B | 0.250 | 0.130 | 0.250 | 0.000 | 0.250 | 0.139 | NA | 0.000 |
| 7782-41-4 | 9 | F | 1.600 | 0.400 | 1.600 | 0.000 | 1.600 | 0.512 | 2.275 | 0.378 |
| 7440-23-5 | 11 | Na | 7.260 | 0.730 | 7.260 | 0.000 | 7.260 | 1.625 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | 1.140 | 0.114 | 1.140 | 0.000 | 1.140 | 0.255 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 1.410 | 0.990 | 1.410 | 0.000 | 1.410 | 1.029 | 1.603 | 0.857 |
| 7440-21-3 | 14 | Si | 0.910 | 0.550 | 0.910 | 0.000 | 0.910 | 0.579 | 1.175 | 0.470 |
| 7723-14-0 | 15 | P | 0.760 | 0.250 | 0.760 | 0.000 | 0.760 | 0.293 | 0.856 | 0.213 |
| 7704-34-9 | 16 | S | 2.600 | 0.260 | 2.600 | 0.000 | 2.600 | 0.581 | 2.742 | 0.274 |
| 7782-50-5 | 17 | Cl | 20.400 | 2.200 | 20.400 | 0.000 | 20.400 | 4.635 | 19.530 | 2.152 |
| 7440-09-7 | 19 | K | 16.300 | 3.300 | 16.300 | 0.000 | 16.300 | 4.639 | 15.505 | 2.990 |
| 7440-70-2 | 20 | Ca | 3.700 | 2.100 | 3.700 | 0.000 | 3.700 | 2.227 | 4.120 | 1.793 |
| 7440-32-6 | 22 | Ti | 0.048 | 0.021 | 0.048 | 0.000 | 0.048 | 0.023 | 0.056 | 0.018 |
| 7440-62-2 | 23 | V | 0.005 | 0.006 | 0.005 | 0.000 | 0.005 | 0.006 | 0.009 | 0.005 |
| 7440-47-3 | 24 | Cr | 0.008 | 0.002 | 0.008 | 0.000 | 0.008 | 0.003 | 0.009 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.340 | 0.170 | 0.340 | 0.000 | 0.340 | 0.183 | 0.373 | 0.145 |
| 7439-89-6 | 26 | Fe | 0.980 | 0.430 | 0.980 | 0.000 | 0.980 | 0.473 | 1.071 | 0.366 |
| 7440-48-4 | 27 | Co | 0.060 | 0.060 | 0.060 | 0.000 | 0.060 | 0.061 | NA | 0.000 |
| 7440-02-0 | 28 | Ni | 0.005 | 0.005 | 0.005 | 0.000 | 0.005 | 0.005 | 0.005 | 0.004 |
| 7440-50-8 | 29 | Cu | 0.037 | 0.007 | 0.037 | 0.000 | 0.037 | 0.010 | 0.033 | 0.006 |
| 7440-66-6 | 30 | Zn | 0.640 | 0.210 | 0.640 | 0.000 | 0.640 | 0.246 | 0.601 | 0.179 |
| 7440-38-2 | 33 | As | 0.028 | 0.007 | 0.028 | 0.000 | 0.028 | 0.009 | 0.025 | 0.006 |
| 7782-49-2 | 34 | Se | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.002 |
| 7726-95-6 | 35 | Br | 0.181 | 0.020 | 0.181 | 0.000 | 0.181 | 0.041 | 0.175 | 0.020 |
| 7440-17-7 | 37 | Rb | 0.045 | 0.006 | 0.045 | 0.000 | 0.045 | 0.011 | 0.045 | 0.005 |
| 7440-24-6 | 38 | Sr | 0.035 | 0.016 | 0.035 | 0.000 | 0.035 | 0.017 | 0.040 | 0.014 |
| 7440-67-7 | 40 | Zr | 0.008 | 0.008 | 0.008 | 0.000 | 0.008 | 0.008 | 0.011 | 0.008 |
| 7439-98-7 | 42 | Mo | 0.025 | 0.013 | 0.025 | 0.000 | 0.025 | 0.014 | 0.030 | 0.031 |
| 7440-05-3 | 46 | Pd | 0.004 | 0.004 | 0.004 | 0.000 | 0.004 | 0.004 | 0.006 | 0.004 |
| 7440-22-4 | 47 | Ag | 0.007 | 0.007 | 0.007 | 0.000 | 0.007 | 0.007 | 0.010 | 0.007 |
| 7440-43-9 | 48 | Cd | 0.002 | 0.020 | 0.002 | 0.000 | 0.002 | 0.020 | 0.007 | 0.018 |
| 7440-74-6 | 49 | In | 0.010 | 0.010 | 0.010 | 0.000 | 0.010 | 0.010 | 0.015 | 0.011 |
| 7440-31-5 | 50 | Sn | 0.013 | 0.013 | 0.013 | 0.000 | 0.013 | 0.013 | 0.019 | 0.013 |
| 7440-36-0 | 51 | Sb | 0.024 | 0.034 | 0.024 | 0.000 | 0.024 | 0.034 | 0.029 | 0.045 |
| 7440-39-3 | 56 | Ba | 0.055 | 0.055 | 0.055 | 0.000 | 0.055 | 0.056 | 0.087 | 0.062 |

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PM Profile Speciation Report - continued (profile 12704)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | 0.065 | 0.065 | 0.065 | 0.000 | 0.065 | 0.066 | 0.103 | 0.073 |
| 7440-45-1 | 58 | Ce | 0.004 | 0.003 | 0.004 | 0.000 | 0.004 | 0.003 | 0.005 | 0.003 |
| 7439-97-6 | 80 | Hg | 0.206 | 0.033 | 0.206 | 0.000 | 0.206 | 0.053 | 0.210 | 0.031 |
| 7439-92-1 | 82 | Pb | 1.300 | 1.300 | 1.300 | 0.000 | 1.300 | 1.326 | NA | 0.000 |
| | 201 | OC | 5.600 | 0.600 | 5.600 | 0.000 | 5.600 | 1.271 | 7.070 | 0.858 |
| | 202 | EC | 4.600 | 0.600 | 4.600 | 0.000 | 4.600 | 1.098 | 4.450 | 0.536 |
| | 203 | SO4 | 7.000 | 1.100 | 7.000 | 0.000 | 7.000 | 1.780 | 7.285 | 0.982 |
| | 204 | NO3 | 0.085 | 0.085 | 0.085 | 0.000 | 0.085 | 0.087 | 0.134 | 0.095 |
| TOTALS: | | | 77.772 | | 77.772 | | 77.772 | | 69.721 | |

PM Profile Speciation Report

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Profile Name : External Combustion - Wood-Fired Boiler Composite
Profile Number : 12705
Data Quality : E

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Control Device : Three multicyclone and bag filter, one multicyclon
Reference(s) : 64,72
Data Source : Six wood-fired boilers in Japan. Samples collected on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10200903

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.540 | 0.800 | 0.910 |

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 23.000 | 0.000 | 23.000 | 0.000 | 23.000 | 0.000 | 23.000 | 0.000 |
| 7440-09-7 | 19 | K | 5.200 | 0.000 | 5.200 | 0.000 | 5.200 | 0.000 | 5.200 | 0.000 |
| 7440-70-2 | 20 | Ca | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.230 | 0.000 | 0.230 | 0.000 | 0.230 | 0.000 | 0.230 | 0.000 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7726-95-6 | 35 | Br | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 |
| TOTALS: | | | 48.061 | | 48.061 | | 48.061 | | 48.061 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Residual Oil Combustion
Profile Number : 13501
Data Quality : A/C

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Control Device : Uncontrolled
Reference(s) : 46
Data Source : Sampled with a 2-stage virtual impactor and Method 5 heated probe. Average of 8 samples from schools, hospitals, apartments, and industrial boilers. Analysis by XRF, INNA, IC, and carbon oxidation.

SCC Assignments: 10300401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.230 0.440 0.620

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | 0.053 | 0.019 | 0.052 | 0.019 | 0.052 | 0.011 | 0.052 | 0.000 |
| 7440-23-5 | 11 | Na | 3.500 | 1.700 | 3.500 | 1.700 | 3.500 | 0.929 | 3.500 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 3.000 | < | 3.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.530 | 0.240 | 0.530 | 0.240 | 0.530 | 0.132 | 0.530 | 0.000 |
| 7440-21-3 | 14 | Si | 0.960 | 0.480 | 0.960 | 0.480 | 0.960 | 0.262 | 0.960 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 13.300 | 2.400 | 13.300 | 2.400 | 13.300 | 1.600 | 13.300 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.100 | < | 0.100 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 0.280 | 0.100 | 0.280 | 0.100 | 0.280 | 0.056 | 0.280 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.580 | 0.640 | 1.580 | 0.640 | 1.580 | 0.356 | 1.580 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.110 | 0.038 | 0.110 | 0.038 | 0.110 | 0.022 | 0.110 | 0.000 |
| 7440-62-2 | 23 | V | 3.440 | 0.750 | 3.440 | 0.750 | 3.440 | 0.469 | 3.440 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.047 | 0.015 | 0.047 | 0.015 | 0.047 | 0.009 | 0.047 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.046 | 0.013 | 0.046 | 0.013 | 0.046 | 0.008 | 0.046 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.970 | 0.610 | 2.970 | 0.610 | 2.970 | 0.389 | 2.970 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 5.360 | 1.210 | 5.360 | 1.210 | 5.360 | 0.749 | 5.360 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.075 | 0.025 | 0.075 | 0.025 | 0.075 | 0.014 | 0.075 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.400 | 0.180 | 0.400 | 0.180 | 0.400 | 0.099 | 0.400 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.013 | 0.021 | 0.013 | 0.021 | 0.013 | 0.011 | 0.013 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 13501)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.110 | 0.064 | 0.110 | 0.064 | 0.110 | 0.035 | 0.110 | 0.000 |
| | 201 | OC | 7.800 | 6.200 | 7.800 | 6.200 | 7.800 | 3.304 | 7.800 | 0.000 |
| | 202 | EC | 2.420 | 2.500 | 2.420 | 2.500 | 2.420 | 1.324 | 2.420 | 0.000 |
| | 203 | SO4 | 48.100 | 11.900 | 48.100 | 11.900 | 48.100 | 0.000 | 48.100 | 0.000 |
| | 204 | NO3 | 0.650 | 0.440 | 0.650 | 0.440 | 0.650 | 0.236 | 0.650 | 0.000 |
| TOTALS: | | | 91.744 | | 91.743 | | 91.743 | | 91.743 | |

PM Profile Speciation Report

Profile Name : External Combustion - Heavy Oil-Fired Boiler Composite
Profile Number : 13502
Data Quality : E

Control Device : Seven uncontrolled and five FGD.
Reference(s) : 64,72
Data Source : Composite of 13 heavy oil-fired boilers in Japan. Samples collected on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10200401

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.560 | 0.770 | 0.860 |

Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NR | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 |
| 7704-34-9 | 16 | S | 9.600 | 0.000 | 9.600 | 0.000 | 9.600 | 0.000 | 9.600 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.000 |
| 7440-09-7 | 19 | K | 0.085 | 0.000 | 0.085 | 0.000 | 0.085 | 0.000 | 0.085 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.085 | 0.000 | 0.085 | 0.000 | 0.085 | 0.000 | 0.085 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 |
| 7440-62-2 | 23 | V | 0.920 | 0.000 | 0.920 | 0.000 | 0.920 | 0.000 | 0.920 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.460 | 0.000 | 0.460 | 0.000 | 0.460 | 0.000 | 0.460 | 0.000 |
| 7440-48-4 | 27 | Co | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.490 | 0.000 | 0.490 | 0.000 | 0.490 | 0.000 | 0.490 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.000 |
| TOTALS: | | | 13.221 | | 13.221 | | 13.221 | | 13.221 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : External Combustion - Indonesian Oil-Fired Boiler Composite
Profile Number : 13503
Data Quality : E

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Control Device : ESP or multicyclone plus ESP
Reference(s) : 64,72
Data Source : Composite of three Indonesian oil-fired boilers in Japan. Samples collected on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10200401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.410 0.520 0.630

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 2.200 | 0.000 | 2.200 | 0.000 | 2.200 | 0.000 | 2.200 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.540 | 0.000 | 0.540 | 0.000 | 0.540 | 0.000 | 0.540 | 0.000 |
| 7704-34-9 | 16 | S | 11.000 | 0.000 | 11.000 | 0.000 | 11.000 | 0.000 | 11.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.000 |
| 7440-09-7 | 19 | K | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.860 | 0.000 | 0.860 | 0.000 | 0.860 | 0.000 | 0.860 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 |
| 7440-62-2 | 23 | V | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.042 | 0.000 | 0.042 | 0.000 | 0.042 | 0.000 | 0.042 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.300 | 0.000 | 1.300 | 0.000 | 1.300 | 0.000 | 1.300 | 0.000 |
| 7440-48-4 | 27 | Co | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 |
| 7440-02-0 | 28 | Ni | 2.400 | 0.000 | 2.400 | 0.000 | 2.400 | 0.000 | 2.400 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 |
| 7440-38-2 | 33 | As | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.000 |
| 7726-95-6 | 35 | Br | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 |
| TOTALS: | | | 20.520 | | 20.520 | | 20.520 | | 20.520 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Oil-Fired Boiler
Profile Number : 13504
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Unspecified methodology.

SCC Assignments: 10200401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.560 0.770 0.860

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 1.203 | 0.120 | 2.217 | 0.222 | 1.557 | 0.282 | 1.541 | 0.154 |
| 7440-21-3 | 14 | Si | 2.077 | 0.208 | 4.505 | 0.451 | 2.924 | 0.538 | 2.879 | 0.288 |
| 7723-14-0 | 15 | P | 0.398 | 0.073 | 0.151 | 0.050 | 0.312 | 0.077 | 0.316 | 0.065 |
| 7704-34-9 | 16 | S | 13.074 | 1.307 | 1.761 | 0.280 | 9.127 | 1.498 | 9.321 | 0.932 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.056 | 0.000 | 0.028 | 0.000 | 0.043 | 0.000 | 0.047 |
| 7440-09-7 | 19 | K | 0.056 | 0.006 | 0.046 | 0.008 | 0.053 | 0.016 | 0.053 | 0.006 |
| 7440-70-2 | 20 | Ca | 0.208 | 0.021 | 0.571 | 0.057 | 0.334 | 0.078 | 0.329 | 0.043 |
| 7440-32-6 | 22 | Ti | 0.079 | 0.009 | 0.168 | 0.017 | 0.110 | 0.032 | 0.108 | 0.011 |
| 7440-62-2 | 23 | V | 1.004 | 0.100 | 0.689 | 0.069 | 0.894 | 0.143 | 0.898 | 0.090 |
| 7440-47-3 | 24 | Cr | 0.003 | 0.012 | 0.028 | 0.013 | 0.011 | 0.017 | 0.011 | 0.012 |
| 7439-96-5 | 25 | Mn | 0.011 | 0.002 | 0.018 | 0.004 | 0.013 | 0.009 | 0.013 | 0.003 |
| 7439-89-6 | 26 | Fe | 0.357 | 0.036 | 0.696 | 0.070 | 0.475 | 0.097 | 0.470 | 0.047 |
| 7440-02-0 | 28 | Ni | 1.595 | 0.160 | 1.508 | 0.151 | 1.565 | 0.250 | 1.564 | 0.156 |
| 7440-50-8 | 29 | Cu | 0.051 | 0.008 | 0.120 | 0.013 | 0.075 | 0.026 | 0.074 | 0.010 |
| 7440-66-6 | 30 | Zn | 0.052 | 0.005 | 0.017 | 0.004 | 0.040 | 0.010 | 0.041 | 0.004 |
| 7440-55-3 | 31 | Ga | 0.008 | 0.002 | 0.002 | 0.002 | 0.006 | 0.003 | 0.006 | 0.002 |
| 7440-38-2 | 33 | As | 0.034 | 0.005 | 0.002 | 0.006 | 0.023 | 0.007 | 0.023 | 0.005 |
| 7782-49-2 | 34 | Se | 0.004 | 0.001 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 |
| 7726-95-6 | 35 | Br | 0.005 | 0.002 | 0.005 | 0.003 | 0.005 | 0.005 | 0.005 | 0.002 |
| 7440-17-7 | 37 | Rb | 0.003 | 0.002 | 0.002 | 0.003 | 0.003 | 0.004 | 0.003 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.011 | 0.002 | 0.030 | 0.005 | 0.018 | 0.011 | 0.017 | 0.003 |
| 7440-65-5 | 39 | Y | 0.003 | 0.004 | 0.004 | 0.006 | 0.004 | 0.007 | 0.004 | 0.005 |
| 7440-67-7 | 40 | Zr | 0.018 | 0.015 | 0.006 | 0.020 | 0.014 | 0.019 | 0.014 | 0.014 |
| 7439-98-7 | 42 | Mo | 0.024 | 0.008 | 0.008 | 0.015 | 0.019 | 0.014 | 0.019 | 0.011 |
| 7440-05-3 | 46 | Pd | 0.017 | 0.017 | 0.019 | 0.012 | 0.017 | 0.017 | 0.017 | 0.010 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.011 | 0.001 | 0.020 | 0.001 | 0.017 | 0.001 | 0.014 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.015 | 0.000 | 0.026 | 0.000 | 0.023 | 0.000 | 0.018 |
| 7440-74-6 | 49 | In | 0.001 | 0.014 | 0.053 | 0.028 | 0.019 | 0.028 | 0.019 | 0.019 |
| 7440-31-5 | 50 | Sn | 0.003 | 0.018 | 0.003 | 0.034 | 0.003 | 0.030 | 0.003 | 0.023 |
| 7440-36-0 | 51 | Sb | 0.019 | 0.031 | 0.014 | 0.056 | 0.017 | 0.050 | 0.018 | 0.039 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.085 | 0.010 | 0.155 | 0.017 | 0.137 | 0.018 | 0.108 |
| 7439-91-0 | 57 | La | 0.094 | 0.124 | 0.177 | 0.230 | 0.123 | 0.204 | 0.117 | 0.159 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.002 | 0.002 | 0.004 | 0.002 | 0.004 | 0.002 | 0.003 |
| 7439-92-1 | 82 | Pb | 0.032 | 0.006 | 0.012 | 0.009 | 0.025 | 0.011 | 0.026 | 0.007 |
| | 201 | OC | 8.960 | 0.896 | 5.630 | 0.563 | 7.798 | 1.176 | 7.850 | 0.785 |
| | 202 | EC | 8.690 | 0.869 | 80.200 | 8.020 | 33.635 | 8.391 | 32.500 | 3.250 |
| TOTALS: | | | 38.116 | | 98.677 | | 59.242 | | 58.283 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Calculation based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : External Combustion - Waste Oil-Fired Boiler
Profile Number : 14101
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,72
Data Source : Boiler firing waste oil in Japan. Samples collected on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10201302

Mass Fraction Data - Size Interval (um) : (0-2.5)(2) (0-6)(2) (0-10)(2)
Mass Fraction : 0.520 0.580 0.710

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Total Particulate Matter -

| | Species | | 0-2.5 um(3) | | 2.5-10 um(3) | | 0-10 um(3) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.710 | 0.000 | 0.710 | 0.000 | 0.710 | 0.000 | 0.710 | 0.000 |
| 7429-90-5 | 13 | Al | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 |
| 7704-34-9 | 16 | S | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 3.600 | 0.000 | 3.600 | 0.000 | 3.600 | 0.000 | 3.600 | 0.000 |
| 7440-09-7 | 19 | K | 4.200 | 0.000 | 4.200 | 0.000 | 4.200 | 0.000 | 4.200 | 0.000 |
| 7440-70-2 | 20 | Ca | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-62-2 | 23 | V | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 |
| 7440-48-4 | 27 | Co | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.850 | 0.000 | 0.850 | 0.000 | 0.850 | 0.000 | 0.850 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.710 | 0.000 | 0.710 | 0.000 | 0.710 | 0.000 | 0.710 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.900 | 0.000 | 1.900 | 0.000 | 1.900 | 0.000 | 1.900 | 0.000 |
| TOTALS: | | | 34.321 | | 34.321 | | 34.321 | | 34.321 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Mass fraction data for uncontrolled residual oil firing.
(3) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : External Combustion - Liquid Waste-Fired Boiler
Profile Number : 14102
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,72
Data Source : Boiler firing pitch in Japan. Samples collected on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10201301

Mass Fraction Data - Size Interval (um) : (0-2.5)(2) (0-6)(2) (0-10)(2)
Mass Fraction : 0.560 0.770 0.860

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Total Particulate Matter -

| | Species | | 0-2.5 um(3) | | 2.5-10 um(3) | | 0-10 um(3) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.450 | 0.000 | 0.450 | 0.000 | 0.450 | 0.000 | 0.450 | 0.000 |
| 7704-34-9 | 16 | S | 25.000 | 0.000 | 25.000 | 0.000 | 25.000 | 0.000 | 25.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.300 | 0.000 | 1.300 | 0.000 | 1.300 | 0.000 | 1.300 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.700 | 0.000 | 1.700 | 0.000 | 1.700 | 0.000 | 1.700 | 0.000 |
| 7440-48-4 | 27 | Co | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-02-0 | 28 | Ni | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 |
| TOTALS: | | | 46.382 | | 46.382 | | 46.382 | | 46.382 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Mass fraction data for uncontrolled residual oil-fired boiler.
(3) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : External Combustion - Solid Waste-Fired Boiler
Profile Number : 15101
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 64,72
Data Source : Boiler firing miscellaneous fuel (primarily wood and building materials) in Japan. Samples collected on PTFE filters and analyzed using XRF and INAA.

SCC Assignments: 10201201

Mass Fraction Data - Size Interval (um) : (0-2.5)(2) (0-6)(2) (0-10)(2)
Mass Fraction : 0.760 0.860 0.900

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Total Particulate Matter -

| | Species | | 0-2.5 um(3) | | 2.5-10 um(3) | | 0-10 um(3) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.840 | 0.000 | 0.840 | 0.000 | 0.840 | 0.000 | 0.840 | 0.000 |
| 7439-95-4 | 12 | Mg | 2.100 | 0.000 | 2.100 | 0.000 | 2.100 | 0.000 | 2.100 | 0.000 |
| 7429-90-5 | 13 | Al | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.000 |
| 7704-34-9 | 16 | S | 9.100 | 0.000 | 9.100 | 0.000 | 9.100 | 0.000 | 9.100 | 0.000 |
| 7782-50-5 | 17 | Cl | 6.800 | 0.000 | 6.800 | 0.000 | 6.800 | 0.000 | 6.800 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 18.000 | 0.000 | 18.000 | 0.000 | 18.000 | 0.000 | 18.000 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.063 | 0.000 | 0.063 | 0.000 | 0.063 | 0.000 | 0.063 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.980 | 0.000 | 0.980 | 0.000 | 0.980 | 0.000 | 0.980 | 0.000 |
| 7440-48-4 | 27 | Co | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.190 | 0.000 | 0.190 | 0.000 | 0.190 | 0.000 | 0.190 | 0.000 |
| 7440-66-6 | 30 | Zn | 8.400 | 0.000 | 8.400 | 0.000 | 8.400 | 0.000 | 8.400 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.310 | 0.000 | 0.310 | 0.000 | 0.310 | 0.000 | 0.310 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| TOTALS: | | | 51.047 | | 51.047 | | 51.047 | | 51.047 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Mass fraction data for uncontrolled residual wood/bark-fired boiler.
(3) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Coal-Fired Power Utility Fly Ash (SRM 1633)
Profile Number : 43303
Data Quality : A/C

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Control Device : ESP catch
Reference(s) : 9
Data Source : Fly ash taken from several power plant control systems.
Not representative of stack emissions.

SCC Assignments: 10100101

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.000 0.001 0.004

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-42-8 | 5 | B | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7782-41-4 | 9 | F | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-23-5 | 11 | Na | 0.340 | 0.000 | 0.340 | 0.000 | 0.340 | 0.000 | 0.340 | 0.200 |
| 7439-95-4 | 12 | Mg | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.160 |
| 7429-90-5 | 13 | Al | 13.200 | 0.000 | 13.200 | 0.000 | 13.200 | 0.000 | 13.200 | 0.500 |
| 7440-21-3 | 14 | Si | 21.000 | 0.000 | 21.000 | 0.000 | 21.000 | 0.000 | 21.000 | 2.000 |
| 7723-14-0 | 15 | P | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7704-34-9 | 16 | S | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7782-50-5 | 17 | Cl | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 |
| 7440-09-7 | 19 | K | 1.600 | 0.000 | 1.600 | 0.000 | 1.600 | 0.000 | 1.600 | 0.080 |
| 7440-70-2 | 20 | Ca | 4.200 | 0.000 | 4.200 | 0.000 | 4.200 | 0.000 | 4.200 | 0.400 |
| 7440-22-2 | 21 | Sc | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7440-32-6 | 22 | Ti | 0.730 | 0.000 | 0.730 | 0.000 | 0.730 | 0.000 | 0.730 | 0.040 |
| 7440-62-2 | 23 | V | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.003 |
| 7440-47-3 | 24 | Cr | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.051 | 0.000 | 0.051 | 0.000 | 0.051 | 0.000 | 0.051 | 0.001 |
| 7439-89-6 | 26 | Fe | 6.200 | 0.000 | 6.200 | 0.000 | 6.200 | 0.000 | 6.200 | 0.300 |
| 7440-48-4 | 27 | Co | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 |
| 7440-02-0 | 28 | Ni | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.001 |
| 7440-50-8 | 29 | Cu | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-66-6 | 30 | Zn | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.002 |
| 7440-55-3 | 31 | Ga | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-56-4 | 32 | Ge | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-38-2 | 33 | As | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7726-95-6 | 35 | Br | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-17-7 | 37 | Rb | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.001 |
| 7440-24-6 | 38 | Sr | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-67-7 | 40 | Zr | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.001 |
| 7440-22-4 | 47 | Ag | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-43-9 | 48 | Cd | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-31-5 | 50 | Sn | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-36-0 | 51 | Sb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |

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PM Profile Speciation Report - continued (profile 43303)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.270 | 0.000 | 0.270 | 0.000 | 0.270 | 0.000 | 0.270 | 0.020 |
| 7440-45-1 | 58 | Ce | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.001 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 49.244 | | 49.244 | | 49.244 | | 49.244 | |

## 3.2 CHEMICAL MANUFACTURING

The manufacture of organic and inorganic chemicals involves the production of a wide variety of end-product and intermediate chemicals. Emissions from the chemical manufacturing industry can be high but are usually recovered for economic reasons. The particulate emissions are usually very finely sized and difficult to remove. Emission sources can include storage and handling operations, reactor processes, separation processes, and fugitive and secondary sources.

PM Profile Speciation Report

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Profile Name : Charcoal Manufacturing
Profile Number : 25302
Data Quality : C/E

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Control Device : Uncontrolled
Reference(s) : 45
Data Source : Average of 2 samples collected with a 2-stage virtual impactor from a Herchoff furnace.

SCC Assignments: 30100601

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.180 0.370 0.530

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | 1.900 | 0.300 | 2.400 | 0.300 | 2.230 | 0.206 | 2.230 | 0.000 |
| 7429-90-5 | 13 | Al | 7.000 | 1.000 | 10.200 | 0.800 | 9.113 | 0.736 | 9.113 | 0.000 |
| 7440-21-3 | 14 | Si | 15.000 | 1.000 | 21.000 | 10.000 | 18.962 | 0.000 | 18.962 | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 3.100 | 0.300 | 0.800 | 0.100 | 1.581 | 0.188 | 1.581 | 0.000 |
| 7782-50-5 | 17 | Cl | 5.000 | 0.600 | 0.900 | 0.600 | 2.292 | 0.378 | 2.292 | 0.000 |
| 7440-09-7 | 19 | K | 7.400 | 0.500 | 3.600 | 0.600 | 4.891 | 0.476 | 4.891 | 0.000 |
| 7440-70-2 | 20 | Ca | 9.500 | 0.600 | 12.900 | 0.800 | 11.745 | 0.841 | 11.745 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.360 | 0.090 | 0.680 | 0.000 | 0.571 | 0.000 | 0.571 | 0.000 |
| 7440-62-2 | 23 | V | 0.028 | 0.000 | 0.040 | 0.020 | 0.036 | 0.000 | 0.036 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.044 | 0.000 | 0.050 | 0.020 | 0.048 | 0.000 | 0.048 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.440 | 0.050 | 0.420 | 0.030 | 0.427 | 0.035 | 0.427 | 0.000 |
| 7439-89-6 | 26 | Fe | 6.400 | 0.400 | 6.600 | 0.400 | 6.532 | 0.482 | 6.532 | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.054 | 0.000 | 0.022 | 0.000 | 0.033 | 0.000 | 0.033 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.360 | 0.000 | 0.140 | 0.000 | 0.215 | 0.000 | 0.215 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.090 | 0.030 | 0.011 | 0.000 | 0.038 | 0.000 | 0.038 | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 25302)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.090 | 0.030 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 1.800 | 0.900 | 1.800 | 0.900 | 1.800 | 0.449 | 1.800 | 0.000 |
| | 202 | EC | 5.200 | 0.400 | 5.200 | 0.400 | 5.200 | 0.402 | 5.200 | 0.000 |
| | 203 | SO4 | 6.500 | 0.500 | 0.600 | 0.100 | 2.604 | 0.358 | 2.604 | 0.000 |
| | 204 | NO3 | 0.300 | 0.200 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 70.566 | | 67.363 | | 68.318 | | 68.318 | |

PM Profile Speciation Report

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Profile Name : Urea Fertilizer Production
Profile Number : 25404
Data Quality : D/E

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Control Device : Cyclone and Baghouse
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones at 400 deg C. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. Rotary kiln emissions at control device exit.

SCC Assignments: 30104001

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.180 | 0.370 | 0.530 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7704-34-9 | 16 | S | 1.300 | 0.000 | 2.000 | 0.000 | 1.762 | 0.000 | 2.600 | 0.000 |
| 7782-50-5 | 17 | Cl | 11.000 | 0.000 | 7.000 | 0.000 | 8.358 | 0.000 | 5.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-48-4 | 27 | Co | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | 0.050 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 25404)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %Wt | 0-2.5 um unc | 2.5-10 um %Wt | 2.5-10 um unc | 0-10 um %Wt | 0-10 um unc | Total Measured %Wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Cc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 201 | OC | 31.000 | 0.000 | 31.000 | 0.000 | 31.000 | 0.000 | 31.000 | 0.000 |
| | 202 | EC | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| | 203 | SO4 | 4.000 | 0.000 | 6.000 | 0.000 | 5.321 | 0.000 | 8.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| TOTALS: | | | 51.400 | | 50.050 | | 50.491 | | 50.700 | |

PM Profile Speciation Report

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Profile Name : Boric Acid Manufacturing
Profile Number : 25405
Data Quality : D/E

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Control Device : Baghouse
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones, at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. Average of 2 tests at the outlet of the baghouse.

SCC Assignments: 30199998, 30199999

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.030 0.070 0.110

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | 77.640 | 0.000 | 77.640 | 0.000 | 77.640 | 0.000 | 77.640 | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 0.660 | 0.000 | 0.660 | 0.000 | 0.660 | 0.000 | 0.660 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 25405)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 201 | OC | 3.900 | 0.000 | 3.900 | 0.000 | 3.900 | 0.000 | 3.900 | 0.000 |
| | 202 | EC | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 |
| | 203 | SO4 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| TOTALS: | | | 86.250 | | 86.250 | | 86.250 | | 86.250 | |

PM Profile Speciation Report

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Profile Name : Phosphorous Plant Plume
Profile Number : 25407
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 44
Data Source : Collected with low-volume sampler by aircraft.

SCC Assignments: 30111299

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.780 0.910 0.940

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 1.250 | 0.000 | 1.250 | 0.000 | 1.250 | 0.207 | 1.250 | 0.250 |
| 7440-21-3 | 14 | Si | 2.790 | 0.000 | 2.790 | 0.000 | 2.790 | 0.463 | 2.790 | 1.540 |
| 7723-14-0 | 15 | P | 3.400 | 0.000 | 3.400 | 0.000 | 3.400 | 0.564 | 3.400 | 0.300 |
| 7704-34-9 | 16 | S | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.050 | 0.300 | 0.090 |
| 7782-50-5 | 17 | Cl | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.007 | 0.040 | 0.030 |
| 7440-09-7 | 19 | K | 0.340 | 0.000 | 0.340 | 0.000 | 0.340 | 0.056 | 0.340 | 0.060 |
| 7440-70-2 | 20 | Ca | 0.940 | 0.000 | 0.940 | 0.000 | 0.940 | 0.156 | 0.940 | 0.280 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.003 | 0.018 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.002 | 0.015 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.043 | 0.260 | 0.060 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.037 | 0.220 | 0.030 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.002 | 0.012 | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.002 | 0.013 | 0.015 |
| 7440-05-3 | 46 | Pd | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.003 | 0.021 | 0.040 |
| 7440-22-4 | 47 | Ag | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.005 | 0.030 | 0.060 |
| 7440-43-9 | 48 | Cd | 0.041 | 0.000 | 0.041 | 0.000 | 0.041 | 0.007 | 0.041 | 0.083 |
| 7440-74-6 | 49 | In | 0.090 | 0.000 | 0.090 | 0.000 | 0.090 | 0.015 | 0.090 | 0.093 |
| 7440-31-5 | 50 | Sn | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.022 | 0.130 | 0.110 |
| 7440-36-0 | 51 | Sb | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.017 | 0.100 | 0.210 |
| 7440-39-3 | 56 | Ba | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.116 | 0.700 | 0.600 |

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PM Profile Speciation Report - continued (profile 25407)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.007 | 0.040 | 0.030 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 10.750 | | 10.750 | | 10.750 | | 10.750 | |

PM Profile Speciation Report

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Profile Name : Fertilizer Production - Phosphate Rock Dust
Profile Number : 25408
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30102803, 30102804, 30102923, 30102924

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.150 | 0.340 | 0.510 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | NR | 0.000 | 0.340 | 0.020 | NE | 0.000 | 0.306 | 0.018 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | 0.130 | 0.010 | NE | 0.000 | 0.117 | 0.009 |
| 7429-90-5 | 13 | Al | 2.543 | 0.254 | 2.099 | 0.210 | 2.230 | 0.186 | 2.143 | 0.194 |
| 7440-21-3 | 14 | Si | 3.349 | 0.335 | 2.482 | 0.248 | 2.737 | 0.232 | 2.568 | 0.230 |
| 7723-14-0 | 15 | P | 11.152 | 2.231 | 9.547 | 1.910 | 10.019 | 1.342 | 9.706 | 1.741 |
| 7704-34-9 | 16 | S | 1.285 | 0.129 | 0.882 | 0.088 | 1.000 | 0.087 | 0.922 | 0.082 |
| 7782-50-5 | 17 | Cl | 0.364 | 0.040 | 0.411 | 0.041 | 0.397 | 0.035 | 0.407 | 0.038 |
| 7440-09-7 | 19 | K | 0.368 | 0.042 | 0.203 | 0.034 | 0.251 | 0.029 | 0.219 | 0.031 |
| 7440-70-2 | 20 | Ca | 19.872 | 1.987 | 22.922 | 2.292 | 22.025 | 1.742 | 22.620 | 2.096 |
| 7440-32-6 | 22 | Ti | 1.057 | 0.106 | 0.842 | 0.084 | 0.905 | 0.077 | 0.863 | 0.078 |
| 7440-62-2 | 23 | V | 0.138 | 0.034 | 0.099 | 0.026 | 0.110 | 0.020 | 0.103 | 0.024 |
| 7440-47-3 | 24 | Cr | 0.108 | 0.011 | 0.087 | 0.009 | 0.093 | 0.010 | 0.089 | 0.008 |
| 7439-96-5 | 25 | Mn | 0.332 | 0.033 | 0.188 | 0.019 | 0.230 | 0.022 | 0.202 | 0.018 |
| 7439-89-6 | 26 | Fe | 7.579 | 0.758 | 4.162 | 0.416 | 5.167 | 0.466 | 4.501 | 0.392 |
| 7440-02-0 | 28 | Ni | 0.032 | 0.005 | 0.014 | 0.003 | 0.020 | 0.004 | 0.016 | 0.003 |
| 7440-50-8 | 29 | Cu | 0.032 | 0.006 | 0.011 | 0.003 | 0.017 | 0.003 | 0.013 | 0.003 |
| 7440-66-6 | 30 | Zn | 0.086 | 0.009 | 0.049 | 0.005 | 0.060 | 0.007 | 0.052 | 0.005 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.003 | 0.003 | 0.001 | 0.002 | 0.002 | 0.003 | 0.001 |
| 7440-38-2 | 33 | As | 0.000 | 0.013 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 |
| 7782-49-2 | 34 | Se | 0.001 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 |
| 7726-95-6 | 35 | Br | 0.025 | 0.004 | 0.003 | 0.002 | 0.009 | 0.002 | 0.005 | 0.002 |
| 7440-17-7 | 37 | Rb | 0.003 | 0.004 | 0.004 | 0.002 | 0.004 | 0.002 | 0.004 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.551 | 0.055 | 0.706 | 0.071 | 0.660 | 0.055 | 0.690 | 0.064 |
| 7440-65-5 | 39 | Y | 0.029 | 0.006 | 0.034 | 0.004 | 0.033 | 0.005 | 0.033 | 0.003 |
| 7440-67-7 | 40 | Zr | 0.127 | 0.039 | 0.088 | 0.036 | 0.100 | 0.024 | 0.092 | 0.033 |
| 7439-98-7 | 42 | Mo | 0.002 | 0.018 | 0.009 | 0.009 | 0.007 | 0.008 | 0.009 | 0.008 |
| 7440-05-3 | 46 | Pd | 0.004 | 0.019 | 0.011 | 0.009 | 0.009 | 0.008 | 0.011 | 0.008 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.023 | 0.000 | 0.012 | 0.000 | 0.009 | 0.000 | 0.011 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.032 | 0.011 | 0.016 | 0.007 | 0.013 | 0.010 | 0.015 |
| 7440-74-6 | 49 | In | 0.049 | 0.036 | 0.000 | 0.018 | 0.014 | 0.015 | 0.005 | 0.016 |
| 7440-31-5 | 50 | Sn | 0.038 | 0.044 | 0.025 | 0.023 | 0.029 | 0.018 | 0.026 | 0.021 |
| 7440-36-0 | 51 | Sb | 0.131 | 0.077 | 0.000 | 0.036 | 0.038 | 0.031 | 0.013 | 0.034 |
| 7440-39-3 | 56 | Ba | 1.531 | 0.263 | 1.873 | 0.187 | 1.772 | 0.156 | 1.839 | 0.172 |
| 7439-91-0 | 57 | La | 0.491 | 0.324 | 0.000 | 0.172 | 0.144 | 0.135 | 0.049 | 0.159 |
| 7439-97-6 | 80 | Hg | 0.005 | 0.004 | 0.004 | 0.003 | 0.004 | 0.002 | 0.004 | 0.003 |

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PM Profile Speciation Report - continued (profile 25408)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.143 | 0.017 | 0.035 | 0.001 | 0.066 | 0.009 | 0.045 | 0.002 |
| 7440-69-9 | 83 | Bi | NR | 0.000 | 0.000 | 0.020 | NE | 0.000 | 0.000 | 0.018 |
| TOTALS: | | | 51.427 | | 47.274 | | 48.159 | | 47.685 | |

(1) No control specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Ammonium Nitrate - Prill Tower
Profile Number : 25409
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30102712

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.560 0.730 0.830

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| | 204 | NO3 | 77.500 | 0.000 | 77.500 | 0.000 | 77.500 | 0.000 | 77.500 | 7.750 |
| TOTALS: | | | 77.500 | | 77.500 | | 77.500 | | 77.500 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

Profile Name : Ammonium Sulfate Production
Profile Number : 25410
Data Quality : E

Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30113004, 30113005

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.110 | 0.490 | 0.990 |

Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7704-34-9 | 16 | S | NE | 24.200 | NE | 26.155 | NE | 24.200 | 2.420 | 7.750 |
| | 203 | SO4 | 72.700 | 0.000 | 72.700 | 0.000 | 72.700 | 0.000 | 72.700 | 7.270 |
| TOTALS: | | | 72.700 | | 72.700 | | 72.700 | | 75.120 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Diammonium Phoshate Plant
Profile Number : 25411
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30103001, 30103002, 30103003, 30103004

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.023 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | 0.092 | 0.092 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.092 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 0.270 | 0.900 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | 0.023 | 0.012 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | 1.103 | 0.221 | 3.561 | 0.890 | 2.693 | 0.555 | 1.330 | 0.332 |
| 7440-21-3 | 14 | Si | 25.806 | 5.161 | 39.441 | 9.860 | 34.629 | 6.424 | 27.063 | 6.766 |
| 7723-14-0 | 15 | P | 0.725 | 0.145 | 4.541 | 1.337 | 3.194 | 0.816 | 1.077 | 0.269 |
| 7704-34-9 | 16 | S | 4.687 | 0.937 | 5.327 | 1.332 | 5.101 | 0.912 | 4.746 | 1.187 |
| 7782-50-5 | 17 | Cl | 5.868 | 1.174 | 4.271 | 1.068 | 4.835 | 0.829 | 5.721 | 1.430 |
| 7440-09-7 | 19 | K | 0.602 | 0.120 | 2.105 | 0.526 | 1.575 | 0.329 | 0.741 | 0.185 |
| 7440-70-2 | 20 | Ca | 0.617 | 0.123 | 6.520 | 1.630 | 4.437 | 1.000 | 1.162 | 0.290 |
| 7440-32-6 | 22 | Ti | 0.020 | 0.004 | 0.199 | 0.056 | 0.136 | 0.037 | 0.037 | 0.009 |
| 7440-62-2 | 23 | V | 0.042 | 0.008 | 0.035 | 0.026 | 0.037 | 0.017 | 0.041 | 0.010 |
| 7440-47-3 | 24 | Cr | 0.006 | 0.003 | 0.000 | 0.025 | 0.002 | 0.015 | 0.006 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.024 | 0.005 | 0.151 | 0.042 | 0.106 | 0.029 | 0.036 | 0.009 |
| 7439-89-6 | 26 | Fe | 0.925 | 0.185 | 3.551 | 0.888 | 2.624 | 0.551 | 1.168 | 0.292 |
| 7440-48-4 | 27 | Co | 0.000 | 0.210 | NR | 0.000 | NE | 0.074 | NR | 0.000 |
| 7440-02-0 | 28 | Ni | 0.013 | 0.004 | 0.000 | 0.028 | 0.005 | 0.017 | 0.011 | 0.006 |
| 7440-50-8 | 29 | Cu | 0.023 | 0.005 | 0.251 | 0.066 | 0.171 | 0.043 | 0.044 | 0.011 |
| 7440-66-6 | 30 | Zn | 0.096 | 0.019 | 0.091 | 0.041 | 0.093 | 0.028 | 0.096 | 0.024 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.002 | 0.000 | 0.018 | 0.000 | 0.011 | 0.001 | 0.004 |
| 7440-38-2 | 33 | As | 0.019 | 0.009 | 0.000 | 0.064 | 0.007 | 0.038 | 0.018 | 0.014 |
| 7782-49-2 | 34 | Se | 0.000 | 0.003 | 0.000 | 0.027 | 0.000 | 0.016 | 0.000 | 0.005 |
| 7726-95-6 | 35 | Br | 0.022 | 0.004 | 0.000 | 0.029 | 0.008 | 0.017 | 0.020 | 0.006 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.003 | 0.000 | 0.034 | 0.000 | 0.020 | 0.000 | 0.006 |
| 7440-24-6 | 38 | Sr | 0.015 | 0.004 | 0.229 | 0.062 | 0.153 | 0.041 | 0.003 | 0.008 |
| 7440-65-5 | 39 | Y | 0.000 | 0.005 | 0.000 | 0.049 | 0.000 | 0.029 | 0.000 | 0.009 |
| 7440-67-7 | 40 | Zr | 0.011 | 0.021 | 0.000 | 0.212 | 0.004 | 0.126 | 0.010 | 0.038 |
| 7439-98-7 | 42 | Mo | 0.028 | 0.015 | 0.334 | 0.172 | 0.226 | 0.105 | 0.056 | 0.029 |
| 7440-05-3 | 46 | Pd | 0.011 | 0.011 | 0.340 | 0.150 | 0.224 | 0.092 | 0.041 | 0.023 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.020 | 0.077 | 0.220 | 0.050 | 0.131 | 0.007 | 0.038 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.027 | 0.439 | 0.320 | 0.284 | 0.192 | 0.041 | 0.053 |
| 7440-74-6 | 49 | In | 0.012 | 0.030 | 0.000 | 0.302 | 0.004 | 0.180 | 0.011 | 0.055 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.037 | 0.000 | 0.390 | 0.000 | 0.232 | 0.000 | 0.070 |

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PM Profile Speciation Report - continued (profile 25411)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | 0.000 | 0.064 | 0.000 | 0.675 | 0.000 | 0.402 | 0.000 | 0.120 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.172 | 0.000 | 1.810 | 0.000 | 1.077 | 0.000 | 0.323 |
| 7439-91-0 | 57 | La | 0.000 | 0.239 | 4.411 | 2.769 | 2.854 | 1.656 | 0.407 | 0.462 |
| 7439-97-6 | 80 | Hg | 0.005 | 0.005 | 0.000 | 0.037 | 0.002 | 0.022 | 0.047 | 0.076 |
| 7439-92-1 | 82 | Pb | 0.081 | 0.016 | 0.194 | 0.105 | 0.154 | 0.065 | 0.091 | 0.023 |
| | 203 | SO4 | 3.220 | 0.810 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| | 204 | NO3 | 3.780 | 0.950 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| TOTALS: | | | 48.147 | | 76.068 | | 63.608 | | 44.032 | |

(1) No controlled specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Superphosphate Plant
Profile Number : 25412
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30102823, 30102824, 30102825

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7782-41-4 | 9 | F | 52.900 | 5.290 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | 0.572 | 0.114 | 1.541 | 0.308 | 1.256 | 0.180 | 0.679 | 0.136 |
| 7440-21-3 | 14 | Si | 26.606 | 2.661 | 64.783 | 6.478 | 53.554 | 4.224 | 30.813 | 3.081 |
| 7723-14-0 | 15 | P | 0.070 | 0.014 | 0.350 | 0.087 | 0.268 | 0.050 | 0.101 | 0.021 |
| 7704-34-9 | 16 | S | 0.136 | 0.027 | 0.518 | 0.114 | 0.406 | 0.066 | 0.178 | 0.036 |
| 7782-50-5 | 17 | Cl | 1.309 | 0.262 | 3.727 | 0.745 | 3.016 | 0.431 | 1.576 | 0.315 |
| 7440-09-7 | 19 | K | 0.003 | 0.002 | 0.012 | 0.016 | 0.009 | 0.009 | 0.004 | 0.004 |
| 7440-70-2 | 20 | Ca | 0.079 | 0.016 | 0.322 | 0.064 | 0.251 | 0.039 | 0.106 | 0.021 |
| 7440-32-6 | 22 | Ti | 0.003 | 0.001 | 0.021 | 0.010 | 0.016 | 0.006 | 0.005 | 0.002 |
| 7440-62-2 | 23 | V | 0.004 | 0.001 | 0.003 | 0.006 | 0.003 | 0.003 | 0.004 | 0.002 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.001 | 0.010 | 0.007 | 0.007 | 0.004 | 0.001 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.001 | 0.001 | 0.001 | 0.007 | 0.001 | 0.004 | 0.001 | 0.002 |
| 7439-89-6 | 26 | Fe | 0.025 | 0.005 | 0.041 | 0.023 | 0.036 | 0.013 | 0.027 | 0.006 |
| 7440-02-0 | 28 | Ni | 0.001 | 0.001 | 0.009 | 0.009 | 0.007 | 0.005 | 0.002 | 0.002 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.001 | 0.000 | 0.009 | 0.000 | 0.005 | 0.000 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.001 | 0.001 | 0.004 | 0.007 | 0.003 | 0.004 | 0.002 | 0.002 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.005 | 0.000 | 0.003 | 0.000 | 0.001 |
| 7440-38-2 | 33 | As | 0.059 | 0.012 | 0.000 | 0.017 | 0.017 | 0.010 | 0.052 | 0.010 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.007 | 0.000 | 0.004 | 0.000 | 0.002 |
| 7726-95-6 | 35 | Br | 0.005 | 0.001 | 0.022 | 0.009 | 0.017 | 0.006 | 0.007 | 0.002 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.000 | 0.010 | 0.000 | 0.005 | 0.000 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.007 | 0.002 | 0.025 | 0.012 | 0.020 | 0.007 | 0.009 | 0.003 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.014 | 0.014 | 0.010 | 0.008 | 0.002 | 0.003 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.009 | 0.114 | 0.062 | 0.080 | 0.035 | 0.013 | 0.015 |
| 7439-98-7 | 42 | Mo | 0.018 | 0.007 | 0.031 | 0.044 | 0.027 | 0.024 | 0.020 | 0.011 |
| 7440-05-3 | 46 | Pd | 0.011 | 0.005 | 0.058 | 0.037 | 0.044 | 0.021 | 0.017 | 0.009 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.024 | 0.062 | 0.017 | 0.034 | 0.003 | 0.015 |
| 7440-43-9 | 48 | Cd | 0.010 | 0.013 | 0.024 | 0.083 | 0.020 | 0.045 | 0.012 | 0.020 |
| 7440-74-6 | 49 | In | 0.000 | 0.013 | 0.089 | 0.091 | 0.063 | 0.050 | 0.010 | 0.021 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.016 | 0.020 | 0.111 | 0.014 | 0.060 | 0.002 | 0.027 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.028 | 0.000 | 0.190 | 0.000 | 0.103 | 0.000 | 0.046 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.073 | 0.000 | 0.499 | 0.000 | 0.271 | 0.000 | 0.120 |
| 7439-91-0 | 57 | La | 0.111 | 0.109 | 0.601 | 0.732 | 0.457 | 0.399 | 0.165 | 0.178 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.002 | 0.000 | 0.012 | 0.000 | 0.007 | 0.001 | 0.003 |
| 7439-92-1 | 82 | Pb | 0.009 | 0.004 | 0.009 | 0.026 | 0.009 | 0.014 | 0.009 | 0.006 |

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PM Profile Speciation Report - continued (profile 25412)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 203 | SO4 | 0.060 | 0.034 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| | 204 | NO3 | 0.000 | 0.166 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| TOTALS: | | | 82.001 | | 72.373 | | 59.628 | | 33.821 | |

(1) No controlled specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Superphosphate Granulation
Profile Number : 25413
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30102823

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.011 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | 0.067 | 0.045 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | 0.051 | 0.045 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.440 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.006 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | 0.973 | 0.097 | 3.137 | 0.784 | 2.501 | 0.440 | 1.046 | 0.105 |
| 7440-21-3 | 14 | Si | 5.791 | 1.453 | 10.562 | 3.675 | 9.159 | 2.077 | 5.950 | 1.515 |
| 7723-14-0 | 15 | P | 3.016 | 1.806 | 7.098 | 3.924 | 5.898 | 2.208 | 3.157 | 1.888 |
| 7704-34-9 | 16 | S | 6.112 | 0.813 | 11.579 | 2.895 | 9.971 | 1.646 | 6.295 | 0.841 |
| 7782-50-5 | 17 | Cl | 14.676 | 6.014 | 8.479 | 7.313 | 10.301 | 4.393 | 14.465 | 6.075 |
| 7440-09-7 | 19 | K | 0.051 | 0.006 | 0.131 | 0.102 | 0.108 | 0.056 | 0.054 | 0.009 |
| 7440-70-2 | 20 | Ca | 0.486 | 0.204 | 4.882 | 3.163 | 3.589 | 1.723 | 0.638 | 0.316 |
| 7440-32-6 | 22 | Ti | 0.019 | 0.003 | 0.049 | 0.048 | 0.040 | 0.027 | 0.020 | 0.005 |
| 7440-62-2 | 23 | V | 0.268 | 0.105 | 0.132 | 0.094 | 0.172 | 0.061 | 0.264 | 0.099 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.004 | 0.008 | 0.044 | 0.005 | 0.024 | 0.000 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.004 | 0.002 | 0.033 | 0.037 | 0.024 | 0.020 | 0.005 | 0.003 |
| 7439-89-6 | 26 | Fe | 0.052 | 0.008 | 0.302 | 0.224 | 0.228 | 0.122 | 0.061 | 0.010 |
| 7440-48-4 | 27 | Co | 0.000 | 0.091 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-02-0 | 28 | Ni | 0.127 | 0.037 | 0.041 | 0.072 | 0.066 | 0.041 | 0.124 | 0.038 |
| 7440-50-8 | 29 | Cu | 0.002 | 0.002 | 0.023 | 0.051 | 0.017 | 0.028 | 0.002 | 0.004 |
| 7440-66-6 | 30 | Zn | 0.006 | 0.003 | 0.014 | 0.032 | 0.012 | 0.018 | 0.006 | 0.003 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.005 | 0.025 | 0.004 | 0.014 | 0.001 | 0.002 |
| 7440-38-2 | 33 | As | 0.043 | 0.028 | 0.000 | 0.086 | 0.013 | 0.047 | 0.042 | 0.027 |
| 7782-49-2 | 34 | Se | 0.000 | 0.002 | 0.000 | 0.038 | 0.000 | 0.021 | 0.000 | 0.003 |
| 7726-95-6 | 35 | Br | 0.033 | 0.007 | 0.002 | 0.045 | 0.011 | 0.025 | 0.032 | 0.006 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.000 | 0.049 | 0.000 | 0.027 | 0.000 | 0.004 |
| 7440-24-6 | 38 | Sr | 0.021 | 0.003 | 0.211 | 0.064 | 0.155 | 0.037 | 0.027 | 0.005 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.069 | 0.000 | 0.038 | 0.000 | 0.005 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.012 | 0.000 | 0.305 | 0.000 | 0.165 | 0.000 | 0.021 |
| 7439-98-7 | 42 | Mo | 0.016 | 0.009 | 0.367 | 0.230 | 0.264 | 0.126 | 0.028 | 0.016 |
| 7440-05-3 | 46 | Pd | 0.020 | 0.007 | 0.229 | 0.223 | 0.167 | 0.122 | 0.027 | 0.013 |
| 7440-22-4 | 47 | Ag | 0.005 | 0.012 | 0.002 | 0.306 | 0.003 | 0.166 | 0.005 | 0.022 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.016 | 0.137 | 0.422 | 0.097 | 0.229 | 0.005 | 0.029 |
| 7440-74-6 | 49 | In | 0.002 | 0.017 | 0.173 | 0.446 | 0.123 | 0.242 | 0.007 | 0.031 |
| 7440-31-5 | 50 | Sn | 0.005 | 0.021 | 0.000 | 0.547 | 0.002 | 0.296 | 0.005 | 0.039 |

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PM Profile Speciation Report - continued (profile 25413)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | 0.000 | 0.037 | 0.000 | 0.978 | 0.000 | 0.530 | 0.000 | 0.069 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.095 | 0.000 | 2.595 | 0.000 | 1.408 | 0.000 | 0.179 |
| 7439-91-0 | 57 | La | 0.000 | 0.136 | 1.764 | 3.655 | 1.245 | 1.983 | 0.056 | 0.255 |
| 7439-97-6 | 80 | Hg | 0.062 | 0.007 | 0.000 | 0.072 | 0.018 | 0.039 | 0.059 | 0.009 |
| 7439-92-1 | 82 | Pb | 0.016 | 0.005 | 0.126 | 0.134 | 0.094 | 0.073 | 0.020 | 0.010 |
| | 201 | OC | 21.000 | 2.100 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| | 202 | EC | 3.230 | 0.323 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| | 203 | SO4 | 3.430 | 0.343 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| | 204 | NO3 | 3.140 | 0.314 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| TOTALS: | | | 62.725 | | 49.486 | | 44.287 | | 32.401 | |

(1) No controlled specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Sodium Tripolyphosphate - Cyclone Dust
Profile Number : 25414
Data Quality : D

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Control Device : Not Applicable(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30104501

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | NR | 0.000 | 13.400 | 2.680 | NE | 0.000 | 13.400 | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | 0.023 | 0.006 | NE | 0.000 | 0.023 | 0.000 |
| 7429-90-5 | 13 | Al | 2.537 | 0.357 | 1.732 | 0.173 | 2.016 | 0.219 | 1.732 | 0.000 |
| 7440-21-3 | 14 | Si | 0.875 | 0.141 | 1.947 | 0.195 | 1.569 | 0.157 | 1.947 | 0.000 |
| 7723-14-0 | 15 | P | 2.086 | 0.486 | 11.733 | 2.350 | 8.328 | 1.474 | 11.733 | 0.000 |
| 7704-34-9 | 16 | S | 0.870 | 0.289 | 0.270 | 0.033 | 0.482 | 0.114 | 0.270 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.380 | 0.118 | 0.048 | 0.013 | 0.165 | 0.047 | 0.048 | 0.000 |
| 7440-09-7 | 19 | K | 0.479 | 0.091 | 0.036 | 0.006 | 0.192 | 0.041 | 0.036 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.131 | 0.039 | 0.075 | 0.008 | 0.095 | 0.018 | 0.075 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.006 | 0.018 | -0.006 | 0.002 | 0.006 | 0.007 | 0.006 | 0.000 |
| 7440-62-2 | 23 | V | 0.044 | 0.016 | 0.004 | 0.002 | 0.018 | 0.007 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.023 | 0.017 | 0.001 | 0.001 | 0.009 | 0.006 | 0.001 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.017 | 0.014 | 0.002 | 0.009 | 0.007 | 0.014 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.052 | 0.053 | 0.097 | 0.010 | 0.081 | 0.022 | 0.097 | 0.000 |
| 7440-48-4 | 27 | Co | 0.002 | 0.001 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.043 | 0.018 | 0.000 | 0.002 | 0.015 | 0.007 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.122 | 0.032 | 0.132 | 0.013 | 0.128 | 0.020 | 0.132 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.157 | 0.031 | 0.046 | 0.005 | 0.085 | 0.015 | 0.046 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.014 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.063 | 0.005 | 0.006 | 0.003 | 0.023 | 0.005 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.015 | 0.001 | 0.001 | 0.001 | 0.005 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.060 | 0.022 | 0.003 | 0.002 | 0.023 | 0.009 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.023 | 0.005 | 0.002 | 0.003 | 0.009 | 0.005 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.004 | 0.028 | 0.003 | 0.002 | 0.003 | 0.010 | 0.003 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.033 | 0.003 | 0.003 | 0.002 | 0.012 | 0.003 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.143 | 0.000 | 0.013 | 0.000 | 0.051 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.050 | 0.111 | 0.000 | 0.010 | 0.018 | 0.040 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.104 | 0.000 | 0.010 | 0.000 | 0.037 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.007 | 0.152 | 0.003 | 0.013 | 0.004 | 0.054 | 0.003 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.188 | 0.000 | 0.018 | 0.000 | 0.067 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.544 | 0.234 | 0.006 | 0.021 | 0.196 | 0.088 | 0.006 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.063 | 0.259 | 0.025 | 0.027 | 0.038 | 0.093 | 0.025 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.390 | 0.440 | 0.016 | 0.045 | 0.148 | 0.159 | 0.016 | 0.000 |
| 7440-39-3 | 56 | Ba | 1.696 | 1.338 | 0.150 | 0.128 | 0.696 | 0.486 | 0.150 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 1.836 | 0.051 | 0.182 | 0.033 | 0.657 | 0.051 | 0.000 |

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PM Profile Speciation Report - continued (profile 25414)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | 0.020 | 0.023 | 0.001 | 0.003 | 0.008 | 0.008 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.615 | 0.112 | 0.072 | 0.008 | 0.264 | 0.051 | 0.072 | 0.000 |
| 7440-69-9 | 83 | Bi | NR | 0.000 | 0.000 | 0.005 | NE | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 11.256 | | 29.908 | | 14.638 | | 29.908 | |

(1) No controlled specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

---

Profile Name : NPK Fertilizer
Profile Number : 25415
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Referenc
78.

SCC Assignments: 30104501

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7723-14-0 | 15 | P | 20.000 | 0.000 | 20.000 | 0.000 | 20.000 | 0.000 | 20.000 | 10.000 |
| 7440-09-7 | 19 | K | 18.000 | 0.000 | 18.000 | 0.000 | 18.000 | 0.000 | 18.000 | 10.000 |
| TOTALS: | | | 38.000 | | 38.000 | | 38.000 | | 38.000 | |

(1) Estimated / extrapolated.

## 3.3 FOOD AND AGRICULTURE

This category includes farming operations and meat and crop processing. Processes involved in the production of food and agricultural products include harvesting, refinement, preservation, storage and handling, and packaging. Refinement processes can include cleaning, drying, grinding, mixing, and fermentation. Particulate emissions are the dominant emission type from this source category.

PM Profile Speciation Report

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Profile Name : Feed and Grain Handling Dust
Profile Number : 21401
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones, at 400 deg F. Cylone and filter catches analyzed by XRF. Si, P, and S non-quantitative.

SCC Assignments: 30200505, 30200506

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.140 | 0.310 | 0.490 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 21401)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 200 | TC | 30.000 | 0.000 | 30.000 | 0.000 | 30.000 | 0.000 | 30.000 | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 46.750 | | 46.750 | | 46.750 | | 46.750 | |

## 3.4 PRIMARY METAL PRODUCTION

Primary metal production is the production of metals from unprocessed ore. Processes involved depend on the element of concern. Processes generating particulate emissions in this industry include smelting operations, grinding, sintering, electrolytic processes, refining, and leaching.

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Ore Concentrate
Profile Number : 21102
Data Quality : B/C

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Proportioning and blending operation. Sampled by dichotomous and low-volume samplers.

SCC Assignments: 30301004, 30301005, 30301011, 30301012, 30301013, 30301014

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.820 0.890 0.920

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 1.300 | 0.200 | 0.500 | 0.100 | 1.213 | 0.266 | 0.500 | 0.100 |
| 7440-21-3 | 14 | Si | 3.800 | 0.400 | 1.800 | 0.200 | 3.583 | 0.663 | 1.500 | 0.500 |
| 7723-14-0 | 15 | P | 0.500 | 0.100 | 0.200 | 0.050 | 0.467 | 0.121 | 0.306 | 0.031 |
| 7704-34-9 | 16 | S | 8.000 | 1.000 | 4.000 | 1.000 | 7.565 | 1.691 | 4.000 | 1.000 |
| 7782-50-5 | 17 | Cl | 1.000 | 0.100 | 0.160 | 0.040 | 0.909 | 0.160 | 0.160 | 0.040 |
| 7440-09-7 | 19 | K | 0.880 | 0.100 | 0.250 | 0.030 | 0.812 | 0.148 | 0.373 | 0.037 |
| 7440-70-2 | 20 | Ca | 2.200 | 0.220 | 2.100 | 0.210 | 2.189 | 0.470 | 3.290 | 0.329 |
| 7440-32-6 | 22 | Ti | 0.100 | 0.030 | 0.100 | 0.300 | 0.100 | 0.269 | 0.101 | 0.011 |
| 7440-62-2 | 23 | V | < | 0.000 | NR | 0.000 | NE | 0.000 | 0.020 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.092 | 0.000 | 0.107 | 0.011 | 0.094 | 0.000 | 0.179 | 0.018 |
| 7439-96-5 | 25 | Mn | 0.200 | 0.030 | 0.280 | 0.040 | 0.209 | 0.062 | 0.460 | 0.046 |
| 7439-89-6 | 26 | Fe | 3.700 | 0.400 | 5.300 | 0.530 | 3.874 | 1.007 | 9.150 | 0.915 |
| 7440-02-0 | 28 | Ni | 0.040 | 0.000 | 0.050 | 0.000 | 0.041 | 0.000 | 0.091 | 0.000 |
| 7440-50-8 | 29 | Cu | 1.200 | 0.200 | 1.600 | 0.200 | 1.243 | 0.357 | 2.575 | 0.257 |
| 7440-66-6 | 30 | Zn | 3.492 | 0.349 | 3.817 | 0.382 | 3.527 | 0.799 | 6.659 | 0.666 |
| 7440-38-2 | 33 | As | 1.340 | 0.134 | 0.737 | 0.074 | 1.274 | 0.236 | 1.097 | 0.110 |
| 7782-49-2 | 34 | Se | 0.024 | 0.000 | 0.021 | 0.000 | 0.024 | 0.000 | 0.050 | 0.000 |
| 7726-95-6 | 35 | Br | 0.200 | 0.050 | 0.040 | 0.000 | 0.183 | 0.000 | 0.040 | 0.020 |
| 7440-24-6 | 38 | Sr | 0.056 | 0.000 | 0.101 | 0.010 | 0.061 | 0.000 | 0.176 | 0.018 |
| 7440-05-3 | 46 | Pd | 0.044 | 0.021 | 0.085 | 0.000 | 0.048 | 0.000 | 0.095 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.140 | 0.039 | 0.159 | 0.016 | 0.142 | 0.046 | 0.239 | 0.024 |
| 7440-43-9 | 48 | Cd | 0.788 | 0.090 | 0.536 | 0.054 | 0.761 | 0.152 | 0.834 | 0.083 |
| 7440-74-6 | 49 | In | 0.013 | 0.000 | 0.011 | 0.000 | 0.013 | 0.000 | NR | 0.000 |
| 7440-31-5 | 50 | Sn | 0.101 | 0.064 | 0.160 | 0.016 | 0.107 | 0.063 | 0.224 | 0.022 |
| 7440-36-0 | 51 | Sb | 0.299 | 0.132 | 0.717 | 0.072 | 0.344 | 0.166 | 0.979 | 0.098 |
| 7440-39-3 | 56 | Ba | 0.172 | 0.297 | 0.083 | 0.021 | 0.162 | 0.266 | 0.185 | 0.036 |
| 7439-97-6 | 80 | Hg | 0.042 | 0.014 | 0.033 | 0.000 | 0.041 | 0.000 | 0.047 | 0.000 |
| 7439-92-1 | 82 | Pb | 10.377 | 1.034 | 13.786 | 1.379 | 10.748 | 2.663 | 22.871 | 2.287 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 21102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 40.100 | | 36.733 | | 39.734 | | 56.201 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Ore Concentrate Composite
Profile Number : 21103
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Fugitive dust from storage and handling. Average of 14 lead material and ore samples each sieved and resuspended.

SCC Assignments: 30301004, 30301005, 30301011, 30301012, 30301013, 30301014

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.690 | 0.800 | 0.860 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 4.374 | 2.914 | 2.280 | 2.064 | 3.960 | 2.919 | 2.238 | 2.073 |
| 7440-21-3 | 14 | Si | 9.709 | 6.315 | 5.627 | 4.352 | 8.902 | 6.284 | 5.581 | 4.510 |
| 7723-14-0 | 15 | P | 0.808 | 0.159 | 0.539 | 0.109 | 0.755 | 0.190 | 0.495 | 0.121 |
| 7704-34-9 | 16 | S | 17.067 | 4.343 | 12.353 | 2.980 | 16.135 | 4.855 | 10.715 | 4.069 |
| 7782-50-5 | 17 | Cl | 0.016 | 0.049 | 0.000 | 0.000 | 0.013 | 0.039 | 0.029 | 0.183 |
| 7440-09-7 | 19 | K | 0.895 | 0.489 | 0.486 | 0.533 | 0.814 | 0.592 | 0.441 | 0.504 |
| 7440-70-2 | 20 | Ca | 2.025 | 1.218 | 1.888 | 1.099 | 1.998 | 1.353 | 1.479 | 1.239 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.219 | 0.104 | 0.172 | 0.093 | 0.210 | 0.116 | 0.167 | 0.109 |
| 7440-62-2 | 23 | V | 0.027 | 0.013 | 0.014 | 0.011 | 0.024 | 0.014 | 0.019 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.039 | 0.016 | 0.031 | 0.017 | 0.037 | 0.020 | 0.035 | 0.017 |
| 7439-96-5 | 25 | Mn | 0.296 | 0.482 | 0.206 | 0.305 | 0.278 | 0.459 | 0.211 | 0.324 |
| 7439-89-6 | 26 | Fe | 6.708 | 5.077 | 6.448 | 5.536 | 6.657 | 6.118 | 7.044 | 6.466 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.092 | 0.047 | 0.102 | 0.066 | 0.094 | 0.067 | 0.125 | 0.079 |
| 7440-50-8 | 29 | Cu | 6.588 | 5.355 | 7.088 | 5.705 | 6.687 | 6.373 | 7.312 | 6.216 |
| 7440-66-6 | 30 | Zn | 3.561 | 2.921 | 4.300 | 3.241 | 3.707 | 3.557 | 4.647 | 3.911 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 3.935 | 2.847 | 3.679 | 2.745 | 3.884 | 3.231 | 3.074 | 3.755 |
| 7782-49-2 | 34 | Se | 0.030 | 0.023 | 0.033 | 0.021 | 0.031 | 0.025 | 0.022 | 0.013 |
| 7726-95-6 | 35 | Br | 0.353 | 0.237 | 0.335 | 0.219 | 0.349 | 0.265 | 0.315 | 0.299 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.056 | 0.105 | 0.063 | 0.154 | 0.057 | 0.150 | 0.059 | 0.158 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.600 | 0.571 | 0.596 | 0.370 | 0.599 | 0.554 | 0.610 | 0.648 |
| 7440-43-9 | 48 | Cd | 0.213 | 0.183 | 0.393 | 0.017 | 0.249 | 0.156 | 0.382 | 0.190 |
| 7440-31-5 | 50 | Sn | 0.292 | 0.252 | 0.385 | 0.214 | 0.310 | 0.271 | 0.313 | 0.245 |
| 7440-36-0 | 51 | Sb | 4.593 | 4.246 | 4.178 | 4.316 | 4.511 | 4.908 | 4.723 | 5.568 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 21103)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.266 | 0.449 | 0.077 | 0.070 | 0.229 | 0.366 | 0.113 | 0.071 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.026 | 0.020 | 0.026 | 0.023 | 0.026 | 0.025 | 0.034 | 0.039 |
| 7439-92-1 | 82 | Pb | 24.865 | 15.000 | 25.959 | 16.800 | 25.081 | 0.000 | 28.996 | 16.700 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 87.653 | | 77.258 | | 85.597 | | 79.179 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting Materials Handling - Composite
Profile Number : 21150
Data Quality : D

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Developed from profiles 21102, 21103, and 21206.

SCC Assignments: 30301004, 30301011, 30301012, 30301013, 30301014, 30330111

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.730 | 0.830 | 0.880 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 2.062 | 1.687 | 0.945 | 1.193 | 1.871 | 1.735 | 0.933 | 1.198 |
| 7440-21-3 | 14 | Si | 4.871 | 3.654 | 2.543 | 2.515 | 4.474 | 3.736 | 2.418 | 2.620 |
| 7723-14-0 | 15 | P | 0.462 | 0.110 | 0.251 | 0.069 | 0.426 | 0.124 | 0.267 | 0.072 |
| 7704-34-9 | 16 | S | 8.953 | 2.577 | 5.550 | 1.815 | 8.373 | 2.892 | 4.977 | 2.419 |
| 7782-50-5 | 17 | Cl | 0.427 | 0.074 | 0.061 | 0.023 | 0.365 | 0.082 | 0.063 | 0.108 |
| 7440-09-7 | 19 | K | 0.672 | 0.289 | 0.258 | 0.308 | 0.601 | 0.361 | 0.276 | 0.292 |
| 7440-70-2 | 20 | Ca | 1.546 | 0.715 | 1.383 | 0.646 | 1.518 | 0.836 | 1.636 | 0.740 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.113 | 0.062 | 0.091 | 0.181 | 0.109 | 0.160 | 0.089 | 0.063 |
| 7440-62-2 | 23 | V | 0.013 | 0.008 | 0.005 | 0.006 | 0.012 | 0.008 | 0.013 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.044 | 0.009 | 0.046 | 0.012 | 0.044 | 0.014 | 0.071 | 0.014 |
| 7439-96-5 | 25 | Mn | 0.172 | 0.279 | 0.162 | 0.178 | 0.171 | 0.276 | 0.224 | 0.189 |
| 7439-89-6 | 26 | Fe | 3.581 | 2.940 | 3.976 | 3.211 | 3.649 | 3.666 | 5.467 | 3.770 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.044 | 0.027 | 0.051 | 0.038 | 0.045 | 0.040 | 0.072 | 0.046 |
| 7440-50-8 | 29 | Cu | 2.642 | 3.094 | 2.923 | 3.296 | 2.690 | 3.778 | 3.323 | 3.592 |
| 7440-66-6 | 30 | Zn | 2.590 | 1.699 | 2.783 | 1.884 | 2.623 | 2.151 | 3.845 | 2.291 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 1.815 | 1.646 | 1.502 | 1.585 | 1.761 | 1.916 | 1.411 | 2.169 |
| 7782-49-2 | 34 | Se | 0.018 | 0.013 | 0.018 | 0.012 | 0.018 | 0.015 | 0.024 | 0.008 |
| 7726-95-6 | 35 | Br | 0.215 | 0.140 | 0.129 | 0.126 | 0.201 | 0.159 | 0.118 | 0.173 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.037 | 0.061 | 0.055 | 0.089 | 0.040 | 0.090 | 0.078 | 0.092 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.015 | 0.012 | 0.028 | 0.000 | 0.017 | 0.011 | 0.032 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.247 | 0.332 | 0.252 | 0.214 | 0.248 | 0.330 | 0.283 | 0.374 |
| 7440-43-9 | 48 | Cd | 0.496 | 0.134 | 0.333 | 0.034 | 0.468 | 0.134 | 0.424 | 0.120 |
| 7440-74-6 | 49 | In | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.137 | 0.162 | 0.185 | 0.124 | 0.145 | 0.171 | 0.184 | 0.142 |
| 7440-36-0 | 51 | Sb | 1.631 | 2.455 | 1.647 | 2.492 | 1.633 | 2.915 | 1.901 | 3.215 |

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PM Profile Speciation Report - continued (profile 21150)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.146 | 0.422 | 0.066 | 0.059 | 0.132 | 0.354 | 0.099 | 0.048 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.023 | 0.016 | 0.020 | 0.013 | 0.022 | 0.018 | 0.027 | 0.023 |
| 7439-92-1 | 82 | Pb | 12.471 | 8.682 | 13.529 | 9.732 | 12.652 | 11.032 | 17.560 | 9.732 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 45.447 | | 38.796 | | 44.312 | | 45.815 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Speiss Fugitive Dust
Profile Number : 21205
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Speiss fugitive dust.

SCC Assignments: 30301009

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.690 | 0.800 | 0.860 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.735 | 0.073 | 0.735 | 0.073 | 0.735 | 0.144 | 0.735 | 0.073 |
| 7440-21-3 | 14 | Si | 2.613 | 0.261 | 2.613 | 0.261 | 2.613 | 0.513 | 2.613 | 0.261 |
| 7723-14-0 | 15 | P | 0.233 | 0.023 | 0.233 | 0.023 | 0.233 | 0.046 | 0.233 | 0.023 |
| 7704-34-9 | 16 | S | 3.716 | 0.734 | 3.716 | 0.734 | 3.716 | 1.024 | 3.716 | 0.734 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.048 | 0.000 | 0.048 | 0.000 | 0.054 | 0.000 | 0.048 |
| 7440-09-7 | 19 | K | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.012 | 0.074 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.289 | 0.129 | 1.289 | 0.129 | 1.289 | 0.253 | 1.289 | 0.129 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.077 | 0.000 | 0.077 | 0.000 | 0.077 | 0.012 | 0.077 | 0.000 |
| 7440-62-2 | 23 | V | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.002 | 0.011 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.004 | 0.022 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.036 | 0.000 | 0.036 | 0.000 | 0.036 | 0.006 | 0.036 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.366 | 0.237 | 2.366 | 0.237 | 2.366 | 0.465 | 2.366 | 0.237 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.755 | 0.075 | 0.755 | 0.075 | 0.755 | 0.148 | 0.755 | 0.075 |
| 7440-50-8 | 29 | Cu | 37.919 | 3.792 | 37.919 | 3.792 | 37.919 | 7.452 | 37.919 | 3.792 |
| 7440-66-6 | 30 | Zn | 1.109 | 0.111 | 1.109 | 0.111 | 1.109 | 0.218 | 1.109 | 0.111 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 6.460 | 0.646 | 6.460 | 0.646 | 6.460 | 1.270 | 6.460 | 0.646 |
| 7782-49-2 | 34 | Se | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.006 | 0.040 | 0.000 |
| 7726-95-6 | 35 | Br | 0.596 | 0.060 | 0.596 | 0.060 | 0.596 | 0.117 | 0.596 | 0.060 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.002 | 0.011 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.526 | 0.053 | 0.526 | 0.053 | 0.526 | 0.104 | 0.526 | 0.053 |
| 7440-43-9 | 48 | Cd | 0.339 | 0.034 | 0.339 | 0.034 | 0.339 | 0.067 | 0.339 | 0.034 |
| 7440-31-5 | 50 | Sn | 0.649 | 0.065 | 0.649 | 0.065 | 0.649 | 0.128 | 0.649 | 0.065 |
| 7440-36-0 | 51 | Sb | 3.641 | 0.364 | 3.641 | 0.364 | 3.641 | 0.715 | 3.641 | 0.364 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.038 | 0.025 | 0.038 | 0.025 | 0.038 | 0.029 | 0.038 | 0.025 |

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PM Profile Speciation Report - continued (profile 21205)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.004 | 0.024 | 0.000 |
| 7439-92-1 | 82 | Pb | 17.880 | 1.788 | 17.880 | 1.788 | 17.880 | 3.514 | 17.880 | 1.788 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 81.159 | | 81.159 | | 81.159 | | 81.159 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Soda Flux Fugative Dust
Profile Number : 21206
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Soda flux fugitive dust.

SCC Assignments: 30301004, 30301005, 30301011, 30301012, 30301013, 30301014

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.690 0.800 0.860

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Total Particulate Matter -

| CAS Number | Species Num | Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.511 | 0.103 | 0.055 | 0.014 | 0.421 | 0.102 | 0.062 | 0.000 |
| 7440-21-3 | 14 | Si | 1.105 | 0.139 | 0.201 | 0.020 | 0.926 | 0.170 | 0.174 | 0.017 |
| 7723-14-0 | 15 | P | 0.079 | 0.030 | 0.013 | 0.000 | 0.066 | 0.026 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 1.792 | 0.261 | 0.298 | 0.047 | 1.497 | 0.296 | 0.215 | 0.036 |
| 7782-50-5 | 17 | Cl | 0.266 | 0.065 | 0.022 | 0.000 | 0.218 | 0.060 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.240 | 0.042 | 0.038 | 0.000 | 0.200 | 0.044 | 0.014 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.414 | 0.053 | 0.161 | 0.016 | 0.364 | 0.067 | 0.139 | 0.014 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.019 | 0.000 | 0.000 | 0.000 | 0.015 | 0.002 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.013 | 0.000 | 0.000 | 0.000 | 0.010 | 0.001 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.021 | 0.000 | 0.000 | 0.000 | 0.017 | 0.002 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.336 | 0.049 | 0.180 | 0.018 | 0.305 | 0.060 | 0.206 | 0.021 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.137 | 0.020 | 0.080 | 0.000 | 0.126 | 0.024 | 0.082 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.717 | 0.082 | 0.233 | 0.023 | 0.621 | 0.109 | 0.229 | 0.023 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.169 | 0.049 | 0.090 | 0.011 | 0.153 | 0.046 | 0.063 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.093 | 0.015 | 0.011 | 0.000 | 0.077 | 0.016 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.012 | 0.000 | 0.000 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.055 | 0.000 | 0.000 | 0.000 | 0.044 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.487 | 0.109 | 0.070 | 0.014 | 0.405 | 0.104 | 0.055 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.017 | 0.105 | 0.011 | 0.014 | 0.016 | 0.085 | 0.014 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.191 | 0.046 | 0.028 | 0.009 | 0.155 | 0.000 | 0.011 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.495 | 0.038 | 0.072 | 0.008 | 0.401 | 0.000 | 0.023 |

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PM Profile Speciation Report - continued (profile 21206)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.014 | 0.000 | 0.000 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 2.172 | 0.243 | 0.841 | 0.084 | 1.909 | 0.335 | 0.813 | 0.081 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 8.588 | | 2.388 | | 7.363 | | 2.066 | |

PM Profile Speciation Report

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Profile Name : Copper Ore Crushing
Profile Number : 21301
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 44
Data Source : Fugitive dust. Bulk sample sieved and resuspended.

SCC Assignments: 30302401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 18.798 | 1.880 | 13.899 | 1.390 | 15.340 | 1.191 | 15.340 | 0.000 |
| 7440-21-3 | 14 | Si | 42.046 | 4.205 | 31.945 | 3.194 | 34.916 | 2.690 | 34.916 | 0.000 |
| 7723-14-0 | 15 | P | 0.541 | 0.054 | 0.258 | 0.026 | 0.341 | 0.031 | 0.341 | 0.000 |
| 7704-34-9 | 16 | S | 1.600 | 0.172 | 1.149 | 0.115 | 1.282 | 0.102 | 1.282 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.122 | 0.035 | 0.102 | 0.010 | 0.108 | 0.013 | 0.108 | 0.000 |
| 7440-09-7 | 19 | K | 3.942 | 0.394 | 3.662 | 0.366 | 3.744 | 0.274 | 3.744 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.881 | 0.088 | 0.717 | 0.072 | 0.765 | 0.058 | 0.765 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.311 | 0.031 | 0.390 | 0.039 | 0.367 | 0.025 | 0.367 | 0.000 |
| 7440-62-2 | 23 | V | 0.046 | 0.000 | 0.032 | 0.000 | 0.036 | 0.000 | 0.036 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.030 | 0.000 | 0.021 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.087 | 0.000 | 0.102 | 0.010 | 0.098 | 0.000 | 0.098 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.359 | 0.436 | 4.062 | 0.406 | 4.149 | 0.304 | 4.149 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.012 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 1.009 | 0.101 | 1.063 | 0.106 | 1.047 | 0.075 | 1.047 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.212 | 0.022 | 0.233 | 0.023 | 0.227 | 0.016 | 0.227 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.018 | 0.016 | 0.033 | 0.000 | 0.029 | 0.000 | 0.029 | 0.000 |
| 7782-49-2 | 34 | Se | 0.013 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | 0.021 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.041 | 0.000 | 0.034 | 0.000 | 0.036 | 0.000 | 0.036 | 0.000 |
| 7440-65-5 | 39 | Y | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-98-7 | 42 | Mo | < | 0.000 | 0.097 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.027 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | 0.023 | 0.039 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.056 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-74-6 | 49 | In | 0.025 | 0.059 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.072 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.127 | 0.012 | 0.019 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.656 | 0.353 | 0.036 | 0.048 | 0.218 | 0.108 | 0.218 | 0.000 |

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PM Profile Speciation Report - continued (profile 21301)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | < | 0.000 | < | 0.075 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.214 | 0.029 | 0.105 | 0.010 | 0.137 | 0.013 | 0.137 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 74.986 | | 57.973 | | 62.864 | | 62.864 | |

PM Profile Speciation Report

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Profile Name : Copper Ore Mill Wastepile
Profile Number : 21302
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 44
Data Source : Bulk sample sieved and resuspended.

SCC Assignments: 30302401

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.150 | 0.340 | 0.510 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 21.269 | 2.127 | 14.655 | 1.465 | 16.600 | 1.316 | 16.600 | 0.000 |
| 7440-21-3 | 14 | Si | 40.602 | 4.060 | 30.240 | 3.024 | 33.288 | 2.579 | 33.288 | 0.000 |
| 7723-14-0 | 15 | P | 0.346 | 0.035 | 0.203 | 0.020 | 0.245 | 0.020 | 0.245 | 0.000 |
| 7704-34-9 | 16 | S | 1.349 | 0.135 | 1.272 | 0.127 | 1.295 | 0.094 | 1.295 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.111 | 0.025 | 0.102 | 0.010 | 0.105 | 0.010 | 0.105 | 0.000 |
| 7440-09-7 | 19 | K | 4.353 | 0.435 | 3.900 | 0.390 | 4.033 | 0.298 | 4.033 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.561 | 0.056 | 0.757 | 0.076 | 0.699 | 0.048 | 0.699 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.292 | 0.029 | 0.422 | 0.042 | 0.384 | 0.026 | 0.384 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.000 | 0.030 | 0.000 | 0.029 | 0.000 | 0.029 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.028 | 0.000 | 0.018 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.108 | 0.011 | 0.112 | 0.011 | 0.111 | 0.008 | 0.111 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.075 | 0.307 | 3.270 | 0.327 | 3.213 | 0.229 | 3.213 | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 1.234 | 0.123 | 1.238 | 0.124 | 1.237 | 0.089 | 1.237 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.400 | 0.040 | 0.496 | 0.050 | 0.468 | 0.033 | 0.468 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.049 | 0.013 | 0.062 | 0.000 | 0.058 | 0.000 | 0.058 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | 0.022 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.026 | 0.000 | 0.032 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-65-5 | 39 | Y | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-98-7 | 42 | Mo | < | 0.000 | 0.038 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.017 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.025 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | 0.046 | 0.038 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-74-6 | 49 | In | < | 0.038 | 0.014 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.048 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | 0.053 | 0.088 | < | 0.014 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.106 | 0.222 | 0.066 | 0.038 | 0.078 | 0.066 | 0.078 | 0.000 |

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PM Profile Speciation Report - continued (profile 21302)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | < | 0.000 | < | 0.061 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.287 | 0.029 | 0.202 | 0.020 | 0.227 | 0.018 | 0.227 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 74.320 | | 57.151 | | 62.121 | | 62.121 | |

PM Profile Speciation Report

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Profile Name : Copper Ore Concentrate
Profile Number : 21303
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 44
Data Source : Fugitive dust. Bulk sample sieved and resuspended.

SCC Assignments: 30302404

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 7.923 | 0.792 | 2.648 | 0.265 | 4.199 | 0.426 | 4.199 | 0.000 |
| 7440-21-3 | 14 | Si | 15.955 | 1.595 | 5.969 | 0.597 | 8.906 | 0.868 | 8.906 | 0.000 |
| 7723-14-0 | 15 | P | 0.596 | 0.060 | 0.326 | 0.033 | 0.405 | 0.035 | 0.405 | 0.000 |
| 7704-34-9 | 16 | S | 12.929 | 1.293 | 10.182 | 1.018 | 10.990 | 0.838 | 10.990 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.020 | 0.042 | < | 0.032 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 1.745 | 0.174 | 0.887 | 0.089 | 1.139 | 0.100 | 1.139 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.517 | 0.052 | 0.456 | 0.046 | 0.474 | 0.035 | 0.474 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.239 | 0.024 | 0.219 | 0.022 | 0.225 | 0.017 | 0.225 | 0.000 |
| 7440-62-2 | 23 | V | 0.039 | 0.000 | 0.034 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.042 | 0.000 | 0.044 | 0.000 | 0.044 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.087 | 0.000 | 0.069 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 |
| 7439-89-6 | 26 | Fe | 10.355 | 1.035 | 12.101 | 1.210 | 11.587 | 0.811 | 11.587 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.103 | 0.010 | 0.109 | 0.011 | 0.107 | 0.008 | 0.107 | 0.000 |
| 7440-50-8 | 29 | Cu | 21.726 | 2.173 | 22.110 | 2.211 | 21.997 | 1.579 | 21.997 | 0.000 |
| 7440-66-6 | 30 | Zn | 4.717 | 0.472 | 6.446 | 0.645 | 5.937 | 0.407 | 5.937 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | 0.051 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 1.016 | 0.102 | 0.991 | 0.099 | 0.998 | 0.072 | 0.998 | 0.000 |
| 7782-49-2 | 34 | Se | 0.012 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.081 | 0.000 | 0.081 | 0.000 | 0.081 | 0.000 | 0.081 | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 |
| 7440-65-5 | 39 | Y | NA | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | 0.035 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-98-7 | 42 | Mo | NA | 0.000 | 0.520 | 0.052 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.000 | 0.020 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | 0.090 | 0.011 | 0.063 | 0.000 | 0.071 | 0.000 | 0.071 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.043 | 0.012 | 0.052 | 0.000 | 0.049 | 0.000 | 0.049 | 0.000 |
| 7440-74-6 | 49 | In | 0.019 | 0.012 | 0.025 | 0.000 | 0.023 | 0.000 | 0.023 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.036 | 0.014 | 0.051 | 0.000 | 0.047 | 0.000 | 0.047 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.094 | 0.026 | 0.073 | 0.000 | 0.079 | 0.000 | 0.079 | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.068 | < | 0.015 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 21303)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | NA | 0.000 | < | 0.023 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | 0.020 | 0.000 | 0.022 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.082 | 0.108 | 1.023 | 0.102 | 1.040 | 0.076 | 1.040 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 79.511 | | 64.622 | | 68.545 | | 68.545 | |

PM Profile Speciation Report

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Profile Name : Copper Mining Waste
Profile Number : 21304
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 44
Data Source : Bulk sample sieved and resuspended.

SCC Assignments: 30302404

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 11.447 | 1.145 | 9.769 | 0.977 | 10.263 | 0.767 | 10.263 | 0.000 |
| 7440-21-3 | 14 | Si | 25.023 | 2.502 | 24.576 | 2.458 | 24.707 | 1.787 | 24.707 | 0.000 |
| 7723-14-0 | 15 | P | 0.556 | 0.056 | 0.310 | 0.031 | 0.382 | 0.032 | 0.382 | 0.000 |
| 7704-34-9 | 16 | S | 4.944 | 0.494 | 2.691 | 0.269 | 3.354 | 0.287 | 3.354 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.097 | 0.035 | 0.096 | 0.013 | 0.096 | 0.012 | 0.096 | 0.000 |
| 7440-09-7 | 19 | K | 2.304 | 0.230 | 2.093 | 0.209 | 2.155 | 0.158 | 2.155 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.087 | 0.109 | 1.937 | 0.194 | 1.687 | 0.113 | 1.687 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.403 | 0.040 | 0.519 | 0.052 | 0.485 | 0.033 | 0.485 | 0.000 |
| 7440-62-2 | 23 | V | 0.044 | 0.000 | 0.035 | 0.000 | 0.038 | 0.000 | 0.038 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.052 | 0.000 | 0.036 | 0.000 | 0.041 | 0.000 | 0.041 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.089 | 0.000 | 0.108 | 0.011 | 0.102 | 0.000 | 0.102 | 0.000 |
| 7439-89-6 | 26 | Fe | 14.384 | 1.438 | 9.106 | 0.911 | 10.658 | 0.867 | 10.658 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.353 | 0.035 | 0.272 | 0.000 | 0.296 | 0.000 | 0.296 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.650 | 0.065 | 0.696 | 0.027 | 0.682 | 0.045 | 0.682 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | < | 0.070 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.051 | 0.025 | 0.043 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.018 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | 0.014 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | 0.019 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-65-5 | 39 | Y | NA | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | 0.016 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-98-7 | 42 | Mo | NA | 0.000 | 0.014 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.021 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | 0.016 | 0.030 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | 0.031 | 0.044 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-74-6 | 49 | In | < | 0.047 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.050 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | 0.169 | 0.095 | 0.046 | 0.017 | 0.082 | 0.029 | 0.082 | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.269 | < | 0.046 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - - continued (profile 21304)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | NA | 0.000 | < | 0.069 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 1.197 | 0.120 | 0.633 | 0.063 | 0.799 | 0.069 | 0.799 | 0.000 |
| | 201 | CC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 62.929 | | 53.029 | | 55.872 | | 55.872 | |

PM Profile Speciation Report

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Profile Name : Copper Ore - Composite
Profile Number : 21320
Data Quality : E

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Control Device : Uncontrolled
Reference(s) : 44
Data Source : Developed from profiles 21301 and 21302.

SCC Assignments: 30302401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 20.033 | 2.007 | 14.277 | 1.428 | 15.970 | 1.254 | 15.970 | 0.000 |
| 7440-21-3 | 14 | Si | 41.324 | 4.133 | 31.093 | 3.110 | 34.102 | 2.635 | 34.102 | 0.000 |
| 7723-14-0 | 15 | P | 0.444 | 0.046 | 0.231 | 0.023 | 0.293 | 0.026 | 0.293 | 0.000 |
| 7704-34-9 | 16 | S | 1.474 | 0.155 | 1.211 | 0.121 | 1.288 | 0.098 | 1.288 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.116 | 0.030 | 0.102 | 0.010 | 0.106 | 0.011 | 0.106 | 0.000 |
| 7440-09-7 | 19 | K | 4.147 | 0.415 | 3.781 | 0.378 | 3.889 | 0.286 | 3.889 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.721 | 0.074 | 0.737 | 0.074 | 0.732 | 0.053 | 0.732 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.301 | 0.030 | 0.406 | 0.041 | 0.375 | 0.026 | 0.375 | 0.000 |
| 7440-62-2 | 23 | V | 0.036 | 0.000 | 0.031 | 0.000 | 0.032 | 0.002 | 0.032 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.029 | 0.000 | 0.019 | 0.000 | 0.022 | 0.001 | 0.022 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.098 | 0.008 | 0.107 | 0.011 | 0.104 | 0.007 | 0.104 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.717 | 0.377 | 3.666 | 0.369 | 3.681 | 0.267 | 3.681 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.006 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-50-8 | 29 | Cu | 1.121 | 0.113 | 1.151 | 0.115 | 1.142 | 0.082 | 1.142 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.306 | 0.032 | 0.364 | 0.039 | 0.347 | 0.025 | 0.347 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.034 | 0.015 | 0.048 | 0.000 | 0.043 | 0.005 | 0.043 | 0.000 |
| 7782-49-2 | 34 | Se | 0.006 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.021 | 0.000 | 0.015 | 0.001 | 0.015 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.034 | 0.000 | 0.033 | 0.000 | 0.033 | 0.002 | 0.033 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.068 | 0.000 | 0.048 | 0.003 | 0.048 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.023 | 0.000 | 0.000 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.011 | 0.033 | 0.000 | 0.000 | 0.003 | 0.010 | 0.003 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.023 | 0.048 | 0.000 | 0.000 | 0.007 | 0.014 | 0.007 | 0.000 |
| 7440-74-6 | 49 | In | 0.013 | 0.050 | 0.007 | 0.000 | 0.009 | 0.015 | 0.009 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.061 | 0.000 | 0.000 | 0.000 | 0.018 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.026 | 0.109 | 0.006 | 0.017 | 0.012 | 0.033 | 0.012 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.381 | 0.295 | 0.051 | 0.043 | 0.148 | 0.089 | 0.148 | 0.000 |

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PM Profile Speciation Report - continued (profile 21320)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.068 | 0.000 | 0.020 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.251 | 0.029 | 0.153 | 0.016 | 0.182 | 0.016 | 0.182 | 0.000 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 74.652 | | 57.563 | | 62.587 | | 62.587 | |

PM Profile Speciation Report

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Profile Name : Composite of Copper Ore Concentrate and Mining Waste
Profile Number : 21340
Data Quality : E

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Control Device : Uncontrolled
Reference(s) : 44
Data Source : Developed from profiles 21303 and 21304.

SCC Assignments: 30302404

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 9.685 | 0.984 | 6.208 | 0.716 | 7.231 | 0.598 | 7.231 | 0.000 |
| 7440-21-3 | 14 | Si | 20.489 | 2.098 | 15.273 | 1.789 | 16.807 | 1.337 | 16.807 | 0.000 |
| 7723-14-0 | 15 | P | 0.576 | 0.058 | 0.318 | 0.032 | 0.394 | 0.034 | 0.394 | 0.000 |
| 7704-34-9 | 16 | S | 8.937 | 0.979 | 6.437 | 0.745 | 7.172 | 0.584 | 7.172 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.059 | 0.039 | 0.048 | 0.024 | 0.051 | 0.014 | 0.051 | 0.000 |
| 7440-09-7 | 19 | K | 2.024 | 0.204 | 1.490 | 0.161 | 1.647 | 0.129 | 1.647 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.802 | 0.085 | 1.197 | 0.141 | 1.080 | 0.077 | 1.080 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.321 | 0.033 | 0.369 | 0.040 | 0.355 | 0.025 | 0.355 | 0.000 |
| 7440-62-2 | 23 | V | 0.041 | 0.000 | 0.035 | 0.000 | 0.037 | 0.002 | 0.037 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.051 | 0.000 | 0.039 | 0.000 | 0.043 | 0.003 | 0.043 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.088 | 0.000 | 0.088 | 0.008 | 0.088 | 0.006 | 0.088 | 0.000 |
| 7439-89-6 | 26 | Fe | 12.370 | 1.253 | 10.604 | 1.071 | 11.123 | 0.833 | 11.123 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.058 | 0.007 | 0.054 | 0.008 | 0.056 | 0.005 | 0.056 | 0.000 |
| 7440-50-8 | 29 | Cu | 11.040 | 1.537 | 11.191 | 1.563 | 11.146 | 0.918 | 11.146 | 0.000 |
| 7440-66-6 | 30 | Zn | 2.683 | 0.337 | 3.571 | 0.456 | 3.310 | 0.250 | 3.310 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.025 | 0.049 | 0.018 | 0.015 | 0.018 | 0.000 |
| 7440-38-2 | 33 | As | 0.533 | 0.074 | 0.517 | 0.070 | 0.522 | 0.043 | 0.522 | 0.000 |
| 7782-49-2 | 34 | Se | 0.006 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.041 | 0.000 | 0.043 | 0.003 | 0.043 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.007 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.009 | 0.000 | 0.018 | 0.000 | 0.015 | 0.001 | 0.015 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.026 | 0.000 | 0.018 | 0.001 | 0.018 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.267 | 0.037 | 0.188 | 0.016 | 0.188 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.015 | 0.010 | 0.000 | 0.007 | 0.004 | 0.007 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.053 | 0.023 | 0.032 | 0.000 | 0.038 | 0.007 | 0.038 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.037 | 0.032 | 0.026 | 0.000 | 0.029 | 0.010 | 0.029 | 0.000 |
| 7440-74-6 | 49 | In | 0.009 | 0.034 | 0.013 | 0.000 | 0.012 | 0.010 | 0.012 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.018 | 0.037 | 0.025 | 0.000 | 0.023 | 0.011 | 0.023 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.132 | 0.070 | 0.059 | 0.012 | 0.081 | 0.022 | 0.081 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.196 | 0.000 | 0.034 | 0.000 | 0.059 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 21340)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.051 | 0.000 | 0.015 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.010 | 0.000 | 0.011 | 0.000 | 0.011 | 0.001 | 0.011 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.139 | 0.114 | 0.828 | 0.085 | 0.920 | 0.072 | 0.920 | 0.000 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 71.220 | | 58.827 | | 62.472 | | 62.472 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Slag dust
Profile Number : 21501
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Sample is composite of samples from various locations on the pile; sieved and resuspended.

SCC Assignments: 30399999

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 3.744 | 0.374 | 2.150 | 0.215 | 2.619 | 0.220 | 2.349 | 0.235 |
| 7440-21-3 | 14 | Si | 18.202 | 1.820 | 11.323 | 1.132 | 13.346 | 1.092 | 12.509 | 1.251 |
| 7723-14-0 | 15 | P | 0.352 | 0.035 | 0.202 | 0.020 | 0.246 | 0.021 | 0.183 | 0.018 |
| 7704-34-9 | 16 | S | 4.260 | 0.426 | 2.237 | 0.224 | 2.832 | 0.245 | 1.967 | 0.197 |
| 7782-50-5 | 17 | Cl | 0.229 | 0.052 | 0.119 | 0.025 | 0.151 | 0.020 | 0.112 | 0.017 |
| 7440-09-7 | 19 | K | 0.777 | 0.078 | 0.570 | 0.057 | 0.631 | 0.049 | 0.648 | 0.065 |
| 7440-70-2 | 20 | Ca | 9.313 | 0.931 | 7.499 | 0.750 | 8.033 | 0.609 | 9.245 | 0.924 |
| 7440-32-6 | 22 | Ti | 0.372 | 0.037 | 0.290 | 0.029 | 0.314 | 0.024 | 0.257 | 0.026 |
| 7440-62-2 | 23 | V | 0.092 | 0.000 | 0.051 | 0.000 | 0.063 | 0.000 | 0.044 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.096 | 0.000 | 0.086 | 0.000 | 0.089 | 0.000 | 0.112 | 0.011 |
| 7439-96-5 | 25 | Mn | 1.168 | 0.117 | 0.988 | 0.099 | 1.041 | 0.078 | 1.278 | 0.128 |
| 7439-89-6 | 26 | Fe | 16.292 | 1.629 | 15.294 | 1.529 | 15.588 | 1.138 | 21.323 | 2.132 |
| 7440-02-0 | 28 | Ni | 0.054 | 0.000 | 0.046 | 0.000 | 0.048 | 0.000 | 0.048 | 0.000 |
| 7440-50-8 | 29 | Cu | 1.766 | 0.177 | 1.044 | 0.104 | 1.256 | 0.105 | 1.189 | 0.119 |
| 7440-66-6 | 30 | Zn | 11.305 | 1.130 | 7.296 | 0.730 | 8.475 | 0.685 | 9.203 | 0.920 |
| 7440-38-2 | 33 | As | 0.634 | 0.068 | 0.357 | 0.036 | 0.438 | 0.038 | 0.325 | 0.032 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.065 | 0.000 | 0.031 | 0.000 | 0.041 | 0.000 | 0.034 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.182 | 0.018 | 0.150 | 0.015 | 0.159 | 0.012 | 0.195 | 0.019 |
| 7440-05-3 | 46 | Pd | < | 0.020 | < | 0.000 | NE | 0.000 | 0.018 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.033 | 0.028 | < | 0.012 | NE | 0.000 | 0.018 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.043 | 0.037 | 0.020 | 0.041 | 0.014 | 0.055 | 0.000 |
| 7440-74-6 | 49 | In | 0.053 | 0.047 | < | 0.018 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.055 | 0.094 | 0.023 | NE | 0.000 | 0.062 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.244 | 0.108 | 0.069 | 0.042 | 0.120 | 0.036 | 0.202 | 0.021 |
| 7440-39-3 | 56 | Ba | 0.084 | 0.269 | 0.194 | 0.109 | 0.162 | 0.086 | 0.353 | 0.042 |
| 7439-97-6 | 80 | Hg | 0.023 | 0.011 | 0.014 | 0.000 | 0.017 | 0.000 | 0.014 | 0.000 |
| 7439-92-1 | 82 | Pb | 6.114 | 0.611 | 3.159 | 0.316 | 4.028 | 0.351 | 3.500 | 0.350 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 21501)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 75.504 | | 53.300 | | 59.738 | | 65.243 | |

PM Profile Speciation Report

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Profile Name : Steel Production - Steel Sinter Plant
Profile Number : 28301
Data Quality : D/D

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Control Device : Baghouse
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. Average of 2 tests downstream of baghouse.

SCC Assignments: 30300813

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.270 0.600 0.690

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 6.600 | 0.000 | 2.600 | 0.000 | 4.165 | 0.000 | 6.330 | 0.000 |
| 7782-50-5 | 17 | Cl | 17.000 | 0.000 | 14.000 | 0.000 | 15.174 | 0.000 | 28.000 | 0.000 |
| 7440-09-7 | 19 | K | 20.000 | 0.000 | 9.000 | 0.000 | 13.304 | 0.000 | 19.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 1.000 | 0.000 | 0.824 | 0.000 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | 0.550 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 3.000 | 0.000 | 0.550 | 0.000 | 1.509 | 0.000 | 3.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-89-6 | 26 | Fe | 13.000 | 0.000 | 20.000 | 0.000 | 17.261 | 0.000 | 14.000 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.550 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7782-49-2 | 34 | Se | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7726-95-6 | 35 | Br | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | 0.050 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | 0.050 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

PM Profile Speciation Report - continued (profile 28301)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 11.000 | 0.000 | 13.000 | 0.000 | 12.217 | 0.000 | 10.000 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | 20.000 | 0.000 | 8.000 | 0.000 | 12.696 | 0.000 | 19.000 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 98.400 | | 74.100 | | 83.100 | | 105.930 | |

PM Profile Speciation Report

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Profile Name : Steel Production - Open Hearth Furnace
Profile Number : 28302
Data Quality : D/E

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Control Device : ESP
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones at 400 deg F. Cyclone and filter catches by XRF. Si, P, and S non-quantitative. Average of 2 tests downstream of ESP. S is estimated at 1/3 of SO4.

SCC Assignments: 30300901

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.390 | 0.500 | 0.530 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 13.300 | 0.000 | 3.000 | 0.000 | 10.579 | 0.000 | 13.300 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-47-3 | 24 | Cr | 2.000 | 0.000 | 0.550 | 0.000 | 1.617 | 0.000 | 2.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-89-6 | 26 | Fe | 11.000 | 0.000 | 16.000 | 0.000 | 12.321 | 0.000 | 11.000 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |

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PM Profile Speciation Report - continued (profile 28302)

Total Particulate Matter - .

| CAS Number | Species Num | Species Sym | 0-2.5 um %Wt | 0-2.5 um unc | 2.5-10 um %Wt | 2.5-10 um unc | 0-10 um %Wt | 0-10 um unc | Total Measured %Wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | 40.000 | 0.000 | 35.000 | 0.000 | 38.679 | 0.000 | 40.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| TOTALS: | | | 75.500 | | 63.750 | | 72.396 | | 75.500 | |

PM Profile Speciation Report

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Profile Name : Steel Production - Basic Oxygen Furnace
Profile Number : 28303
Data Quality : D/E

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Control Device : ESP
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. S estimated as 1/3 of SO4.

SCC Assignments: 30300913

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.650 0.660 0.670

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | 9.900 | 0.000 | 9.900 | 0.000 | 9.900 | 0.000 | 9.900 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 13.330 | 0.000 | 13.330 | 0.000 | 13.330 | 0.000 | 13.330 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-47-3 | 24 | Cr | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-89-6 | 26 | Fe | 11.000 | 0.000 | 11.000 | 0.000 | 11.000 | 0.000 | 11.000 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |

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PM Profile Speciation Report - continued (profile 28303)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %Wt | 0-2.5 um unc | 2.5-10 um %Wt | 2.5-10 um unc | 0-10 um %Wt | 0-10 um unc | Total Measured %Wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| | 201 | OC | 20.000 | 0.000 | 20.000 | 0.000 | 20.000 | 0.000 | 20.000 | 0.000 |
| | 202 | EC | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 203 | SO4 | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| TOTALS: | | | 105.430 | | 105.430 | | 105.430 | | 105.430 | |

PM Profile Speciation Report

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Profile Name : Iron Ore Dust - Sinter
Profile Number : 28304
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30300813, 30400701

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.270 | 0.600 | 0.690 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 2.634 | 0.263 | 1.139 | 0.114 | 1.724 | 0.200 | 2.244 | 0.323 |
| 7440-21-3 | 14 | Si | 6.447 | 0.645 | 3.308 | 0.331 | 4.537 | 0.504 | 5.628 | 0.796 |
| 7723-14-0 | 15 | P | 0.145 | 0.033 | 0.051 | 0.017 | 0.088 | 0.020 | 0.120 | 0.029 |
| 7704-34-9 | 16 | S | 1.050 | 0.105 | 0.000 | 0.101 | 0.411 | 0.095 | 0.776 | 0.127 |
| 7782-50-5 | 17 | Cl | 0.319 | 0.037 | 0.206 | 0.026 | 0.250 | 0.032 | 0.289 | 0.042 |
| 7440-09-7 | 19 | K | 0.300 | 0.032 | 0.186 | 0.022 | 0.231 | 0.029 | 0.270 | 0.039 |
| 7440-70-2 | 20 | Ca | 12.655 | 1.266 | 14.174 | 1.417 | 13.580 | 1.358 | 13.052 | 1.678 |
| 7440-32-6 | 22 | Ti | 0.290 | 0.029 | 0.280 | 0.028 | 0.283 | 0.033 | 0.287 | 0.038 |
| 7440-62-2 | 23 | V | 0.055 | 0.007 | 0.049 | 0.005 | 0.052 | 0.009 | 0.054 | 0.008 |
| 7440-47-3 | 24 | Cr | 0.094 | 0.009 | 0.103 | 0.010 | 0.099 | 0.014 | 0.096 | 0.012 |
| 7439-96-5 | 25 | Mn | 0.652 | 0.065 | 0.536 | 0.054 | 0.581 | 0.064 | 0.622 | 0.083 |
| 7439-89-6 | 26 | Fe | 27.491 | 2.749 | 32.511 | 3.251 | 30.547 | 3.043 | 28.802 | 3.675 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.004 | 0.012 | 0.001 | 0.014 | 0.004 | 0.017 | 0.004 |
| 7440-50-8 | 29 | Cu | 0.053 | 0.007 | 0.015 | 0.002 | 0.030 | 0.006 | 0.043 | 0.007 |
| 7440-66-6 | 30 | Zn | 0.058 | 0.006 | 0.008 | 0.001 | 0.027 | 0.005 | 0.045 | 0.007 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.002 |
| 7440-38-2 | 33 | As | 0.000 | 0.009 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.007 |
| 7782-49-2 | 34 | Se | 0.001 | 0.003 | 0.002 | 0.001 | 0.002 | 0.002 | 0.001 | 0.002 |
| 7726-95-6 | 35 | Br | 0.014 | 0.004 | 0.003 | 0.001 | 0.007 | 0.003 | 0.011 | 0.003 |
| 7440-17-7 | 37 | Rb | 0.005 | 0.004 | 0.008 | 0.001 | 0.007 | 0.003 | 0.006 | 0.003 |
| 7440-24-6 | 38 | Sr | 0.023 | 0.006 | 0.015 | 0.002 | 0.018 | 0.005 | 0.021 | 0.005 |
| 7440-65-5 | 39 | Y | 0.009 | 0.006 | 0.007 | 0.001 | 0.008 | 0.004 | 0.009 | 0.005 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.027 | 0.009 | 0.005 | 0.006 | 0.012 | 0.002 | 0.020 |
| 7439-98-7 | 42 | Mo | 0.039 | 0.021 | 0.021 | 0.004 | 0.028 | 0.010 | 0.034 | 0.016 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.019 | 0.007 | 0.004 | 0.004 | 0.008 | 0.002 | 0.014 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.026 | 0.012 | 0.005 | 0.007 | 0.011 | 0.003 | 0.019 |
| 7440-43-9 | 48 | Cd | 0.082 | 0.040 | 0.039 | 0.009 | 0.055 | 0.018 | 0.070 | 0.031 |
| 7440-74-6 | 49 | In | 0.029 | 0.039 | 0.011 | 0.008 | 0.018 | 0.016 | 0.024 | 0.029 |
| 7440-31-5 | 50 | Sn | 0.030 | 0.049 | 0.000 | 0.010 | 0.012 | 0.020 | 0.022 | 0.036 |
| 7440-36-0 | 51 | Sb | 0.037 | 0.080 | 0.000 | 0.017 | 0.014 | 0.033 | 0.027 | 0.059 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.234 | 0.000 | 0.046 | 0.000 | 0.096 | 0.000 | 0.173 |
| 7439-91-0 | 57 | La | 0.000 | 0.337 | 0.000 | 0.067 | 0.000 | 0.138 | 0.000 | 0.250 |
| 7439-97-6 | 80 | Hg | 0.011 | 0.005 | 0.013 | 0.002 | 0.012 | 0.004 | 0.011 | 0.004 |
| 7439-92-1 | 82 | Pb | 0.060 | 0.014 | 0.051 | 0.005 | 0.054 | 0.010 | 0.058 | 0.012 |
| TOTALS: | | | 52.601 | | 52.776 | | 52.706 | | 52.646 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Steel Desulfurization Baghouse Dust
Profile Number : 28306
Data Quality : D

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Control Device : Not Applicable
Reference(s) : 62,78
Data Source : Sample of baghouse dust from steel plant desulfurization unit.

SCC Assignments: 30300999

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.420 0.650 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.878 | 0.088 | 0.561 | 0.056 | 0.732 | 0.103 | 0.598 | 0.052 |
| 7440-21-3 | 14 | Si | 1.628 | 0.163 | 0.967 | 0.097 | 1.323 | 0.124 | 1.043 | 0.090 |
| 7723-14-0 | 15 | P | 0.226 | 0.053 | 0.081 | 0.025 | 0.159 | 0.028 | 0.098 | 0.023 |
| 7704-34-9 | 16 | S | 2.739 | 0.274 | 0.437 | 0.115 | 1.676 | 0.183 | 0.702 | 0.111 |
| 7782-50-5 | 17 | Cl | 0.458 | 0.046 | 0.265 | 0.029 | 0.369 | 0.038 | 0.287 | 0.027 |
| 7440-09-7 | 19 | K | 2.539 | 0.254 | 1.020 | 0.102 | 1.838 | 0.174 | 1.195 | 0.100 |
| 7440-70-2 | 20 | Ca | 25.445 | 2.545 | 21.313 | 2.131 | 23.538 | 2.147 | 21.788 | 1.947 |
| 7440-32-6 | 22 | Ti | 0.165 | 0.017 | 0.227 | 0.023 | 0.193 | 0.024 | 0.219 | 0.020 |
| 7440-62-2 | 23 | V | 0.041 | 0.005 | 0.047 | 0.005 | 0.043 | 0.008 | 0.046 | 0.004 |
| 7440-47-3 | 24 | Cr | 0.064 | 0.006 | 0.079 | 0.008 | 0.071 | 0.011 | 0.077 | 0.007 |
| 7439-96-5 | 25 | Mn | 0.277 | 0.028 | 0.221 | 0.022 | 0.251 | 0.027 | 0.228 | 0.020 |
| 7439-89-6 | 26 | Fe | 20.537 | 2.054 | 29.277 | 2.928 | 24.571 | 2.387 | 28.271 | 2.633 |
| 7440-02-0 | 28 | Ni | 0.016 | 0.004 | 0.014 | 0.001 | 0.015 | 0.004 | 0.014 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.016 | 0.005 | 0.010 | 0.001 | 0.013 | 0.004 | 0.011 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.091 | 0.009 | 0.034 | 0.003 | 0.065 | 0.009 | 0.041 | 0.003 |
| 7440-55-3 | 31 | Ga | 0.002 | 0.003 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7440-38-2 | 33 | As | 0.000 | 0.008 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 |
| 7782-49-2 | 34 | Se | 0.004 | 0.003 | 0.002 | 0.001 | 0.003 | 0.002 | 0.002 | 0.001 |
| 7726-95-6 | 35 | Br | 0.006 | 0.003 | 0.004 | 0.001 | 0.005 | 0.002 | 0.004 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.019 | 0.005 | 0.015 | 0.002 | 0.017 | 0.005 | 0.016 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.116 | 0.012 | 0.095 | 0.010 | 0.106 | 0.014 | 0.097 | 0.009 |
| 7440-65-5 | 39 | Y | 0.003 | 0.006 | 0.004 | 0.001 | 0.003 | 0.003 | 0.004 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.025 | 0.015 | 0.006 | 0.007 | 0.011 | 0.014 | 0.006 |
| 7439-98-7 | 42 | Mo | 0.013 | 0.019 | 0.018 | 0.003 | 0.015 | 0.008 | 0.017 | 0.004 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.018 | 0.008 | 0.004 | 0.004 | 0.007 | 0.007 | 0.004 |
| 7440-22-4 | 47 | Ag | 0.015 | 0.026 | 0.015 | 0.004 | 0.015 | 0.010 | 0.015 | 0.005 |
| 7440-43-9 | 48 | Cd | 0.033 | 0.034 | 0.025 | 0.007 | 0.030 | 0.014 | 0.026 | 0.007 |
| 7440-74-6 | 49 | In | 0.007 | 0.034 | 0.021 | 0.007 | 0.013 | 0.014 | 0.019 | 0.007 |
| 7440-31-5 | 50 | Sn | 0.008 | 0.043 | 0.009 | 0.008 | 0.008 | 0.016 | 0.009 | 0.009 |
| 7440-36-0 | 51 | Sb | 0.063 | 0.073 | 0.000 | 0.013 | 0.034 | 0.027 | 0.007 | 0.014 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.213 | 0.000 | 0.036 | 0.000 | 0.078 | 0.000 | 0.040 |
| 7439-91-0 | 57 | La | 0.000 | 0.301 | 0.030 | 0.055 | 0.014 | 0.111 | 0.027 | 0.059 |
| 7439-97-6 | 80 | Hg | 0.010 | 0.005 | 0.022 | 0.002 | 0.016 | 0.005 | 0.020 | 0.002 |
| 7439-92-1 | 82 | Pb | 0.059 | 0.013 | 0.069 | 0.007 | 0.063 | 0.011 | 0.068 | 0.006 |
| TOTALS: | | | 55.478 | | 54.906 | | 55.211 | | 54.971 | |

(1) Calculated based on methodology in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Steel Production - Basic Oxygen Furnace
Profile Number : 28307
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30300913

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.650 0.660 0.670

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | 13 | Al | 0.383 | 0.055 | 0.285 | 0.092 | 0.383 | 0.000 | 0.465 | 0.162 |
| 7440-21-3 | 14 | Si | 1.500 | 0.648 | 1.060 | 0.637 | 1.500 | 0.000 | 1.229 | 0.545 |
| 7723-14-0 | 15 | P | 0.223 | 0.045 | 0.111 | 0.051 | 0.223 | 0.000 | 0.149 | 0.056 |
| 7704-34-9 | 16 | S | 1.525 | 1.126 | 0.019 | 0.198 | 1.525 | 0.000 | 1.129 | 1.261 |
| 7782-50-5 | 17 | Cl | 1.819 | 0.825 | 0.398 | 0.394 | 1.819 | 0.000 | 0.654 | 0.504 |
| 7440-09-7 | 19 | K | 2.803 | 0.554 | 1.421 | 0.536 | 2.803 | 0.000 | 3.636 | 2.803 |
| 7440-70-2 | 20 | Ca | 0.981 | 0.612 | 0.944 | 0.851 | 0.981 | 0.000 | 1.545 | 0.758 |
| 7440-32-6 | 22 | Ti | 0.375 | 0.102 | 0.421 | 0.046 | 0.375 | 0.000 | 0.369 | 0.160 |
| 7440-62-2 | 23 | V | 0.093 | 0.014 | 0.097 | 0.014 | 0.093 | 0.000 | 0.085 | 0.033 |
| 7440-47-3 | 24 | Cr | 0.189 | 0.019 | 0.191 | 0.021 | 0.189 | 0.000 | 0.167 | 0.046 |
| 7439-96-5 | 25 | Mn | 2.073 | 1.138 | 1.250 | 0.622 | 2.073 | 0.000 | 1.470 | 0.338 |
| 7439-89-6 | 26 | Fe | 50.131 | 15.178 | 60.592 | 6.059 | 50.131 | 0.000 | 50.199 | 20.979 |
| 7440-02-0 | 28 | Ni | 0.017 | 0.005 | 0.018 | 0.003 | 0.017 | 0.000 | 0.016 | 0.005 |
| 7440-50-8 | 29 | Cu | 0.020 | 0.009 | 0.013 | 0.003 | 0.020 | 0.000 | 0.014 | 0.005 |
| 7440-66-6 | 30 | Zn | 0.057 | 0.024 | 0.034 | 0.023 | 0.057 | 0.000 | 0.047 | 0.033 |
| 7440-55-3 | 31 | Ga | 0.007 | 0.006 | 0.003 | 0.003 | 0.007 | 0.000 | 0.005 | 0.003 |
| 7440-38-2 | 33 | As | 0.002 | 0.007 | 0.000 | 0.008 | 0.002 | 0.000 | 0.003 | 0.007 |
| 7782-49-2 | 34 | Se | 0.003 | 0.001 | 0.003 | 0.001 | 0.003 | 0.000 | 0.002 | 0.002 |
| 7726-95-6 | 35 | Br | 0.016 | 0.009 | 0.006 | 0.002 | 0.016 | 0.000 | 0.009 | 0.003 |
| 7440-17-7 | 37 | Rb | 0.022 | 0.004 | 0.020 | 0.008 | 0.022 | 0.000 | 0.027 | 0.011 |
| 7440-24-6 | 38 | Sr | 0.013 | 0.003 | 0.011 | 0.004 | 0.013 | 0.000 | 0.016 | 0.003 |
| 7440-65-5 | 39 | Y | 0.002 | 0.003 | 0.000 | 0.003 | 0.002 | 0.000 | 0.002 | 0.004 |
| 7440-67-7 | 40 | Zr | 0.017 | 0.012 | 0.007 | 0.010 | 0.017 | 0.000 | 0.005 | 0.014 |
| 7439-98-7 | 42 | Mo | 0.024 | 0.009 | 0.018 | 0.008 | 0.024 | 0.000 | 0.013 | 0.012 |
| 7440-05-3 | 46 | Pd | 0.020 | 0.008 | 0.017 | 0.009 | 0.020 | 0.000 | 0.030 | 0.017 |
| 7440-22-4 | 47 | Ag | 0.040 | 0.012 | 0.023 | 0.010 | 0.040 | 0.000 | 0.035 | 0.015 |
| 7440-43-9 | 48 | Cd | 0.039 | 0.054 | 0.035 | 0.016 | 0.039 | 0.000 | 0.020 | 0.020 |
| 7440-74-6 | 49 | In | 0.004 | 0.017 | 0.017 | 0.016 | 0.004 | 0.000 | 0.012 | 0.021 |
| 7440-31-5 | 50 | Sn | 0.028 | 0.020 | 0.029 | 0.018 | 0.028 | 0.000 | 0.035 | 0.025 |
| 7440-36-0 | 51 | Sb | 0.018 | 0.033 | 0.005 | 0.030 | 0.018 | 0.000 | 0.017 | 0.042 |
| 7440-39-3 | 56 | Ba | 0.059 | 0.090 | 0.019 | 0.078 | 0.059 | 0.000 | 0.083 | 0.112 |
| 7439-91-0 | 57 | La | 0.021 | 0.138 | 0.010 | 0.120 | 0.021 | 0.000 | 0.000 | 0.168 |
| 7439-97-6 | 80 | Hg | 0.014 | 0.003 | 0.011 | 0.004 | 0.014 | 0.000 | 0.012 | 0.007 |
| 7439-92-1 | 82 | Pb | 0.081 | 0.009 | 0.102 | 0.045 | 0.081 | 0.000 | 0.076 | 0.069 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NE | 0.000 | 0.440 | 0.044 |

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PM Profile Speciation Report - continued (profile 28307)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 202 | EC | NR | 0.000 | NR | 0.000 | NE | 0.000 | 0.000 | 0.030 |
| TOTALS: | | | 62.619 | | 67.190 | | 62.619 | | 62.016 | |

(1) No controlled specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Ferromanganese Furnace
Profile Number : 28401
Data Quality : B/C

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Control Device : Baghouse
Reference(s) : 46
Data Source : Sampled with a 2-stage virtual impactor with a Method 5 heated probe. No dilution air. Analysis by INNA, IC, and carbon oxidation. Average of 2 samples from one source.

SCC Assignments: 30300701

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.490 0.670 0.830

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | 0.290 | 0.080 | 0.290 | 0.080 | 0.290 | 0.075 | 0.290 | 0.000 |
| 7440-23-5 | 11 | Na | 3.100 | 0.300 | 3.100 | 0.300 | 3.100 | 0.444 | 3.100 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 4.000 | < | 4.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.640 | 0.130 | 0.640 | 0.130 | 0.640 | 0.132 | 0.640 | 0.000 |
| 7440-21-3 | 14 | Si | 0.990 | 0.300 | 0.990 | 0.300 | 0.990 | 0.276 | 0.990 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.700 | 0.350 | 1.700 | 0.350 | 1.700 | 0.355 | 1.700 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.420 | 0.160 | 0.420 | 0.160 | 0.420 | 0.142 | 0.420 | 0.000 |
| 7440-09-7 | 19 | K | 10.500 | 3.900 | 10.500 | 3.900 | 10.500 | 3.484 | 10.500 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.300 | 0.140 | 1.300 | 0.140 | 1.300 | 0.193 | 1.300 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.046 | 0.007 | 0.046 | 0.007 | 0.046 | 0.008 | 0.046 | 0.000 |
| 7440-62-2 | 23 | V | 0.024 | 0.019 | 0.024 | 0.019 | 0.024 | 0.016 | 0.024 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.042 | 0.003 | 0.042 | 0.003 | 0.042 | 0.006 | 0.042 | 0.000 |
| 7439-96-5 | 25 | Mn | 17.300 | 0.990 | 17.300 | 0.990 | 17.300 | 2.204 | 17.300 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.100 | 1.400 | 2.100 | 1.400 | 2.100 | 1.195 | 2.100 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.005 | < | 0.005 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.036 | 0.004 | 0.036 | 0.004 | 0.036 | 0.005 | 0.036 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.580 | 0.250 | 0.580 | 0.250 | 0.580 | 0.220 | 0.580 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.160 | 0.220 | 0.160 | 0.220 | 0.160 | 0.185 | 0.160 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 28401)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.045 | 0.016 | 0.045 | 0.016 | 0.045 | 0.014 | 0.045 | 0.000 |
| | 201 | OC | 9.000 | 0.090 | 9.000 | 0.090 | 9.000 | 1.065 | 9.000 | 0.000 |
| | 202 | EC | 1.500 | 0.150 | 1.500 | 0.150 | 1.500 | 0.217 | 1.500 | 0.000 |
| | 203 | SO4 | 4.200 | 0.400 | 4.200 | 0.400 | 4.200 | 0.598 | 4.200 | 0.000 |
| | 204 | NO3 | 5.700 | 2.800 | 5.700 | 2.800 | 5.700 | 2.433 | 5.700 | 0.000 |
| TOTALS: | | | 59.673 | | 59.673 | | 59.673 | | 59.673 | |

PM Profile Speciation Report

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Profile Name : Aluminum Processing
Profile Number : 29101
Data Quality : B/D

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Control Device : Baghouse
Reference(s) : 46,54
Data Source : Sampled with a 2-stage virtual impactor with a Method 5 heated probe. No dilution air. Analysis by XRF, INNA, IC, and carbon oxidation. Average of 3 samples from 2 plants. Sampled downstream of baghouse.

SCC Assignments: 30300107

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.400 | 0.520 | 0.580 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | 6.000 | 2.300 | 4.200 | 1.900 | 5.441 | 2.178 | 5.441 | 0.000 |
| 7440-23-5 | 11 | Na | 4.100 | 1.700 | 2.400 | 0.600 | 3.572 | 1.327 | 3.572 | 0.000 |
| 7439-95-4 | 12 | Mg | 2.800 | 1.800 | 2.700 | 0.550 | 2.769 | 1.352 | 2.769 | 0.000 |
| 7429-90-5 | 13 | Al | 27.000 | 8.000 | 31.300 | 4.900 | 28.334 | 7.623 | 28.334 | 0.000 |
| 7440-21-3 | 14 | Si | 0.340 | 0.340 | 0.097 | 0.080 | 0.265 | 0.243 | 0.265 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.400 | 0.200 | < | 0.300 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | 1.330 | 0.840 | 1.200 | 0.150 | 1.290 | 0.614 | 1.290 | 0.000 |
| 7440-09-7 | 19 | K | 0.220 | 0.060 | < | 0.100 | NE | 0.000 | NE | 0.000 |
| 7440-70-2 | 20 | Ca | 0.330 | 0.030 | 0.810 | 0.340 | 0.479 | 0.250 | 0.479 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.040 | 0.030 | 0.076 | 0.041 | 0.051 | 0.036 | 0.051 | 0.000 |
| 7440-62-2 | 23 | V | 0.064 | 0.036 | 0.040 | 0.011 | 0.057 | 0.027 | 0.057 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.010 | 0.016 | 0.018 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.011 | 0.008 | < | 0.020 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | 0.450 | 0.290 | 0.380 | 0.150 | 0.428 | 0.232 | 0.428 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.190 | 0.085 | 0.210 | 0.060 | 0.196 | 0.077 | 0.196 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.044 | 0.007 | 0.140 | 0.040 | 0.074 | 0.031 | 0.074 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.015 | 0.011 | 0.009 | 0.004 | 0.013 | 0.008 | 0.013 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.037 | 0.054 | 0.120 | 0.200 | 0.063 | 0.143 | 0.063 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 29101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.012 | 0.010 | < | 0.100 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 3.900 | 3.900 | < | 2.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | 2.300 | 1.000 | 1.600 | 1.500 | 2.083 | 1.273 | 2.083 | 0.000 |
| | 203 | SO4 | 4.400 | 3.900 | 1.700 | 1.100 | 3.562 | 2.832 | 3.562 | 0.000 |
| | 204 | NO3 | 0.410 | 0.180 | NA | 2.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 55.393 | | 46.998 | | 48.677 | | 48.677 | |

PM Profile Speciation Report

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Profile Name : Aluminum Reduction Potline
Profile Number : 29102
Data Quality : B/D

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Control Device : Uncontrolled
Reference(s) : 49
Data Source : Sampled with a 2-stage virtual impactor. Average from 2 roof vents.

SCC Assignments: 30300107

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.400 0.520 0.580

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | < 0.000 | | < 0.000 | | < 0.000 | | NA | 0.000 |
| 7440-42-8 | 5 | B | 0.190 | 0.020 | 0.190 | 0.000 | 0.190 | 0.030 | NA | 0.000 |
| 7782-41-4 | 9 | F | 13.500 | 5.900 | 13.500 | 0.000 | 13.500 | 4.475 | 15.454 | 3.387 |
| 7440-23-5 | 11 | Na | 14.900 | 1.700 | 14.900 | 0.000 | 14.900 | 2.366 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | 0.055 | 0.006 | 0.055 | 0.000 | 0.055 | 0.009 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 15.200 | 1.700 | 15.200 | 0.000 | 15.200 | 2.402 | 15.926 | 1.657 |
| 7440-21-3 | 14 | Si | 0.340 | 0.040 | 0.340 | 0.000 | 0.340 | 0.054 | 0.398 | 0.047 |
| 7723-14-0 | 15 | P | 0.030 | 0.030 | 0.030 | 0.000 | 0.030 | 0.021 | 0.042 | 0.019 |
| 7704-34-9 | 16 | S | 5.000 | 3.800 | 5.000 | 0.000 | 5.000 | 2.710 | 3.908 | 2.065 |
| 7782-50-5 | 17 | Cl | 0.800 | 0.160 | 0.800 | 0.000 | 0.800 | 0.156 | 0.834 | 0.338 |
| 7440-09-7 | 19 | K | 0.527 | 0.470 | 0.527 | 0.000 | 0.527 | 0.332 | 0.358 | 0.254 |
| 7440-70-2 | 20 | Ca | 0.100 | 0.140 | 0.100 | 0.000 | 0.100 | 0.098 | 0.414 | 0.083 |
| 7440-32-6 | 22 | Ti | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.015 | 0.002 |
| 7440-62-2 | 23 | V | 0.015 | 0.004 | 0.015 | 0.000 | 0.015 | 0.003 | 0.073 | 0.013 |
| 7439-96-5 | 25 | Mn | 0.008 | 0.011 | 0.008 | 0.000 | 0.008 | 0.008 | 0.004 | 0.006 |
| 7439-89-6 | 26 | Fe | 0.114 | 0.095 | 0.114 | 0.000 | 0.114 | 0.067 | 0.812 | 0.281 |
| 7440-48-4 | 27 | Co | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.001 | NA | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.008 | 0.014 | 0.000 | 0.014 | 0.006 | 0.288 | 0.078 |
| 7440-50-8 | 29 | Cu | 0.018 | 0.008 | 0.018 | 0.000 | 0.018 | 0.006 | 0.078 | 0.011 |
| 7440-66-6 | 30 | Zn | 0.007 | 0.001 | 0.007 | 0.000 | 0.007 | 0.001 | 0.006 | 0.003 |
| 7440-55-3 | 31 | Ga | 0.028 | 0.018 | 0.028 | 0.000 | 0.028 | 0.013 | 0.050 | 0.014 |
| 7440-38-2 | 33 | As | 0.022 | 0.014 | 0.022 | 0.000 | 0.022 | 0.010 | 0.018 | 0.008 |
| 7782-49-2 | 34 | Se | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.022 | 0.008 | 0.022 | 0.000 | 0.022 | 0.006 | 0.016 | 0.004 |
| 7440-17-7 | 37 | Rb | 0.005 | 0.001 | 0.005 | 0.000 | 0.005 | 0.001 | 0.004 | 0.000 |
| 7440-24-6 | 38 | Sr | < 0.000 | | < 0.000 | | < 0.000 | | 0.003 | 0.000 |
| 7440-67-7 | 40 | Zr | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7439-98-7 | 42 | Mo | 0.006 | 0.006 | 0.006 | 0.000 | 0.006 | 0.004 | 0.012 | 0.005 |
| 7440-05-3 | 46 | Pd | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-22-4 | 47 | Ag | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-43-9 | 48 | Cd | 0.003 | 0.001 | 0.003 | 0.000 | 0.003 | 0.001 | 0.002 | 0.001 |
| 7440-74-6 | 49 | In | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-31-5 | 50 | Sn | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-36-0 | 51 | Sb | 0.001 | 0.003 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.002 |
| 7440-39-3 | 56 | Ba | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.002 | 0.001 |

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PM Profile Speciation Report - continued (profile 29102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | 0.004 | 0.004 | 0.004 | 0.000 | 0.004 | 0.003 | 0.004 | 0.003 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.072 | 0.026 | 0.072 | 0.000 | 0.072 | 0.020 | 0.053 | 0.014 |
| 7440-69-9 | 83 | Bi | 0.030 | 0.030 | 0.030 | 0.000 | 0.030 | 0.021 | NA | 0.000 |
| | 200 | TC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 201 | OC | 28.200 | 5.000 | 28.200 | 0.000 | 28.200 | 5.198 | 22.180 | 3.032 |
| | 202 | EC | 2.680 | 0.320 | 2.680 | 0.000 | 2.680 | 0.431 | 15.247 | 2.765 |
| | 203 | SO4 | 17.411 | 9.300 | 17.411 | 0.000 | 17.411 | 6.849 | 12.764 | 5.043 |
| | 204 | NO3 | 0.690 | 0.130 | 0.690 | 0.000 | 0.690 | 0.131 | 0.593 | 0.086 |
| TOTALS: | | | 100.000 | | 100.000 | | 100.000 | | 89.561 | |

PM Profile Speciation Report

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Profile Name : Primary Copper Smelter
Profile Number : 29202
Data Quality : D/E

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Control Device : ESP
Reference(s) : 24
Data Source : Analyzed by XRF/SSMS. 1-2 samples downstream of ESP on a reverberatory furnace.

SCC Assignments: 30300503

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.840 0.980 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-42-8 | 5 | B | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-41-4 | 9 | F | 4.950 | 0.000 | 4.950 | 0.000 | 4.950 | 0.840 | 4.950 | 0.000 |
| 7440-23-5 | 11 | Na | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 0.792 | 0.000 | 0.792 | 0.000 | 0.792 | 0.134 | 0.792 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.056 | 0.000 | 0.056 | 0.000 | 0.056 | 0.010 | 0.056 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.660 | 0.000 | 0.660 | 0.000 | 0.660 | 0.112 | 0.660 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.047 | 0.000 | 0.047 | 0.000 | 0.047 | 0.008 | 0.047 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 92.449 | 0.000 | 92.449 | 0.000 | 92.449 | 15.688 | 92.449 | 0.000 |
| 7782-49-2 | 34 | Se | 0.640 | 0.000 | 0.640 | 0.000 | 0.640 | 0.109 | 0.640 | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.002 | 0.010 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | 0.217 | 0.000 | 0.217 | 0.000 | 0.217 | 0.037 | 0.217 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 29202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.049 | 0.000 | 0.049 | 0.000 | 0.049 | 0.008 | 0.049 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 99.884 | | 99.884 | | 99.884 | | 99.884 | |

PM Profile Speciation Report

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Profile Name : Primary Copper Reverberatory Furnace - Slag Tap
Profile Number : 29203
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,79
Data Source : Data taken from Reference 62. For details, consult Reference 79.

SCC Assignments: 30300514, 30499999

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.210 0.230 0.270

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.200 | 0.000 | 1.000 | 0.000 | 0.896 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.200 | 0.000 | 1.000 | 0.000 | 0.896 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 1.000 | 0.000 | 5.000 | 0.000 | 4.478 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.200 | 0.000 | 0.500 | 0.000 | 0.468 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.500 | 0.000 | 2.000 | 0.000 | 1.806 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.500 | 0.000 | 0.800 | 0.000 | 0.806 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.300 | 0.000 | 0.060 | 0.000 | 0.239 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.010 | 0.000 | 0.020 | 0.000 | 0.019 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.012 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.010 | 0.000 | 0.030 | 0.000 | 0.028 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.190 | 0.016 | 0.380 | 0.060 | 0.215 | 0.070 | 0.215 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.030 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.150 | 0.005 | 0.167 | 0.010 | 0.152 | 0.028 | 0.152 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.700 | 0.050 | 0.820 | 0.090 | 1.586 | 0.220 | 1.586 | 0.000 |
| 7440-38-2 | 33 | As | 60.000 | 3.600 | 71.000 | 2.000 | 61.423 | 9.226 | 61.423 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.200 | 0.000 | 0.300 | 0.000 | 0.307 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.200 | 0.000 | 0.900 | 0.000 | 0.809 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.100 | 0.000 | 0.300 | 0.000 | 0.276 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.100 | 0.000 | 0.050 | 0.000 | 0.089 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.100 | 0.000 | 0.200 | 0.000 | 0.193 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.092 | 0.005 | 0.110 | 0.010 | 0.094 | 0.021 | 0.094 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.011 | 0.002 | 0.000 | 0.030 | 0.010 | 0.027 | 0.010 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.630 | 0.220 | 0.530 | 0.460 | 0.617 | 0.449 | 0.617 | 0.000 |
| 7440-74-6 | 49 | In | 0.012 | 0.001 | 0.000 | 0.020 | 0.010 | 0.018 | 0.010 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.130 | 0.021 | 0.210 | 0.020 | 0.140 | 0.037 | 0.140 | 0.000 |
| 7440-36-0 | 51 | Sb | 1.100 | 0.029 | 0.980 | 0.080 | 1.085 | 0.166 | 1.085 | 0.000 |
| 13494-80-9 | 52 | Te | 0.090 | 0.022 | 0.130 | 0.010 | 0.095 | 0.028 | 0.095 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.030 | 0.000 | 0.500 | 0.000 | 0.442 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 6.000 | 0.790 | 8.000 | 0.400 | 6.259 | 1.157 | 6.259 | 0.000 |
| 7440-69-9 | 83 | Bi | 0.370 | 0.100 | NR | 0.000 | 0.322 | 0.088 | 0.322 | 0.000 |
| TOTALS: | | | 70.475 | | 82.327 | | 72.008 | | 72.008 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Primary Copper Reverberatory Furnace - Slag Skim & Pour
Profile Number : 29204
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,80
Data Source : Data taken from Reference 62. For details, consult Reference 80.

SCC Assignments: 30300514

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.210 0.230 0.270

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.081 | 0.030 | 0.733 | 0.002 | 0.649 | 0.002 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.296 | 3.593 | 0.359 | 0.233 | 0.487 | 0.233 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.097 | 0.000 | 0.291 | 0.000 | 0.267 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.050 | 1.351 | 0.000 | 2.596 | 0.047 | 2.519 | 0.047 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.209 | 0.000 | 0.345 | 0.000 | 0.345 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.361 | 0.049 | 0.435 | 0.086 | 0.366 | 0.103 | 0.366 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.338 | 0.123 | 1.151 | 0.008 | 1.048 | 0.008 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.009 | 0.059 | 0.055 | 0.013 | 0.050 | 0.013 | 0.000 |
| 7440-62-2 | 23 | V | 0.003 | 0.003 | 0.175 | 0.021 | 0.014 | 0.028 | 0.014 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.013 | 0.085 | 0.019 | 0.006 | 0.024 | 0.006 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.004 | 0.020 | 0.005 | 0.010 | 0.008 | 0.010 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.663 | 0.066 | 6.401 | 0.640 | 1.035 | 0.765 | 1.035 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.049 | 0.115 | 0.057 | 0.008 | 0.065 | 0.008 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.194 | 0.019 | 6.795 | 0.680 | 0.622 | 0.806 | 0.622 | 0.000 |
| 7440-66-6 | 30 | Zn | 24.455 | 2.446 | 13.279 | 1.375 | 23.730 | 3.662 | 23.730 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.075 | 0.009 | 0.116 | 0.001 | 0.118 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 15.725 | 1.573 | 11.732 | 1.601 | 15.466 | 2.708 | 15.466 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.071 | 0.000 | 0.146 | 0.000 | 0.140 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.855 | 0.000 | 1.461 | 0.000 | 1.450 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.012 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.004 | 0.004 | 0.001 | 0.008 | 0.004 | 0.008 | 0.004 | 0.000 |
| 7440-65-5 | 39 | Y | 0.021 | 0.054 | 0.007 | 0.080 | 0.020 | 0.082 | 0.020 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.001 | 0.016 | 0.000 | 0.082 | 0.001 | 0.073 | 0.001 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.368 | 0.037 | 0.377 | 0.038 | 0.369 | 0.071 | 0.369 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.004 | 0.003 | 0.017 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 1.840 | 0.184 | 1.045 | 0.231 | 1.789 | 0.334 | 1.789 | 0.000 |
| 7440-74-6 | 49 | In | 0.061 | 0.007 | 0.083 | 0.025 | 0.062 | 0.027 | 0.062 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.721 | 0.072 | 0.405 | 0.077 | 0.701 | 0.125 | 0.701 | 0.000 |
| 7440-36-0 | 51 | Sb | 1.648 | 0.165 | 1.086 | 0.215 | 1.612 | 0.307 | 1.612 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.008 | 0.000 | 0.042 | 0.000 | 0.038 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.014 | 0.000 | 0.078 | 0.000 | 0.070 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.077 | 0.000 | 0.145 | 0.000 | 0.141 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 21.951 | 2.195 | 13.763 | 1.376 | 21.420 | 3.374 | 21.420 | 0.000 |
| TOTALS: | | | 68.086 | | 59.621 | | 67.539 | | 67.539 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Primary Copper Converter - Secondary Hood
Profile Number : 29205
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,79
Data Source : Data taken from Reference 62. For details, consult Reference 79.

SCC Assignments: 30300515

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.120 0.320 0.590

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.200 | 0.000 | 3.000 | 0.000 | 1.354 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.200 | 0.000 | 10.000 | 0.000 | 4.510 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 2.000 | 0.000 | 30.000 | 0.000 | 13.536 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.200 | 0.000 | 5.000 | 0.000 | 2.255 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.400 | 0.000 | 5.000 | 0.000 | 2.256 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.100 | 0.000 | 2.000 | 0.000 | 0.902 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.020 | 0.000 | 0.200 | 0.000 | 0.090 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.020 | 0.000 | 0.050 | 0.000 | 0.023 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.020 | 0.000 | 0.050 | 0.000 | 0.023 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.020 | NR | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.260 | 0.190 | 7.100 | 1.200 | 1.113 | 0.563 | 1.113 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.030 | NR | 0.000 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 1.100 | 1.100 | 9.400 | 1.500 | 2.135 | 0.740 | 2.135 | 0.000 |
| 7440-66-6 | 30 | Zn | 2.600 | 2.600 | 0.000 | 2.000 | 2.276 | 1.048 | 2.276 | 0.000 |
| 7440-38-2 | 33 | As | 26.000 | 11.000 | 0.000 | 22.000 | 22.758 | 10.198 | 22.758 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.200 | 0.000 | 0.400 | 0.000 | 0.185 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.200 | 0.000 | 1.000 | 0.000 | 0.453 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.060 | 0.000 | 0.300 | 0.000 | 0.136 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.050 | 0.000 | 0.200 | 0.000 | 0.091 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.090 | 0.000 | 2.000 | 0.000 | 0.902 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.100 | 0.000 | 0.200 | 0.000 | 0.092 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.260 | 0.360 | 0.160 | 0.040 | 0.248 | 0.076 | 0.248 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.600 | 0.870 | 0.260 | 0.050 | 0.558 | 0.179 | 0.558 | 0.000 |
| 7440-74-6 | 49 | In | 0.140 | 0.120 | 0.000 | 0.050 | 0.123 | 0.033 | 0.123 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.530 | 0.320 | 0.420 | 0.080 | 0.516 | 0.077 | 0.516 | 0.000 |
| 7440-36-0 | 51 | Sb | 3.100 | 2.200 | 1.730 | 0.300 | 2.929 | 0.478 | 2.929 | 0.000 |
| 13494-80-9 | 52 | Te | 0.072 | 0.038 | 0.000 | 0.020 | 0.063 | 0.012 | 0.063 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.200 | NR | 0.000 | 0.000 | 0.041 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 28.000 | 13.000 | 0.000 | 20.000 | 24.509 | 9.434 | 24.509 | 0.000 |
| 7440-69-9 | 83 | Bi | 1.000 | 0.920 | NR | 0.000 | 0.875 | 0.189 | 0.875 | 0.000 |
| TOTALS: | | | 63.662 | | 19.070 | | 58.103 | | 58.103 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Primary Copper Converter - Secondary Hood
Profile Number : 29206
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,80
Data Source : Data taken from Reference 62. For details, consult Reference 80.

SCC Assignments: 30300515

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.120 | 0.320 | 0.590 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.039 | 0.000 | 0.503 | 0.000 | 0.227 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.231 | 0.000 | 1.999 | 0.000 | 0.903 | 0.000 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.087 | 0.000 | 0.496 | 0.000 | 0.224 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 1.393 | 0.000 | 4.031 | 0.000 | 1.840 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.215 | 0.000 | 0.678 | 0.000 | 0.309 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.133 | 0.017 | 0.310 | 0.043 | 0.145 | 0.023 | 0.145 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.145 | 0.000 | 0.755 | 0.000 | 0.342 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.003 | 0.000 | 0.020 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.001 | 0.000 | 0.008 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.005 | 0.000 | 0.018 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.004 | 0.000 | 0.017 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.039 | 0.004 | 0.283 | 0.028 | 0.055 | 0.016 | 0.055 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.002 | 0.009 | 0.005 | 0.007 | 0.003 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.499 | 0.050 | 1.323 | 0.132 | 0.552 | 0.070 | 0.552 | 0.000 |
| 7440-66-6 | 30 | Zn | 7.250 | 0.725 | 8.546 | 0.855 | 7.333 | 0.496 | 7.333 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.024 | 0.035 | 0.000 | 0.091 | 0.023 | 0.041 | 0.023 | 0.000 |
| 7440-38-2 | 33 | As | 7.229 | 0.831 | 10.534 | 2.608 | 7.440 | 1.226 | 7.440 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.059 | 0.000 | 0.196 | 0.000 | 0.089 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.359 | 0.000 | 1.175 | 0.000 | 0.535 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.006 | 0.000 | 0.020 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.004 | 0.001 | 0.013 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.037 | 0.046 | 0.064 | 0.142 | 0.039 | 0.065 | 0.039 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.014 | 0.014 | 0.015 | 0.056 | 0.014 | 0.026 | 0.014 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.050 | 0.005 | 0.095 | 0.010 | 0.053 | 0.007 | 0.053 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.050 | 0.005 | 0.033 | 0.016 | 0.049 | 0.008 | 0.049 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.631 | 0.063 | 0.825 | 0.146 | 0.643 | 0.073 | 0.643 | 0.000 |
| 7440-74-6 | 49 | In | 0.036 | 0.004 | 0.048 | 0.018 | 0.037 | 0.009 | 0.037 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.305 | 0.031 | 0.445 | 0.068 | 0.314 | 0.035 | 0.314 | 0.000 |
| 7440-36-0 | 51 | Sb | 1.107 | 0.111 | 1.577 | 0.254 | 1.137 | 0.127 | 1.137 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.004 | 0.000 | 0.030 | 0.000 | 0.013 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.008 | 0.000 | 0.055 | 0.000 | 0.025 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.025 | 0.000 | 0.094 | 0.000 | 0.043 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 23.558 | 2.356 | 28.996 | 2.900 | 23.904 | 1.659 | 23.904 | 0.000 |
| TOTALS: | | | 40.969 | | 53.104 | | 41.745 | | 41.745 | |

(1) No controlled speci- ed: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Primary Copper Flash Furnace - Matte & Slag Tap
Profile Number : 29207
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,80
Data Source : Data taken from Reference 62. For details, consult Reference 80.

SCC Assignments: 30300512

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.840 0.890 0.920

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.228 | 0.000 | 0.691 | 0.000 | 0.692 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.204 | 2.188 | 0.361 | 0.137 | 0.459 | 0.137 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.088 | 0.000 | 0.167 | 0.000 | 0.178 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 1.195 | 0.467 | 3.455 | 0.029 | 3.478 | 0.029 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.185 | 0.000 | 0.536 | 0.000 | 0.539 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.331 | 0.033 | 0.583 | 0.119 | 0.347 | 0.151 | 0.347 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.508 | 0.000 | 2.104 | 0.000 | 2.063 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.020 | 0.000 | 0.222 | 0.000 | 0.213 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.007 | 0.000 | 0.046 | 0.000 | 0.044 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.018 | 0.002 | 0.123 | 0.012 | 0.025 | 0.035 | 0.025 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.013 | 0.002 | 0.042 | 0.009 | 0.015 | 0.020 | 0.015 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.688 | 0.269 | 7.085 | 0.709 | 2.962 | 1.054 | 2.962 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.004 | 0.023 | 0.015 | 0.002 | 0.020 | 0.002 | 0.000 |
| 7440-50-8 | 29 | Cu | 3.354 | 0.335 | 8.420 | 0.842 | 3.670 | 1.259 | 3.670 | 0.000 |
| 7440-66-6 | 30 | Zn | 9.767 | 0.977 | 7.812 | 1.403 | 9.645 | 2.180 | 9.645 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.087 | 0.000 | 0.265 | 0.000 | 0.265 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 32.785 | 3.279 | 31.823 | 5.174 | 32.725 | 7.746 | 32.725 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.098 | 0.000 | 0.343 | 0.000 | 0.339 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 2.532 | 0.253 | 0.000 | 5.961 | 2.374 | 5.710 | 2.374 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.032 | 0.000 | 0.090 | 0.000 | 0.090 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.004 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.107 | 0.000 | 0.274 | 0.000 | 0.279 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.069 | 0.000 | 0.221 | 0.000 | 0.220 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.161 | 0.016 | 0.154 | 0.031 | 0.160 | 0.054 | 0.160 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.001 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.024 | 0.004 | 0.086 | 0.029 | 0.028 | 0.039 | 0.028 | 0.000 |
| 7440-43-9 | 48 | Cd | 1.679 | 0.169 | 1.257 | 0.465 | 1.652 | 0.539 | 1.652 | 0.000 |
| 7440-74-6 | 49 | In | 0.031 | 0.006 | 0.000 | 0.037 | 0.029 | 0.036 | 0.029 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.423 | 0.043 | 0.427 | 0.136 | 0.424 | 0.162 | 0.424 | 0.000 |
| 7440-36-0 | 51 | Sb | 1.991 | 0.229 | 2.014 | 0.658 | 1.992 | 0.745 | 1.992 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.008 | 0.000 | 0.067 | 0.000 | 0.064 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.014 | 0.000 | 0.124 | 0.000 | 0.119 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.196 | 0.000 | 0.592 | 0.000 | 0.594 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 12.464 | 1.246 | 11.596 | 1.791 | 12.410 | 2.833 | 12.410 | 0.000 |
| TOTALS: | | | 68.261 | | 74.100 | | 68.626 | | 68.626 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Primary Copper - Process Stack
Profile Number : 29208
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,79
Data Source : Data taken from Reference 62. For details, consult Reference 79.

SCC Assignments: 30300524

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.970 1.000 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.200 | 0.000 | 2.000 | 0.000 | 1.979 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.200 | 0.000 | 1.000 | 0.000 | 1.004 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.765 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.300 | 0.000 | 0.500 | 0.000 | 0.572 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.500 | 0.000 | 0.500 | 0.000 | 0.691 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.800 | 0.000 | 2.000 | 0.000 | 2.117 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.100 | 0.000 | 0.200 | 0.000 | 0.220 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.016 | 0.001 | 0.015 | 0.003 | 0.016 | 0.013 | 0.016 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.014 | 0.001 | 0.017 | 0.005 | 0.015 | 0.014 | 0.015 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.009 | 0.004 | 0.015 | 0.003 | 0.010 | 0.013 | 0.010 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.290 | 0.020 | 0.400 | 0.060 | 0.313 | 0.104 | 0.313 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.040 | 0.008 | 0.070 | 0.020 | 0.046 | 0.034 | 0.046 | 0.000 |
| 7440-50-8 | 29 | Cu | 3.000 | 0.260 | 2.400 | 0.200 | 2.876 | 0.590 | 2.876 | 0.000 |
| 7440-66-6 | 30 | Zn | 4.200 | 1.400 | 4.000 | 1.400 | 4.159 | 2.065 | 4.159 | 0.000 |
| 7440-38-2 | 33 | As | 24.000 | 2.600 | 38.000 | 9.000 | 26.893 | 10.474 | 26.893 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.100 | 0.000 | 0.200 | 0.000 | 0.220 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.300 | 0.000 | 1.000 | 0.000 | 1.027 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.138 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.138 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.138 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.100 | 0.012 | 0.134 | 0.035 | 0.107 | 0.054 | 0.107 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.120 | 0.015 | 0.120 | 0.050 | 0.120 | 0.065 | 0.120 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.510 | 0.150 | 0.460 | 0.080 | 0.500 | 0.196 | 0.500 | 0.000 |
| 7440-74-6 | 49 | In | 0.023 | 0.005 | 0.000 | 0.020 | 0.018 | 0.021 | 0.018 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.400 | 0.063 | 0.390 | 0.070 | 0.398 | 0.129 | 0.398 | 0.000 |
| 7440-36-0 | 51 | Sb | 6.000 | 0.580 | 5.600 | 0.400 | 5.917 | 1.223 | 5.917 | 0.000 |
| 13494-80-9 | 52 | Te | 0.170 | 0.025 | 0.180 | 0.030 | 0.172 | 0.063 | 0.172 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.200 | 0.000 | 0.500 | 0.000 | 0.529 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 18.000 | 0.930 | 16.000 | 2.000 | 17.587 | 3.654 | 17.587 | 0.000 |
| 7440-69-9 | 83 | Bi | 0.400 | 0.082 | NR | 0.000 | 0.317 | 0.097 | 0.317 | 0.000 |
| TOTALS: | | | 57.292 | | 67.801 | | 59.464 | | 59.464 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Primary Copper Roaster
Profile Number : 29209
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,79
Data Source : Data taken from Reference 62. For details, consult Reference 79.

SCC Assignments: 30300502, 30300509

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.970 1.000 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 6.300 | 0.600 | 2.400 | 0.200 | 2.621 | 1.096 | 2.621 | 0.000 |
| 7440-21-3 | 14 | Si | 13.500 | 1.200 | 4.800 | 0.500 | 5.293 | 2.300 | 5.293 | 0.000 |
| 7704-34-9 | 16 | S | 9.800 | 0.900 | 8.100 | 0.300 | 8.196 | 1.830 | 8.196 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.138 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 1.010 | 0.100 | 0.420 | 0.080 | 0.453 | 0.201 | 0.453 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.000 | 0.170 | 1.620 | 0.110 | 1.642 | 0.393 | 1.642 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.260 | 0.050 | 0.160 | 0.040 | 0.166 | 0.083 | 0.166 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.050 | 0.000 | 0.040 | 0.000 | 0.062 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.066 | 0.015 | 0.040 | 0.020 | 0.042 | 0.033 | 0.042 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.137 | 0.015 | 0.081 | 0.018 | 0.084 | 0.041 | 0.084 | 0.000 |
| 7439-89-6 | 26 | Fe | 18.600 | 1.500 | 13.000 | 0.600 | 13.317 | 3.269 | 13.317 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.110 | 0.050 | 0.000 | 0.080 | 0.006 | 0.094 | 0.006 | 0.000 |
| 7440-50-8 | 29 | Cu | 18.600 | 1.500 | 18.400 | 1.900 | 18.411 | 3.935 | 18.411 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.090 | 0.120 | 1.020 | 0.080 | 1.024 | 0.248 | 1.024 | 0.000 |
| 7440-38-2 | 33 | As | 4.200 | 0.400 | 3.700 | 0.600 | 3.728 | 0.998 | 3.728 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.050 | 0.000 | 0.030 | 0.000 | 0.057 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.300 | 0.000 | 0.200 | 0.000 | 0.351 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.040 | 0.000 | 0.050 | 0.000 | 0.063 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.020 | 0.000 | 0.040 | 0.003 | 0.044 | 0.003 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.030 | 0.000 | 0.040 | 0.000 | 0.049 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.160 | 0.050 | 0.120 | 0.040 | 0.122 | 0.075 | 0.122 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.200 | 0.042 | 0.010 | 0.040 | 0.195 | 0.040 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.200 | 0.000 | 0.020 | 0.000 | 0.195 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.200 | 0.000 | 0.020 | 0.000 | 0.195 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.200 | 0.000 | 0.020 | 0.000 | 0.195 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.340 | 0.160 | 0.076 | 0.021 | 0.091 | 0.166 | 0.091 | 0.000 |
| 13494-80-9 | 52 | Te | 0.000 | 0.200 | 0.000 | 0.100 | 0.000 | 0.218 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.100 | 0.000 | 0.040 | 0.000 | 0.105 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 2.130 | 0.180 | 1.750 | 0.100 | 1.772 | 0.413 | 1.772 | 0.000 |
| 7440-69-9 | 83 | Bi | 0.300 | 0.100 | 0.060 | 0.030 | 0.074 | 0.112 | 0.074 | 0.000 |
| TOTALS: | | | 78.653 | | 55.789 | | 57.085 | | 57.085 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

Profile Name : Primary Copper Reverberatory Furnace Fugitives Composite
Profile Number : 29210
Data Quality : D

Control Device : Uncontrolled
Reference(s) :
Data Source : Profile represents a composite of Profiles 29203 and 29204, fugitive emissions from reverb furnace slag tapping and slag skimming.

SCC Assignments: 30300514

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.210 | 0.230 | 0.270 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 0.000 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 3.593 | 0.000 | 0.233 | 0.000 | 0.233 | 0.000 |
| 7704-34-9 | 16 | S | 0.050 | 0.000 | 0.000 | 0.000 | 0.047 | 0.000 | 0.047 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.361 | 0.000 | 0.435 | 0.000 | 0.366 | 0.000 | 0.366 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.000 | 0.123 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.000 | 0.059 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-62-2 | 23 | V | 0.003 | 0.000 | 0.175 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.085 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.000 | 0.020 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.427 | 0.000 | 3.391 | 0.000 | 0.625 | 0.000 | 0.625 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.115 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.172 | 0.000 | 3.481 | 0.000 | 0.387 | 0.000 | 0.387 | 0.000 |
| 7440-66-6 | 30 | Zn | 13.078 | 0.000 | 7.050 | 0.000 | 12.658 | 0.000 | 12.658 | 0.000 |
| 7440-38-2 | 33 | As | 37.863 | 0.000 | 41.366 | 0.000 | 38.445 | 0.000 | 38.445 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.004 | 0.000 | 0.001 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-65-5 | 39 | Y | 0.021 | 0.000 | 0.007 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.230 | 0.000 | 0.244 | 0.000 | 0.232 | 0.000 | 0.232 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.006 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-43-9 | 48 | Cd | 1.235 | 0.000 | 0.788 | 0.000 | 1.203 | 0.000 | 1.203 | 0.000 |
| 7440-74-6 | 49 | In | 0.037 | 0.000 | 0.042 | 0.000 | 0.036 | 0.000 | 0.036 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.426 | 0.000 | 0.308 | 0.000 | 0.421 | 0.000 | 0.421 | 0.000 |
| 7440-36-0 | 51 | Sb | 1.374 | 0.000 | 1.033 | 0.000 | 1.349 | 0.000 | 1.349 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 13.976 | 0.000 | 10.882 | 0.000 | 13.840 | 0.000 | 13.840 | 0.000 |
| TOTALS: | | | 69.283 | | 73.203 | | 69.932 | | 69.932 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Primary Copper Converter - Secondary Hood Composite
Profile Number : 29211
Data Quality : D

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Control Device : Uncontrolled
Reference(s) :
Data Source : Profile represents a composite of Profiles 29205 and 29206.

SCC Assignments: 30300515

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.120 0.320 0.590

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.067 | 0.000 | 0.155 | 0.000 | 0.073 | 0.000 | 0.073 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.150 | 0.000 | 3.692 | 0.000 | 0.584 | 0.000 | 0.584 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.000 | 0.005 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.800 | 0.000 | 5.362 | 0.000 | 1.344 | 0.000 | 1.344 | 0.000 |
| 7440-66-6 | 30 | Zn | 4.925 | 0.000 | 4.273 | 0.000 | 4.805 | 0.000 | 4.805 | 0.000 |
| 7440-38-2 | 33 | As | 16.615 | 0.000 | 5.267 | 0.000 | 15.099 | 0.000 | 15.099 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.019 | 0.000 | 0.032 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.030 | 0.000 | 0.048 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.155 | 0.000 | 0.097 | 0.000 | 0.149 | 0.000 | 0.149 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.616 | 0.000 | 0.543 | 0.000 | 0.601 | 0.000 | 0.601 | 0.000 |
| 7440-74-6 | 49 | In | 0.088 | 0.000 | 0.024 | 0.000 | 0.080 | 0.000 | 0.080 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.418 | 0.000 | 0.433 | 0.000 | 0.415 | 0.000 | 0.415 | 0.000 |
| 7440-36-0 | 51 | Sb | 2.104 | 0.000 | 1.654 | 0.000 | 2.033 | 0.000 | 2.033 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 25.779 | 0.000 | 14.498 | 0.000 | 24.207 | 0.000 | 24.207 | 0.000 |
| TOTALS: | | | 51.770 | | 36.083 | | 49.441 | | 49.441 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Slag Pouring
Profile Number : 29301
Data Quality : C/E

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Sample is composite of short episodic emissions from many pours. Collected with modified high volume sampler.

SCC Assignments: 30301021

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.830 | 0.910 | 0.950 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.420 | 0.000 | 0.420 | 0.000 | 0.420 | 0.073 | 0.420 | 0.100 |
| 7440-21-3 | 14 | Si | 1.900 | 0.000 | 1.900 | 0.000 | 1.900 | 0.332 | 1.900 | 0.500 |
| 7723-14-0 | 15 | P | 0.266 | 0.000 | 0.266 | 0.000 | 0.266 | 0.046 | 0.266 | 0.027 |
| 7704-34-9 | 16 | S | 5.523 | 0.000 | 5.523 | 0.000 | 5.523 | 0.965 | 5.523 | 0.552 |
| 7782-50-5 | 17 | Cl | 0.090 | 0.000 | 0.090 | 0.000 | 0.090 | 0.016 | 0.090 | 0.020 |
| 7440-09-7 | 19 | K | 4.174 | 0.000 | 4.174 | 0.000 | 4.174 | 0.729 | 4.174 | 0.417 |
| 7440-70-2 | 20 | Ca | 2.600 | 0.000 | 2.600 | 0.000 | 2.600 | 0.454 | 2.600 | 0.400 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.104 | 0.000 | 0.104 | 0.000 | 0.104 | 0.018 | 0.104 | 0.010 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.003 | 0.020 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.017 | 0.100 | 0.030 |
| 7439-89-6 | 26 | Fe | 3.735 | 0.000 | 3.735 | 0.000 | 3.735 | 0.653 | 3.735 | 0.373 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.012 | 0.066 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.375 | 0.000 | 0.375 | 0.000 | 0.375 | 0.066 | 0.375 | 0.037 |
| 7440-66-6 | 30 | Zn | 32.477 | 0.000 | 32.477 | 0.000 | 32.477 | 5.675 | 32.477 | 3.248 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 5.196 | 0.000 | 5.196 | 0.000 | 5.196 | 0.908 | 5.196 | 0.520 |
| 7782-49-2 | 34 | Se | 0.208 | 0.000 | 0.208 | 0.000 | 0.208 | 0.036 | 0.208 | 0.121 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.052 | 0.000 | 0.052 | 0.000 | 0.052 | 0.009 | 0.052 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.023 | 0.130 | 0.019 |
| 7440-43-9 | 48 | Cd | 0.159 | 0.000 | 0.159 | 0.000 | 0.159 | 0.028 | 0.159 | 0.024 |
| 7440-74-6 | 49 | In | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.002 | 0.011 | 0.000 |
| 7440-31-5 | 50 | Sn | 3.849 | 0.000 | 3.849 | 0.000 | 3.849 | 0.673 | 3.849 | 0.385 |
| 7440-36-0 | 51 | Sb | 1.626 | 0.000 | 1.626 | 0.000 | 1.626 | 0.284 | 1.626 | 0.163 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 29301)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.102 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.016 | 0.092 | 0.011 |
| 7439-92-1 | 82 | Pb | 3.156 | 0.000 | 3.156 | 0.000 | 3.156 | 0.551 | 3.156 | 0.316 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 66.329 | | 66.329 | | 66.329 | | 66.329 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Blast Furnace
Profile Number : 29302
Data Quality : B/C

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Control Device : Baghouse
Reference(s) : 43
Data Source : Sampled with a dilution sampler.

SCC Assignments: 30301002

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.570 | 0.720 | 0.860 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.100 | 0.100 | 0.100 | 0.100 | 0.100 | 0.095 | 0.100 | 0.071 |
| 7440-21-3 | 14 | Si | 0.200 | 0.200 | 0.200 | 0.200 | 0.200 | 0.189 | 0.200 | 0.141 |
| 7723-14-0 | 15 | P | 0.764 | 0.076 | 0.730 | 0.073 | 0.753 | 0.121 | 0.758 | 0.076 |
| 7704-34-9 | 16 | S | 13.269 | 1.446 | 13.189 | 1.607 | 13.242 | 2.265 | 13.255 | 1.325 |
| 7782-50-5 | 17 | Cl | 5.000 | 0.800 | 4.700 | 0.500 | 4.899 | 0.897 | 4.949 | 0.495 |
| 7440-09-7 | 19 | K | 2.075 | 0.207 | 2.179 | 0.218 | 2.110 | 0.345 | 2.093 | 0.209 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.055 | 0.540 | 0.070 | 0.547 | 0.093 | 0.548 | 0.055 |
| 7440-32-6 | 22 | Ti | 0.027 | 0.000 | 0.038 | 0.000 | 0.031 | 0.000 | 0.029 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.000 | 0.031 | 0.000 | 0.024 | 0.000 | 0.022 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.131 | 0.013 | 0.163 | 0.021 | 0.142 | 0.026 | 0.136 | 0.014 |
| 7440-02-0 | 28 | Ni | 0.060 | 0.000 | 0.055 | 0.000 | 0.058 | 0.000 | 0.059 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.354 | 0.035 | 0.355 | 0.035 | 0.354 | 0.057 | 0.354 | 0.035 |
| 7440-66-6 | 30 | Zn | 15.217 | 1.522 | 14.917 | 1.492 | 15.116 | 2.446 | 15.166 | 1.517 |
| 7440-38-2 | 33 | As | 3.047 | 0.305 | 3.347 | 0.335 | 3.148 | 0.520 | 3.098 | 0.310 |
| 7782-49-2 | 34 | Se | 0.037 | 0.000 | 0.018 | 0.000 | 0.031 | 0.000 | 0.034 | 0.000 |
| 7726-95-6 | 35 | Br | 0.130 | 0.030 | 0.120 | 0.020 | 0.127 | 0.029 | 0.128 | 0.018 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.011 | NE | 0.000 | < | 0.000 |
| 7440-05-3 | 46 | Pd | 0.201 | 0.020 | 0.025 | 0.024 | 0.142 | 0.028 | 0.171 | 0.017 |
| 7440-22-4 | 47 | Ag | 0.166 | 0.017 | 0.146 | 0.040 | 0.159 | 0.035 | 0.163 | 0.021 |
| 7440-43-9 | 48 | Cd | 23.503 | 2.350 | 21.308 | 2.131 | 22.763 | 3.642 | 23.130 | 2.313 |
| 7440-74-6 | 49 | In | 0.015 | 0.000 | 0.050 | 0.000 | 0.027 | 0.000 | 0.021 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.501 | 0.050 | 0.482 | 0.081 | 0.495 | 0.091 | 0.498 | 0.050 |
| 7440-36-0 | 51 | Sb | 0.137 | 0.065 | 0.059 | 0.151 | 0.111 | 0.110 | 0.124 | 0.082 |
| 7440-39-3 | 56 | Ba | 0.178 | 0.066 | 0.216 | 0.308 | 0.191 | 0.210 | 0.184 | 0.157 |
| 7439-97-6 | 80 | Hg | 0.022 | 0.013 | 0.025 | 0.020 | 0.023 | 0.016 | 0.022 | 0.012 |
| 7439-92-1 | 82 | Pb | 30.867 | 3.087 | 29.683 | 2.968 | 30.468 | 4.916 | 30.666 | 3.067 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 29302)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 96.571 | | 92.676 | | 95.261 | | 95.908 | |

PM Profile Speciation Report

---

Profile Name : Primary Lead Smelting - Zinc Fuming
Profile Number : 29303
Data Quality : B/C

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Control Device : Baghouse
Reference(s) : 43
Data Source : Sampled with a dilution sampler.

SCC Assignments: 30301008

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.570 0.720 0.860

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.500 | 0.100 | 0.300 | 0.100 | 0.433 | 0.109 | 0.450 | 0.071 |
| 7440-21-3 | 14 | Si | 1.500 | 0.300 | 0.700 | 0.200 | 1.230 | 0.285 | 1.300 | 0.180 |
| 7723-14-0 | 15 | P | 0.164 | 0.016 | 0.182 | 0.018 | 0.170 | 0.028 | 0.168 | 0.017 |
| 7704-34-9 | 16 | S | 2.567 | 0.334 | 3.544 | 0.449 | 2.896 | 0.553 | 2.811 | 0.281 |
| 7782-50-5 | 17 | Cl | 1.700 | 0.400 | 0.300 | 0.100 | 1.228 | 0.318 | 1.350 | 0.206 |
| 7440-09-7 | 19 | K | 0.550 | 0.055 | 0.613 | 0.061 | 0.571 | 0.094 | 0.566 | 0.057 |
| 7440-70-2 | 20 | Ca | 0.200 | 0.100 | 0.300 | 0.100 | 0.234 | 0.100 | 0.225 | 0.071 |
| 7440-32-6 | 22 | Ti | 0.026 | 0.000 | 0.033 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.011 | 0.000 | 0.014 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.164 | 0.016 | 0.386 | 0.039 | 0.239 | 0.048 | 0.219 | 0.022 |
| 7440-02-0 | 28 | Ni | 0.098 | 0.000 | 0.104 | 0.010 | 0.100 | 0.000 | 0.099 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.207 | 0.021 | 0.273 | 0.027 | 0.229 | 0.039 | 0.223 | 0.022 |
| 7440-66-6 | 30 | Zn | 53.517 | 5.352 | 59.174 | 5.917 | 55.425 | 9.159 | 54.931 | 5.493 |
| 7440-38-2 | 33 | As | 1.424 | 0.142 | 1.525 | 0.152 | 1.458 | 0.239 | 1.449 | 0.145 |
| 7782-49-2 | 34 | Se | 0.011 | 0.000 | 0.012 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-05-3 | 46 | Pd | 0.128 | 0.013 | 0.063 | 0.011 | 0.106 | 0.017 | 0.112 | 0.011 |
| 7440-22-4 | 47 | Ag | 0.048 | 0.000 | 0.039 | 0.012 | 0.045 | 0.000 | 0.046 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.084 | 0.000 | 0.062 | 0.019 | 0.077 | 0.000 | 0.078 | 0.011 |
| 7440-74-6 | 49 | In | 0.056 | 0.000 | 0.030 | 0.000 | 0.047 | 0.000 | 0.049 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.703 | 0.070 | 0.706 | 0.071 | 0.704 | 0.114 | 0.704 | 0.070 |
| 7440-36-0 | 51 | Sb | 0.545 | 0.054 | 0.587 | 0.061 | 0.559 | 0.092 | 0.555 | 0.055 |
| 7440-39-3 | 56 | Ba | < | 0.039 | < | 0.100 | NE | 0.000 | < | 0.054 |
| 7439-97-6 | 80 | Hg | 0.064 | 0.000 | 0.061 | 0.000 | 0.063 | 0.000 | 0.063 | 0.000 |
| 7439-92-1 | 82 | Pb | 7.459 | 0.746 | 9.645 | 0.964 | 8.196 | 1.400 | 8.005 | 0.800 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 29303)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 71.726 | | 78.653 | | 74.061 | | 73.454 | |

PM Profile Speciation Report

---

Profile Name : Primary Lead Smelting - Sintering
Profile Number : 29304
Data Quality : B/C

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Control Device : Baghouse
Reference(s) : 43
Data Source : Sampled with a dilution sampler.

SCC Assignments: 30301001

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.820 0.890 0.920

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.900 | 0.090 | 1.000 | 0.300 | 0.911 | 0.327 | 0.922 | 0.180 |
| 7440-21-3 | 14 | Si | 3.000 | 0.300 | 3.500 | 1.000 | 3.054 | 1.097 | 3.110 | 0.707 |
| 7723-14-0 | 15 | P | 0.798 | 0.080 | 0.767 | 0.120 | 0.795 | 0.190 | 0.791 | 0.079 |
| 7704-34-9 | 16 | S | 15.829 | 1.583 | 15.097 | 2.390 | 15.749 | 3.759 | 15.667 | 1.567 |
| 7782-50-5 | 17 | Cl | 1.000 | 0.100 | 0.900 | 0.200 | 0.989 | 0.262 | 0.978 | 0.269 |
| 7440-09-7 | 19 | K | 0.889 | 0.089 | 0.741 | 0.112 | 0.873 | 0.194 | 0.856 | 0.086 |
| 7440-70-2 | 20 | Ca | 2.600 | 0.260 | 5.000 | 1.000 | 2.861 | 1.163 | 3.128 | 0.522 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.169 | 0.017 | 0.203 | 0.031 | 0.173 | 0.046 | 0.176 | 0.018 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.046 | 0.005 | 0.065 | 0.013 | 0.048 | 0.016 | 0.050 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.380 | 0.038 | 0.500 | 0.100 | 0.393 | 0.124 | 0.406 | 0.064 |
| 7439-89-6 | 26 | Fe | 5.764 | 0.576 | 7.761 | 1.085 | 5.981 | 1.638 | 6.203 | 0.620 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.082 | 0.008 | 0.093 | 0.017 | 0.083 | 0.023 | 0.084 | 0.000 |
| 7440-50-8 | 29 | Cu | 1.498 | 0.150 | 2.060 | 0.289 | 1.559 | 0.433 | 1.622 | 0.162 |
| 7440-66-6 | 30 | Zn | 4.174 | 0.417 | 5.678 | 0.793 | 4.337 | 1.194 | 4.505 | 0.450 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 4.948 | 0.495 | 2.900 | 0.429 | 4.725 | 0.929 | 4.497 | 0.450 |
| 7782-49-2 | 34 | Se | 0.129 | 0.013 | 0.085 | 0.018 | 0.124 | 0.028 | 0.119 | 0.012 |
| 7726-95-6 | 35 | Br | 0.080 | 0.020 | 0.060 | 0.000 | 0.078 | 0.022 | 0.076 | 0.011 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.198 | 0.020 | 0.262 | 0.040 | 0.205 | 0.057 | 0.212 | 0.021 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.246 | 0.034 | 0.234 | 0.070 | 0.245 | 0.082 | 0.243 | 0.039 |
| 7440-43-9 | 48 | Cd | 1.358 | 0.000 | 1.158 | 0.192 | 1.336 | 0.283 | 1.314 | 0.131 |
| 7440-31-5 | 50 | Sn | 0.234 | 0.049 | 0.128 | 0.106 | 0.222 | 0.109 | 0.211 | 0.058 |
| 7440-36-0 | 51 | Sb | 1.907 | 0.191 | 1.603 | 0.312 | 1.874 | 0.453 | 1.840 | 0.184 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.115 | 0.205 | 0.375 | 0.491 | 0.143 | 0.477 | 0.172 | 0.266 |

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PM Profile Speciation Report - continued (profile 29304)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.172 | 0.022 | 0.142 | 0.033 | 0.169 | 0.045 | 0.165 | 0.020 |
| 7439-92-1 | 82 | Pb | 26.610 | 2.661 | 26.900 | 3.750 | 26.642 | 6.288 | 26.674 | 2.667 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 73.126 | | 77.212 | | 73.569 | | 74.021 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Blast Furnace Upset
Profile Number : 29305
Data Quality : B/C

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Control Device : Baghouse
Reference(s) : 43
Data Source : Blast furnace upset samples collected with a dilution sampler.

SCC Assignments: 30301002

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.570 | 0.720 | 0.860 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | 0.220 | 0.050 | NE | 0.000 | < | 0.000 |
| 7440-21-3 | 14 | Si | 0.030 | 0.000 | 0.500 | 0.200 | 0.188 | 0.000 | 0.030 | 0.000 |
| 7723-14-0 | 15 | P | 0.959 | 0.096 | 0.642 | 0.064 | 0.852 | 0.132 | 0.688 | 0.069 |
| 7704-34-9 | 16 | S | 19.400 | 2.077 | 11.885 | 1.463 | 16.866 | 2.717 | 14.058 | 1.901 |
| 7782-50-5 | 17 | Cl | 3.880 | 1.000 | 2.000 | 0.500 | 3.246 | 0.846 | 4.000 | 1.000 |
| 7440-09-7 | 19 | K | 2.321 | 0.232 | 1.466 | 0.147 | 2.033 | 0.315 | 1.510 | 0.151 |
| 7440-70-2 | 20 | Ca | 0.500 | 0.100 | 0.500 | 0.073 | 0.500 | 0.105 | 0.500 | 0.100 |
| 7440-32-6 | 22 | Ti | 0.033 | 0.000 | 0.050 | 0.000 | 0.039 | 0.000 | 0.060 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.017 | 0.000 | 0.020 | 0.000 | 0.018 | 0.000 | 0.023 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.124 | 0.012 | 0.942 | 0.094 | 0.400 | 0.109 | 1.624 | 0.162 |
| 7440-02-0 | 28 | Ni | 0.063 | 0.000 | 0.057 | 0.000 | 0.061 | 0.000 | 0.067 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.184 | 0.018 | 0.414 | 0.041 | 0.262 | 0.052 | 0.677 | 0.068 |
| 7440-66-6 | 30 | Zn | 7.420 | 0.754 | 14.918 | 1.492 | 9.948 | 1.915 | 6.184 | 0.618 |
| 7440-38-2 | 33 | As | 3.349 | 0.335 | 1.541 | 0.162 | 2.739 | 0.425 | 2.855 | 0.285 |
| 7782-49-2 | 34 | Se | 0.072 | 0.000 | 0.023 | 0.000 | 0.055 | 0.000 | 0.074 | 0.011 |
| 7726-95-6 | 35 | Br | 0.110 | 0.030 | 0.032 | 0.000 | 0.084 | 0.000 | 0.110 | 0.030 |
| 7440-24-6 | 38 | Sr | 0.035 | 0.000 | 0.037 | 0.000 | 0.036 | 0.000 | 0.062 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.308 | 0.031 | 0.063 | 0.021 | 0.225 | 0.039 | 0.144 | 0.014 |
| 7440-22-4 | 47 | Ag | 0.152 | 0.015 | 0.079 | 0.029 | 0.127 | 0.027 | 0.117 | 0.012 |
| 7440-43-9 | 48 | Cd | 16.240 | 1.647 | 7.872 | 0.787 | 13.418 | 2.080 | 10.202 | 1.020 |
| 7440-74-6 | 49 | In | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.585 | 0.058 | 0.289 | 0.058 | 0.485 | 0.082 | 0.363 | 0.036 |
| 7440-36-0 | 51 | Sb | 0.297 | 0.050 | 0.217 | 0.108 | 0.270 | 0.086 | 0.399 | 0.056 |
| 7440-39-3 | 56 | Ba | 0.144 | 0.050 | < | 0.230 | NE | 0.000 | 0.213 | 0.056 |
| 7439-97-6 | 80 | Hg | 0.117 | 0.018 | 0.069 | 0.020 | 0.101 | 0.022 | 0.035 | 0.018 |
| 7439-92-1 | 82 | Pb | 43.630 | 4.395 | 29.507 | 2.951 | 38.868 | 6.057 | 42.687 | 4.269 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 29305)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 100.000 | | 73.373 | | 90.851 | | 86.712 | |

PM Profile Speciation Report

---

Profile Name : Primary Lead Smelting-Zinc Baghouse
Profile Number : 29306
Data Quality : B/C

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Control Device : Baghouse
Reference(s) : 43
Data Source : Sampled within the zinc fuming baghouse with dichotomous and low-volume samplers.

SCC Assignments: 30301008

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.820 0.890 0.920

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.050 | 0.020 | 1.551 | 0.155 | 0.213 | 0.240 | 0.600 | 0.200 |
| 7440-21-3 | 14 | Si | 0.779 | 0.078 | 5.091 | 0.509 | 1.248 | 0.795 | 2.000 | 0.800 |
| 7723-14-0 | 15 | P | 0.311 | 0.031 | 0.272 | 0.027 | 0.307 | 0.064 | 0.190 | 0.019 |
| 7704-34-9 | 16 | S | 6.254 | 0.639 | 4.308 | 0.575 | 6.042 | 1.226 | 3.041 | 0.558 |
| 7782-50-5 | 17 | Cl | < | 0.054 | 0.050 | 0.050 | NE | 0.000 | 0.150 | 0.050 |
| 7440-09-7 | 19 | K | 0.949 | 0.095 | 0.834 | 0.083 | 0.936 | 0.195 | 0.862 | 0.086 |
| 7440-70-2 | 20 | Ca | 0.500 | 0.300 | 1.000 | 0.200 | 0.554 | 0.351 | 0.500 | 0.100 |
| 7440-32-6 | 22 | Ti | 0.042 | 0.000 | 0.090 | 0.000 | 0.047 | 0.000 | 0.082 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.016 | 0.000 | 0.014 | 0.000 | 0.016 | 0.000 | 0.017 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | 0.050 | 0.000 | NE | 0.000 | 0.030 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.221 | 0.022 | 1.150 | 0.115 | 0.322 | 0.181 | 1.042 | 0.104 |
| 7440-02-0 | 28 | Ni | 0.095 | 0.000 | 0.098 | 0.000 | 0.095 | 0.000 | 0.115 | 0.011 |
| 7440-50-8 | 29 | Cu | 0.259 | 0.026 | 0.498 | 0.050 | 0.285 | 0.087 | 0.625 | 0.062 |
| 7440-66-6 | 30 | Zn | 50.140 | 5.014 | 43.478 | 4.348 | 49.416 | 10.245 | 53.304 | 5.330 |
| 7440-38-2 | 33 | As | 2.298 | 0.230 | 1.457 | 0.146 | 2.207 | 0.420 | 1.777 | 0.178 |
| 7782-49-2 | 34 | Se | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 | 0.020 | 0.000 |
| 7726-95-6 | 35 | Br | 0.030 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | 0.014 | 0.000 | NE | 0.000 | 0.011 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.034 | 0.014 | 0.053 | 0.013 | 0.036 | 0.019 | 0.080 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.032 | 0.019 | 0.037 | 0.017 | 0.033 | 0.024 | 0.033 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.080 | 0.031 | 0.030 | 0.026 | 0.075 | 0.038 | 0.070 | 0.013 |
| 7440-74-6 | 49 | In | 0.030 | 0.000 | < | 0.000 | NE | 0.000 | 0.011 | 0.000 |
| 7440-31-5 | 50 | Sn | 1.066 | 0.107 | 0.702 | 0.070 | 1.026 | 0.197 | 0.861 | 0.086 |
| 7440-36-0 | 51 | Sb | 0.717 | 0.092 | 0.413 | 0.069 | 0.684 | 0.146 | 0.728 | 0.073 |
| 7440-39-3 | 56 | Ba | < | 0.168 | < | 0.144 | NE | 0.000 | < | 0.055 |
| 7439-97-6 | 80 | Hg | 0.048 | 0.011 | 0.049 | 0.000 | 0.048 | 0.000 | 0.059 | 0.000 |
| 7439-92-1 | 82 | Pb | 12.440 | 1.244 | 12.482 | 1.248 | 12.445 | 2.720 | 12.780 | 1.278 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 29306)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 76.402 | | 73.732 | | 76.046 | | 78.988 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting-Dross Reverberatory Furnace
Profile Number : 29307
Data Quality : B/C

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Samples collected near building vents with dichotomous and low-volume sampler.

SCC Assignments: 30301003

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.810 0.920 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.030 | 0.000 | 0.500 | 0.100 | 0.112 | 0.000 | 0.030 | 0.000 |
| 7440-21-3 | 14 | Si | 0.200 | 0.100 | 1.460 | 0.146 | 0.419 | 0.226 | 0.200 | 0.100 |
| 7723-14-0 | 15 | P | 0.125 | 0.012 | 0.141 | 0.014 | 0.128 | 0.027 | 0.035 | 0.000 |
| 7704-34-9 | 16 | S | 1.667 | 0.244 | 1.534 | 0.533 | 1.644 | 0.552 | < | 0.582 |
| 7782-50-5 | 17 | Cl | < | 0.017 | < | 0.034 | NE | 0.000 | < | 0.038 |
| 7440-09-7 | 19 | K | 0.108 | 0.011 | 0.279 | 0.028 | 0.138 | 0.043 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 0.600 | 0.100 | 1.160 | 0.116 | 0.697 | 0.198 | 0.763 | 0.076 |
| 7440-32-6 | 22 | Ti | 0.060 | 0.000 | 0.056 | 0.000 | 0.059 | 0.000 | 0.016 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | 0.013 | 0.000 | NE | 0.000 | 0.016 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.013 | 0.000 | 0.039 | 0.000 | 0.018 | 0.000 | 0.024 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.106 | 0.011 | 0.752 | 0.075 | 0.218 | 0.109 | 0.744 | 0.074 |
| 7440-02-0 | 28 | Ni | 0.054 | 0.000 | 0.076 | 0.000 | 0.058 | 0.000 | 0.086 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.140 | 0.014 | 1.873 | 0.187 | 0.441 | 0.269 | 2.894 | 0.289 |
| 7440-66-6 | 30 | Zn | 2.361 | 0.236 | 0.963 | 0.096 | 2.118 | 0.365 | 1.358 | 0.136 |
| 7440-38-2 | 33 | As | 57.818 | 5.782 | 20.000 | 2.000 | 51.258 | 8.758 | 24.000 | 3.000 |
| 7782-49-2 | 34 | Se | 0.115 | 0.011 | 0.084 | 0.000 | 0.110 | 0.000 | 0.093 | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | 0.014 | 0.000 | NE | 0.000 | 0.011 | 0.000 |
| 7440-05-3 | 46 | Pd | 2.389 | 0.239 | 0.504 | 0.050 | 2.062 | 0.350 | 1.090 | 0.109 |
| 7440-22-4 | 47 | Ag | 0.854 | 0.085 | 0.300 | 0.030 | 0.758 | 0.129 | 0.494 | 0.049 |
| 7440-43-9 | 48 | Cd | 1.164 | 0.116 | 0.800 | 0.200 | 1.101 | 0.253 | 1.219 | 0.122 |
| 7440-74-6 | 49 | In | 0.023 | 0.000 | 0.191 | 0.019 | 0.052 | 0.000 | 0.231 | 0.023 |
| 7440-31-5 | 50 | Sn | 0.191 | 0.019 | 1.600 | 0.300 | 0.435 | 0.312 | 1.242 | 0.124 |
| 7440-36-0 | 51 | Sb | 5.200 | 1.000 | 2.000 | 0.300 | 4.645 | 1.081 | 2.700 | 0.400 |
| 7440-39-3 | 56 | Ba | 0.078 | 0.022 | 0.032 | 0.023 | 0.070 | 0.028 | 0.125 | 0.014 |
| 7439-97-6 | 80 | Hg | 0.269 | 0.027 | 0.107 | 0.011 | 0.241 | 0.042 | 0.104 | 0.010 |
| 7439-92-1 | 82 | Pb | 5.561 | 0.556 | 16.000 | 4.000 | 7.372 | 3.881 | 13.482 | 1.348 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 29307)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 79.126 | | 50.478 | | 74.154 | | 50.957 | |

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting-Sinter Production
Profile Number : 29309
Data Quality : B/C

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Samples collected at various locations on the pile.
Bulk sample sieved and resuspended.

SCC Assignments: 30301025

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.870 0.940 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.050 | 0.050 | 0.650 | 0.065 | 0.117 | 0.110 | 0.050 | 0.050 |
| 7440-21-3 | 14 | Si | 0.900 | 0.200 | 2.900 | 0.400 | 1.124 | 0.550 | 0.460 | 0.100 |
| 7723-14-0 | 15 | P | 0.300 | 0.030 | 0.360 | 0.040 | 0.307 | 0.074 | 0.120 | 0.040 |
| 7704-34-9 | 16 | S | 1.400 | 2.000 | 6.000 | 2.000 | 1.916 | 2.627 | 1.000 | 1.000 |
| 7782-50-5 | 17 | Cl | 2.000 | 1.000 | 1.000 | 0.300 | 1.888 | 0.968 | 0.500 | 0.500 |
| 7440-09-7 | 19 | K | 0.020 | 0.020 | 0.240 | 0.024 | 0.045 | 0.041 | 0.050 | 0.050 |
| 7440-70-2 | 20 | Ca | 0.050 | 0.020 | 2.000 | 0.200 | 0.269 | 0.308 | 0.500 | 0.100 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | 0.040 | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.016 | 0.000 | 0.038 | 0.000 | 0.018 | 0.000 | 0.017 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.015 | 0.000 | 0.300 | 0.100 | 0.047 | 0.000 | 0.120 | 0.012 |
| 7439-89-6 | 26 | Fe | 0.160 | 0.020 | 4.800 | 0.500 | 0.681 | 0.749 | 2.344 | 0.234 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.056 | 0.000 | 0.083 | 0.000 | 0.059 | 0.000 | 0.061 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.221 | 0.022 | 1.659 | 0.166 | 0.382 | 0.257 | 1.007 | 0.101 |
| 7440-66-6 | 30 | Zn | 0.867 | 0.087 | 4.243 | 0.424 | 1.246 | 0.666 | 2.688 | 0.269 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 8.692 | 0.869 | 5.532 | 0.553 | 8.337 | 1.584 | 4.921 | 0.492 |
| 7782-49-2 | 34 | Se | 0.155 | 0.015 | 0.084 | 0.000 | 0.147 | 0.000 | 0.101 | 0.010 |
| 7726-95-6 | 35 | Br | 0.100 | 0.050 | 0.100 | 0.050 | 0.100 | 0.065 | 0.100 | 0.050 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.030 | 0.000 | 0.184 | 0.018 | 0.047 | 0.000 | 0.097 | 0.000 |
| 7440-05-3 | 46 | Pd | 2.702 | 0.270 | 0.746 | 0.075 | 2.482 | 0.431 | 0.730 | 0.073 |
| 7440-22-4 | 47 | Ag | 0.699 | 0.070 | 0.378 | 0.038 | 0.663 | 0.122 | 0.347 | 0.035 |
| 7440-43-9 | 48 | Cd | 8.859 | 0.886 | 2.884 | 0.288 | 8.188 | 1.433 | 3.705 | 0.370 |
| 7440-74-6 | 49 | In | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | 2.541 | 0.254 | 0.680 | 0.068 | 2.332 | 0.404 | 0.776 | 0.078 |
| 7440-36-0 | 51 | Sb | 2.380 | 0.238 | 1.833 | 0.183 | 2.319 | 0.462 | 1.725 | 0.172 |

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PM Profile Speciation Report - continued (profile 29309)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.522 | 0.052 | 0.257 | 0.026 | 0.492 | 0.089 | 0.275 | 0.027 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.129 | 0.018 | 0.187 | 0.019 | 0.136 | 0.037 | 0.119 | 0.013 |
| 7439-92-1 | 82 | Pb | 46.503 | 4.650 | 27.915 | 2.791 | 44.417 | 8.340 | 31.410 | 3.141 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 79.367 | | 65.093 | | 77.759 | | 53.223 | |

PM Profile Speciation Report

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Profile Name : Primary Lead - Dross Building
Profile Number : 29310
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,75
Data Source : Data taken from Reference 62. For details, consult Reference 75.

SCC Assignments: 30301009

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.830 0.930 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.078 | 0.000 | 0.111 | 0.000 | 0.000 | 0.000 | 0.064 |
| 7440-21-3 | 14 | Si | 0.000 | 0.024 | 0.000 | 0.056 | 0.000 | 0.000 | 0.000 | 0.024 |
| 7723-14-0 | 15 | P | 0.000 | 0.016 | 0.000 | 0.023 | 0.000 | 0.000 | 0.000 | 0.013 |
| 7704-34-9 | 16 | S | 0.000 | 0.416 | 0.000 | 0.635 | 0.000 | 0.000 | 0.000 | 0.348 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.147 | 0.000 | 0.130 | 0.000 | 0.000 | 0.000 | 0.110 |
| 7440-09-7 | 19 | K | 0.000 | 0.040 | 0.000 | 0.045 | 0.000 | 0.000 | 0.000 | 0.031 |
| 7440-70-2 | 20 | Ca | 0.000 | 0.080 | 0.000 | 0.113 | 0.000 | 0.000 | 0.000 | 0.065 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.008 | 0.000 | 0.011 | 0.000 | 0.000 | 0.000 | 0.007 |
| 7440-62-2 | 23 | V | 0.000 | 0.002 | 0.005 | 0.021 | 0.001 | 0.000 | 0.002 | 0.007 |
| 7440-47-3 | 24 | Cr | 0.003 | 0.008 | 0.000 | 0.003 | 0.003 | 0.000 | 0.002 | 0.006 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.003 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | 0.003 |
| 7439-89-6 | 26 | Fe | 0.482 | 0.634 | 1.431 | 0.820 | 0.627 | 0.000 | 0.770 | 0.511 |
| 7440-02-0 | 28 | Ni | 0.023 | 0.042 | 0.073 | 0.102 | 0.031 | 0.000 | 0.038 | 0.043 |
| 7440-50-8 | 29 | Cu | 0.179 | 0.052 | 1.889 | 0.457 | 0.441 | 0.000 | 0.697 | 0.152 |
| 7440-66-6 | 30 | Zn | 0.745 | 0.200 | 0.672 | 0.235 | 0.734 | 0.000 | 0.723 | 0.172 |
| 7440-55-3 | 31 | Ga | 0.027 | 0.092 | 0.035 | 0.146 | 0.028 | 0.000 | 0.030 | 0.078 |
| 7440-38-2 | 33 | As | 58.289 | 9.831 | 6.755 | 5.152 | 50.401 | 0.000 | 42.673 | 8.645 |
| 7782-49-2 | 34 | Se | 0.000 | 0.016 | 0.000 | 0.028 | 0.000 | 0.000 | 0.000 | 0.014 |
| 7726-95-6 | 35 | Br | 0.000 | 0.194 | 0.000 | 0.065 | 0.000 | 0.000 | 0.000 | 0.137 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.042 | 0.000 | 0.016 | 0.000 | 0.000 | 0.000 | 0.030 |
| 7440-24-6 | 38 | Sr | 0.007 | 0.012 | 0.016 | 0.055 | 0.008 | 0.000 | 0.010 | 0.019 |
| 7440-65-5 | 39 | Y | 0.026 | 0.088 | 0.000 | 0.039 | 0.022 | 0.000 | 0.018 | 0.063 |
| 7440-67-7 | 40 | Zr | 0.018 | 0.009 | 0.039 | 0.128 | 0.021 | 0.000 | 0.024 | 0.039 |
| 7439-98-7 | 42 | Mo | 0.051 | 0.026 | 0.033 | 0.089 | 0.048 | 0.000 | 0.046 | 0.033 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.002 | 0.017 | 0.056 | 0.003 | 0.000 | 0.005 | 0.017 |
| 7440-22-4 | 47 | Ag | 0.081 | 0.075 | 0.290 | 0.155 | 0.113 | 0.000 | 0.144 | 0.071 |
| 7440-43-9 | 48 | Cd | 0.548 | 0.297 | 0.133 | 0.235 | 0.484 | 0.000 | 0.422 | 0.224 |
| 7440-74-6 | 49 | In | 0.028 | 0.084 | 0.047 | 0.190 | 0.031 | 0.000 | 0.034 | 0.082 |
| 7440-31-5 | 50 | Sn | 0.233 | 0.400 | 0.842 | 0.320 | 0.326 | 0.000 | 0.418 | 0.297 |
| 7440-36-0 | 51 | Sb | 5.871 | 4.088 | 1.077 | 0.855 | 5.137 | 0.000 | 4.418 | 2.906 |
| 7440-39-3 | 56 | Ba | 0.065 | 0.060 | 0.000 | 0.028 | 0.055 | 0.000 | 0.045 | 0.043 |
| 7439-91-0 | 57 | La | 0.122 | 0.141 | 0.000 | 0.028 | 0.103 | 0.000 | 0.085 | 0.099 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.024 | 0.040 | 0.155 | 0.006 | 0.000 | 0.012 | 0.050 |
| 7439-92-1 | 82 | Pb | 13.256 | 9.693 | 15.791 | 5.847 | 13.644 | 0.000 | 14.024 | 7.113 |
| TOTALS: | | | 80.054 | | 29.185 | | 72.267 | | 64.640 | |

(1) No controlled specified: thus, assumed uncontrolled.
(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Primary Lead - Slag Pour
Profile Number : 29311
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,75
Data Source : Data taken from Reference 62. For details, consult Reference 75.

SCC Assignments: 30301021

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.730 0.830 0.890

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.023 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.011 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.011 |
| 7704-34-9 | 16 | S | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 1.506 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.311 |
| 7440-09-7 | 19 | K | 0.959 | 0.000 | 0.959 | 0.000 | 0.959 | 0.000 | 0.959 | 0.557 |
| 7440-70-2 | 20 | Ca | 0.091 | 0.000 | 0.091 | 0.000 | 0.091 | 0.000 | 0.091 | 0.104 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.082 |
| 7439-96-5 | 25 | Mn | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.081 |
| 7439-89-6 | 26 | Fe | 0.319 | 0.000 | 0.319 | 0.000 | 0.319 | 0.000 | 0.319 | 0.039 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 |
| 7440-50-8 | 29 | Cu | 0.084 | 0.000 | 0.084 | 0.000 | 0.084 | 0.000 | 0.084 | 0.181 |
| 7440-66-6 | 30 | Zn | 48.556 | 0.000 | 48.556 | 0.000 | 48.556 | 0.000 | 48.556 | 11.856 |
| 7440-55-3 | 31 | Ga | 0.034 | 0.000 | 0.034 | 0.000 | 0.034 | 0.000 | 0.034 | 0.123 |
| 7440-38-2 | 33 | As | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 1.626 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.011 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.016 |
| 7440-17-7 | 37 | Rb | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.125 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.079 |
| 7440-67-7 | 40 | Zr | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.034 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.007 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.023 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.011 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.023 |
| 7440-74-6 | 49 | In | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.062 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.045 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.023 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.045 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.045 |
| 7439-97-6 | 80 | Hg | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.042 |
| 7439-92-1 | 82 | Pb | 27.417 | 0.000 | 27.417 | 0.000 | 27.417 | 0.000 | 27.417 | 2.821 |
| TOTALS: | | | 77.671 | | 77.671 | | 77.671 | | 77.671 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Primary Lead Smelting - Composite
Profile Number : 29330
Data Quality : C

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Control Device : Baghouse
Reference(s) : 43
Data Source : Developed from profiles 29303 and 29306.

SCC Assignments: 30301008

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.690 | 0.800 | 0.890 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.483 | 0.079 | 0.950 | 0.203 | 0.588 | 0.205 | 0.657 | 0.161 |
| 7440-21-3 | 14 | Si | 1.760 | 0.249 | 3.097 | 0.658 | 2.060 | 0.671 | 2.137 | 0.625 |
| 7723-14-0 | 15 | P | 0.424 | 0.050 | 0.407 | 0.072 | 0.420 | 0.094 | 0.383 | 0.048 |
| 7704-34-9 | 16 | S | 8.217 | 1.004 | 7.650 | 1.443 | 8.089 | 1.836 | 7.173 | 0.974 |
| 7782-50-5 | 17 | Cl | 0.900 | 0.240 | 0.417 | 0.132 | 0.791 | 0.239 | 0.826 | 0.198 |
| 7440-09-7 | 19 | K | 0.796 | 0.082 | 0.729 | 0.088 | 0.781 | 0.151 | 0.761 | 0.078 |
| 7440-70-2 | 20 | Ca | 1.100 | 0.236 | 2.100 | 0.592 | 1.325 | 0.558 | 1.284 | 0.310 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.079 | 0.010 | 0.109 | 0.018 | 0.086 | 0.022 | 0.095 | 0.010 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.003 | 0.031 | 0.008 | 0.026 | 0.008 | 0.026 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.127 | 0.022 | 0.183 | 0.058 | 0.139 | 0.054 | 0.145 | 0.037 |
| 7439-89-6 | 26 | Fe | 2.050 | 0.333 | 3.099 | 0.630 | 2.285 | 0.687 | 2.488 | 0.363 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.092 | 0.005 | 0.098 | 0.011 | 0.093 | 0.018 | 0.099 | 0.006 |
| 7440-50-8 | 29 | Cu | 0.655 | 0.089 | 0.944 | 0.170 | 0.720 | 0.195 | 0.823 | 0.101 |
| 7440-66-6 | 30 | Zn | 35.944 | 4.241 | 36.110 | 4.264 | 35.981 | 7.276 | 37.580 | 4.427 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 2.890 | 0.326 | 1.961 | 0.276 | 2.681 | 0.506 | 2.574 | 0.292 |
| 7782-49-2 | 34 | Se | 0.050 | 0.008 | 0.036 | 0.010 | 0.047 | 0.012 | 0.050 | 0.007 |
| 7726-95-6 | 35 | Br | 0.037 | 0.012 | 0.020 | 0.000 | 0.033 | 0.010 | 0.025 | 0.006 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.066 | 0.012 | 0.092 | 0.023 | 0.072 | 0.024 | 0.074 | 0.012 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.054 | 0.011 | 0.039 | 0.010 | 0.051 | 0.014 | 0.064 | 0.006 |
| 7440-22-4 | 47 | Ag | 0.109 | 0.022 | 0.103 | 0.042 | 0.107 | 0.041 | 0.107 | 0.023 |
| 7440-43-9 | 48 | Cd | 0.507 | 0.018 | 0.417 | 0.112 | 0.487 | 0.114 | 0.487 | 0.076 |
| 7440-74-6 | 49 | In | 0.029 | 0.000 | 0.010 | 0.000 | 0.024 | 0.003 | 0.020 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.668 | 0.079 | 0.512 | 0.084 | 0.633 | 0.128 | 0.592 | 0.072 |
| 7440-36-0 | 51 | Sb | 1.056 | 0.126 | 0.868 | 0.188 | 1.014 | 0.231 | 1.041 | 0.119 |

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PM Profile Speciation Report - continued (profile 29330)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.038 | 0.155 | 0.125 | 0.301 | 0.058 | 0.263 | 0.057 | 0.160 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.095 | 0.014 | 0.084 | 0.019 | 0.092 | 0.023 | 0.096 | 0.012 |
| 7439-92-1 | 82 | Pb | 15.503 | 1.750 | 16.342 | 2.349 | 15.692 | 3.355 | 15.820 | 1.769 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 73.753 | | 76.533 | | 74.375 | | 75.484 | |

## 3.5 SECONDARY METAL PRODUCTION

Secondary metal production is the production of metals from scrap material. Processes generating particulate emissions can include smelting, pouring into molds, cleaning, refining, alloying, and storage and handling.

PM Profile Speciation Report

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Profile Name : Scrap Copper Incinerator
Profile Number : 19101
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Plume sample collected with low-volume sampler.
Incineration of machinery oil and plastic and insulation.

SCC Assignments: 30400208

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.240 0.320 0.420

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 0.115 | 0.000 | 0.115 | 0.000 | 0.115 | 0.013 | 0.115 | 0.011 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.071 | 0.000 | 0.071 | 0.000 | 0.071 | 0.008 | 0.071 | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 19101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 0.186 | | 0.186 | | 0.186 | | 0.186 | |

PM Profile Speciation Report

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Profile Name : Aluminum Foundry-Reverboratory Furnace
Profile Number : 20101
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones, at 400 deg. F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative.

SCC Assignments: 30400103

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.500 0.530 0.600

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | 11.000 | 0.000 | 11.000 | 0.000 | 11.000 | 0.000 | 11.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-89-6 | 26 | Fe | 6.000 | 0.000 | 6.000 | 0.000 | 6.000 | 0.000 | 6.000 | 0.000 |
| 7440-48-4 | 27 | Co | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 20101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| | 201 | OC | 13.000 | 0.000 | 13.000 | 0.000 | 13.000 | 0.000 | 13.000 | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | 16.000 | 0.000 | 16.000 | 0.000 | 16.000 | 0.000 | 16.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| TOTALS: | | | 51.550 | | 51.550 | | 51.550 | | 51.550 | |

PM Profile Speciation Report

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Profile Name : Secondary Aluminum Plant - Dross Recovery Furnace
Profile Number : 20102
Data Quality : B/D

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Control Device : Baghouse
Reference(s) : 52
Data Source : Dilution sampling train.

SCC Assignments: 30400107

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.820 0.890 0.920

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 1.447 | 0.082 | 4.857 | 0.447 | 1.818 | 0.756 | 1.818 | 0.000 |
| 7440-21-3 | 14 | Si | 6.412 | 0.315 | 11.501 | 1.055 | 6.965 | 1.928 | 6.965 | 0.000 |
| 7723-14-0 | 15 | P | 0.373 | 0.068 | 0.374 | 0.114 | 0.373 | 0.136 | 0.373 | 0.000 |
| 7704-34-9 | 16 | S | 2.883 | 0.156 | 1.959 | 0.261 | 2.783 | 0.516 | 2.783 | 0.000 |
| 7782-50-5 | 17 | Cl | 23.212 | 1.139 | 17.746 | 1.875 | 22.618 | 4.170 | 22.618 | 0.000 |
| 7440-09-7 | 19 | K | 10.035 | 0.490 | 10.295 | 1.017 | 10.063 | 2.073 | 10.063 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.079 | 0.030 | 0.764 | 0.090 | 0.153 | 0.129 | 0.153 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.025 | 0.003 | 0.112 | 0.015 | 0.034 | 0.020 | 0.034 | 0.000 |
| 7440-62-2 | 23 | V | 0.006 | 0.001 | 0.010 | 0.005 | 0.006 | 0.005 | 0.006 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.028 | 0.003 | 0.063 | 0.009 | 0.032 | 0.012 | 0.032 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.002 | 0.037 | 0.007 | 0.013 | 0.008 | 0.013 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.251 | 0.015 | 1.319 | 0.120 | 0.367 | 0.201 | 0.367 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.033 | 0.003 | 0.052 | 0.010 | 0.035 | 0.012 | 0.035 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.042 | 0.004 | 0.104 | 0.014 | 0.049 | 0.019 | 0.049 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.079 | 0.005 | 0.202 | 0.022 | 0.092 | 0.034 | 0.092 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.005 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.011 | 0.005 | 0.005 | 0.014 | 0.010 | 0.013 | 0.010 | 0.000 |
| 7782-49-2 | 34 | Se | 0.016 | 0.002 | 0.013 | 0.005 | 0.016 | 0.005 | 0.016 | 0.000 |
| 7726-95-6 | 35 | Br | 0.065 | 0.004 | 0.039 | 0.009 | 0.062 | 0.013 | 0.062 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.004 | 0.003 | 0.000 | 0.007 | 0.004 | 0.007 | 0.004 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.005 | 0.003 | 0.003 | 0.009 | 0.005 | 0.008 | 0.005 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.002 | 0.015 | 0.039 | 0.044 | 0.006 | 0.042 | 0.006 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.020 | 0.014 | 0.061 | 0.043 | 0.024 | 0.041 | 0.024 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.019 | 0.083 | 0.057 | 0.009 | 0.055 | 0.009 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.047 | 0.025 | 0.000 | 0.079 | 0.042 | 0.074 | 0.042 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.597 | 0.068 | 0.353 | 0.162 | 0.570 | 0.179 | 0.570 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.036 | 0.113 | 0.000 | 0.347 | 0.032 | 0.325 | 0.032 | 0.000 |

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PM Profile Speciation Report - continued (profile 20102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.003 | 0.000 | 0.010 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.079 | 0.009 | 0.094 | 0.023 | 0.081 | 0.027 | 0.081 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 45.797 | | 50.085 | | 46.262 | | 46.262 | |

PM Profile Speciation Report

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Profile Name : Secondary Aluminum - Dross Recovery Furnace
Profile Number : 20103
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,63
Data Source : Data taken from Reference 62. For details, consult Reference 63.

SCC Assignments: 30400107

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.820 | 0.890 | 0.920 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 15.500 | 1.600 | 18.000 | 4.400 | 15.772 | 5.081 | 15.972 | 2.374 |
| 7429-90-5 | 13 | Al | 1.700 | 0.200 | 4.700 | 0.800 | 2.026 | 0.926 | 2.266 | 0.319 |
| 7440-21-3 | 14 | Si | 3.100 | 2.200 | 7.600 | 3.700 | 3.589 | 4.088 | 3.949 | 1.959 |
| 7723-14-0 | 15 | P | 0.450 | 0.270 | 0.370 | 0.110 | 0.441 | 0.275 | 0.435 | 0.226 |
| 7704-34-9 | 16 | S | 3.000 | 4.000 | 2.000 | 0.200 | 2.891 | 3.597 | 2.811 | 3.263 |
| 7782-50-5 | 17 | Cl | 20.000 | 4.000 | 21.000 | 5.000 | 20.109 | 6.709 | 20.189 | 4.091 |
| 7440-09-7 | 19 | K | 10.900 | 1.500 | 6.300 | 4.500 | 10.400 | 4.700 | 10.032 | 1.910 |
| 7440-70-2 | 20 | Ca | 0.120 | 0.090 | 0.870 | 0.260 | 0.202 | 0.282 | 0.262 | 0.091 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.024 | 0.003 | 0.120 | 0.040 | 0.034 | 0.049 | 0.042 | 0.009 |
| 7440-62-2 | 23 | V | 0.004 | 0.001 | 0.006 | 0.004 | 0.004 | 0.008 | 0.004 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.039 | 0.004 | 0.061 | 0.007 | 0.041 | 0.024 | 0.043 | 0.006 |
| 7439-96-5 | 25 | Mn | 0.012 | 0.001 | 0.029 | 0.011 | 0.014 | 0.018 | 0.015 | 0.003 |
| 7439-89-6 | 26 | Fe | 0.290 | 0.090 | 1.200 | 0.200 | 0.389 | 0.252 | 0.462 | 0.093 |
| 7440-48-4 | 27 | Co | 0.001 | 0.000 | 0.006 | 0.001 | 0.002 | 0.006 | 0.002 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.033 | 0.003 | 0.056 | 0.029 | 0.036 | 0.035 | 0.037 | 0.007 |
| 7440-50-8 | 29 | Cu | 0.045 | 0.020 | 0.110 | 0.030 | 0.052 | 0.045 | 0.057 | 0.018 |
| 7440-66-6 | 30 | Zn | 0.075 | 0.008 | 0.190 | 0.020 | 0.088 | 0.047 | 0.097 | 0.012 |
| 7440-38-2 | 33 | As | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.004 | 0.002 | 0.001 |
| 7782-49-2 | 34 | Se | 0.006 | 0.001 | 0.009 | 0.001 | 0.007 | 0.008 | 0.007 | 0.001 |
| 7726-95-6 | 35 | Br | 0.063 | 0.007 | 0.039 | 0.008 | 0.060 | 0.021 | 0.059 | 0.009 |
| 7440-17-7 | 37 | Rb | 0.009 | 0.004 | NR | 0.000 | NE | 0.000 | 0.008 | 0.003 |
| 7440-22-4 | 47 | Ag | NR | 0.000 | 0.008 | 0.001 | NE | 0.000 | 0.002 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.055 | 0.054 | NR | 0.000 | NE | 0.000 | 0.045 | 0.044 |
| 7440-36-0 | 51 | Sb | 0.570 | 0.060 | NR | 0.000 | NE | 0.000 | 0.463 | 0.077 |
| 7439-91-0 | 57 | La | 0.002 | 0.001 | NR | 0.000 | NE | 0.000 | 0.001 | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | 0.002 | 0.001 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.081 | 0.014 | 0.098 | 0.031 | 0.083 | 0.044 | 0.084 | 0.016 |
| 7440-29-1 | 90 | Th | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 201 | OC | 1.500 | 1.400 | 43.000 | 33.000 | 6.011 | 31.420 | 9.330 | 6.375 |
| | 202 | EC | 0.190 | 0.070 | 4.000 | 1.400 | 0.604 | 1.381 | 0.909 | 0.281 |
| | 203 | SO4 | 0.400 | 0.360 | NR | 0.000 | NE | 0.000 | 0.325 | 0.295 |
| | 204 | NO3 | 2.200 | 0.900 | NR | 0.000 | NE | 0.000 | 1.785 | 0.766 |
| TOTALS: | | | 60.371 | | 109.776 | | 62.857 | | 69.695 | |

(1) No control specified: thus, assumed uncontrolled.
(2) alculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Secondary Lead Smelter - Blast Furnace
Profile Number : 20401
Data Quality : D/E

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Control Device : Baghouse
Reference(s) : 23
Data Source : Samples by isokinetic Method 5 downstream of a baghouse.
Analysis by Optical Emission Spec.

SCC Assignments: 30400403

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.650 | 0.780 | 0.840 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-42-8 | 5 | B | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7782-41-4 | 9 | F | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-23-5 | 11 | Na | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.464 | 3.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7429-90-5 | 13 | Al | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-21-3 | 14 | Si | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.046 | 0.300 | 0.000 |
| 7723-14-0 | 15 | P | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.008 | 0.050 | 0.000 |
| 7704-34-9 | 16 | S | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7782-50-5 | 17 | Cl | 19.300 | 0.000 | 19.300 | 0.000 | 19.300 | 2.987 | 19.300 | 0.000 |
| 7440-09-7 | 19 | K | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.155 | 1.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.005 | 0.030 | 0.000 |
| 7440-22-2 | 21 | Sc | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-32-6 | 22 | Ti | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-62-2 | 23 | V | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.015 | 0.100 | 0.000 |
| 7440-48-4 | 27 | Co | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-02-0 | 28 | Ni | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.005 | 0.030 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.046 | 0.300 | 0.000 |
| 7440-55-3 | 31 | Ga | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-56-4 | 32 | Ge | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-38-2 | 33 | As | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.046 | 0.300 | 0.000 |
| 7782-49-2 | 34 | Se | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7726-95-6 | 35 | Br | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-17-7 | 37 | Rb | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-24-6 | 38 | Sr | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-67-7 | 40 | Zr | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-22-4 | 47 | Ag | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |
| 7440-43-9 | 48 | Cd | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.108 | 0.700 | 0.000 |
| 7440-31-5 | 50 | Sn | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.310 | 2.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.031 | 0.200 | 0.000 |
| 7440-46-2 | 55 | Cs | < 0.000 | | < 0.000 | | < 0.000 | | < 0.000 | |

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PM Profile Speciation Report - continued (profile 20401)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 50.000 | 0.000 | 50.000 | 0.000 | 50.000 | 7.738 | 50.000 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | 7.530 | 0.000 | 7.530 | 0.000 | 7.530 | 1.165 | 7.530 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 84.850 | | 84.850 | | 84.850 | | 84.850 | |

PM Profile Speciation Report

---

Profile Name : Seconary Lead - Sanitary Baghouse
Profile Number : 20402
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,76
Data Source : Data taken from Reference 62. For details, consult Reference 76.

SCC Assignments: 30400499

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.650 0.780 0.840

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(1) %wt | 0-2.5 um(1) unc | 2.5-10 um(1) %wt | 2.5-10 um(1) unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-23-5 | 11 | Na | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.024 |
| 7439-95-4 | 12 | Mg | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.015 |
| 7429-90-5 | 13 | Al | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.030 |
| 7440-21-3 | 14 | Si | 0.072 | 0.000 | 0.072 | 0.000 | 0.072 | 0.000 | 0.072 | 0.014 |
| 7723-14-0 | 15 | P | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.010 |
| 7782-50-5 | 17 | Cl | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.076 |
| 7440-09-7 | 19 | K | 0.390 | 0.000 | 0.390 | 0.000 | 0.390 | 0.000 | 0.390 | 0.120 |
| 7440-70-2 | 20 | Ca | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.020 |
| 7440-32-6 | 22 | Ti | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.008 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.003 |
| 7439-96-5 | 25 | Mn | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.006 |
| 7439-89-6 | 26 | Fe | 4.320 | 0.000 | 4.320 | 0.000 | 4.320 | 0.000 | 4.320 | 0.864 |
| 7440-48-4 | 27 | Co | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7440-02-0 | 28 | Ni | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.004 |
| 7440-50-8 | 29 | Cu | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.024 |
| 7440-66-6 | 30 | Zn | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.013 |
| 7440-38-2 | 33 | As | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.012 |
| 7782-49-2 | 34 | Se | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.002 |
| 7726-95-6 | 35 | Br | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.003 |
| 7440-05-3 | 46 | Pd | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.014 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.010 |
| 7440-74-6 | 49 | In | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.106 | 0.000 | 0.106 | 0.000 | 0.106 | 0.000 | 0.106 | 0.106 |
| 7440-36-0 | 51 | Sb | 0.840 | 0.000 | 0.840 | 0.000 | 0.840 | 0.000 | 0.840 | 0.168 |
| 7440-39-3 | 56 | Ba | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.035 |
| 7439-97-6 | 80 | Hg | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.005 |
| 7439-92-1 | 82 | Pb | 11.500 | 0.000 | 11.500 | 0.000 | 11.500 | 0.000 | 11.500 | 1.200 |
| TOTALS: | | | 18.286 | | 18.286 | | 18.286 | | 18.286 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Seconary Lead - Reverberatory Furnace
Profile Number : 20403
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,76
Data Source : Data taken from Reference 62. For details, consult Reference 76.

SCC Assignments: 30400402

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.350 | 0.390 | 0.400 |

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc(2) |
| 7440-23-5 | 11 | Na | 1.043 | 0.000 | 1.043 | 0.000 | 1.043 | 0.000 | 1.043 | 0.209 |
| 7439-95-4 | 12 | Mg | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.054 |
| 7429-90-5 | 13 | Al | 0.323 | 0.000 | 0.323 | 0.000 | 0.323 | 0.000 | 0.323 | 0.065 |
| 7440-21-3 | 14 | Si | 0.398 | 0.000 | 0.398 | 0.000 | 0.398 | 0.000 | 0.398 | 0.080 |
| 7723-14-0 | 15 | P | 0.215 | 0.000 | 0.215 | 0.000 | 0.215 | 0.000 | 0.215 | 0.215 |
| 7704-34-9 | 16 | S | 2.118 | 0.000 | 2.118 | 0.000 | 2.118 | 0.000 | 2.118 | 0.422 |
| 7782-50-5 | 17 | Cl | 1.312 | 0.000 | 1.312 | 0.000 | 1.312 | 0.000 | 1.312 | 0.262 |
| 7440-09-7 | 19 | K | 0.301 | 0.000 | 0.301 | 0.000 | 0.301 | 0.000 | 0.301 | 0.065 |
| 7440-70-2 | 20 | Ca | 0.688 | 0.000 | 0.688 | 0.000 | 0.688 | 0.000 | 0.688 | 0.138 |
| 7440-32-6 | 22 | Ti | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.005 |
| 7440-62-2 | 23 | V | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.118 | 0.000 | 0.118 | 0.000 | 0.118 | 0.000 | 0.118 | 0.032 |
| 7439-96-5 | 25 | Mn | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.007 |
| 7439-89-6 | 26 | Fe | 0.946 | 0.000 | 0.946 | 0.000 | 0.946 | 0.000 | 0.946 | 0.189 |
| 7440-48-4 | 27 | Co | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.002 |
| 7440-02-0 | 28 | Ni | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.022 |
| 7440-50-8 | 29 | Cu | 0.269 | 0.000 | 0.269 | 0.000 | 0.269 | 0.000 | 0.269 | 0.054 |
| 7440-66-6 | 30 | Zn | 0.172 | 0.000 | 0.172 | 0.000 | 0.172 | 0.000 | 0.172 | 0.034 |
| 7440-38-2 | 33 | As | 0.355 | 0.000 | 0.355 | 0.000 | 0.355 | 0.000 | 0.355 | 0.071 |
| 7782-49-2 | 34 | Se | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.013 |
| 7726-95-6 | 35 | Br | 0.290 | 0.000 | 0.290 | 0.000 | 0.290 | 0.000 | 0.290 | 0.058 |
| 7440-17-7 | 37 | Rb | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.043 |
| 7440-24-6 | 38 | Sr | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.027 |
| 7440-05-3 | 46 | Pd | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.151 |
| 7440-22-4 | 47 | Ag | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.022 |
| 7440-43-9 | 48 | Cd | 0.645 | 0.000 | 0.645 | 0.000 | 0.645 | 0.000 | 0.645 | 0.430 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.065 | 0.000 | 0.065 | 0.000 | 0.065 | 0.000 | 0.065 | 0.409 |
| 7440-36-0 | 51 | Sb | 1.893 | 0.000 | 1.893 | 0.000 | 1.893 | 0.000 | 1.893 | 0.379 |
| 7440-39-3 | 56 | Ba | 0.807 | 0.000 | 0.807 | 0.000 | 0.807 | 0.000 | 0.807 | 0.807 |
| 7439-97-6 | 80 | Hg | 0.108 | 0.000 | 0.108 | 0.000 | 0.108 | 0.000 | 0.108 | 0.043 |
| 7439-92-1 | 82 | Pb | 11.400 | 0.000 | 11.400 | 0.000 | 11.400 | 0.000 | 11.400 | 1.183 |
| TOTALS: | | | 23.988 | | 23.988 | | 23.988 | | 23.988 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Seconary Lead - Melting Pot Fugitives
Profile Number : 20404
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,76
Data Source : Data taken from Reference 62. For details, consult Reference 76.

SCC Assignments: 30400413

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.650 0.780 0.840

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc(2) |
| 7440-23-5 | 11 | Na | 0.559 | 0.000 | 0.559 | 0.000 | 0.559 | 0.000 | 0.559 | 0.112 |
| 7439-95-4 | 12 | Mg | 0.353 | 0.000 | 0.353 | 0.000 | 0.353 | 0.000 | 0.353 | 0.077 |
| 7429-90-5 | 13 | Al | 1.529 | 0.000 | 1.529 | 0.000 | 1.529 | 0.000 | 1.529 | 0.306 |
| 7440-21-3 | 14 | Si | 1.412 | 0.000 | 1.412 | 0.000 | 1.412 | 0.000 | 1.412 | 0.282 |
| 7723-14-0 | 15 | P | 0.112 | 0.000 | 0.112 | 0.000 | 0.112 | 0.000 | 0.112 | 0.112 |
| 7704-34-9 | 16 | S | 0.230 | 0.000 | 0.230 | 0.000 | 0.230 | 0.000 | 0.230 | 0.230 |
| 7782-50-5 | 17 | Cl | 0.506 | 0.000 | 0.506 | 0.000 | 0.506 | 0.000 | 0.506 | 0.101 |
| 7440-09-7 | 19 | K | 0.065 | 0.000 | 0.065 | 0.000 | 0.065 | 0.000 | 0.065 | 0.029 |
| 7440-70-2 | 20 | Ca | 0.218 | 0.000 | 0.218 | 0.000 | 0.218 | 0.000 | 0.218 | 0.047 |
| 7440-32-6 | 22 | Ti | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.014 |
| 7440-62-2 | 23 | V | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.012 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.002 |
| 7439-89-6 | 26 | Fe | 0.329 | 0.000 | 0.329 | 0.000 | 0.329 | 0.000 | 0.329 | 0.066 |
| 7440-48-4 | 27 | Co | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.012 |
| 7440-50-8 | 29 | Cu | 0.129 | 0.000 | 0.129 | 0.000 | 0.129 | 0.000 | 0.129 | 0.026 |
| 7440-66-6 | 30 | Zn | 0.055 | 0.000 | 0.055 | 0.000 | 0.055 | 0.000 | 0.055 | 0.011 |
| 7440-38-2 | 33 | As | 0.212 | 0.000 | 0.212 | 0.000 | 0.212 | 0.000 | 0.212 | 0.042 |
| 7782-49-2 | 34 | Se | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.003 |
| 7726-95-6 | 35 | Br | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.012 |
| 7440-24-6 | 38 | Sr | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.012 |
| 7440-05-3 | 46 | Pd | 0.088 | 0.000 | 0.088 | 0.000 | 0.088 | 0.000 | 0.088 | 0.071 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.029 |
| 7440-74-6 | 49 | In | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-31-5 | 50 | Sn | 0.171 | 0.000 | 0.171 | 0.000 | 0.171 | 0.000 | 0.171 | 0.171 |
| 7440-36-0 | 51 | Sb | 1.294 | 0.000 | 1.294 | 0.000 | 1.294 | 0.000 | 1.294 | 0.259 |
| 7440-39-3 | 56 | Ba | 0.588 | 0.000 | 0.588 | 0.000 | 0.588 | 0.000 | 0.588 | 0.588 |
| 7439-97-6 | 80 | Hg | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.024 |
| 7439-92-1 | 82 | Pb | 10.000 | 0.000 | 10.000 | 0.000 | 10.000 | 0.000 | 10.000 | 1.177 |
| TOTALS: | | | 18.021 | | 18.021 | | 18.021 | | 18.021 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Seconary Lead - Melting Pot Stack
Profile Number : 20405
Data Quality : E

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Control Device : Baghouse
Reference(s) : 62,76
Data Source : Data taken from Reference 62. For details, consult Reference 76.

SCC Assignments: 30400401

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.710 | 0.840 | 0.890 |

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.205 | 0.000 | 0.205 | 0.000 | 0.205 | 0.000 | 0.205 | 0.041 |
| 7439-95-4 | 12 | Mg | 0.063 | 0.000 | 0.063 | 0.000 | 0.063 | 0.000 | 0.063 | 0.027 |
| 7429-90-5 | 13 | Al | 0.243 | 0.000 | 0.243 | 0.000 | 0.243 | 0.000 | 0.243 | 0.049 |
| 7440-21-3 | 14 | Si | 0.234 | 0.000 | 0.234 | 0.000 | 0.234 | 0.000 | 0.234 | 0.047 |
| 7723-14-0 | 15 | P | 0.097 | 0.000 | 0.097 | 0.000 | 0.097 | 0.000 | 0.097 | 0.097 |
| 7704-34-9 | 16 | S | 0.167 | 0.000 | 0.167 | 0.000 | 0.167 | 0.000 | 0.167 | 0.167 |
| 7782-50-5 | 17 | Cl | 0.365 | 0.000 | 0.365 | 0.000 | 0.365 | 0.000 | 0.365 | 0.073 |
| 7440-09-7 | 19 | K | 0.083 | 0.000 | 0.083 | 0.000 | 0.083 | 0.000 | 0.083 | 0.017 |
| 7440-70-2 | 20 | Ca | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.020 |
| 7440-32-6 | 22 | Ti | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.006 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.175 | 0.000 | 0.175 | 0.000 | 0.175 | 0.000 | 0.175 | 0.035 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.006 |
| 7440-50-8 | 29 | Cu | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.005 |
| 7440-66-6 | 30 | Zn | 0.034 | 0.000 | 0.034 | 0.000 | 0.034 | 0.000 | 0.034 | 0.007 |
| 7440-38-2 | 33 | As | 0.036 | 0.000 | 0.036 | 0.000 | 0.036 | 0.000 | 0.036 | 0.007 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7726-95-6 | 35 | Br | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.006 |
| 7440-17-7 | 37 | Rb | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.005 |
| 7440-24-6 | 38 | Sr | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.005 |
| 7440-05-3 | 46 | Pd | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.034 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.004 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.073 | 0.000 | 0.073 | 0.000 | 0.073 | 0.000 | 0.073 | 0.097 |
| 7440-36-0 | 51 | Sb | 0.080 | 0.000 | 0.080 | 0.000 | 0.080 | 0.000 | 0.080 | 0.016 |
| 7440-39-3 | 56 | Ba | 0.122 | 0.000 | 0.122 | 0.000 | 0.122 | 0.000 | 0.122 | 0.122 |
| 7439-97-6 | 80 | Hg | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.015 |
| 7439-92-1 | 82 | Pb | 11.100 | 0.000 | 11.100 | 0.000 | 11.100 | 0.000 | 11.100 | 1.120 |
| TOTALS: | | | 13.259 | | 13.259 | | 13.259 | | 13.259 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Seconary Lead - Yard Dust
Profile Number : 20406
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,77
Data Source : Data taken from Reference 62. For details, consult Reference 77.

SCC Assignments: 30400499

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.350 0.390 0.400

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.420 | 0.084 | 0.533 | 0.000 | 0.434 | 0.000 | 0.533 | 0.091 |
| 7429-90-5 | 13 | Al | 1.866 | 0.373 | 1.466 | 0.000 | 1.816 | 0.000 | 1.466 | 0.229 |
| 7440-21-3 | 14 | Si | 2.971 | 0.549 | 2.367 | 0.000 | 2.896 | 0.000 | 2.367 | 0.370 |
| 7723-14-0 | 15 | P | 0.909 | 0.183 | 0.681 | 0.000 | 0.880 | 0.000 | 0.681 | 0.105 |
| 7782-50-5 | 17 | Cl | 0.610 | 0.120 | 0.872 | 0.000 | 0.643 | 0.000 | 0.872 | 0.151 |
| 7440-09-7 | 19 | K | 0.406 | 0.018 | 0.500 | 0.000 | 0.418 | 0.000 | 0.500 | 0.085 |
| 7440-70-2 | 20 | Ca | 0.122 | 0.054 | 0.124 | 0.000 | 0.122 | 0.000 | 0.124 | 0.037 |
| 7440-32-6 | 22 | Ti | 0.041 | 0.008 | 0.009 | 0.000 | 0.037 | 0.000 | 0.009 | 0.002 |
| 7440-62-2 | 23 | V | 0.017 | 0.003 | 0.005 | 0.000 | 0.016 | 0.000 | 0.005 | 0.002 |
| 7440-47-3 | 24 | Cr | 0.021 | 0.004 | 0.023 | 0.000 | 0.021 | 0.000 | 0.023 | 0.004 |
| 7439-96-5 | 25 | Mn | 0.020 | 0.004 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.003 |
| 7439-89-6 | 26 | Fe | 0.458 | 0.092 | 0.408 | 0.000 | 0.452 | 0.000 | 0.408 | 0.065 |
| 7440-02-0 | 28 | Ni | 0.090 | 0.018 | 0.090 | 0.000 | 0.090 | 0.000 | 0.090 | 0.015 |
| 7440-50-8 | 29 | Cu | 0.151 | 0.030 | 0.156 | 0.000 | 0.152 | 0.000 | 0.156 | 0.026 |
| 7440-66-6 | 30 | Zn | 0.150 | 0.030 | 0.156 | 0.000 | 0.151 | 0.000 | 0.156 | 0.026 |
| 7440-55-3 | 31 | Ga | 0.042 | 0.042 | 0.041 | 0.000 | 0.041 | 0.000 | 0.041 | 0.034 |
| 7440-38-2 | 33 | As | 1.000 | 0.200 | 0.397 | 0.000 | 0.925 | 0.000 | 0.397 | 0.056 |
| 7782-49-2 | 34 | Se | 0.052 | 0.052 | 0.053 | 0.000 | 0.052 | 0.000 | 0.053 | 0.044 |
| 7726-95-6 | 35 | Br | 0.014 | 0.003 | 0.010 | 0.000 | 0.013 | 0.000 | 0.010 | 0.002 |
| 7440-17-7 | 37 | Rb | 0.008 | 0.008 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.006 |
| 7440-24-6 | 38 | Sr | 0.020 | 0.020 | 0.014 | 0.000 | 0.019 | 0.000 | 0.014 | 0.016 |
| 7440-65-5 | 39 | Y | 0.041 | 0.041 | 0.041 | 0.000 | 0.041 | 0.000 | 0.041 | 0.034 |
| 7440-67-7 | 40 | Zr | 0.063 | 0.063 | 0.063 | 0.000 | 0.063 | 0.000 | 0.063 | 0.052 |
| 7439-98-7 | 42 | Mo | 0.097 | 0.019 | 0.121 | 0.000 | 0.100 | 0.000 | 0.121 | 0.021 |
| 7440-05-3 | 46 | Pd | 0.044 | 0.044 | 0.163 | 0.000 | 0.059 | 0.000 | 0.163 | 0.154 |
| 7440-22-4 | 47 | Ag | 0.064 | 0.016 | 0.039 | 0.000 | 0.061 | 0.000 | 0.039 | 0.026 |
| 7440-43-9 | 48 | Cd | 0.650 | 0.620 | 0.527 | 0.000 | 0.635 | 0.000 | 0.527 | 0.411 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.186 | 0.186 | 0.347 | 0.000 | 0.206 | 0.000 | 0.347 | 0.311 |
| 7440-36-0 | 51 | Sb | 2.600 | 0.520 | 1.055 | 0.000 | 2.407 | 0.000 | 1.055 | 0.149 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.010 | 0.015 | 0.000 | 0.019 | 0.000 | 0.015 | 0.005 |
| 7439-91-0 | 57 | La | 0.088 | 0.088 | 0.046 | 0.000 | 0.083 | 0.000 | 0.046 | 0.033 |
| 7439-97-6 | 80 | Hg | 0.016 | 0.016 | 0.014 | 0.000 | 0.015 | 0.000 | 0.014 | 0.012 |
| 7439-92-1 | 82 | Pb | 66.630 | 6.663 | 68.091 | 0.000 | 66.813 | 0.000 | 68.091 | 6.809 |
| TOTALS: | | | 79.887 | | 78.455 | | 79.708 | | 78.455 | |

(1) Estimated / extrapolated.
(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Zinc Oxide Kiln
Profile Number : 20501
Data Quality : C/E

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Control Device : Unspecified
Reference(s) : 43
Data Source : Sample collected at duct discharge with low-volume sampler.

SCC Assignments: 30400899

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.180 0.370 0.530

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.423 | 0.000 | 0.423 | 0.000 | 0.423 | 0.029 | 0.423 | 0.045 |
| 7440-21-3 | 14 | Si | 0.574 | 0.000 | 0.574 | 0.000 | 0.574 | 0.039 | 0.574 | 0.057 |
| 7723-14-0 | 15 | P | 0.188 | 0.000 | 0.188 | 0.000 | 0.188 | 0.013 | 0.188 | 0.019 |
| 7704-34-9 | 16 | S | 3.290 | 0.000 | 3.290 | 0.000 | 3.290 | 0.223 | 3.290 | 0.516 |
| 7782-50-5 | 17 | Cl | 0.427 | 0.000 | 0.427 | 0.000 | 0.427 | 0.029 | 0.427 | 0.057 |
| 7440-09-7 | 19 | K | 0.615 | 0.000 | 0.615 | 0.000 | 0.615 | 0.042 | 0.615 | 0.061 |
| 7440-70-2 | 20 | Ca | 0.231 | 0.000 | 0.231 | 0.000 | 0.231 | 0.016 | 0.231 | 0.023 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.002 | 0.031 | 0.000 |
| 7440-62-2 | 23 | V | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.001 | 0.011 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.001 | 0.018 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.001 | 0.021 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.188 | 0.000 | 0.188 | 0.000 | 0.188 | 0.013 | 0.188 | 0.019 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.106 | 0.000 | 0.106 | 0.000 | 0.106 | 0.007 | 0.106 | 0.011 |
| 7440-50-8 | 29 | Cu | 0.254 | 0.000 | 0.254 | 0.000 | 0.254 | 0.017 | 0.254 | 0.025 |
| 7440-66-6 | 30 | Zn | 63.182 | 0.000 | 63.182 | 0.000 | 63.182 | 4.292 | 63.182 | 6.318 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 1.184 | 0.000 | 1.184 | 0.000 | 1.184 | 0.080 | 1.184 | 0.118 |
| 7782-49-2 | 34 | Se | 0.377 | 0.000 | 0.377 | 0.000 | 0.377 | 0.026 | 0.377 | 0.038 |
| 7726-95-6 | 35 | Br | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.008 | 0.120 | 0.012 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-05-3 | 46 | Pd | 0.055 | 0.000 | 0.055 | 0.000 | 0.055 | 0.004 | 0.055 | 0.011 |
| 7440-22-4 | 47 | Ag | 0.036 | 0.000 | 0.036 | 0.000 | 0.036 | 0.002 | 0.036 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.080 | 0.000 | 0.080 | 0.000 | 0.080 | 0.005 | 0.080 | 0.018 |
| 7440-74-6 | 49 | In | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.002 | 0.033 | 0.016 |
| 7440-31-5 | 50 | Sn | 0.424 | 0.000 | 0.424 | 0.000 | 0.424 | 0.029 | 0.424 | 0.042 |
| 7440-36-0 | 51 | Sb | 0.391 | 0.000 | 0.391 | 0.000 | 0.391 | 0.027 | 0.391 | 0.053 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.078 |

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PM Profile Speciation Report - continued (profile 20501)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.064 | 0.000 | 0.064 | 0.000 | 0.064 | 0.004 | 0.064 | 0.000 |
| 7439-92-1 | 82 | Pb | 11.664 | 0.000 | 11.664 | 0.000 | 11.664 | 0.792 | 11.664 | 1.166 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 83.987 | | 83.987 | | 83.987 | | 83.987 | |

PM Profile Speciation Report

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Profile Name : Antimony Oxide Plant - Antimony Roasting
Profile Number : 20502
Data Quality : B/D

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Control Device : Wet Scrubber
Reference(s) : 52
Data Source : Samples downstream from water scrubber system, collected with dilution sampler. One representative sample from group nine.

SCC Assignments: 30400299

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.180 | 0.370 | 0.530 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.000 | 0.148 | 0.000 | 0.281 | 0.000 | 0.108 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.148 | 0.000 | 0.281 | 0.000 | 0.108 | 0.000 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.037 | 0.000 | 0.066 | 0.000 | 0.026 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 1.334 | 0.068 | 1.493 | 0.146 | 1.439 | 0.111 | 1.439 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.754 | 0.042 | 0.786 | 0.084 | 0.775 | 0.061 | 0.775 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.538 | 0.000 | 0.935 | 0.000 | 0.366 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | < | 9.197 | < | 16.100 | NE | 0.000 | NE | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.462 | 0.000 | 0.805 | 0.000 | 0.315 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.004 | 0.000 | 0.007 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.005 | 0.001 | 0.080 | 0.004 | 0.055 | 0.004 | 0.055 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.006 | 0.001 | 0.008 | 0.004 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.108 | 0.006 | 0.125 | 0.016 | 0.119 | 0.010 | 0.119 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.015 | 0.001 | 0.010 | 0.004 | 0.012 | 0.002 | 0.012 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.011 | 0.001 | 0.005 | 0.004 | 0.007 | 0.002 | 0.007 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.070 | 0.001 | 0.012 | 0.003 | 0.032 | 0.004 | 0.032 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.005 | 0.001 | 0.004 | 0.003 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.078 | 0.005 | 0.090 | 0.013 | 0.086 | 0.007 | 0.086 | 0.000 |
| 7782-49-2 | 34 | Se | 0.008 | 0.001 | 0.008 | 0.003 | 0.008 | 0.001 | 0.008 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.008 | 0.000 | 0.017 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.001 | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.007 | 0.000 | 0.029 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.029 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.011 | 0.000 | 0.039 | 0.000 | 0.014 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.027 | 0.000 | 0.355 | 0.000 | 0.121 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 76.651 | 3.630 | 87.726 | 7.138 | 83.965 | 6.221 | 83.965 | 0.000 |

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PM Profile Speciation Report - continued (profile 20502)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.039 | 0.000 | 0.212 | 0.000 | 0.073 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.028 | 0.007 | 0.018 | 0.003 | 0.018 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.128 | 0.007 | 0.103 | 0.018 | 0.111 | 0.010 | 0.111 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 79.173 | | 90.478 | | 86.638 | | 86.638 | |

PM Profile Speciation Report

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Profile Name : Antimony Oxide Plant - Antimony Roasting
Profile Number : 20503
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,63
Data Source : Data taken from Reference 62. For details, consult Reference 63.

SCC Assignments: 30400299

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.180 0.370 0.530

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured(3) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.030 | 0.053 | 0.330 | 0.500 | 0.228 | 0.000 | 0.228 | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | 0.750 | 0.810 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.280 | 0.070 | 1.300 | 0.100 | 1.293 | 0.000 | 1.293 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.011 | 0.018 | 0.990 | 0.130 | 0.658 | 0.000 | 0.658 | 0.000 |
| 7440-32-6 | 22 | Ti | NR | 0.000 | 1.000 | 0.600 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | 0.001 | 0.000 | 0.002 | 0.003 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.001 | 0.012 | 0.003 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7726-95-6 | 35 | Br | 0.022 | 0.001 | 0.028 | 0.001 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.530 | 0.030 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | 74.000 | 4.000 | 76.000 | 13.000 | 75.321 | 0.000 | 75.321 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.170 | 0.040 | 0.110 | 0.020 | 0.130 | 0.000 | 0.130 | 0.000 |
| | 201 | OC | 1.000 | 0.600 | 4.800 | 1.600 | 3.509 | 0.000 | 3.509 | 0.000 |
| | 202 | EC | 0.099 | 0.014 | 0.230 | 0.280 | 0.186 | 0.000 | 0.186 | 0.000 |
| | 203 | SO4 | 0.052 | 0.012 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 77.210 | | 85.553 | | 81.366 | | 81.366 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.
(3) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Cast Iron Induction Furnace
Profile Number : 28201
Data Quality : C/E

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Control Device : Unspecified
Reference(s) : 47
Data Source : Mean of 3 tests during, melting, refining, and discharge.

SCC Assignments: 30400303

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.820 | 0.890 | 0.920 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.357 | 2.000 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7429-90-5 | 13 | Al | 1.300 | 0.000 | 1.300 | 0.000 | 1.300 | 0.232 | 1.300 | 0.000 |
| 7440-21-3 | 14 | Si | 2.100 | 0.000 | 2.100 | 0.000 | 2.100 | 0.374 | 2.100 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | 2.500 | 0.000 | 2.500 | 0.000 | 2.500 | 0.446 | 2.500 | 0.000 |
| 7440-09-7 | 19 | K | 3.200 | 0.000 | 3.200 | 0.000 | 3.200 | 0.570 | 3.200 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.267 | 1.500 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.480 | 0.000 | 0.480 | 0.000 | 0.480 | 0.086 | 0.480 | 0.000 |
| 7440-62-2 | 23 | V | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 | 0.006 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.004 | 0.024 | 0.000 |
| 7439-96-5 | 25 | Mn | 1.700 | 0.000 | 1.700 | 0.000 | 1.700 | 0.303 | 1.700 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.700 | 0.000 | 5.700 | 0.000 | 5.700 | 1.016 | 5.700 | 0.000 |
| 7440-48-4 | 27 | Co | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.098 | 0.000 | 0.098 | 0.000 | 0.098 | 0.017 | 0.098 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.021 | 0.120 | 0.000 |
| 7440-66-6 | 30 | Zn | 2.900 | 0.000 | 2.900 | 0.000 | 2.900 | 0.517 | 2.900 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.002 | 0.012 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.004 | 0.021 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.002 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.002 | 0.012 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 28201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.540 | 0.000 | 0.540 | 0.000 | 0.540 | 0.096 | 0.540 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 24.226 | | 24.226 | | 24.226 | | 24.226 | |

PM Profile Speciation Report

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Profile Name : Cast Iron Cupola
Profile Number : 28202
Data Quality : C/D

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Control Device : Unspecified
Reference(s) : 47
Data Source : Mean of 5 tests. XRF and INNA analysis. Scrap, pig iron, coke, and limestone raw materials.

SCC Assignments: 30400301

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.850 | 0.920 | 0.930 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | 1.300 | 0.000 | 1.300 | 0.000 | 1.300 | 0.238 | 1.300 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7429-90-5 | 13 | Al | 1.100 | 0.000 | 1.100 | 0.000 | 1.100 | 0.201 | 1.100 | 0.000 |
| 7440-21-3 | 14 | Si | 24.000 | 0.000 | 24.000 | 0.000 | 24.000 | 4.387 | 24.000 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 2.300 | 0.000 | 2.300 | 0.000 | 2.300 | 0.420 | 2.300 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.890 | 0.000 | 0.890 | 0.000 | 0.890 | 0.163 | 0.890 | 0.000 |
| 7440-09-7 | 19 | K | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.548 | 3.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.183 | 1.000 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.011 | 0.060 | 0.000 |
| 7440-62-2 | 23 | V | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.002 | 0.009 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.052 | 0.000 | 0.052 | 0.000 | 0.052 | 0.010 | 0.052 | 0.000 |
| 7439-96-5 | 25 | Mn | 4.500 | 0.000 | 4.500 | 0.000 | 4.500 | 0.823 | 4.500 | 0.000 |
| 7439-89-6 | 26 | Fe | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 2.742 | 15.000 | 0.000 |
| 7440-48-4 | 27 | Co | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.006 | 0.035 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.048 | 0.260 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.830 | 0.000 | 0.830 | 0.000 | 0.830 | 0.152 | 0.830 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.002 | 0.013 | 0.000 |
| 7782-49-2 | 34 | Se | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.002 | 0.009 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.004 | 0.022 | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | 0.370 | 0.000 | 0.370 | 0.000 | 0.370 | 0.068 | 0.370 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 28202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.230 | 0.000 | 0.230 | 0.000 | 0.230 | 0.042 | 0.230 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 54.986 | | 54.986 | | 54.986 | | 54.986 | |

PM Profile Speciation Report

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Profile Name : Steel Electric Arc Furnace
Profile Number : 28305
Data Quality : C/D

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Control Device : Baghouse
Reference(s) : 46
Data Source : Sampled with a 2-stage virtual impactor with a Method 5 heated probe. No dilution air. Analysis by XRF, INNA, IC, and carbon oxidation. Average of 2 baghouse samples.

SCC Assignments: 30400701

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.750 0.760 0.780

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(2) | | Total Measured(3) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.500 | NA | 0.500 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 1.260 | 0.480 | 1.260 | 0.480 | 1.260 | 0.696 | 1.260 | 0.000 |
| 7439-95-4 | 12 | Mg | 6.500 | 0.710 | 6.500 | 0.710 | 6.500 | 1.579 | 6.500 | 0.000 |
| 7429-90-5 | 13 | Al | 0.650 | 0.160 | 0.650 | 0.160 | 0.650 | 0.251 | 0.650 | 0.000 |
| 7440-21-3 | 14 | Si | 5.000 | 0.210 | 5.000 | 0.210 | 5.000 | 1.003 | 5.000 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.960 | 0.070 | 1.950 | 0.070 | 1.960 | 0.388 | 1.960 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.850 | 0.780 | 1.850 | 0.780 | 1.850 | 1.119 | 1.850 | 0.000 |
| 7440-09-7 | 19 | K | 0.920 | 0.070 | 0.920 | 0.070 | 0.920 | 0.201 | 0.920 | 0.000 |
| 7440-70-2 | 20 | Ca | 6.200 | 0.570 | 6.200 | 0.570 | 6.200 | 1.422 | 6.200 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.200 | 0.020 | 0.200 | 0.020 | 0.200 | 0.047 | 0.200 | 0.000 |
| 7440-62-2 | 23 | V | 0.060 | 0.010 | 0.060 | 0.010 | 0.060 | 0.018 | 0.060 | 0.000 |
| 7440-47-3 | 24 | Cr | 2.100 | 1.400 | 2.100 | 1.400 | 2.100 | 1.946 | 2.100 | 0.000 |
| 7439-96-5 | 25 | Mn | 8.700 | 0.900 | 8.700 | 0.900 | 8.700 | 2.073 | 8.700 | 0.000 |
| 7439-89-6 | 26 | Fe | 32.000 | 3.000 | 32.000 | 3.000 | 32.000 | 7.383 | 32.000 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.700 | 0.070 | 0.700 | 0.070 | 0.700 | 0.165 | 0.700 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.280 | 0.030 | 0.280 | 0.030 | 0.280 | 0.068 | 0.280 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.200 | 0.120 | 1.200 | 0.120 | 1.200 | 0.283 | 1.200 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-65-5 | 39 | Y | 0.009 | 0.006 | 0.007 | 0.001 | 0.008 | 0.004 | 0.009 | 0.005 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-98-7 | 42 | Mo | 0.039 | 0.021 | 0.021 | 0.004 | 0.028 | 0.010 | 0.034 | 0.016 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.019 | 0.007 | 0.004 | 0.004 | 0.008 | 0.002 | 0.014 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 28305)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(1) %wt | 0-2.5 um(1) unc | 2.5-10 um(1) %wt | 2.5-10 um(1) unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured(3) %wt | Total Measured(3) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-74-6 | 49 | In | 0.029 | 0.039 | 0.011 | 0.008 | 0.018 | 0.016 | 0.024 | 0.029 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.337 | 0.000 | 0.067 | 0.000 | 0.138 | 0.000 | 0.250 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.760 | 0.070 | 0.760 | 0.070 | 0.760 | 0.174 | 0.760 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | 2.500 | 1.300 | 2.500 | 1.300 | 2.500 | 1.832 | 2.500 | 0.000 |
| | 204 | NO3 | NA | 1.400 | NA | 1.400 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 72.917 | | 72.876 | | 72.898 | | 72.909 | |

(1) Data as reported in Receptor Model Source Composition Library.
(2) Calculated based on a methodology described in Source Composition Library.
(3) Extrapolated / Estimated.

PM Profile Speciation Report

Profile Name : Steel Foundry - Steel Heat Treating (Salt Quench)
Profile Number : 28601
Data Quality : C/E

Control Device : Uncontrolled
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones, at 400 deg F. analyzed by XRF. Si, P, and S non-quantitative. Average of 2 tests from baghouse outlet.

SCC Assignments: 30400704

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.780 0.910 0.940

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | 30.000 | 0.000 | 30.000 | 0.000 | 30.000 | 4.979 | 30.000 | 0.000 |
| 7440-09-7 | 19 | K | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.664 | 4.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.091 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.091 | 0.550 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 9.000 | 0.000 | 9.000 | 0.000 | 9.000 | 1.494 | 9.000 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.332 | 2.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.008 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.008 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.008 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.008 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

PM Profile Speciation Report - continued (profile 28601)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.091 | 0.550 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.008 | 0.050 | 0.000 |
| | 201 | OC | 6.000 | 0.000 | 6.000 | 0.000 | 6.000 | 0.996 | 6.000 | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | 32.000 | 0.000 | 32.000 | 0.000 | 32.000 | 5.311 | 32.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.091 | 0.550 | 0.000 |
| TOTALS: | | | 85.450 | | 85.450 | | 85.450 | | 85.450 | |

PM Profile Speciation Report

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Profile Name : Copper Oxide Kiln
Profile Number : 29201
Data Quality : C/E

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Control Device : Wet Scrubber
Reference(s) : 43
Data Source : Sampled with high-volume sampler from plume level at top of stack.

SCC Assignments: 30499999

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.180 0.370 0.530

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.347 | 0.000 | 0.347 | 0.000 | 0.347 | 0.024 | 0.347 | 0.035 |
| 7440-21-3 | 14 | Si | 0.362 | 0.000 | 0.362 | 0.000 | 0.362 | 0.025 | 0.362 | 0.036 |
| 7723-14-0 | 15 | P | 0.193 | 0.000 | 0.193 | 0.000 | 0.193 | 0.013 | 0.193 | 0.019 |
| 7704-34-9 | 16 | S | 4.488 | 0.000 | 4.488 | 0.000 | 4.488 | 0.305 | 4.488 | 0.449 |
| 7782-50-5 | 17 | Cl | 2.116 | 0.000 | 2.116 | 0.000 | 2.116 | 0.144 | 2.116 | 0.212 |
| 7440-09-7 | 19 | K | 0.211 | 0.000 | 0.211 | 0.000 | 0.211 | 0.014 | 0.211 | 0.021 |
| 7440-70-2 | 20 | Ca | 0.750 | 0.000 | 0.750 | 0.000 | 0.750 | 0.051 | 0.750 | 0.100 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.001 | 0.018 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.001 | 0.014 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.007 | 0.100 | 0.100 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.203 | 0.000 | 0.203 | 0.000 | 0.203 | 0.014 | 0.203 | 0.020 |
| 7440-50-8 | 29 | Cu | 54.151 | 0.000 | 54.151 | 0.000 | 54.151 | 3.678 | 54.151 | 5.415 |
| 7440-66-6 | 30 | Zn | 0.127 | 0.000 | 0.127 | 0.000 | 0.127 | 0.009 | 0.127 | 0.039 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.001 | 0.018 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.001 | 0.011 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.100 | 0.000 | 0.200 | 0.000 | 0.193 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.092 | 0.005 | 0.110 | 0.010 | 0.094 | 0.021 | 0.094 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.001 | 0.011 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.011 | 0.002 | 0.000 | 0.030 | 0.010 | 0.027 | 0.010 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.088 | 0.000 | 0.088 | 0.000 | 0.088 | 0.006 | 0.088 | 0.016 |
| 7440-74-6 | 49 | In | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 29201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(1) %wt | 0-2.5 um(1) unc | 2.5-10 um(1) %wt | 2.5-10 um(1) unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured(2) %wt | Total Measured(2) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.018 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 13494-80-9 | 52 | Te | 0.090 | 0.022 | 0.130 | 0.010 | 0.095 | 0.028 | 0.095 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.001 | 0.013 | 0.083 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.234 | 0.000 | 0.234 | 0.000 | 0.234 | 0.016 | 0.234 | 0.023 |
| 7440-69-9 | 83 | Bi | 0.370 | 0.100 | NR | 0.000 | 0.322 | 0.088 | 0.322 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 64.018 | | 63.695 | | 63.976 | | 63.976 | |

(1) Extrapolated / Estimated.

(2) Data as reported in Receptor Model Source Composition Library.

PM Profile Speciation Report

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Profile Name : Secondary Copper Pyrometal - Cathode Charge
Profile Number : 29501
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,75
Data Source : Data taken from Reference 62. For details, consult Reference 75.

SCC Assignments: 30400215

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.820 0.890 0.920

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.076 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.152 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.030 |
| 7704-34-9 | 16 | S | 0.187 | 0.000 | 0.187 | 0.000 | 0.187 | 0.000 | 0.187 | 0.182 |
| 7782-50-5 | 17 | Cl | 0.373 | 0.000 | 0.373 | 0.000 | 0.373 | 0.000 | 0.373 | 0.075 |
| 7440-09-7 | 19 | K | 0.152 | 0.000 | 0.152 | 0.000 | 0.152 | 0.000 | 0.152 | 0.061 |
| 7440-70-2 | 20 | Ca | 0.273 | 0.000 | 0.273 | 0.000 | 0.273 | 0.000 | 0.273 | 0.076 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.005 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 |
| 7439-96-5 | 25 | Mn | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.002 |
| 7439-89-6 | 26 | Fe | 0.176 | 0.000 | 0.176 | 0.000 | 0.176 | 0.000 | 0.176 | 0.035 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.015 |
| 7440-50-8 | 29 | Cu | 15.435 | 0.000 | 15.435 | 0.000 | 15.435 | 0.000 | 15.435 | 3.087 |
| 7440-66-6 | 30 | Zn | 1.672 | 0.000 | 1.672 | 0.000 | 1.672 | 0.000 | 1.672 | 0.334 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.015 |
| 7440-38-2 | 33 | As | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.142 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| 7726-95-6 | 35 | Br | 0.037 | 0.000 | 0.037 | 0.000 | 0.037 | 0.000 | 0.037 | 0.007 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 |
| 7440-67-7 | 40 | Zr | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.008 |
| 7439-98-7 | 42 | Mo | 0.046 | 0.000 | 0.046 | 0.000 | 0.046 | 0.000 | 0.046 | 0.015 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.012 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.030 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.015 |
| 7440-31-5 | 50 | Sn | 0.349 | 0.000 | 0.349 | 0.000 | 0.349 | 0.000 | 0.349 | 0.070 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.015 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.076 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.122 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| 7439-92-1 | 82 | Pb | 2.521 | 0.000 | 2.521 | 0.000 | 2.521 | 0.000 | 2.521 | 0.504 |
| TOTALS: | | | 21.248 | | 21.248 | | 21.248 | | 21.248 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Secondary Copper Pyrometal - Regular Charge
Profile Number : 29502
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,75
Data Source : Data taken from Reference 62. For details, consult Reference 75.

SCC Assignments: 30400214

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.820 | 0.890 | 0.920 |

Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.191 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.511 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.064 |
| 7704-34-9 | 16 | S | 0.348 | 0.000 | 0.348 | 0.000 | 0.348 | 0.000 | 0.348 | 0.579 |
| 7782-50-5 | 17 | Cl | 2.004 | 0.000 | 2.004 | 0.000 | 2.004 | 0.000 | 2.004 | 0.401 |
| 7440-09-7 | 19 | K | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.064 |
| 7440-70-2 | 20 | Ca | 0.594 | 0.000 | 0.594 | 0.000 | 0.594 | 0.000 | 0.594 | 0.119 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 |
| 7439-89-6 | 26 | Fe | 0.312 | 0.000 | 0.312 | 0.000 | 0.312 | 0.000 | 0.312 | 0.062 |
| 7440-02-0 | 28 | Ni | 0.093 | 0.000 | 0.093 | 0.000 | 0.093 | 0.000 | 0.093 | 0.019 |
| 7440-50-8 | 29 | Cu | 18.755 | 0.000 | 18.755 | 0.000 | 18.755 | 0.000 | 18.755 | 3.751 |
| 7440-66-6 | 30 | Zn | 2.745 | 0.000 | 2.745 | 0.000 | 2.745 | 0.000 | 2.745 | 0.549 |
| 7440-55-3 | 31 | Ga | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.035 |
| 7440-38-2 | 33 | As | 0.135 | 0.000 | 0.135 | 0.000 | 0.135 | 0.000 | 0.135 | 0.410 |
| 7782-49-2 | 34 | Se | 0.157 | 0.000 | 0.157 | 0.000 | 0.157 | 0.000 | 0.157 | 0.031 |
| 7726-95-6 | 35 | Br | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.011 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.008 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.009 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.030 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.039 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.032 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.032 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.032 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.057 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.063 |
| 7440-31-5 | 50 | Sn | 0.532 | 0.000 | 0.532 | 0.000 | 0.532 | 0.000 | 0.532 | 0.115 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.097 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.319 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.638 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 |
| 7439-92-1 | 82 | Pb | 7.159 | 0.000 | 7.159 | 0.000 | 7.159 | 0.000 | 7.159 | 1.432 |
| TOTALS: | | | 33.198 | | 33.198 | | 33.198 | | 33.198 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

## 3.6 MINERAL PRODUCTS INDUSTRY

Production and processing of minerals produces particulate emissions frequently of the same composition as the finished product. This is because most of the processes involved generate dust. These processes include quarrying, crushing, screening, drying, and storage and handling.

PM Profile Speciation Report

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Profile Name : Limestone Dust
Profile Number : 21101
Data Quality : B/C

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Limestone ground for use as flux. Samples sieved and resuspended.

SCC Assignments: 30301005

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 2.110 | 0.211 | 1.199 | 0.120 | 1.521 | 0.148 | 1.067 | 0.107 |
| 7440-21-3 | 14 | Si | 6.496 | 0.650 | 3.394 | 0.339 | 4.489 | 0.448 | 2.813 | 0.281 |
| 7723-14-0 | 15 | P | 0.126 | 0.040 | < | 0.029 | NE | 0.000 | < | 0.029 |
| 7704-34-9 | 16 | S | 1.023 | 0.104 | 0.663 | 0.066 | 0.790 | 0.075 | 0.743 | 0.074 |
| 7782-50-5 | 17 | Cl | 0.455 | 0.048 | 0.410 | 0.041 | 0.426 | 0.038 | 0.420 | 0.042 |
| 7440-09-7 | 19 | K | 0.163 | 0.042 | 0.135 | 0.023 | 0.145 | 0.020 | 0.091 | 0.022 |
| 7440-70-2 | 20 | Ca | 29.515 | 2.951 | 29.723 | 2.972 | 29.650 | 2.561 | 28.643 | 2.864 |
| 7440-32-6 | 22 | Ti | 0.081 | 0.000 | 0.053 | 0.000 | 0.063 | 0.000 | 0.046 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.028 | 0.000 | 0.036 | 0.000 | 0.025 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.043 | 0.104 | 0.536 | 0.054 | 0.715 | 0.072 | 0.441 | 0.044 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.016 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | 0.104 | 0.010 | 0.020 | 0.000 | 0.050 | 0.000 | 0.014 | 0.000 |
| 7440-38-2 | 33 | As | 0.020 | 0.013 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.027 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.024 | 0.000 | 0.018 | 0.000 | 0.020 | 0.000 | 0.022 | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.021 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.027 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.042 | 0.045 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-74-6 | 49 | In | < | 0.047 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.052 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.095 | < | 0.017 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.256 | < | 0.044 | NE | 0.000 | < | 0.022 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.270 | 0.027 | 0.048 | 0.000 | 0.126 | 0.000 | 0.051 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 21101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 41.565 | | 36.227 | | 38.031 | | 34.376 | |

PM Profile Speciation Report

---

Profile Name : Coke Dust
Profile Number : 21203
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 43
Data Source : Fugitive dust from storage and handling. Bulk sample ground, sieved, and resuspended.

SCC Assignments: 30510104, 30510204, 30510304, 30510404, 30510504

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 4.039 | 0.519 | 2.568 | 0.257 | 3.001 | 0.262 | 3.007 | 0.301 |
| 7440-21-3 | 14 | Si | 8.131 | 1.005 | 6.250 | 0.625 | 6.803 | 0.551 | 7.663 | 0.766 |
| 7723-14-0 | 15 | P | 0.137 | 0.041 | 0.118 | 0.012 | 0.124 | 0.015 | 0.144 | 0.014 |
| 7704-34-9 | 16 | S | 0.381 | 0.132 | 0.568 | 0.057 | 0.513 | 0.051 | 0.596 | 0.060 |
| 7782-50-5 | 17 | Cl | 0.164 | 0.055 | 0.032 | 0.000 | 0.071 | 0.018 | 0.047 | 0.000 |
| 7440-09-7 | 19 | K | 0.217 | 0.038 | 0.167 | 0.017 | 0.182 | 0.017 | 0.187 | 0.019 |
| 7440-70-2 | 20 | Ca | 2.738 | 0.342 | 2.285 | 0.228 | 2.418 | 0.191 | 2.229 | 0.223 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.236 | 0.034 | 0.157 | 0.016 | 0.180 | 0.016 | 0.181 | 0.018 |
| 7440-62-2 | 23 | V | 0.022 | 0.000 | 0.000 | 0.000 | 0.006 | 0.001 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.016 | 0.000 | 0.000 | 0.000 | 0.005 | 0.001 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.010 | 0.000 | 0.007 | 0.000 | 0.013 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.464 | 0.189 | 0.907 | 0.091 | 1.071 | 0.095 | 1.037 | 0.104 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.516 | 0.068 | 0.731 | 0.073 | 0.668 | 0.047 | 1.083 | 0.108 |
| 7440-66-6 | 30 | Zn | 0.399 | 0.054 | 0.313 | 0.031 | 0.338 | 0.028 | 0.459 | 0.046 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.041 | 0.026 | 0.021 | 0.000 | 0.027 | 0.008 | 0.023 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.014 | 0.000 | 0.000 | 0.000 | 0.004 | 0.001 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.012 | 0.014 | 0.000 | 0.000 | 0.004 | 0.004 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.062 | 0.000 | 0.000 | 0.000 | 0.018 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.089 | 0.013 | 0.000 | 0.024 | 0.026 | 0.012 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.119 | 0.000 | 0.012 | 0.000 | 0.035 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.225 | 0.203 | 0.069 | 0.023 | 0.115 | 0.061 | 0.000 | 0.018 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 21203)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.560 | 0.610 | 0.000 | 0.061 | 0.165 | 0.182 | 0.066 | 0.048 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.017 | 0.016 | 0.000 | 0.000 | 0.005 | 0.005 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.249 | 0.049 | 0.131 | 0.013 | 0.166 | 0.019 | 0.201 | 0.020 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 19.628 | | 14.340 | | 15.897 | | 16.948 | |

PM Profile Speciation Report

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Profile Name : Coal Dust
Profile Number : 21204
Data Quality : B/C

---

Control Device : Uncontrolled
Reference(s) : 43
Data Source : Fugitive dust from storage and handling. Sample sieved and resuspended.

SCC Assignments: 30510103, 30510203, 30510303, 30510403, 30510503

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 10.865 | 1.086 | 4.627 | 0.463 | 6.462 | 0.602 | 5.273 | 0.527 |
| 7440-21-3 | 14 | Si | 22.466 | 2.247 | 11.346 | 1.135 | 14.617 | 1.282 | 12.956 | 1.296 |
| 7723-14-0 | 15 | P | 0.194 | 0.019 | 0.085 | 0.000 | 0.117 | 0.000 | 0.097 | 0.000 |
| 7704-34-9 | 16 | S | 0.566 | 0.057 | 0.417 | 0.042 | 0.461 | 0.036 | 0.533 | 0.053 |
| 7782-50-5 | 17 | Cl | 0.171 | 0.020 | 0.067 | 0.000 | 0.098 | 0.000 | 0.086 | 0.000 |
| 7440-09-7 | 19 | K | 0.968 | 0.097 | 0.489 | 0.049 | 0.630 | 0.055 | 0.519 | 0.052 |
| 7440-70-2 | 20 | Ca | 3.142 | 0.314 | 3.422 | 0.342 | 3.340 | 0.237 | 4.465 | 0.446 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.283 | 0.028 | 0.161 | 0.016 | 0.197 | 0.017 | 0.172 | 0.017 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.013 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 1.422 | 0.142 | < | 0.094 | NE | 0.000 | 1.109 | 0.111 |
| 7440-48-4 | 27 | Co | < | 0.000 | 0.945 | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.022 | 0.000 | < | 0.000 | NE | 0.000 | 0.049 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.033 | 0.000 | < | 0.000 | NE | 0.000 | 0.041 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.016 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.011 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.014 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.021 | 0.017 | 0.000 | NE | 0.000 | 0.012 | 0.000 |
| 7440-74-6 | 49 | In | 0.031 | 0.024 | < | 0.011 | NE | 0.000 | < | 0.011 |
| 7440-31-5 | 50 | Sn | 0.027 | 0.028 | < | 0.013 | NE | 0.000 | < | 0.012 |
| 7440-36-0 | 51 | Sb | < | 0.054 | 0.018 | 0.021 | NE | 0.000 | < | 0.022 |

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PM Profile Speciation Report - continued (profile 21204)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.077 | 0.138 | < | 0.061 | NE | 0.000 | 0.108 | 0.056 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.072 | 0.000 | 0.018 | 0.000 | 0.034 | 0.000 | 0.044 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 40.382 | | 21.627 | | 25.971 | | 25.480 | |

PM Profile Speciation Report

---

Profile Name : Calcium Carbide Furnace
Profile Number : 25201
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 46
Data Source : Sampled with a 2-stage virtual impactor with a Method 5 heated probe. Analysis by XRF, INNA, IC, and carbon oxidation. No dilution air. Average of 2 samples from same source.

SCC Assignments: 30500999

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.180 | 0.370 | 0.530 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.100 | NA | 0.200 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.920 | 0.100 | 0.430 | 0.050 | 0.596 | 0.062 | 0.596 | 0.000 |
| 7439-95-4 | 12 | Mg | 2.400 | 0.350 | 1.250 | 0.350 | 1.641 | 0.212 | 1.641 | 0.000 |
| 7429-90-5 | 13 | Al | 0.580 | 0.110 | 0.860 | 0.130 | 0.765 | 0.076 | 0.765 | 0.000 |
| 7440-21-3 | 14 | Si | 2.500 | 0.070 | 2.900 | 1.300 | 2.764 | 0.479 | 2.764 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.600 | 0.420 | 0.540 | 0.570 | 0.900 | 0.254 | 0.900 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.050 | 0.070 | 0.960 | 0.630 | 0.991 | 0.226 | 0.991 | 0.000 |
| 7440-09-7 | 19 | K | 1.250 | 0.350 | 0.480 | 0.300 | 0.742 | 0.169 | 0.742 | 0.000 |
| 7440-70-2 | 20 | Ca | 30.000 | 4.000 | 25.800 | 8.700 | 27.226 | 3.767 | 27.226 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.020 | < | 0.020 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | 0.009 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.010 | < | 0.010 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.042 | 0.003 | 0.036 | 0.010 | 0.038 | 0.004 | 0.038 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.540 | 0.080 | 0.330 | 0.130 | 0.401 | 0.060 | 0.401 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.022 | 0.008 | 0.021 | 0.006 | 0.021 | 0.004 | 0.021 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.020 | 0.011 | 0.040 | 0.004 | 0.033 | 0.005 | 0.033 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.015 | 0.007 | < | 0.010 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.010 | < | 0.010 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 25201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.008 | 0.004 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 7.300 | 1.300 | 4.500 | 0.780 | 5.451 | 0.659 | 5.451 | 0.000 |
| | 202 | EC | 1.200 | 0.280 | 3.600 | 1.800 | 2.785 | 0.645 | 2.785 | 0.000 |
| | 203 | SO4 | 3.200 | 0.420 | 0.930 | 1.100 | 1.701 | 0.431 | 1.701 | 0.000 |
| | 204 | NO3 | 0.570 | 0.240 | NA | 0.500 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 53.217 | | 42.686 | | 46.055 | | 46.055 | |

PM Profile Speciation Report

---

Profile Name : Silica Manufacturing
Profile Number : 25401
Data Quality : C/D

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Control Device : Baghouse
Reference(s) : 21
Data Source : Sampled with a 2-stage virtual impactor. Analysis by XRF.
Average of 3 source tests from a baghouse outlet.

SCC Assignments: 30599999

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.485 | 0.390 | 0.553 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.990 | 0.200 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-21-3 | 14 | Si | 45.320 | 9.120 | 46.360 | 9.270 | 45.448 | 13.955 | 45.448 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.140 | 0.030 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 0.280 | 0.060 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.005 | 0.001 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | 0.160 | 0.030 | 0.390 | 0.078 | 0.188 | 0.090 | 0.188 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.013 | 0.003 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.003 | 0.001 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 25401)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 46.911 | | 46.750 | | 45.636 | | 45.636 | |

PM Profile Speciation Report

---

Profile Name : Asphalt Roofing Manufacturing
Profile Number : 25402
Data Quality : C/D

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Control Device : Unspecified
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. Average of 2 samples taken down stream of control system.

SCC Assignments: 30500102

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.330 | 0.380 | 0.400 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 7.600 | 7.000 | 5.000 | 7.000 | 7.145 | 8.236 | 7.330 | 7.000 |
| 7782-50-5 | 17 | Cl | 12.000 | 3.000 | 12.000 | 3.000 | 12.000 | 4.021 | 12.000 | 3.000 |
| 7440-09-7 | 19 | K | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.400 | 0.700 | 3.400 | 0.700 | 3.400 | 0.991 | 3.400 | 0.700 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.100 | 0.300 | 2.100 | 0.300 | 2.100 | 0.493 | 2.100 | 0.300 |
| 7440-48-4 | 27 | Co | 1.800 | 0.300 | 1.800 | 0.300 | 1.800 | 0.459 | 1.800 | 0.300 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 25402)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 201 | OC | 23.000 | 0.000 | 23.000 | 0.000 | 23.000 | 0.000 | 23.000 | 0.000 |
| | 202 | EC | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 |
| | 203 | SO4 | 23.000 | 0.000 | 23.000 | 0.000 | 23.000 | 0.000 | 23.000 | 0.000 |
| | 204 | NO3 | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| TOTALS: | | | 76.650 | | 74.050 | | 76.195 | | 76.380 | |

PM Profile Speciation Report

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Profile Name : Carborundum Manufacturing
Profile Number : 25406
Data Quality : B/D

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Control Device : Uncontrolled
Reference(s) : 46, 54
Data Source : Sampled with a 2-stage virtual impactor with a Method 5 heated probe. No dilution air. Analysis by XRF, INNA, IC, and carbon oxidation. Samples from roof exhaust vent. Average of 4 samples from burn cycle and bottom removal.

SCC Assignments: 30500999

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.485 | 0.390 | 0.553 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | 0.050 | 0.030 | NA | 0.400 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.120 | 0.100 | 0.260 | 0.170 | 0.137 | 0.177 | 0.137 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.780 | 1.200 | < | 0.400 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.350 | 0.400 | 2.800 | 4.300 | 0.651 | 3.804 | 0.651 | 0.000 |
| 7440-21-3 | 14 | Si | 3.500 | 4.300 | 12.000 | 15.000 | 4.545 | 0.000 | 4.545 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 4.800 | 6.600 | 0.410 | 0.310 | 4.260 | 5.826 | 4.260 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.700 | 1.500 | 0.990 | 0.430 | 1.613 | 1.390 | 1.613 | 0.000 |
| 7440-09-7 | 19 | K | 0.790 | 1.100 | 0.720 | 1.100 | 0.781 | 1.371 | 0.781 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.140 | 0.130 | 0.570 | 0.490 | 0.193 | 0.451 | 0.193 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.014 | 0.019 | 0.033 | 0.490 | 0.016 | 0.430 | 0.016 | 0.000 |
| 7440-62-2 | 23 | V | 0.007 | 0.008 | 0.012 | 0.010 | 0.008 | 0.011 | 0.008 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.009 | 0.011 | 0.004 | 0.007 | 0.008 | 0.012 | 0.008 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.035 | 0.041 | 0.029 | 0.025 | 0.034 | 0.042 | 0.034 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.330 | 0.610 | 0.270 | 0.210 | 0.323 | 0.568 | 0.323 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.007 | 0.017 | 0.230 | 0.006 | 0.202 | 0.006 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.019 | 0.023 | 0.055 | 0.018 | 0.023 | 0.027 | 0.023 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.004 | 0.004 | < | 0.010 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.017 | 0.010 | 0.011 | 0.009 | 0.016 | 0.012 | 0.016 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 25406)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < 0.000 | | < 0.000 | | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < 0.000 | | < 0.000 | | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < 0.000 | | < 0.000 | | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < 0.000 | | < 0.000 | | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < 0.000 | | < 0.000 | | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < 0.010 | | < 0.010 | | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 21.400 | 7.400 | 4.600 | 2.300 | 19.334 | 7.319 | 19.334 | 0.000 |
| | 202 | EC | 13.670 | 13.000 | 24.000 | 15.000 | 14.940 | 0.000 | 14.940 | 0.000 |
| | 203 | SO4 | 16.000 | 25.000 | 1.600 | 1.830 | 14.229 | 0.000 | 14.229 | 0.000 |
| | 204 | NO3 | 1.600 | 2.100 | 0.830 | 0.480 | 1.505 | 1.902 | 1.505 | 0.000 |
| TOTALS: | | | 65.339 | | 49.211 | | 62.622 | | 62.622 | |

PM Profile Speciation Report

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Profile Name : Glass Furnace
Profile Number : 27102
Data Quality : B/D

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Control Device : Uncontrolled
Reference(s) : 49
Data Source : Average of 3 replicate samples collected with a dilution sampler.

SCC Assignments: 30501402

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.910 0.930 0.950

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.003 | 0.003 | 0.003 | 0.000 | 0.003 | 0.003 | NA | 0.000 |
| 7440-42-8 | 5 | B | 0.010 | 0.010 | 0.010 | 0.000 | 0.010 | 0.010 | NA | 0.000 |
| 7782-41-4 | 9 | F | 0.027 | 0.006 | 0.027 | 0.000 | 0.027 | 0.008 | 0.025 | 0.005 |
| 7440-23-5 | 11 | Na | 12.800 | 1.280 | 12.800 | 0.000 | 12.800 | 2.742 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | 0.183 | 0.018 | 0.183 | 0.000 | 0.183 | 0.039 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.011 | 0.011 | 0.011 | 0.000 | 0.011 | 0.011 | 0.028 | 0.010 |
| 7440-21-3 | 14 | Si | 0.320 | 0.060 | 0.320 | 0.000 | 0.320 | 0.084 | 0.347 | 0.055 |
| 7723-14-0 | 15 | P | 0.025 | 0.025 | 0.025 | 0.000 | 0.025 | 0.024 | 0.032 | 0.024 |
| 7704-34-9 | 16 | S | 17.600 | 1.760 | 17.600 | 0.000 | 17.600 | 3.770 | 17.512 | 1.751 |
| 7782-50-5 | 17 | Cl | 0.016 | 0.003 | 0.016 | 0.000 | 0.016 | 0.004 | 0.020 | 0.007 |
| 7440-09-7 | 19 | K | 1.800 | 0.180 | 1.800 | 0.000 | 1.800 | 0.386 | 1.835 | 0.183 |
| 7440-70-2 | 20 | Ca | 0.427 | 0.043 | 0.427 | 0.000 | 0.427 | 0.092 | 0.461 | 0.046 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.005 | 0.000 |
| 7440-62-2 | 23 | V | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 | 0.006 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.215 | 0.021 | 0.215 | 0.000 | 0.215 | 0.046 | 0.218 | 0.022 |
| 7439-96-5 | 25 | Mn | 0.003 | 0.001 | 0.003 | 0.000 | 0.003 | 0.001 | 0.003 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.026 | 0.003 | 0.026 | 0.000 | 0.026 | 0.006 | 0.034 | 0.006 |
| 7440-48-4 | 27 | Co | 0.020 | 0.020 | 0.020 | 0.000 | 0.020 | 0.020 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.022 | 0.002 | 0.022 | 0.000 | 0.022 | 0.005 | 0.023 | 0.002 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.023 | 0.002 | 0.023 | 0.000 | 0.023 | 0.005 | 0.023 | 0.002 |
| 7782-49-2 | 34 | Se | 0.014 | 0.003 | 0.014 | 0.000 | 0.014 | 0.004 | 0.014 | 0.003 |
| 7726-95-6 | 35 | Br | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.013 | 0.001 | 0.013 | 0.000 | 0.013 | 0.003 | 0.013 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 | 0.003 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.042 | 0.004 | 0.042 | 0.000 | 0.042 | 0.009 | 0.044 | 0.004 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.003 | 0.002 | 0.003 | 0.000 | 0.003 | 0.002 | 0.003 | 0.002 |
| 7440-31-5 | 50 | Sn | 0.015 | 0.003 | 0.015 | 0.000 | 0.015 | 0.004 | 0.014 | 0.003 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.003 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - - continued (profile 27102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.003 | 0.001 | 0.003 | 0.000 | 0.003 | 0.001 | 0.009 | 0.008 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.195 | 0.019 | 0.195 | 0.000 | 0.195 | 0.042 | 0.194 | 0.019 |
| | 201 | OC | 0.710 | 0.080 | 0.710 | 0.000 | 0.710 | 0.156 | 1.050 | 0.105 |
| | 202 | EC | 0.062 | 0.080 | 0.062 | 0.000 | 0.062 | 0.078 | 0.154 | 0.105 |
| | 203 | SO4 | 48.900 | 7.300 | 48.900 | 0.000 | 48.900 | 11.690 | 50.341 | 6.579 |
| | 204 | NO3 | 0.015 | 0.003 | 0.015 | 0.000 | 0.015 | 0.004 | 0.018 | 0.006 |
| TOTALS: | | | 83.528 | | 83.528 | | 83.528 | | 72.441 | |

PM Profile Speciation Report

---

Profile Name : Cement Kiln (Gas-Fired)
Profile Number : 27201
Data Quality : D/E

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Control Device : Baghouse
Reference(s) : 10
Data Source : SASS train with Method 5 heated probe, 3 cyclones, at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. Average of 2 samples downstream from baghouse.

SCC Assignments: 30500606

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.450 | 0.790 | 0.840 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 2.400 | 0.400 | < | 0.000 | NE | 0.000 | 2.200 | 0.800 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | 2.400 | 0.400 | 1.500 | 0.300 | 1.982 | 0.343 | 1.400 | 0.300 |
| 7440-70-2 | 20 | Ca | 16.100 | 3.000 | 22.000 | 3.000 | 18.839 | 3.071 | 27.000 | 3.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.550 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | 0.550 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | 0.550 | 0.000 | NE | 0.000 | 1.200 | 0.100 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 27201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 201 | OC | NA | 0.000 | 2.660 | 0.000 | NE | 0.000 | 3.220 | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | 4.270 | 0.000 | 1.680 | 0.000 | 3.067 | 0.000 | 1.260 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| | 206 | CO3 | 0.000 | 0.000 | 8.100 | 0.000 | 3.761 | 0.614 | 8.790 | 0.000 |
| TOTALS: | | | 26.270 | | 37.040 | | 28.199 | | 46.170 | |

PM Profile Speciation Report

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Profile Name : Cement Kiln (Coal-Fired)
Profile Number : 27203
Data Quality : B/D

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Control Device : ESP
Reference(s) : 49
Data Source : Average of 2 replicate samples from a single stack collected with a dilution sampler with a 2-stage virtual impactor.

SCC Assignments: 30500706

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.640 0.840 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.020 | 0.020 | 0.020 | 0.000 | 0.020 | 0.015 | NA | 0.000 |
| 7440-42-8 | 5 | B | 0.050 | 0.050 | 0.050 | 0.000 | 0.050 | 0.038 | NA | 0.000 |
| 7782-41-4 | 9 | F | 0.200 | 0.028 | 0.200 | 0.000 | 0.200 | 0.037 | 0.200 | 0.109 |
| 7440-23-5 | 11 | Na | 2.290 | 0.460 | 2.290 | 0.000 | 2.290 | 0.489 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | 0.240 | 0.024 | 0.240 | 0.000 | 0.240 | 0.040 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 4.280 | 0.430 | 4.280 | 0.000 | 4.280 | 0.721 | 4.106 | 0.411 |
| 7440-21-3 | 14 | Si | 8.440 | 0.844 | 8.440 | 0.000 | 8.440 | 1.421 | 8.896 | 1.362 |
| 7723-14-0 | 15 | P | 0.017 | 0.075 | 0.017 | 0.000 | 0.017 | 0.057 | 0.029 | 0.049 |
| 7704-34-9 | 16 | S | 6.800 | 1.400 | 6.800 | 0.000 | 6.800 | 1.470 | 5.000 | 0.912 |
| 7782-50-5 | 17 | Cl | 7.800 | 1.900 | 7.800 | 0.000 | 7.800 | 1.851 | 4.392 | 0.771 |
| 7440-09-7 | 19 | K | 5.400 | 1.500 | 5.400 | 0.000 | 5.400 | 1.392 | 3.792 | 0.622 |
| 7440-70-2 | 20 | Ca | 10.000 | 1.300 | 10.000 | 0.000 | 10.000 | 1.796 | 14.800 | 1.480 |
| 7440-32-6 | 22 | Ti | 0.298 | 0.036 | 0.298 | 0.000 | 0.298 | 0.052 | 0.302 | 0.032 |
| 7440-62-2 | 23 | V | 0.010 | 0.002 | 0.010 | 0.000 | 0.010 | 0.002 | 0.011 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.027 | 0.024 | 0.027 | 0.000 | 0.027 | 0.019 | 0.016 | 0.010 |
| 7439-96-5 | 25 | Mn | 0.034 | 0.019 | 0.034 | 0.000 | 0.034 | 0.015 | 0.027 | 0.008 |
| 7439-89-6 | 26 | Fe | 0.930 | 0.140 | 0.930 | 0.000 | 0.930 | 0.175 | 1.038 | 0.104 |
| 7440-48-4 | 27 | Co | 0.100 | 0.100 | 0.100 | 0.000 | 0.100 | 0.077 | NA | 0.000 |
| 7440-02-0 | 28 | Ni | 0.093 | 0.096 | 0.093 | 0.000 | 0.093 | 0.074 | 0.043 | 0.038 |
| 7440-50-8 | 29 | Cu | 0.023 | 0.004 | 0.023 | 0.000 | 0.023 | 0.005 | 0.017 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.217 | 0.022 | 0.217 | 0.000 | 0.217 | 0.037 | 0.203 | 0.020 |
| 7440-38-2 | 33 | As | 0.004 | 0.010 | 0.004 | 0.000 | 0.004 | 0.008 | 0.005 | 0.006 |
| 7782-49-2 | 34 | Se | 0.010 | 0.003 | 0.010 | 0.000 | 0.010 | 0.003 | 0.009 | 0.002 |
| 7726-95-6 | 35 | Br | 0.020 | 0.006 | 0.020 | 0.000 | 0.020 | 0.005 | 0.012 | 0.002 |
| 7440-17-7 | 37 | Rb | 0.075 | 0.019 | 0.075 | 0.000 | 0.075 | 0.018 | 0.055 | 0.008 |
| 7440-24-6 | 38 | Sr | 0.032 | 0.003 | 0.032 | 0.000 | 0.032 | 0.005 | 0.037 | 0.004 |
| 7440-67-7 | 40 | Zr | 0.006 | 0.009 | 0.006 | 0.000 | 0.006 | 0.007 | 0.004 | 0.004 |
| 7439-98-7 | 42 | Mo | 0.016 | 0.015 | 0.016 | 0.000 | 0.016 | 0.012 | 0.018 | 0.012 |
| 7440-05-3 | 46 | Pd | 0.005 | 0.009 | 0.005 | 0.000 | 0.005 | 0.007 | 0.003 | 0.004 |
| 7440-22-4 | 47 | Ag | 0.006 | 0.004 | 0.006 | 0.000 | 0.006 | 0.003 | 0.003 | 0.003 |
| 7440-43-9 | 48 | Cd | 0.016 | 0.015 | 0.016 | 0.000 | 0.016 | 0.012 | 0.010 | 0.007 |
| 7440-74-6 | 49 | In | 0.006 | 0.008 | 0.006 | 0.000 | 0.006 | 0.006 | 0.004 | 0.004 |
| 7440-31-5 | 50 | Sn | 0.004 | 0.004 | 0.004 | 0.000 | 0.004 | 0.003 | 0.004 | 0.003 |
| 7440-39-3 | 56 | Ba | 0.034 | 0.007 | 0.034 | 0.000 | 0.034 | 0.007 | 0.026 | 0.013 |
| 7439-91-0 | 57 | La | 0.024 | 0.024 | 0.024 | 0.000 | 0.024 | 0.018 | 0.025 | 0.018 |

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PM Profile Speciation Report - continued (profile 27203)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.820 | 0.280 | 1.820 | 0.000 | 1.820 | 0.346 | 1.346 | 0.136 |
| 7440-69-9 | 83 | Bi | 1.000 | 1.000 | 1.000 | 0.000 | 1.000 | 0.768 | NA | 0.000 |
| | 201 | OC | 5.400 | 0.600 | 5.400 | 0.000 | 5.400 | 0.930 | 6.654 | 0.665 |
| | 202 | EC | 0.200 | 0.400 | 0.200 | 0.000 | 0.200 | 0.303 | 0.188 | 0.288 |
| | 203 | SO4 | 18.300 | 6.400 | 18.300 | 0.000 | 18.300 | 5.551 | 14.520 | 7.642 |
| | 204 | NO3 | 0.200 | 0.040 | 0.200 | 0.000 | 0.200 | 0.043 | 0.740 | 0.660 |
| TOTALS: | | | 74.448 | | 74.448 | | 74.448 | | 66.536 | |

PM Profile Speciation Report

---

Profile Name : Portland Cement Dust
Profile Number : 27204
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Unspecified methodology.

SCC Assignments: 30500618, 30500619

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.400 |
| 7440-21-3 | 14 | Si | 10.200 | 0.000 | 10.200 | 0.000 | 10.200 | 0.000 | 10.200 | 2.000 |
| 7723-14-0 | 15 | P | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.020 |
| 7704-34-9 | 16 | S | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.170 |
| 7440-09-7 | 19 | K | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.028 |
| 7440-70-2 | 20 | Ca | 46.100 | 0.000 | 46.100 | 0.000 | 46.100 | 0.000 | 46.100 | 4.610 |
| 7440-32-6 | 22 | Ti | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.028 |
| 7440-47-3 | 24 | Cr | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.006 |
| 7439-89-6 | 26 | Fe | 2.940 | 0.000 | 2.940 | 0.000 | 2.940 | 0.000 | 2.940 | 0.580 |
| 7440-66-6 | 30 | Zn | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.052 |
| TOTALS: | | | 62.805 | | 62.805 | | 62.805 | | 62.805 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Cement Ball Mill
Profile Number : 27205
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30500609, 30500610

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 2.542 | 0.000 | 2.542 | 0.000 | 2.542 | 0.000 | 2.542 | 0.639 |
| 7440-21-3 | 14 | Si | 8.363 | 0.000 | 8.363 | 0.000 | 8.363 | 0.000 | 8.363 | 2.332 |
| 7723-14-0 | 15 | P | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.029 |
| 7704-34-9 | 16 | S | 2.357 | 0.000 | 2.357 | 0.000 | 2.357 | 0.000 | 2.357 | 0.480 |
| 7782-50-5 | 17 | Cl | 0.328 | 0.000 | 0.328 | 0.000 | 0.328 | 0.000 | 0.328 | 0.049 |
| 7440-09-7 | 19 | K | 0.873 | 0.000 | 0.873 | 0.000 | 0.873 | 0.000 | 0.873 | 0.131 |
| 7440-70-2 | 20 | Ca | 24.175 | 0.000 | 24.175 | 0.000 | 24.175 | 0.000 | 24.175 | 3.626 |
| 7440-32-6 | 22 | Ti | 0.186 | 0.000 | 0.186 | 0.000 | 0.186 | 0.000 | 0.186 | 0.029 |
| 7440-62-2 | 23 | V | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.004 |
| 7440-47-3 | 24 | Cr | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.273 | 0.000 | 0.273 | 0.000 | 0.273 | 0.000 | 0.273 | 0.041 |
| 7439-89-6 | 26 | Fe | 1.221 | 0.000 | 1.221 | 0.000 | 1.221 | 0.000 | 1.221 | 0.183 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.002 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.091 | 0.000 | 0.091 | 0.000 | 0.091 | 0.000 | 0.091 | 0.014 |
| 7440-65-5 | 39 | Y | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.005 |
| 7439-98-7 | 42 | Mo | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.003 |
| 7440-05-3 | 46 | Pd | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.002 |
| 7440-22-4 | 47 | Ag | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.003 |
| 7440-43-9 | 48 | Cd | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.005 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.005 |
| 7440-31-5 | 50 | Sn | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.005 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.009 |
| 7440-39-3 | 56 | Ba | 0.063 | 0.000 | 0.063 | 0.000 | 0.063 | 0.000 | 0.063 | 0.024 |
| 7439-91-0 | 57 | La | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.034 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.002 |
| TOTALS: | | | 40.727 | | 40.727 | | 40.727 | | 40.727 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Gypsum Calciner
Profile Number : 27501
Data Quality : D/E

---

Control Device : Baghouse
Reference(s) : 10
Data Source : SASS train with Method 5 heated probe, 3 cyclones, at 400 deg. F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. The one sample analyzed was taken downstream of the baghouse.

SCC Assignments: 30501501, 30501520

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.180 | 0.370 | 0.530 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 13.660 | 0.000 | 19.000 | 0.000 | 17.186 | 0.000 | 18.300 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.550 | 0.000 | < | 0.000 | NE | 0.000 | 0.550 | 0.000 |
| 7440-09-7 | 19 | K | 0.550 | 0.000 | 0.050 | 0.000 | 0.220 | 0.000 | 0.550 | 0.000 |
| 7440-70-2 | 20 | Ca | 13.000 | 0.000 | 0.900 | 0.000 | 5.009 | 0.000 | 12.000 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.550 | 0.000 | 0.050 | 0.000 | 0.220 | 0.000 | 0.550 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.550 | 0.000 | 0.050 | 0.000 | 0.220 | 0.000 | 0.550 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | 0.050 | 0.000 | NE | 0.000 | 0.050 | 0.000 |
| 7782-49-2 | 34 | Se | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 27501)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | 0.050 | 0.000 | NE | 0.000 | 0.050 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.050 | 0.000 | < | 0.000 | NE | 0.000 | 0.050 | 0.000 |
| | 200 | TC | 1.000 | 0.000 | 0.550 | 0.000 | 0.703 | 0.000 | 2.000 | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | 41.000 | 0.000 | 57.000 | 0.000 | 51.566 | 0.000 | 55.000 | 0.000 |
| | 204 | NO3 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| | 206 | CO3 | 0.000 | 0.000 | 0.550 | 0.000 | 0.363 | 0.026 | 0.550 | 0.000 |
| TOTALS: | | | 71.860 | | 79.100 | | 76.337 | | 91.100 | |

PM Profile Speciation Report

---

Profile Name : Gypsum Handling
Profile Number : 27502
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Unspecified methodology.

SCC Assignments: 30501504, 30501508

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

---

Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7704-34-9 | 16 | S | 18.600 | 0.000 | 18.600 | 0.000 | 18.600 | 0.000 | 18.600 | 1.860 |
| 7440-70-2 | 20 | Ca | 23.300 | 0.000 | 23.300 | 0.000 | 23.300 | 0.000 | 23.300 | 2.330 |
| | 203 | SO4 | 55.800 | 0.000 | 55.800 | 0.000 | 55.800 | 0.000 | 55.800 | 5.580 |
| TOTALS: | | | 97.700 | | 97.700 | | 97.700 | | 97.700 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Gypsum Kiln
Profile Number : 27503
Data Quality : E

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Control Device : ESP
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30501520

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.180 0.370 0.850

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 2.044 | 0.204 | 1.200 | 0.120 | 1.487 | 0.147 | 1.487 | 0.000 |
| 7440-21-3 | 14 | Si | 1.036 | 0.283 | 0.728 | 0.127 | 0.832 | 0.135 | 0.832 | 0.000 |
| 7723-14-0 | 15 | P | 1.733 | 0.348 | 0.736 | 0.149 | 1.074 | 0.172 | 1.074 | 0.000 |
| 7704-34-9 | 16 | S | 11.783 | 1.178 | 15.456 | 1.546 | 14.208 | 1.256 | 14.208 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.063 | 0.000 | 0.073 | 0.000 | 0.048 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.148 | 0.037 | 0.058 | 0.028 | 0.088 | 0.023 | 0.088 | 0.000 |
| 7440-70-2 | 20 | Ca | 23.792 | 2.379 | 20.938 | 2.094 | 21.907 | 1.991 | 21.907 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.530 | 0.053 | 0.179 | 0.018 | 0.298 | 0.035 | 0.298 | 0.000 |
| 7440-62-2 | 23 | V | 0.334 | 0.033 | 0.089 | 0.009 | 0.172 | 0.022 | 0.172 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.123 | 0.012 | 0.032 | 0.003 | 0.063 | 0.009 | 0.063 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.068 | 0.007 | 0.022 | 0.002 | 0.038 | 0.006 | 0.038 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.928 | 0.093 | 0.327 | 0.033 | 0.531 | 0.061 | 0.531 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.004 | 0.002 | 0.001 | 0.005 | 0.002 | 0.005 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.019 | 0.004 | 0.018 | 0.002 | 0.018 | 0.004 | 0.018 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.017 | 0.003 | 0.007 | 0.001 | 0.010 | 0.003 | 0.010 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.003 | 0.002 | 0.001 | 0.001 | 0.002 | 0.001 | 0.002 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.009 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.002 | 0.003 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.015 | 0.004 | 0.004 | 0.001 | 0.008 | 0.002 | 0.008 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.007 | 0.004 | 0.007 | 0.001 | 0.007 | 0.002 | 0.007 | 0.000 |
| 7440-24-6 | 38 | Sr | 1.768 | 0.177 | 0.697 | 0.070 | 1.061 | 0.116 | 1.061 | 0.000 |
| 7440-65-5 | 39 | Y | 0.058 | 0.007 | 0.017 | 0.002 | 0.031 | 0.005 | 0.031 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.178 | 0.085 | 0.073 | 0.033 | 0.108 | 0.037 | 0.108 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.015 | 0.016 | 0.005 | 0.006 | 0.008 | 0.007 | 0.008 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.032 | 0.015 | 0.000 | 0.006 | 0.011 | 0.006 | 0.011 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.020 | 0.009 | 0.008 | 0.006 | 0.009 | 0.006 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.029 | 0.014 | 0.011 | 0.010 | 0.012 | 0.010 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.032 | 0.000 | 0.011 | 0.000 | 0.013 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.035 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.066 | 0.000 | 0.024 | 0.000 | 0.026 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.260 | 0.189 | 0.114 | 0.072 | 0.164 | 0.078 | 0.164 | 0.000 |
| 7439-91-0 | 57 | La | 0.077 | 0.270 | 0.098 | 0.103 | 0.091 | 0.110 | 0.091 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.009 | 0.005 | 0.004 | 0.002 | 0.005 | 0.002 | 0.005 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.083 | 0.012 | 0.036 | 0.005 | 0.052 | 0.008 | 0.052 | 0.000 |
| TOTALS: | | | 45.072 | | 40.872 | | 42.296 | | 42.296 | |

(1) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.
(2) Estimated / extrapolated.

PM Profile Speciation Report

Profile Name : Lime Handling
Profile Number : 27601
Data Quality : E

Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Unspecified methodology.

SCC Assignments: 30501607, 30501608, 30501615

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.300 | 0.620 | 0.850 |

Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-70-2 | 20 | Ca | 71.000 | 0.000 | 71.000 | 0.000 | 71.000 | 0.000 | 71.000 | 7.100 |
| TOTALS: | | | 71.000 | | 71.000 | | 71.000 | | 71.000 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Lime Kiln
Profile Number : 27602
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30700106

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.180 0.370 0.530

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 1.138 | 0.114 | 0.765 | 0.077 | 0.892 | 0.087 | 0.868 | 0.087 |
| 7440-21-3 | 14 | Si | 1.812 | 0.222 | 1.300 | 0.130 | 1.474 | 0.147 | 1.440 | 0.144 |
| 7723-14-0 | 15 | P | 0.231 | 0.047 | 0.088 | 0.031 | 0.136 | 0.028 | 0.128 | 0.035 |
| 7704-34-9 | 16 | S | 7.531 | 0.753 | 3.819 | 0.382 | 5.080 | 0.515 | 4.851 | 0.485 |
| 7782-50-5 | 17 | Cl | 0.439 | 0.218 | 0.287 | 0.034 | 0.338 | 0.081 | 0.330 | 0.086 |
| 7440-09-7 | 19 | K | 1.825 | 1.322 | 0.166 | 0.037 | 0.729 | 0.458 | 0.633 | 0.390 |
| 7440-70-2 | 20 | Ca | 22.580 | 2.258 | 26.651 | 2.665 | 25.268 | 2.239 | 25.510 | 2.551 |
| 7440-32-6 | 22 | Ti | 0.030 | 0.007 | 0.037 | 0.004 | 0.035 | 0.006 | 0.035 | 0.005 |
| 7440-62-2 | 23 | V | 0.006 | 0.001 | 0.005 | 0.001 | 0.005 | 0.002 | 0.005 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.008 | 0.003 | 0.008 | 0.001 | 0.008 | 0.002 | 0.008 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.240 | 0.045 | 0.198 | 0.020 | 0.212 | 0.026 | 0.209 | 0.021 |
| 7439-89-6 | 26 | Fe | 1.870 | 0.405 | 1.590 | 0.159 | 1.685 | 0.199 | 1.666 | 0.167 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.001 | 0.005 | 0.001 | 0.005 | 0.002 | 0.005 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.007 | 0.003 | 0.007 | 0.001 | 0.007 | 0.002 | 0.007 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.007 | 0.001 | 0.005 | 0.001 | 0.006 | 0.002 | 0.006 | 0.001 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.017 | 0.003 | 0.004 | 0.001 | 0.009 | 0.002 | 0.008 | 0.002 |
| 7782-49-2 | 34 | Se | 0.002 | 0.002 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7726-95-6 | 35 | Br | 0.012 | 0.002 | 0.003 | 0.000 | 0.006 | 0.002 | 0.005 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.013 | 0.007 | 0.003 | 0.001 | 0.006 | 0.003 | 0.005 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.011 | 0.003 | 0.014 | 0.001 | 0.013 | 0.003 | 0.013 | 0.001 |
| 7440-65-5 | 39 | Y | 0.002 | 0.002 | 0.003 | 0.001 | 0.003 | 0.002 | 0.003 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.006 | 0.008 | 0.005 | 0.003 | 0.005 | 0.004 | 0.005 | 0.004 |
| 7439-98-7 | 42 | Mo | 0.016 | 0.004 | 0.012 | 0.002 | 0.013 | 0.003 | 0.013 | 0.003 |
| 7440-05-3 | 46 | Pd | 0.012 | 0.004 | 0.009 | 0.002 | 0.010 | 0.003 | 0.010 | 0.002 |
| 7440-22-4 | 47 | Ag | 0.010 | 0.005 | 0.005 | 0.003 | 0.006 | 0.003 | 0.006 | 0.003 |
| 7440-43-9 | 48 | Cd | 0.001 | 0.008 | 0.001 | 0.004 | 0.001 | 0.003 | 0.001 | 0.005 |
| 7440-74-6 | 49 | In | 0.006 | 0.008 | 0.007 | 0.004 | 0.007 | 0.004 | 0.007 | 0.005 |
| 7440-31-5 | 50 | Sn | 0.017 | 0.009 | 0.004 | 0.004 | 0.008 | 0.004 | 0.008 | 0.006 |
| 7440-36-0 | 51 | Sb | 0.003 | 0.016 | 0.000 | 0.008 | 0.001 | 0.007 | 0.001 | 0.010 |
| 7440-39-3 | 56 | Ba | 0.035 | 0.048 | 0.000 | 0.020 | 0.012 | 0.020 | 0.009 | 0.026 |
| 7439-91-0 | 57 | La | 0.000 | 0.064 | 0.000 | 0.030 | 0.000 | 0.028 | 0.000 | 0.040 |
| 7439-97-6 | 80 | Hg | 0.006 | 0.001 | 0.003 | 0.001 | 0.004 | 0.002 | 0.004 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.044 | 0.010 | 0.015 | 0.002 | 0.025 | 0.005 | 0.023 | 0.004 |
| TOTALS: | | | 37.942 | | 35.021 | | 36.011 | | 35.824 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

## 3.7 PETROLEUM INDUSTRY

The petroleum industry includes petroleum refining and natural gas processing. Petroleum refining involves the production of several fuels, oils, and feeds for the petrochemical industry from crude oil. Refining processes include distillation, conversion, treatment, and storage and handling processes. The most significant sources of emissions include vacuum distillation, catalytic cracking, thermal cracking, boilers, and heaters.

PM Profile Speciation Report

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Profile Name : Refinery Process Heaters (Gas)
Profile Number : 26101
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 10
Data Source : SASS train with heated Method 5 probe, 3 cyclones at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. The one sample analyzed is the less than 1 um fraction.

SCC Assignments: 30600105

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.900 | 0.930 | 0.960 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 15.600 | 0.000 | 15.600 | 0.000 | 15.600 | 0.000 | 15.600 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-48-4 | 27 | Co | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

PM Profile Speciation Report - continued (profile 26101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| | 201 | OC | 7.000 | 0.000 | 7.000 | 0.000 | 7.000 | 0.000 | 7.000 | 0.000 |
| | 202 | EC | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 203 | SO4 | 47.000 | 0.000 | 47.000 | 0.000 | 47.000 | 0.000 | 47.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| TOTALS: | | | 80.200 | | 80.200 | | 80.200 | | 80.200 | |

PM Profile Speciation Report

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Profile Name : Petroleum Refinery Catalytic Cracker
Profile Number : 26202
Data Quality : B/D

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Control Device : ESP
Reference(s) : 52
Data Source : One representative sample from a group of 9 collected with a dilution sampler.

SCC Assignments: 30600201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.485 0.390 0.553

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 4.968 | 0.227 | 23.469 | 1.914 | 7.243 | 3.422 | 7.243 | 0.000 |
| 7440-21-3 | 14 | Si | 11.796 | 0.537 | 50.570 | 4.227 | 16.564 | 7.446 | 16.564 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.074 | 0.000 | 0.315 | 0.000 | 0.284 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 4.511 | 0.209 | 2.237 | 0.750 | 4.231 | 0.925 | 4.231 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.052 | 0.000 | 0.183 | 0.000 | 0.167 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.038 | 0.002 | 0.117 | 0.018 | 0.048 | 0.022 | 0.048 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.036 | 0.002 | 0.155 | 0.018 | 0.051 | 0.025 | 0.051 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.117 | 0.053 | 0.117 | 0.275 | 0.117 | 0.246 | 0.117 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.023 | 0.000 | 0.121 | 0.000 | 0.108 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.011 | 0.000 | 0.055 | 0.000 | 0.049 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.003 | 0.000 | 0.018 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.247 | 0.012 | 0.567 | 0.067 | 0.286 | 0.097 | 0.286 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.027 | 0.001 | 0.059 | 0.010 | 0.031 | 0.012 | 0.031 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.003 | 0.000 | 0.005 | 0.004 | 0.003 | 0.004 | 0.003 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.005 | 0.000 | 0.012 | 0.003 | 0.006 | 0.003 | 0.006 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.002 | 0.000 | 0.005 | 0.002 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.001 | 0.000 | 0.007 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.002 | 0.000 | 0.007 | 0.003 | 0.003 | 0.003 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.003 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.000 | 0.003 | 0.004 | 0.001 | 0.004 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.005 | 0.000 | 0.006 | 0.005 | 0.005 | 0.004 | 0.005 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.002 | 0.026 | 0.025 | 0.003 | 0.022 | 0.003 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.002 | 0.045 | 0.022 | 0.006 | 0.020 | 0.006 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.002 | 0.019 | 0.030 | 0.002 | 0.026 | 0.002 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.001 | 0.003 | 0.000 | 0.042 | 0.001 | 0.037 | 0.001 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.002 | 0.005 | 0.000 | 0.080 | 0.002 | 0.070 | 0.002 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 26202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.000 | 0.012 | 0.308 | 0.196 | 0.038 | 0.176 | 0.038 | 0.000 |
| 7439-91-0 | 57 | La | 0.246 | 0.025 | 0.645 | 0.334 | 0.295 | 0.306 | 0.295 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.006 | 0.006 | 0.001 | 0.005 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.008 | 0.001 | 0.023 | 0.012 | 0.010 | 0.011 | 0.010 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 22.015 | | 78.404 | | 28.949 | | 28.949 | |

PM Profile Speciation Report

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Profile Name : Petroleum Refinery Catalytic Cracker
Profile Number : 26203
Data Quality : C

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Control Device : Uncontrolled(1)
Reference(s) : 62
Data Source : Size-selective dilution samplers used to collect three samples with two dichotomous virtual impactors. Spectrographic analysis used.

SCC Assignments: 30600201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.450 0.700 0.790

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 18.377 | 2.426 | 18.761 | 3.154 | 18.481 | 3.310 | 18.481 | 0.000 |
| 7440-21-3 | 14 | Si | 17.845 | 2.479 | 17.395 | 2.808 | 17.628 | 3.668 | 17.628 | 0.000 |
| 7723-14-0 | 15 | P | 0.042 | 0.024 | 0.055 | 0.009 | 0.048 | 0.023 | 0.048 | 0.000 |
| 7704-34-9 | 16 | S | 1.647 | 0.380 | 0.504 | 0.092 | 1.189 | 0.329 | 1.189 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.246 | 0.069 | 0.253 | 0.061 | 0.252 | 0.082 | 0.252 | 0.000 |
| 7440-09-7 | 19 | K | 0.179 | 0.016 | 0.119 | 0.017 | 0.154 | 0.033 | 0.154 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.156 | 0.024 | 0.177 | 0.033 | 0.165 | 0.044 | 0.165 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.799 | 0.093 | 0.825 | 0.163 | 0.806 | 0.188 | 0.806 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.199 | 0.000 | 0.239 | 0.000 | 0.246 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.078 | 0.000 | 0.096 | 0.000 | 0.098 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.030 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.688 | 0.113 | 0.822 | 0.094 | 0.744 | 0.152 | 0.744 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.017 | 0.010 | 0.033 | 0.004 | 0.024 | 0.012 | 0.024 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.002 | 0.001 | 0.002 | 0.001 | 0.003 | 0.001 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.012 | 0.007 | 0.014 | 0.003 | 0.013 | 0.008 | 0.013 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.003 | 0.002 | 0.003 | 0.001 | 0.003 | 0.003 | 0.003 | 0.000 |
| 7440-38-2 | 33 | As | 0.010 | 0.007 | 0.000 | 0.001 | 0.006 | 0.005 | 0.006 | 0.000 |
| 7782-49-2 | 34 | Se | 0.006 | 0.002 | 0.006 | 0.001 | 0.006 | 0.004 | 0.006 | 0.000 |
| 7726-95-6 | 35 | Br | 0.003 | 0.004 | 0.009 | 0.001 | 0.005 | 0.006 | 0.005 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.003 | 0.012 | 0.004 | 0.005 | 0.007 | 0.005 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.004 | 0.013 | 0.003 | 0.005 | 0.007 | 0.005 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.015 | 0.000 | 0.004 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.010 | 0.000 | 0.002 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.010 | 0.000 | 0.002 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.013 | 0.000 | 0.003 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.017 | 0.000 | 0.004 | 0.000 | 0.012 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.021 | 0.000 | 0.005 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.025 | 0.000 | 0.006 | 0.000 | 0.019 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.057 | 0.000 | 0.013 | 0.000 | 0.042 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.105 | 0.000 | 0.025 | 0.000 | 0.077 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.431 | 0.318 | 0.594 | 0.266 | 0.512 | 0.326 | 0.512 | 0.000 |
| 7440-45-1 | 58 | Ce | 1.357 | 0.122 | 1.285 | 0.280 | 1.316 | 0.306 | 1.316 | 0.000 |
| 7440-00-8 | 60 | Nd | 0.404 | 0.060 | 0.361 | 0.075 | 0.382 | 0.095 | 0.382 | 0.000 |

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PM Profile Speciation Report - continued (profile 26203)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(2) %wt | Total Measured(2) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | 0.001 | 0.002 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.006 | 0.031 | 0.006 | 0.013 | 0.012 | 0.013 | 0.000 |
| TOTALS: | | | 42.224 | | 41.274 | | 41.759 | | 41.759 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Petroleum Refinery Catalytic Cracker
Profile Number : 26204
Data Quality : C

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30600201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.450 0.700 0.790

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured(3) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 21.412 | 2.141 | 16.911 | 1.691 | 19.475 | 2.658 | 19.475 | 0.000 |
| 7440-21-3 | 14 | Si | 43.462 | 4.346 | 32.652 | 3.265 | 38.809 | 6.442 | 38.809 | 0.000 |
| 7723-14-0 | 15 | P | 0.249 | 0.052 | 0.125 | 0.025 | 0.196 | 0.053 | 0.196 | 0.000 |
| 7704-34-9 | 16 | S | 0.324 | 0.077 | 0.192 | 0.026 | 0.267 | 0.073 | 0.267 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.059 | 0.028 | 0.012 | 0.010 | 0.038 | 0.023 | 0.038 | 0.000 |
| 7440-09-7 | 19 | K | 0.148 | 0.022 | 0.115 | 0.012 | 0.134 | 0.031 | 0.134 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.247 | 0.025 | 0.319 | 0.032 | 0.278 | 0.055 | 0.278 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.998 | 0.100 | 1.065 | 0.107 | 1.027 | 0.178 | 1.027 | 0.000 |
| 7440-62-2 | 23 | V | 0.441 | 0.044 | 0.447 | 0.045 | 0.444 | 0.081 | 0.444 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.113 | 0.013 | 0.118 | 0.019 | 0.115 | 0.029 | 0.115 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.065 | 0.008 | 0.065 | 0.007 | 0.065 | 0.018 | 0.065 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.956 | 0.096 | 0.829 | 0.083 | 0.901 | 0.156 | 0.901 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.251 | 0.025 | 0.171 | 0.017 | 0.217 | 0.042 | 0.217 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.047 | 0.009 | 0.068 | 0.007 | 0.056 | 0.018 | 0.056 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.040 | 0.007 | 0.027 | 0.003 | 0.034 | 0.011 | 0.034 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.005 | 0.004 | 0.002 | 0.002 | 0.005 | 0.002 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.017 | 0.000 | 0.006 | 0.000 | 0.013 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.004 | 0.001 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.015 | 0.006 | 0.003 | 0.001 | 0.010 | 0.005 | 0.010 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.006 | 0.007 | 0.002 | 0.003 | 0.006 | 0.003 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.017 | 0.008 | 0.019 | 0.003 | 0.018 | 0.010 | 0.018 | 0.000 |
| 7440-65-5 | 39 | Y | 0.003 | 0.009 | 0.018 | 0.003 | 0.009 | 0.010 | 0.009 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.040 | 0.023 | 0.011 | 0.010 | 0.031 | 0.010 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.030 | 0.000 | 0.008 | 0.000 | 0.022 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.028 | 0.000 | 0.008 | 0.000 | 0.021 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.042 | 0.017 | 0.011 | 0.007 | 0.032 | 0.007 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.011 | 0.055 | 0.006 | 0.015 | 0.009 | 0.041 | 0.009 | 0.000 |
| 7440-74-6 | 49 | In | 0.098 | 0.061 | 0.001 | 0.017 | 0.056 | 0.047 | 0.056 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.072 | 0.074 | 0.008 | 0.022 | 0.045 | 0.057 | 0.045 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.174 | 0.126 | 0.009 | 0.036 | 0.103 | 0.096 | 0.103 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.352 | 0.000 | 0.097 | 0.000 | 0.262 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.196 | 0.526 | 0.995 | 0.270 | 0.540 | 0.446 | 0.540 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.017 | 0.008 | 0.002 | 0.002 | 0.010 | 0.006 | 0.010 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.150 | 0.024 | 0.066 | 0.007 | 0.114 | 0.027 | 0.114 | 0.000 |
| TOTALS: | | | 69.565 | | 54.295 | | 62.992 | | 62.992 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.
(3) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Petroleum Refinery Catalytic Cracker
Profile Number : 26205
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,63
Data Source : Four samples analyzed using XRF and neutron activation.

SCC Assignments: 30600201

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.450 | 0.700 | 0.790 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.360 | 0.040 | 0.944 | 0.118 | 0.611 | 0.121 | 0.384 | 0.064 |
| 7429-90-5 | 13 | Al | 6.500 | 1.100 | 16.520 | 2.360 | 10.812 | 2.530 | 6.911 | 1.396 |
| 7440-21-3 | 14 | Si | 9.800 | 1.300 | 49.560 | 2.950 | 26.912 | 4.525 | 11.430 | 1.912 |
| 7723-14-0 | 15 | P | 0.160 | 0.030 | NR | 0.000 | NE | 0.000 | 0.153 | 0.036 |
| 7704-34-9 | 16 | S | 4.200 | 0.500 | 4.012 | 1.829 | 4.119 | 1.663 | 4.192 | 0.748 |
| 7782-50-5 | 17 | Cl | NR | 0.000 | 0.384 | 0.153 | NE | 0.000 | 0.016 | 0.007 |
| 7440-09-7 | 19 | K | 0.031 | 0.005 | 0.118 | 0.018 | 0.068 | 0.025 | 0.035 | 0.007 |
| 7440-70-2 | 20 | Ca | 0.030 | 0.004 | 0.159 | 0.035 | 0.086 | 0.038 | 0.035 | 0.006 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.350 | 0.090 | 0.708 | 0.708 | 0.504 | 0.604 | 0.365 | 0.103 |
| 7440-62-2 | 23 | V | 0.023 | 0.007 | 0.049 | 0.027 | 0.034 | 0.026 | 0.024 | 0.008 |
| 7440-47-3 | 24 | Cr | 0.006 | 0.001 | 0.015 | 0.002 | 0.010 | 0.007 | 0.006 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.001 | 0.000 | 0.005 | 0.001 | 0.003 | 0.004 | 0.001 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.200 | 0.030 | 0.590 | 0.030 | 0.368 | 0.070 | 0.216 | 0.040 |
| 7440-48-4 | 27 | Co | 0.001 | 0.000 | 0.004 | 0.001 | 0.003 | 0.003 | 0.002 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.022 | 0.003 | 0.058 | 0.010 | 0.037 | 0.016 | 0.024 | 0.004 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.001 | 0.008 | 0.007 | 0.004 | 0.007 | 0.002 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.002 | 0.001 | 0.012 | 0.001 | 0.006 | 0.006 | 0.003 | 0.001 |
| 7440-38-2 | 33 | As | NR | 0.000 | 0.004 | 0.001 | NE | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.000 | 0.004 | 0.001 | 0.002 | 0.003 | 0.001 | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | 0.007 | 0.003 | NE | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.004 | 0.001 | 0.012 | 0.001 | 0.007 | 0.006 | 0.004 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.012 | 0.004 | 0.094 | 0.030 | 0.047 | 0.031 | 0.015 | 0.004 |
| 7440-31-5 | 50 | Sn | 0.005 | 0.002 | NR | 0.000 | NE | 0.000 | 0.005 | 0.002 |
| 7440-36-0 | 51 | Sb | 0.001 | 0.000 | 0.002 | 0.003 | 0.001 | 0.003 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.032 | 0.004 | NR | 0.000 | NE | 0.000 | 0.031 | 0.006 |
| 7439-91-0 | 57 | La | 0.310 | 0.040 | 0.873 | 0.041 | 0.552 | 0.096 | 0.333 | 0.058 |
| 7440-45-1 | 58 | Ce | 0.250 | 0.040 | 0.684 | 0.041 | 0.437 | 0.083 | 0.268 | 0.052 |
| 7440-00-8 | 60 | Nd | 0.170 | 0.020 | 0.454 | 0.035 | 0.292 | 0.061 | 0.182 | 0.031 |
| 7440-19-9 | 62 | Sm | 0.016 | 0.002 | 0.045 | 0.002 | 0.028 | 0.012 | 0.017 | 0.003 |
| 7440-53-1 | 63 | Eu | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-54-2 | 64 | Gd | 0.007 | 0.001 | 0.017 | 0.003 | 0.011 | 0.007 | 0.007 | 0.001 |
| 7440-27-9 | 65 | Tb | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.003 | 0.001 | 0.000 |
| 7440-64-4 | 70 | Yb | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.002 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 26205)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-25-7 | 73 | Ta | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.009 | 0.002 | 0.033 | 0.013 | 0.019 | 0.015 | 0.010 | 0.003 |
| 7440-29-1 | 90 | Th | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| | 201 | OC | 0.280 | 0.990 | NR | 0.000 | NE | 0.000 | 0.269 | 0.950 |
| | 202 | EC | 0.160 | 0.050 | 0.277 | 0.071 | 0.210 | 0.079 | 0.165 | 0.053 |
| | 203 | SO4 | 38.000 | 4.000 | NR | 0.000 | NE | 0.000 | 36.443 | 6.341 |
| | 204 | NO3 | 0.051 | 0.220 | NR | 0.000 | NE | 0.000 | 0.049 | 0.022 |
| TOTALS: | | | 60.999 | | 75.660 | | 45.188 | | 61.603 | |

(1) No control specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Coke Calciner
Profile Number : 26206
Data Quality : D

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Control Device : Baghouse
Reference(s) : 62
Data Source : Baghouse catch dust sampled by operating personnel.

SCC Assignments: 30601401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.180 0.370 0.530

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.054 | 0.054 | 0.150 | 0.051 | 0.141 | 0.037 | 0.141 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.047 | 0.105 | 0.047 | 0.095 | 0.033 | 0.095 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.060 | 0.000 | 0.052 | 0.000 | 0.037 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 16.184 | 0.824 | 15.272 | 0.816 | 15.355 | 1.089 | 15.355 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.039 | 0.000 | 0.033 | 0.000 | 0.023 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.037 | 0.037 | 0.061 | 0.039 | 0.058 | 0.027 | 0.058 | 0.000 |
| 7440-70-2 | 20 | Ca | 25.778 | 1.293 | 28.154 | 1.410 | 27.937 | 1.826 | 27.937 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.009 | 0.002 | 0.006 | 0.001 | 0.007 | 0.002 | 0.007 | 0.000 |
| 7440-62-2 | 23 | V | 0.105 | 0.007 | 0.122 | 0.007 | 0.120 | 0.012 | 0.120 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.002 | 0.006 | 0.001 | 0.005 | 0.002 | 0.005 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.059 | 0.005 | 0.096 | 0.006 | 0.093 | 0.010 | 0.093 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.028 | 0.003 | 0.035 | 0.002 | 0.035 | 0.005 | 0.035 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.001 | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.005 | 0.001 | 0.006 | 0.001 | 0.006 | 0.002 | 0.006 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.004 | 0.001 | 0.003 | 0.002 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.018 | 0.003 | 0.022 | 0.001 | 0.022 | 0.004 | 0.022 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.011 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.007 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.008 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.012 | 0.000 | 0.004 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.015 | 0.000 | 0.005 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.018 | 0.000 | 0.006 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.041 | 0.000 | 0.013 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.073 | 0.022 | 0.024 | 0.020 | 0.029 | 0.020 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.136 | 0.000 | 0.044 | 0.000 | 0.053 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.005 | 0.005 | 0.018 | 0.002 | 0.016 | 0.004 | 0.016 | 0.000 |
| TOTALS: | | | 42.284 | | 44.084 | | 43.918 | | 43.918 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Green Coke Dust
Profile Number : 26207
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30601401

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.101 | 0.015 | 0.119 | 0.012 | 0.114 | 0.012 | 0.113 | 0.011 |
| 7440-21-3 | 14 | Si | 0.123 | 0.012 | 0.122 | 0.012 | 0.122 | 0.012 | 0.122 | 0.011 |
| 7723-14-0 | 15 | P | 0.080 | 0.017 | 0.059 | 0.012 | 0.065 | 0.010 | 0.066 | 0.010 |
| 7704-34-9 | 16 | S | 0.723 | 0.072 | 0.687 | 0.069 | 0.698 | 0.059 | 0.698 | 0.061 |
| 7782-50-5 | 17 | Cl | 0.001 | 0.011 | 0.000 | 0.007 | 0.000 | 0.005 | 0.000 | 0.006 |
| 7440-09-7 | 19 | K | 0.000 | 0.004 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 |
| 7440-70-2 | 20 | Ca | 0.019 | 0.004 | 0.036 | 0.004 | 0.031 | 0.005 | 0.031 | 0.003 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 |
| 7440-62-2 | 23 | V | 0.017 | 0.003 | 0.011 | 0.001 | 0.013 | 0.003 | 0.013 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.001 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 |
| 7439-89-6 | 26 | Fe | 0.022 | 0.007 | 0.014 | 0.003 | 0.016 | 0.004 | 0.017 | 0.003 |
| 7440-02-0 | 28 | Ni | 0.022 | 0.003 | 0.016 | 0.002 | 0.018 | 0.003 | 0.018 | 0.002 |
| 7440-50-8 | 29 | Cu | 0.004 | 0.003 | 0.010 | 0.002 | 0.008 | 0.003 | 0.008 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.006 | 0.002 | 0.002 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 |
| 7440-38-2 | 33 | As | 0.000 | 0.004 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 |
| 7782-49-2 | 34 | Se | 0.002 | 0.002 | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7726-95-6 | 35 | Br | 0.000 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.003 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.003 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7440-65-5 | 39 | Y | 0.000 | 0.004 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.016 | 0.000 | 0.008 | 0.000 | 0.006 | 0.000 | 0.007 |
| 7439-98-7 | 42 | Mo | 0.016 | 0.013 | 0.000 | 0.006 | 0.005 | 0.005 | 0.005 | 0.006 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.012 | 0.000 | 0.005 | 0.000 | 0.004 | 0.000 | 0.005 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.017 | 0.000 | 0.007 | 0.000 | 0.006 | 0.000 | 0.007 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.021 | 0.000 | 0.011 | 0.000 | 0.009 | 0.000 | 0.010 |
| 7440-74-6 | 49 | In | 0.014 | 0.023 | 0.000 | 0.012 | 0.004 | 0.009 | 0.004 | 0.011 |
| 7440-31-5 | 50 | Sn | 0.071 | 0.031 | 0.004 | 0.016 | 0.024 | 0.013 | 0.025 | 0.015 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.047 | 0.000 | 0.026 | 0.000 | 0.020 | 0.000 | 0.023 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.142 | 0.000 | 0.072 | 0.000 | 0.057 | 0.000 | 0.066 |
| 7439-91-0 | 57 | La | 0.000 | 0.202 | 0.000 | 0.105 | 0.000 | 0.082 | 0.000 | 0.096 |
| 7439-97-6 | 80 | Hg | 0.003 | 0.003 | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.002 | 0.007 | 0.009 | 0.004 | 0.007 | 0.004 | 0.010 | 0.003 |
| | 201 | OC | NR | 0.000 | 24.600 | 4.920 | NE | 0.000 | 16.966 | 3.434 |

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PM Profile Speciation Report - continued (profile 26207)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 202 | EC | NR | 0.000 | 80.500 | 16.100 | NE | 0.000 | 55.517 | 11.236 |
| TOTALS: | | | 1.227 | | 106.192 | | 1.133 | | 73.621 | |

(1) No control specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Coke Cooler
Profile Number : 26208
Data Quality : D

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Control Device : Uncontrolled(1)
Reference(s) : 62,78
Data Source : Data taken from Reference 62. For details, consult Reference 78.

SCC Assignments: 30601201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.211 | 0.021 | 0.166 | 0.042 | 0.179 | 0.017 | 0.180 | 0.030 |
| 7440-21-3 | 14 | Si | 0.304 | 0.056 | 0.169 | 0.017 | 0.209 | 0.021 | 0.211 | 0.026 |
| 7723-14-0 | 15 | P | 0.142 | 0.026 | 0.080 | 0.018 | 0.098 | 0.011 | 0.099 | 0.020 |
| 7704-34-9 | 16 | S | 1.485 | 0.149 | 0.702 | 0.070 | 0.932 | 0.089 | 0.949 | 0.095 |
| 7782-50-5 | 17 | Cl | 0.071 | 0.101 | 0.000 | 0.005 | 0.021 | 0.004 | 0.023 | 0.032 |
| 7440-09-7 | 19 | K | 0.056 | 0.007 | 0.014 | 0.002 | 0.026 | 0.004 | 0.027 | 0.003 |
| 7440-70-2 | 20 | Ca | 0.161 | 0.016 | 0.052 | 0.005 | 0.084 | 0.010 | 0.087 | 0.009 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.002 | 0.004 | 0.001 | 0.006 | 0.001 | 0.006 | 0.001 |
| 7440-62-2 | 23 | V | 0.100 | 0.012 | 0.047 | 0.005 | 0.063 | 0.007 | 0.064 | 0.006 |
| 7440-47-3 | 24 | Cr | 0.011 | 0.002 | 0.010 | 0.001 | 0.010 | 0.002 | 0.010 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.007 | 0.007 | 0.003 | 0.005 | 0.004 | 0.001 | 0.004 | 0.006 |
| 7439-89-6 | 26 | Fe | 0.329 | 0.065 | 0.213 | 0.057 | 0.247 | 0.023 | 0.250 | 0.060 |
| 7440-02-0 | 28 | Ni | 0.038 | 0.004 | 0.038 | 0.004 | 0.038 | 0.005 | 0.038 | 0.004 |
| 7440-50-8 | 29 | Cu | 0.003 | 0.001 | 0.000 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.007 | 0.003 | 0.001 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-38-2 | 33 | As | 0.345 | 0.219 | 0.051 | 0.031 | 0.138 | 0.018 | 0.144 | 0.092 |
| 7782-49-2 | 34 | Se | 0.004 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.002 | 0.001 |
| 7726-95-6 | 35 | Br | 0.023 | 0.010 | 0.004 | 0.002 | 0.009 | 0.002 | 0.010 | 0.004 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.004 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.006 | 0.009 | 0.000 | 0.005 | 0.002 | 0.000 | 0.002 | 0.006 |
| 7439-98-7 | 42 | Mo | 0.006 | 0.007 | 0.004 | 0.004 | 0.005 | 0.001 | 0.005 | 0.005 |
| 7440-05-3 | 46 | Pd | 0.014 | 0.008 | 0.005 | 0.006 | 0.007 | 0.002 | 0.008 | 0.007 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 | 0.006 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.012 | 0.000 | 0.006 | 0.000 | 0.000 | 0.000 | 0.008 |
| 7440-74-6 | 49 | In | 0.007 | 0.012 | 0.000 | 0.007 | 0.002 | 0.000 | 0.002 | 0.008 |
| 7440-31-5 | 50 | Sn | 0.011 | 0.015 | 0.000 | 0.008 | 0.003 | 0.001 | 0.003 | 0.010 |
| 7440-36-0 | 51 | Sb | 0.018 | 0.025 | 0.000 | 0.013 | 0.005 | 0.001 | 0.005 | 0.017 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.069 | 0.000 | 0.038 | 0.000 | 0.000 | 0.000 | 0.048 |
| 7439-91-0 | 57 | La | 0.051 | 0.102 | 0.000 | 0.055 | 0.015 | 0.003 | 0.016 | 0.070 |
| 7439-97-6 | 80 | Hg | 0.005 | 0.002 | 0.001 | 0.001 | 0.002 | 0.001 | 0.002 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.007 | 0.004 | 0.001 | 0.002 | 0.003 | 0.001 | 0.003 | 0.003 |
| | 201 | OC | 3.280 | 0.328 | 1.300 | 0.130 | 1.882 | 0.187 | 1.920 | 0.192 |

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PM Profile Speciation Report - continued (profile 26208)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %Wt | 0-2.5 um unc | 2.5-10 um %Wt | 2.5-10 um unc | 0-10 um(2) %Wt | 0-10 um(2) unc | Total Measured %Wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 202 | EC | 73.900 | 7.390 | 94.700 | 9.470 | 88.582 | 6.953 | 88.100 | 8.810 |
| TOTALS: | | | 80.617 | | 97.567 | | 92.579 | | 92.176 | |

(1) No control specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

---

Profile Name : Catalytic Cracker Composite
Profile Number : 26209
Data Quality : D

---

Control Device : Uncontrolled
Reference(s) :
Data Source : Profile represents a composite of Profiles 26203, 26204, and 26205.

SCC Assignments: 30600201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.450 0.700 0.790

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 15.430 | 0.000 | 17.397 | 0.000 | 16.256 | 0.000 | 14.956 | 0.000 |
| 7440-21-3 | 14 | Si | 23.702 | 0.000 | 33.202 | 0.000 | 27.783 | 0.000 | 22.622 | 0.000 |
| 7723-14-0 | 15 | P | 0.150 | 0.000 | 0.090 | 0.000 | 0.122 | 0.000 | 0.132 | 0.000 |
| 7704-34-9 | 16 | S | 2.057 | 0.000 | 1.569 | 0.000 | 1.858 | 0.000 | 1.883 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.153 | 0.000 | 0.216 | 0.000 | 0.145 | 0.000 | 0.102 | 0.000 |
| 7440-09-7 | 19 | K | 0.119 | 0.000 | 0.117 | 0.000 | 0.119 | 0.000 | 0.108 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.144 | 0.000 | 0.218 | 0.000 | 0.176 | 0.000 | 0.159 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.716 | 0.000 | 0.866 | 0.000 | 0.779 | 0.000 | 0.733 | 0.000 |
| 7440-62-2 | 23 | V | 0.155 | 0.000 | 0.165 | 0.000 | 0.159 | 0.000 | 0.156 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.040 | 0.000 | 0.044 | 0.000 | 0.042 | 0.000 | 0.040 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.022 | 0.000 | 0.023 | 0.000 | 0.023 | 0.000 | 0.022 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.615 | 0.000 | 0.747 | 0.000 | 0.671 | 0.000 | 0.620 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.100 | 0.000 | 0.087 | 0.000 | 0.093 | 0.000 | 0.088 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.016 | 0.000 | 0.026 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 | 0.017 | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 |
| 7782-49-2 | 34 | Se | 0.002 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.006 | 0.000 | 0.005 | 0.000 | 0.057 | 0.000 | 0.005 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.007 | 0.000 | 0.014 | 0.000 | 0.010 | 0.000 | 0.009 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.004 | 0.000 | 0.039 | 0.000 | 0.019 | 0.000 | 0.008 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.026 | 0.000 | 0.004 | 0.000 | 0.023 | 0.000 | 0.017 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.058 | 0.000 | 0.004 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.011 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.010 | 0.000 |
| 7439-91-0 | 57 | La | 0.312 | 0.000 | 0.821 | 0.000 | 0.535 | 0.000 | 0.462 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.053 | 0.000 | 0.043 | 0.000 | 0.049 | 0.000 | 0.046 | 0.000 |
| TOTALS: | | | 43.921 | | 55.724 | | 48.999 | | 42.255 | |

(1) Uncertainty not evaluated.

## 3.8 PULP AND PAPER INDUSTRY

The most common wood pulping processes include Kraft, Sulfite, Neutral Sulfite Semichemical, and Soda. Chemical wood pulping is the extraction of cellulose fiber from wood by dissolving the lignin which binds the fibers. Particulate emissions can arise when fluidized bed reactors are used to burn spent process liquor. The flue gas contains sodium sulfate and sodium carbonate dust. The paper products industry includes a variety of wood working and paper processing operations. Particulate emissions can arise from sawing and cutting operations among other processes.

PM Profile Speciation Report

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Profile Name : Particle Board Dryer
Profile Number : 22101
Data Quality : B/D

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Control Device : Multicyclones
Reference(s) : 45
Data Source : Average of 2 samples from one source. Glues used are less than 1% NaCl.

SCC Assignments: 30700703

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.485 0.390 0.553

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 3.700 | 4.000 | 0.300 | 0.100 | 3.282 | 3.539 | 3.282 | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | 0.040 | 0.020 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-21-3 | 14 | Si | 0.250 | 0.070 | < | 0.100 | NE | 0.000 | NE | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.400 | 0.200 | 0.030 | 0.003 | 1.232 | 0.247 | 1.232 | 0.000 |
| 7782-50-5 | 17 | Cl | 4.500 | 0.800 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 4.000 | 0.800 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-70-2 | 20 | Ca | 0.500 | 0.100 | 0.100 | 0.030 | 0.451 | 0.111 | 0.451 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.090 | 0.010 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | 0.100 | 0.010 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.060 | 0.010 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 22101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 200 | TC | NA | 0.000 | 58.000 | 17.700 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 50.000 | 17.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | 8.000 | 5.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | 3.650 | 0.600 | 0.100 | 0.100 | 3.213 | 0.700 | 3.213 | 0.000 |
| | 204 | NO3 | 1.250 | 0.350 | 0.500 | 0.200 | 1.158 | 0.391 | 1.158 | 0.000 |
| TOTALS: | | | 77.500 | | 59.070 | | 9.336 | | 9.336 | |

PM Profile Speciation Report

---

Profile Name : Particle Board Dryer
Profile Number : 22102
Data Quality : B/D

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Control Device : Wet Scrubber
Reference(s) : 45
Data Source : Average of 2 samples from one source collected with a 2-stage virtual impactor. High NaCl due to salcontent of resin glues.

SCC Assignments: 30700703

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.485 | 0.390 | 0.553 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 18.200 | 3.100 | 17.000 | 4.000 | 18.052 | 5.407 | 18.052 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | 0.400 | 0.600 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-21-3 | 14 | Si | 0.250 | 0.070 | 1.100 | 0.100 | 0.355 | 0.176 | 0.355 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.000 | 0.400 | 1.900 | 0.500 | 1.111 | 0.622 | 1.111 | 0.000 |
| 7782-50-5 | 17 | Cl | 23.400 | 1.900 | 25.000 | 6.000 | 23.597 | 6.965 | 23.597 | 0.000 |
| 7440-09-7 | 19 | K | 1.050 | 0.070 | 1.500 | 0.300 | 1.105 | 0.353 | 1.105 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.200 | 0.000 | 1.100 | 0.400 | 0.311 | 0.000 | 0.311 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.020 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | 0.020 | 0.030 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.020 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 22102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 10.000 | 5.000 | 10.000 | 5.000 | 10.000 | 6.445 | 10.000 | 0.000 |
| | 202 | EC | 1.200 | 0.300 | 1.200 | 0.300 | 1.200 | 0.428 | 1.200 | 0.000 |
| | 203 | SO4 | 3.650 | 0.070 | 2.200 | 0.500 | 3.472 | 0.690 | 3.472 | 0.000 |
| | 204 | NO3 | 1.250 | 0.350 | 0.500 | 0.200 | 1.158 | 0.391 | 1.158 | 0.000 |
| TOTALS: | | | 60.260 | | 61.900 | | 60.361 | | 60.361 | |

PM Profile Speciation Report

---

Profile Name : Wood Products - Sanderdust
Profile Number : 22201
Data Quality : C/D

---

Control Device : Cyclone
Reference(s) : 10
Data Source : Average of 5 source tests. SASS train with heated Method 5 probe, 3 cyclones; at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P and S non-quantitative.

SCC Assignments: 30700702

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.300 | 0.430 | 0.530 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 22201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 201 | OC | 35.000 | 0.000 | 35.000 | 0.000 | 35.000 | 0.000 | 35.000 | 0.000 |
| | 202 | EC | 6.000 | 0.000 | 6.000 | 0.000 | 6.000 | 0.000 | 6.000 | 0.000 |
| | 203 | SO4 | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 204 | NO3 | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| TOTALS: | | | 41.150 | | 41.150 | | 41.150 | | 41.150 | |

PM Profile Speciation Report

---

Profile Name : Sawdust
Profile Number : 22202
Data Quality : B/D

---

Control Device : Uncontrolled
Reference(s) : 45
Data Source : Grab sample from cyclone catch. Average of 6 samples.

SCC Assignments: 30700804

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.485 0.390 0.553

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.240 | 0.100 | 0.240 | 0.100 | 0.240 | 0.131 | 0.240 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.180 | 0.130 | 0.090 | 0.090 | 0.169 | 0.141 | 0.169 | 0.000 |
| 7440-21-3 | 14 | Si | 0.300 | 0.400 | 0.110 | 0.160 | 0.277 | 0.380 | 0.277 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | 0.030 | 0.030 | 0.140 | 0.140 | 0.044 | 0.127 | 0.044 | 0.000 |
| 7440-09-7 | 19 | K | 0.030 | 0.040 | 0.060 | 0.030 | 0.034 | 0.045 | 0.034 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.240 | 0.140 | 0.500 | 0.400 | 0.272 | 0.378 | 0.272 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.210 | 0.180 | 0.130 | 0.110 | 0.200 | 0.188 | 0.200 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 22202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 50.000 | 3.500 | 48.000 | 5.000 | 49.754 | 10.127 | 49.754 | 0.000 |
| | 202 | EC | 4.600 | 1.000 | 4.700 | 1.500 | 4.612 | 1.779 | 4.612 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 55.840 | | 53.980 | | 55.612 | | 55.612 | |

PM Profile Speciation Report

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Profile Name : Veneer Dryer
Profile Number : 22301
Data Quality : B/D

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Control Device : Uncontrolled
Reference(s) : 45
Data Source : Average of 6 samples collected from 3 sources with a 2-stage virtual impactor.

SCC Assignments: 30700701

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.180 | 0.370 | 0.530 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 22301)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 81.650 | 10.370 | 81.650 | 10.370 | 81.650 | 0.000 | 81.650 | 0.000 |
| | 202 | EC | 0.767 | 0.522 | 0.767 | 0.522 | 0.767 | 0.256 | 0.767 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 82.417 | | 82.417 | | 82.417 | | 82.417 | |

PM Profile Speciation Report

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Profile Name : Kraft Recovery Furnace
Profile Number : 23103
Data Quality : B/C

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Control Device : ESP and Wet Scrubber
Reference(s) : 49
Data Source : Average of 4 replicate samples collected from one stack with a dilution sampler.

SCC Assignments: 30700110

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.670 0.720 0.750

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | 1.859 | 3.100 | 1.859 | 0.000 | 1.859 | 2.789 | 1.570 | 2.452 |
| 7440-23-5 | 11 | Na | 25.350 | 13.000 | 25.350 | 0.000 | 25.350 | 12.465 | 26.740 | 10.740 |
| 7429-90-5 | 13 | Al | 0.473 | 0.430 | 0.473 | 0.000 | 0.473 | 0.393 | 0.490 | 0.367 |
| 7440-21-3 | 14 | Si | 0.219 | 0.170 | 0.219 | 0.000 | 0.219 | 0.157 | 0.311 | 0.187 |
| 7723-14-0 | 15 | P | 0.101 | 0.170 | 0.101 | 0.000 | 0.101 | 0.153 | 0.135 | 0.143 |
| 7704-34-9 | 16 | S | 14.440 | 1.800 | 14.440 | 0.000 | 14.440 | 3.040 | 14.430 | 1.676 |
| 7782-50-5 | 17 | Cl | 1.707 | 0.380 | 1.707 | 0.000 | 1.707 | 0.456 | 1.700 | 0.334 |
| 7440-09-7 | 19 | K | 2.010 | 0.238 | 2.010 | 0.000 | 2.010 | 0.417 | 1.960 | 0.232 |
| 7440-70-2 | 20 | Ca | 0.063 | 0.094 | 0.063 | 0.000 | 0.063 | 0.085 | 0.081 | 0.076 |
| 7440-32-6 | 22 | Ti | 0.007 | 0.006 | 0.007 | 0.000 | 0.007 | 0.006 | 0.008 | 0.005 |
| 7440-62-2 | 23 | V | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.002 |
| 7440-47-3 | 24 | Cr | 0.008 | 0.012 | 0.008 | 0.000 | 0.008 | 0.011 | 0.016 | 0.010 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.012 | 0.010 | 0.000 | 0.010 | 0.011 | 0.014 | 0.010 |
| 7439-89-6 | 26 | Fe | 0.143 | 0.210 | 0.143 | 0.000 | 0.143 | 0.189 | 0.147 | 0.168 |
| 7440-02-0 | 28 | Ni | 0.025 | 0.052 | 0.025 | 0.000 | 0.025 | 0.047 | 0.026 | 0.042 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 | 0.004 | 0.004 |
| 7440-66-6 | 30 | Zn | 0.014 | 0.018 | 0.014 | 0.000 | 0.014 | 0.016 | 0.017 | 0.014 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-38-2 | 33 | As | 0.003 | 0.003 | 0.003 | 0.000 | 0.003 | 0.003 | 0.004 | 0.003 |
| 7782-49-2 | 34 | Se | 0.003 | 0.003 | 0.003 | 0.000 | 0.003 | 0.003 | 0.005 | 0.004 |
| 7726-95-6 | 35 | Br | 0.056 | 0.012 | 0.056 | 0.000 | 0.056 | 0.015 | 0.052 | 0.010 |
| 7440-17-7 | 37 | Rb | 0.012 | 0.004 | 0.012 | 0.000 | 0.012 | 0.004 | 0.020 | 0.007 |
| 7440-24-6 | 38 | Sr | 0.006 | 0.008 | 0.006 | 0.000 | 0.006 | 0.007 | 0.005 | 0.007 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.009 | 0.011 | 0.009 | 0.000 | 0.009 | 0.010 | 0.021 | 0.023 |
| 7439-98-7 | 42 | Mo | 0.008 | 0.010 | 0.008 | 0.000 | 0.008 | 0.009 | 0.010 | 0.010 |
| 7440-05-3 | 46 | Pd | 0.015 | 0.019 | 0.015 | 0.000 | 0.015 | 0.017 | 0.029 | 0.015 |
| 7440-22-4 | 47 | Ag | 0.018 | 0.019 | 0.018 | 0.000 | 0.018 | 0.017 | 0.020 | 0.022 |
| 7440-43-9 | 48 | Cd | 0.013 | 0.015 | 0.013 | 0.000 | 0.013 | 0.014 | 0.018 | 0.013 |
| 7440-74-6 | 49 | In | 0.013 | 0.030 | 0.013 | 0.000 | 0.013 | 0.027 | 0.039 | 0.061 |
| 7440-31-5 | 50 | Sn | 0.017 | 0.020 | 0.017 | 0.000 | 0.017 | 0.018 | 0.024 | 0.018 |
| 7440-36-0 | 51 | Sb | 0.010 | 0.060 | 0.010 | 0.000 | 0.010 | 0.054 | 0.026 | 0.059 |
| 7440-39-3 | 56 | Ba | 0.097 | 0.115 | 0.097 | 0.000 | 0.097 | 0.104 | 0.115 | 0.102 |

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PM Profile Speciation Report - continued (profile 23103)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-91-0 | 57 | La | 0.114 | 0.135 | 0.114 | 0.000 | 0.114 | 0.122 | 0.218 | 0.217 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.003 | 0.001 | 0.000 | 0.001 | 0.003 | 0.002 | 0.003 |
| 7439-92-1 | 82 | Pb | 0.016 | 0.020 | 0.016 | 0.000 | 0.016 | 0.018 | 0.026 | 0.017 |
| | 201 | OC | 1.951 | 0.250 | 1.951 | 0.000 | 1.951 | 0.414 | 2.567 | 0.320 |
| | 202 | EC | 0.042 | 0.050 | 0.042 | 0.000 | 0.042 | 0.045 | 0.142 | 0.132 |
| | 203 | SO4 | 51.038 | 9.000 | 51.038 | 0.000 | 51.038 | 12.157 | 48.812 | 7.379 |
| | 204 | NO3 | 0.101 | 0.170 | 0.101 | 0.000 | 0.101 | 0.153 | 0.126 | 0.144 |
| TOTALS: | | | 99.976 | | 99.975 | | 99.975 | | 99.932 | |

PM Profile Speciation Report

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Profile Name : Lime Kiln
Profile Number : 23202
Data Quality : B/C

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Control Device : Wet Scrubber
Reference(s) : 49
Data Source : Average of 3 replicate samples from a single stack using a dilution sampler with a 2-stage virtual impactor.

SCC Assignments: 30700106

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.960 0.980 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | 0.038 | 0.007 | 0.038 | 0.000 | 0.038 | 0.010 | 1.296 | 0.240 |
| 7440-23-5 | 11 | Na | 36.210 | 4.000 | 36.210 | 0.000 | 36.210 | 8.104 | 34.680 | 3.681 |
| 7429-90-5 | 13 | Al | 0.064 | 0.074 | 0.064 | 0.000 | 0.064 | 0.074 | 0.303 | 0.094 |
| 7440-21-3 | 14 | Si | 0.038 | 0.042 | 0.038 | 0.000 | 0.038 | 0.042 | 0.200 | 0.056 |
| 7723-14-0 | 15 | P | 0.105 | 0.227 | 0.105 | 0.000 | 0.105 | 0.223 | 0.175 | 0.195 |
| 7704-34-9 | 16 | S | 16.520 | 1.780 | 16.520 | 0.000 | 16.520 | 3.676 | 16.040 | 1.703 |
| 7782-50-5 | 17 | Cl | 2.618 | 0.282 | 2.618 | 0.000 | 2.618 | 0.583 | 2.630 | 0.326 |
| 7440-09-7 | 19 | K | 1.299 | 0.140 | 1.299 | 0.000 | 1.299 | 0.289 | 1.280 | 0.136 |
| 7440-70-2 | 20 | Ca | 0.342 | 0.037 | 0.342 | 0.000 | 0.342 | 0.076 | 0.390 | 0.042 |
| 7440-32-6 | 22 | Ti | 0.004 | 0.003 | 0.004 | 0.000 | 0.004 | 0.003 | 0.004 | 0.003 |
| 7440-62-2 | 23 | V | 0.068 | 0.007 | 0.068 | 0.000 | 0.068 | 0.015 | 0.063 | 0.007 |
| 7440-47-3 | 24 | Cr | 0.011 | 0.003 | 0.011 | 0.000 | 0.011 | 0.004 | 0.015 | 0.004 |
| 7439-96-5 | 25 | Mn | 0.015 | 0.003 | 0.015 | 0.000 | 0.015 | 0.004 | 0.022 | 0.004 |
| 7439-89-6 | 26 | Fe | 0.041 | 0.009 | 0.041 | 0.000 | 0.041 | 0.012 | 0.066 | 0.012 |
| 7440-02-0 | 28 | Ni | 0.032 | 0.005 | 0.032 | 0.000 | 0.032 | 0.008 | 0.047 | 0.006 |
| 7440-50-8 | 29 | Cu | 0.005 | 0.004 | 0.005 | 0.000 | 0.005 | 0.004 | 0.006 | 0.004 |
| 7440-66-6 | 30 | Zn | 0.006 | 0.002 | 0.006 | 0.000 | 0.006 | 0.002 | 0.013 | 0.003 |
| 7440-38-2 | 33 | As | 0.003 | 0.007 | 0.003 | 0.000 | 0.003 | 0.007 | 0.005 | 0.007 |
| 7782-49-2 | 34 | Se | 0.003 | 0.002 | 0.003 | 0.000 | 0.003 | 0.002 | 0.005 | 0.003 |
| 7726-95-6 | 35 | Br | 0.024 | 0.004 | 0.024 | 0.000 | 0.024 | 0.006 | 0.023 | 0.004 |
| 7440-17-7 | 37 | Rb | 0.006 | 0.004 | 0.006 | 0.000 | 0.006 | 0.004 | 0.011 | 0.005 |
| 7440-24-6 | 38 | Sr | 0.003 | 0.005 | 0.003 | 0.000 | 0.003 | 0.005 | 0.009 | 0.006 |
| 7440-65-5 | 39 | Y | 0.003 | 0.003 | 0.003 | 0.000 | 0.003 | 0.003 | 0.005 | 0.003 |
| 7440-67-7 | 40 | Zr | 0.012 | 0.012 | 0.012 | 0.000 | 0.012 | 0.012 | 0.020 | 0.014 |
| 7439-98-7 | 42 | Mo | 0.004 | 0.009 | 0.004 | 0.000 | 0.004 | 0.009 | 0.033 | 0.019 |
| 7440-05-3 | 46 | Pd | 0.006 | 0.006 | 0.006 | 0.000 | 0.006 | 0.006 | 0.015 | 0.012 |
| 7440-22-4 | 47 | Ag | 0.027 | 0.020 | 0.027 | 0.000 | 0.027 | 0.020 | 0.068 | 0.025 |
| 7440-43-9 | 48 | Cd | 0.015 | 0.015 | 0.015 | 0.000 | 0.015 | 0.015 | 0.026 | 0.018 |
| 7440-31-5 | 50 | Sn | 0.047 | 0.032 | 0.047 | 0.000 | 0.047 | 0.033 | 0.069 | 0.038 |
| 7440-36-0 | 51 | Sb | 0.019 | 0.019 | 0.019 | 0.000 | 0.019 | 0.019 | 0.032 | 0.023 |
| 7440-39-3 | 56 | Ba | 0.029 | 0.029 | 0.029 | 0.000 | 0.029 | 0.029 | 0.049 | 0.035 |
| 7439-91-0 | 57 | La | 0.099 | 0.107 | 0.099 | 0.000 | 0.099 | 0.107 | 0.169 | 0.127 |
| 7440-45-1 | 58 | Ce | 0.118 | 0.127 | 0.118 | 0.000 | 0.118 | 0.127 | 0.201 | 0.151 |

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PM Profile Speciation Report - continued (profile 23202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | 0.002 | 0.004 | 0.002 | 0.000 | 0.002 | 0.004 | 0.004 | 0.005 |
| 7439-92-1 | 82 | Pb | 0.018 | 0.011 | 0.018 | 0.000 | 0.018 | 0.011 | 0.023 | 0.013 |
| | 201 | OC | 9.280 | 1.000 | 9.280 | 0.000 | 9.280 | 2.065 | 10.120 | 1.724 |
| | 202 | EC | 0.464 | 0.500 | 0.464 | 0.000 | 0.464 | 0.498 | 0.576 | 0.481 |
| | 203 | SO4 | 48.830 | 8.000 | 48.830 | 0.000 | 48.830 | 12.367 | 47.197 | 6.881 |
| | 204 | NO3 | 0.092 | 0.100 | 0.092 | 0.000 | 0.092 | 0.100 | 0.150 | 0.113 |
| TOTALS: | | | 116.520 | | 116.520 | | 116.520 | | 116.040 | |

PM Profile Speciation Report

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Profile Name : Sulfite Recovery Boiler
Profile Number : 24101
Data Quality : B/C

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Control Device : Uncontrolled
Reference(s) : 46
Data Source : Sampled with a 2-stage virtual impactor with a Method 5 heated probe. Analysis by XRF, INNA, IC and carbon oxidation. No dilution air. Average of 2 samples from 2 plants.

SCC Assignments: 30700234

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.780 0.880 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 2.500 | 0.800 | 2.500 | 0.800 | 2.500 | 0.984 | 2.500 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.730 | 0.520 | 0.730 | 0.520 | 0.730 | 0.597 | 0.730 | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-21-3 | 14 | Si | 0.400 | 0.150 | 0.400 | 0.150 | 0.400 | 0.180 | 0.400 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 12.000 | 2.000 | 12.000 | 2.000 | 12.000 | 2.952 | 12.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.580 | 0.100 | 0.580 | 0.100 | 0.580 | 0.146 | 0.580 | 0.000 |
| 7440-09-7 | 19 | K | 30.000 | 10.000 | 30.000 | 10.000 | 30.000 | 0.000 | 30.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.000 | 0.200 | 2.000 | 0.200 | 2.000 | 0.390 | 2.000 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.001 | 0.010 | 0.001 | 0.010 | 0.002 | 0.010 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.001 | < | 0.001 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.001 | < | 0.001 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.054 | 0.070 | 0.054 | 0.070 | 0.054 | 0.079 | 0.054 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.066 | 0.036 | 0.066 | 0.036 | 0.066 | 0.042 | 0.066 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.001 | < | 0.001 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.016 | 0.017 | 0.016 | 0.017 | 0.016 | 0.019 | 0.016 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.017 | 0.002 | 0.017 | 0.002 | 0.017 | 0.004 | 0.017 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 24101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.030 | < | 0.030 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | 56.000 | 11.200 | 56.000 | 11.200 | 56.000 | 0.000 | 56.000 | 0.000 |
| | 204 | NO3 | 0.300 | 0.060 | 0.300 | 0.060 | 0.300 | 0.083 | 0.300 | 0.000 |
| TOTALS: | | | 104.673 | | 104.673 | | 104.673 | | 104.673 | |

## 3.9 SURFACE COATING OPERATIONS

Surface coating operations primarily involve the application of paint, varnish/shellac, lacquer, enamel, or paint primer for surface decoration and/or protection before products are marketed. Adhesives, as the name implies, involve the application of a bonding agent for the purpose of adhering materials together. A number of basic industrial coating operations are utilized, including spraying, flowcoating, roller coating, dipping, and electro-coating. There are variations and combinations of these operations, each designed for a special task. The coatings applied in these operations vary widely as to composition and physical properties. In order to accelerate the drying of the solvents used in the surface coatings, a drying or baking operation is usually an integral part of the basic coating process.

PM Profile Speciation Report

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Profile Name : Paint Spray Booth
Profile Number : 25403
Data Quality : D/E

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Control Device : Water Spray Booth
Reference(s) : 10
Data Source : SASS train with Method 5 probe, 3 cyclones at 400 deg F. Cyclone and filter catches analyzed by XRF. Si, P, and S non-quantitative. Analysis of one sample downstream of control device. Carbon value estimated.

SCC Assignments: 40200101

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.290 | 0.380 | 0.470 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 0.660 | 0.000 | 0.660 | 0.000 | 0.660 | 0.000 | 0.660 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 25403)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 201 | OC | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 0.000 |
| | 202 | EC | 10.000 | 0.000 | 10.000 | 0.000 | 10.000 | 0.000 | 10.000 | 0.000 |
| | 203 | SO4 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 | 2.000 | 0.000 |
| | 204 | NO3 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| TOTALS: | | | 57.110 | | 57.110 | | 57.110 | | 57.110 | |

## 3.10 SOLID WASTE DISPOSAL

Solid waste sources can be industrial, urban, agricultural, or construction. Solid waste may be disposed of in landfills or land application units or incinerated. A large percentage of urban and industrial waste is burned. Waste burning processes include open burning and controlled and uncontrolled incineration where significant particulate emissions may be generated.

PM Profile Speciation Report

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Profile Name : Municipal Incinerator (Philadelphia)
Profile Number : 17105
Data Quality : B/D

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Control Device : ESP(Inoperative)
Reference(s) : 52
Data Source : Dilution sampler. Representative sample from group of 10.

SCC Assignments: 50100101

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.260 0.310 0.380

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.819 | 0.117 | 5.827 | 0.466 | 2.400 | 0.657 | 2.400 | 0.000 |
| 7440-21-3 | 14 | Si | 1.442 | 0.067 | 8.570 | 0.581 | 3.693 | 0.931 | 3.693 | 0.000 |
| 7723-14-0 | 15 | P | 0.543 | 0.098 | 0.894 | 0.299 | 0.654 | 0.238 | 0.654 | 0.000 |
| 7704-34-9 | 16 | S | 1.906 | 0.301 | 3.487 | 0.601 | 2.405 | 0.599 | 2.405 | 0.000 |
| 7782-50-5 | 17 | Cl | 21.299 | 0.985 | 16.678 | 2.218 | 19.840 | 3.100 | 19.840 | 0.000 |
| 7440-09-7 | 19 | K | 6.464 | 0.305 | 4.491 | 0.640 | 5.841 | 0.903 | 5.841 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.223 | 0.030 | 5.870 | 0.381 | 2.006 | 0.626 | 2.006 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.012 | 0.003 | 1.097 | 0.069 | 0.355 | 0.116 | 0.355 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.001 | 0.024 | 0.008 | 0.008 | 0.006 | 0.008 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.001 | 0.111 | 0.009 | 0.045 | 0.012 | 0.045 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.018 | 0.001 | 0.091 | 0.008 | 0.041 | 0.011 | 0.041 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.279 | 0.013 | 1.874 | 0.129 | 0.783 | 0.204 | 0.783 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.032 | 0.002 | 0.085 | 0.010 | 0.049 | 0.011 | 0.049 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.148 | 0.007 | 0.053 | 0.015 | 0.118 | 0.019 | 0.118 | 0.000 |
| 7440-66-6 | 30 | Zn | 11.503 | 0.525 | 4.012 | 0.918 | 9.137 | 1.383 | 9.137 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.016 | 0.011 | 0.000 | 0.022 | 0.011 | 0.017 | 0.011 | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.031 | 0.000 | 0.071 | 0.000 | 0.053 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.003 | 0.011 | 0.003 | 0.020 | 0.003 | 0.016 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 0.563 | 0.027 | 0.375 | 0.057 | 0.504 | 0.078 | 0.504 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.016 | 0.002 | 0.005 | 0.008 | 0.013 | 0.006 | 0.013 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.009 | 0.002 | 0.023 | 0.008 | 0.013 | 0.006 | 0.013 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.014 | 0.000 | 0.039 | 0.000 | 0.028 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.036 | 0.003 | 0.003 | 0.023 | 0.026 | 0.016 | 0.026 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.284 | 0.016 | 0.024 | 0.049 | 0.202 | 0.045 | 0.202 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.829 | 0.041 | 0.004 | 0.089 | 0.568 | 0.105 | 0.568 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.442 | 0.028 | 0.086 | 0.113 | 0.330 | 0.091 | 0.330 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.029 | 0.000 | 0.242 | 0.014 | 0.167 | 0.014 | 0.000 |

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PM Profile Speciation Report - continued (profile 17105)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | 0.009 | 0.004 | 0.011 | 0.012 | 0.010 | 0.009 | 0.010 | 0.000 |
| 7439-92-1 | 82 | Pb | 8.116 | 0.371 | 2.428 | 0.633 | 6.320 | 0.961 | 6.320 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 55.046 | | 56.126 | | 55.389 | | 55.389 | |

PM Profile Speciation Report

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Profile Name : Municipal Incinerator Composite
Profile Number : 17106
Data Quality : B/E

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Control Device : ESP, Baghouse, and Scrubbers
Reference(s) : Not specified
Data Source : Composite profiles of 17101, 17102, 17103, and 17104.
(Note: These profiles were not included in the Receptor Model Source Composition Library.)

SCC Assignments: 50100101

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.260 | 0.310 | 0.380 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | 9.550 | 0.000 | 9.550 | 0.000 | 9.550 | 1.307 | 9.550 | 1.800 |
| 7439-95-4 | 12 | Mg | 1.420 | 0.000 | 1.420 | 0.000 | 1.420 | 0.194 | 1.420 | 1.150 |
| 7429-90-5 | 13 | Al | 1.170 | 0.000 | 1.170 | 0.000 | 1.170 | 0.160 | 1.170 | 0.590 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 4.300 | 0.000 | 4.300 | 0.000 | 4.300 | 0.588 | 4.300 | 7.500 |
| 7782-50-5 | 17 | Cl | 22.300 | 0.000 | 22.300 | 0.000 | 22.300 | 3.052 | 22.300 | 4.300 |
| 7440-09-7 | 19 | K | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.684 | 5.000 | 10.000 |
| 7440-70-2 | 20 | Ca | 0.767 | 0.000 | 0.767 | 0.000 | 0.767 | 0.105 | 0.767 | 1.330 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.193 | 0.000 | 0.193 | 0.000 | 0.193 | 0.026 | 0.193 | 0.127 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.036 | 0.000 | 0.036 | 0.000 | 0.036 | 0.005 | 0.036 | 0.023 |
| 7439-96-5 | 25 | Mn | 0.083 | 0.000 | 0.083 | 0.000 | 0.083 | 0.011 | 0.083 | 0.062 |
| 7439-89-6 | 26 | Fe | 0.627 | 0.000 | 0.627 | 0.000 | 0.627 | 0.086 | 0.627 | 0.286 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.002 | 0.014 | 0.006 |
| 7440-50-8 | 29 | Cu | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.025 | 0.180 | 0.017 |
| 7440-66-6 | 30 | Zn | 11.800 | 0.000 | 11.800 | 0.000 | 11.800 | 1.615 | 11.800 | 0.350 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.003 | 0.020 | 0.004 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.166 | 0.000 | 0.166 | 0.000 | 0.166 | 0.023 | 0.166 | 0.097 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.003 | 0.025 | 0.023 |
| 7440-43-9 | 48 | Cd | 0.115 | 0.000 | 0.115 | 0.000 | 0.115 | 0.016 | 0.115 | 0.047 |
| 7440-31-5 | 50 | Sn | 0.885 | 0.000 | 0.885 | 0.000 | 0.885 | 0.121 | 0.885 | 0.577 |
| 7440-36-0 | 51 | Sb | 0.168 | 0.000 | 0.168 | 0.000 | 0.168 | 0.023 | 0.168 | 0.078 |

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PM Profile Speciation Report - continued (profile 17106)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.004 | 0.004 |
| 7440-39-3 | 56 | Ba | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 | 0.007 | 0.010 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 5.330 | 0.000 | 5.330 | 0.000 | 5.330 | 0.729 | 5.330 | 9.230 |
| 7439-92-1 | 82 | Pb | 8.230 | 0.000 | 8.230 | 0.000 | 8.230 | 1.126 | 8.230 | 1.400 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 72.390 | | 72.390 | | 72.390 | | 72.390 | |

PM Profile Speciation Report

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Profile Name : Municipal Incinerator (East Chicago,IN)
Profile Number : 17107
Data Quality : E

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Control Device : Spray chamber and 3-stage scrubbing tower.
Reference(s) : 64,74
Data Source : Samples collected according to EPA incinerator method (HNO3 impingers) and with Andersen impactors. Analyzed by INAA and AA.

SCC Assignments: 50100101

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.260 0.310 0.380

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 8.200 | 0.000 | 8.200 | 0.000 | 8.200 | 0.000 | 8.200 | 1.300 |
| 7439-95-4 | 12 | Mg | 2.800 | 0.000 | 2.800 | 0.000 | 2.800 | 0.000 | 2.800 | 0.800 |
| 7782-50-5 | 17 | Cl | 27.000 | 0.000 | 27.000 | 0.000 | 27.000 | 0.000 | 27.000 | 3.000 |
| 7440-47-3 | 24 | Cr | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.008 |
| 7439-89-6 | 26 | Fe | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.150 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.003 |
| 7440-50-8 | 29 | Cu | 0.170 | 0.000 | 0.170 | 0.000 | 0.170 | 0.000 | 0.170 | 0.030 |
| 7440-66-6 | 30 | Zn | 11.400 | 0.000 | 11.400 | 0.000 | 11.400 | 0.000 | 11.400 | 2.800 |
| 7440-38-2 | 33 | As | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.009 |
| 7782-49-2 | 34 | Se | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.004 |
| 7726-95-6 | 35 | Br | 0.088 | 0.000 | 0.088 | 0.000 | 0.088 | 0.000 | 0.088 | 0.039 |
| 7440-22-4 | 47 | Ag | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.008 |
| 7440-43-9 | 48 | Cd | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.040 |
| 7440-74-6 | 49 | In | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-31-5 | 50 | Sn | 1.290 | 0.000 | 1.290 | 0.000 | 1.290 | 0.000 | 1.290 | 0.160 |
| 7440-36-0 | 51 | Sb | 0.160 | 0.000 | 0.160 | 0.000 | 0.160 | 0.000 | 0.160 | 0.080 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.013 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-19-9 | 62 | Sm | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-57-5 | 79 | Au | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 6.900 | 0.000 | 6.900 | 0.000 | 6.900 | 0.000 | 6.900 | 1.000 |
| 7440-29-1 | 90 | Th | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 58.593 | | 58.593 | | 58.593 | | 58.593 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Municipal Incinerator (Philadelphia)
Profile Number : 17108
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,63
Data Source : Data taken from Reference 62. For details, consult Reference 63.

SCC Assignments: 50100101

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.260 0.310 0.380

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 6.200 | 3.200 | 5.700 | 0.800 | 6.042 | 0.961 | 6.148 | 2.973 |
| 7429-90-5 | 13 | Al | 0.230 | 0.100 | 5.200 | 0.600 | 1.799 | 0.567 | 0.748 | 0.130 |
| 7440-21-3 | 14 | Si | 1.700 | 0.300 | 8.600 | 2.000 | 3.879 | 0.953 | 2.419 | 0.431 |
| 7723-14-0 | 15 | P | 0.630 | 0.120 | 0.900 | 0.140 | 0.715 | 0.128 | 0.658 | 0.136 |
| 7704-34-9 | 16 | S | 2.900 | 0.800 | 3.200 | 0.700 | 2.995 | 0.492 | 2.931 | 0.810 |
| 7782-50-5 | 17 | Cl | 27.000 | 4.000 | 15.000 | 3.000 | 23.211 | 3.586 | 25.750 | 4.910 |
| 7440-09-7 | 19 | K | 7.600 | 2.300 | 4.500 | 0.600 | 6.621 | 1.026 | 7.277 | 2.267 |
| 7440-70-2 | 20 | Ca | 0.230 | 0.100 | 11.200 | 0.600 | 3.694 | 1.211 | 1.373 | 0.166 |
| 7440-32-6 | 22 | Ti | 0.030 | 0.015 | 1.500 | 0.300 | 0.494 | 0.169 | 0.183 | 0.038 |
| 7440-62-2 | 23 | V | 0.001 | 0.001 | 0.010 | 0.004 | 0.004 | 0.004 | 0.002 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.009 | 0.003 | 0.110 | 0.040 | 0.041 | 0.018 | 0.019 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.016 | 0.003 | 0.095 | 0.005 | 0.041 | 0.017 | 0.024 | 0.004 |
| 7439-89-6 | 26 | Fe | 0.220 | 0.050 | 1.600 | 0.200 | 0.656 | 0.182 | 0.364 | 0.062 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.003 | 0.001 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.029 | 0.004 | 0.110 | 0.050 | 0.055 | 0.019 | 0.037 | 0.008 |
| 7440-50-8 | 29 | Cu | 0.120 | 0.004 | 0.073 | 0.021 | 0.105 | 0.020 | 0.115 | 0.016 |
| 7440-66-6 | 30 | Zn | 9.800 | 0.500 | 4.200 | 3.300 | 8.032 | 1.249 | 9.217 | 1.331 |
| 7440-38-2 | 33 | As | 0.007 | 0.003 | 0.006 | 0.006 | 0.006 | 0.003 | 0.007 | 0.003 |
| 7782-49-2 | 34 | Se | 0.004 | 0.001 | 0.007 | 0.002 | 0.005 | 0.004 | 0.004 | 0.001 |
| 7726-95-6 | 35 | Br | 0.230 | 0.080 | 0.120 | 0.050 | 0.195 | 0.034 | 0.219 | 0.077 |
| 7440-17-7 | 37 | Rb | 0.022 | 0.004 | 0.009 | 0.004 | 0.018 | 0.005 | 0.021 | 0.005 |
| 7440-24-6 | 38 | Sr | 0.009 | 0.001 | 0.036 | 0.009 | 0.017 | 0.009 | 0.012 | 0.002 |
| 7440-67-7 | 40 | Zr | 0.029 | 0.002 | NR | 0.000 | NE | 0.000 | 0.026 | 0.004 |
| 7439-98-7 | 42 | Mo | 0.038 | 0.004 | 0.011 | 0.005 | 0.029 | 0.006 | 0.035 | 0.006 |
| 7440-22-4 | 47 | Ag | 0.007 | 0.001 | 0.008 | 0.001 | 0.007 | 0.004 | 0.007 | 0.002 |
| 7440-43-9 | 48 | Cd | 0.110 | 0.060 | 0.079 | 0.023 | 0.100 | 0.020 | 0.107 | 0.056 |
| 7440-74-6 | 49 | In | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.670 | 0.190 | 1.460 | 0.080 | 0.919 | 0.183 | 0.752 | 0.193 |
| 7440-36-0 | 51 | Sb | 0.140 | 0.080 | 0.049 | 0.049 | 0.111 | 0.020 | 0.131 | 0.074 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.083 | 0.042 | NR | 0.000 | NE | 0.000 | 0.074 | 0.039 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 | 0.002 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | 0.001 | 0.001 | NE | 0.000 | 0.000 | 0.000 |
| 7440-19-9 | 62 | Sm | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 17108)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(2) %wt | 0-10 um(2) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 5.800 | 1.200 | 1.700 | 0.500 | 4.505 | 0.713 | 5.373 | 1.288 |
| 7440-29-1 | 90 | Th | NR | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 201 | OC | 0.570 | 0.230 | 0.570 | 0.230 | 0.570 | 0.097 | 0.570 | 0.220 |
| | 202 | EC | 3.500 | 0.200 | 2.300 | 0.500 | 3.121 | 0.487 | 3.375 | 0.474 |
| | 203 | SO4 | 6.800 | 2.300 | 12.000 | 3.000 | 8.442 | 1.526 | 7.342 | 2.269 |
| TOTALS: | | | 74.736 | | 80.360 | | 76.432 | | 75.323 | |

(1) No control specified: thus, assumed uncontrolled.

(2) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Car Shredder
Profile Number : 17109
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,93
Data Source : Data taken from Reference 62. For details, consult Refrence 93.

SCC Assignments: 31401101, 31401102

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.390 0.480 0.550

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7782-41-4 | 9 | F | 0.050 | 0.050 | 0.000 | 5.000 | 0.035 | 4.211 | 0.197 | 0.157 |
| 7440-23-5 | 11 | Na | 0.180 | 0.240 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | 0.100 | 0.100 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | 0.470 | 0.064 | 1.900 | 0.350 | 0.886 | 0.338 | 0.556 | 0.064 |
| 7440-21-3 | 14 | Si | 0.870 | 0.190 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7704-34-9 | 16 | S | 0.470 | 0.085 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7782-50-5 | 17 | Cl | 0.680 | 0.460 | 8.700 | 0.790 | 3.013 | 0.979 | 1.161 | 0.436 |
| 7440-09-7 | 19 | K | 0.270 | 0.180 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-70-2 | 20 | Ca | 0.480 | 0.057 | 5.500 | 0.710 | 1.940 | 0.727 | 0.781 | 0.078 |
| 7440-32-6 | 22 | Ti | 0.025 | 0.025 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-62-2 | 23 | V | 0.001 | 0.001 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-47-3 | 24 | Cr | 0.040 | 0.004 | 0.000 | 2.000 | 0.028 | 1.684 | 0.098 | 0.060 |
| 7439-96-5 | 25 | Mn | 0.088 | 0.045 | 0.078 | 0.100 | 0.085 | 0.092 | 0.087 | 0.043 |
| 7439-89-6 | 26 | Fe | 5.760 | 0.980 | 3.700 | 1.100 | 5.161 | 1.324 | 5.636 | 0.924 |
| 7440-02-0 | 28 | Ni | 0.031 | 0.007 | 0.000 | 0.001 | 0.022 | 0.006 | 0.029 | 0.007 |
| 7440-50-8 | 29 | Cu | 0.100 | 0.014 | 0.990 | 0.300 | 0.359 | 0.268 | 0.153 | 0.022 |
| 7440-66-6 | 30 | Zn | 2.100 | 0.210 | 0.870 | 0.120 | 1.742 | 0.288 | 2.026 | 0.203 |
| 7726-95-6 | 35 | Br | 0.490 | 0.350 | 8.400 | 1.100 | 2.791 | 1.140 | 0.965 | 0.336 |
| 7439-92-1 | 82 | Pb | 0.490 | 0.049 | 0.000 | 0.005 | 0.347 | 0.060 | 0.461 | 0.046 |
| | 201 | OC | 7.700 | 3.300 | 31.000 | 2.800 | 14.478 | 4.068 | 9.098 | 3.108 |
| | 202 | EC | 0.600 | 0.060 | 4.000 | 4.200 | 1.589 | 3.550 | 0.804 | 0.258 |
| | 203 | SO4 | 0.290 | 0.030 | 0.000 | 6.000 | 0.206 | 5.053 | 0.453 | 0.182 |
| | 204 | NO3 | 0.150 | 0.150 | 0.000 | 15.000 | 0.106 | 12.632 | 0.591 | 0.472 |
| TOTALS: | | | 21.435 | | 65.138 | | 32.788 | | 23.096 | |

(1) No control specified: thus, assumed uncontrolled.

PM Profile Speciation Report

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Profile Name : Sewage Sludge Incineration - Composite
Profile Number : 17120
Data Quality : D

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Control Device : Scrubber
Reference(s) : 60
Data Source : Composite of profiles 17121, 17122, 17123, and 17124.

SCC Assignments: 50100506

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.240 | 0.320 | 0.420 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 1.410 | 0.000 | 1.410 | 0.000 | 1.410 | 0.000 | 1.410 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.650 | 0.000 | 0.650 | 0.000 | 0.650 | 0.000 | 0.650 | 0.000 |
| 7429-90-5 | 13 | Al | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 |
| 7440-21-3 | 14 | Si | 4.770 | 0.000 | 4.770 | 0.000 | 4.770 | 0.000 | 4.770 | 0.000 |
| 7723-14-0 | 15 | P | 3.260 | 0.000 | 3.260 | 0.000 | 3.260 | 0.000 | 3.260 | 0.000 |
| 7704-34-9 | 16 | S | 6.330 | 0.000 | 6.330 | 0.000 | 6.330 | 0.000 | 6.330 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.480 | 0.000 | 1.480 | 0.000 | 1.480 | 0.000 | 1.480 | 0.000 |
| 7440-09-7 | 19 | K | 0.960 | 0.000 | 0.960 | 0.000 | 0.960 | 0.000 | 0.960 | 0.000 |
| 7440-70-2 | 20 | Ca | 5.070 | 0.000 | 5.070 | 0.000 | 5.070 | 0.000 | 5.070 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-32-6 | 22 | Ti | 0.440 | 0.000 | 0.440 | 0.000 | 0.440 | 0.000 | 0.440 | 0.000 |
| 7440-62-2 | 23 | V | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.580 | 0.000 | 0.580 | 0.000 | 0.580 | 0.000 | 0.580 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.380 | 0.000 | 5.380 | 0.000 | 5.380 | 0.000 | 5.380 | 0.000 |
| 7440-48-4 | 27 | Co | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-02-0 | 28 | Ni | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-50-8 | 29 | Cu | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.361 | 0.000 | 0.361 | 0.000 | 0.361 | 0.000 | 0.361 | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 |
| 7726-95-6 | 35 | Br | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-98-7 | 42 | Mo | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-43-9 | 48 | Cd | 0.830 | 0.000 | 0.830 | 0.000 | 0.830 | 0.000 | 0.830 | 0.000 |
| 7440-31-5 | 50 | Sn | 1.390 | 0.000 | 1.390 | 0.000 | 1.390 | 0.000 | 1.390 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-39-3 | 56 | Ba | 0.270 | 0.000 | 0.270 | 0.000 | 0.270 | 0.000 | 0.270 | 0.000 |

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PM Profile Speciation Report - continued (profile 17120)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-92-1 | 82 | Pb | 2.940 | 0.000 | 2.940 | 0.000 | 2.940 | 0.000 | 2.940 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 39.771 | | 39.771 | | 39.771 | | 39.771 | |

PM Profile Speciation Report

Profile Name : Sewage Sludge Incineration
Profile Number : 17121
Data Quality : D

Control Device : Scrubber
Reference(s) : 60
Data Source : Samples collected with a modified EPA Method 5 train were analyzed by X-ray fluorescence for elemental composition. Particle size distribution data were collected by cascade impactors. Data reflect average of tests conducted at a seven-chambered multiple-hearth furnace.

SCC Assignments: 50100506

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.280 | 0.280 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 2.760 | 0.000 | 2.760 | 0.000 | 2.760 | 0.000 | 2.760 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.710 | 0.000 | 0.710 | 0.000 | 0.710 | 0.000 | 0.710 | 0.000 |
| 7429-90-5 | 13 | Al | 1.020 | 0.000 | 1.020 | 0.000 | 1.020 | 0.000 | 1.020 | 0.000 |
| 7440-21-3 | 14 | Si | 4.690 | 0.000 | 4.690 | 0.000 | 4.690 | 0.000 | 4.690 | 0.000 |
| 7723-14-0 | 15 | P | 4.690 | 0.000 | 4.690 | 0.000 | 4.690 | 0.000 | 4.690 | 0.000 |
| 7704-34-9 | 16 | S | 5.250 | 0.000 | 5.250 | 0.000 | 5.250 | 0.000 | 5.250 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 |
| 7440-09-7 | 19 | K | 1.710 | 0.000 | 1.710 | 0.000 | 1.710 | 0.000 | 1.710 | 0.000 |
| 7440-70-2 | 20 | Ca | 6.200 | 0.000 | 6.200 | 0.000 | 6.200 | 0.000 | 6.200 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-32-6 | 22 | Ti | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.000 |
| 7440-62-2 | 23 | V | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.770 | 0.000 | 0.770 | 0.000 | 0.770 | 0.000 | 0.770 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.910 | 0.000 | 2.910 | 0.000 | 2.910 | 0.000 | 2.910 | 0.000 |
| 7440-48-4 | 27 | Co | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-02-0 | 28 | Ni | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-50-8 | 29 | Cu | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-66-6 | 30 | Zn | 6.440 | 0.000 | 6.440 | 0.000 | 6.440 | 0.000 | 6.440 | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7726-95-6 | 35 | Br | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-98-7 | 42 | Mo | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-43-9 | 48 | Cd | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 |

PM Profile Speciation Report - continued (profile 17121)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 1.420 | 0.000 | 1.420 | 0.000 | 1.420 | 0.000 | 1.420 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-39-3 | 56 | Ba | 0.080 | 0.000 | 0.080 | 0.000 | 0.080 | 0.000 | 0.080 | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-92-1 | 82 | Pb | 4.070 | 0.000 | 4.070 | 0.000 | 4.070 | 0.000 | 4.070 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 45.610 | | 45.610 | | 45.610 | | 45.610 | |

PM Profile Speciation Report

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Profile Name : Sewage Sludge Incineration
Profile Number : 17122
Data Quality : D

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Control Device : Scrubber
Reference(s) : 60
Data Source : Samples collected with a modified EPA Method 5 train were analyzed by X-ray fluorescence for elemental composition. Particle size distribution data were collected by cascade impactors. Data reflect average of tests conducted at a eight-chambered multiple-hearth furnace.

SCC Assignments: 50100506

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.240 0.320 0.420

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 0.570 | 0.000 | 0.570 | 0.000 | 0.570 | 0.000 | 0.570 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.860 | 0.000 | 0.860 | 0.000 | 0.860 | 0.000 | 0.860 | 0.000 |
| 7429-90-5 | 13 | Al | 3.050 | 0.000 | 3.050 | 0.000 | 3.050 | 0.000 | 3.050 | 0.000 |
| 7440-21-3 | 14 | Si | 8.130 | 0.000 | 8.130 | 0.000 | 8.130 | 0.000 | 8.130 | 0.000 |
| 7723-14-0 | 15 | P | 3.360 | 0.000 | 3.360 | 0.000 | 3.360 | 0.000 | 3.360 | 0.000 |
| 7704-34-9 | 16 | S | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 |
| 7440-09-7 | 19 | K | 0.890 | 0.000 | 0.890 | 0.000 | 0.890 | 0.000 | 0.890 | 0.000 |
| 7440-70-2 | 20 | Ca | 5.090 | 0.000 | 5.090 | 0.000 | 5.090 | 0.000 | 5.090 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-32-6 | 22 | Ti | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.000 |
| 7440-62-2 | 23 | V | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.940 | 0.000 | 0.940 | 0.000 | 0.940 | 0.000 | 0.940 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.160 | 0.000 | 0.160 | 0.000 | 0.160 | 0.000 | 0.160 | 0.000 |
| 7439-89-6 | 26 | Fe | 13.750 | 0.000 | 13.750 | 0.000 | 13.750 | 0.000 | 13.750 | 0.000 |
| 7440-48-4 | 27 | Co | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.240 | 0.000 | 0.240 | 0.000 | 0.240 | 0.000 | 0.240 | 0.000 |
| 7440-50-8 | 29 | Cu | 1.580 | 0.000 | 1.580 | 0.000 | 1.580 | 0.000 | 1.580 | 0.000 |
| 7440-66-6 | 30 | Zn | 3.580 | 0.000 | 3.580 | 0.000 | 3.580 | 0.000 | 3.580 | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 |
| 7726-95-6 | 35 | Br | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-98-7 | 42 | Mo | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-43-9 | 48 | Cd | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 |

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PM Profile Speciation Report - continued (profile 17122)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 2.390 | 0.000 | 2.390 | 0.000 | 2.390 | 0.000 | 2.390 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-39-3 | 56 | Ba | 0.560 | 0.000 | 0.560 | 0.000 | 0.560 | 0.000 | 0.560 | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-92-1 | 82 | Pb | 2.270 | 0.000 | 2.270 | 0.000 | 2.270 | 0.000 | 2.270 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 50.750 | | 50.750 | | 50.750 | | 50.750 | |

PM Profile Speciation Report

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Profile Name : Sewage Sludge Incineration
Profile Number : 17123
Data Quality : D

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Control Device : Scrubber
Reference(s) : 60
Data Source : Samples collected with a modified EPA Method 5 train were analyzed by X-ray fluorescence for elemental composition. Particle size distribution data were collected by cascade impactors. Data reflect average of tests at a fluidized bed furnace.

SCC Assignments: 50100506

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.240 0.320 0.420

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 1.960 | 0.000 | 1.960 | 0.000 | 1.960 | 0.000 | 1.960 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.010 | 0.000 | 1.010 | 0.000 | 1.010 | 0.000 | 1.010 | 0.000 |
| 7429-90-5 | 13 | Al | 3.070 | 0.000 | 3.070 | 0.000 | 3.070 | 0.000 | 3.070 | 0.000 |
| 7440-21-3 | 14 | Si | 5.330 | 0.000 | 5.330 | 0.000 | 5.330 | 0.000 | 5.330 | 0.000 |
| 7723-14-0 | 15 | P | 4.140 | 0.000 | 4.140 | 0.000 | 4.140 | 0.000 | 4.140 | 0.000 |
| 7704-34-9 | 16 | S | 14.420 | 0.000 | 14.420 | 0.000 | 14.420 | 0.000 | 14.420 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.930 | 0.000 | 0.930 | 0.000 | 0.930 | 0.000 | 0.930 | 0.000 |
| 7440-09-7 | 19 | K | 1.070 | 0.000 | 1.070 | 0.000 | 1.070 | 0.000 | 1.070 | 0.000 |
| 7440-70-2 | 20 | Ca | 8.760 | 0.000 | 8.760 | 0.000 | 8.760 | 0.000 | 8.760 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-32-6 | 22 | Ti | 0.650 | 0.000 | 0.650 | 0.000 | 0.650 | 0.000 | 0.650 | 0.000 |
| 7440-62-2 | 23 | V | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.460 | 0.000 | 0.460 | 0.000 | 0.460 | 0.000 | 0.460 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.520 | 0.000 | 4.520 | 0.000 | 4.520 | 0.000 | 4.520 | 0.000 |
| 7440-48-4 | 27 | Co | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-02-0 | 28 | Ni | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-50-8 | 29 | Cu | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.720 | 0.000 | 1.720 | 0.000 | 1.720 | 0.000 | 1.720 | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | 0.360 | 0.000 | 0.360 | 0.000 | 0.360 | 0.000 | 0.360 | 0.000 |
| 7726-95-6 | 35 | Br | 0.770 | 0.000 | 0.770 | 0.000 | 0.770 | 0.000 | 0.770 | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-98-7 | 42 | Mo | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-43-9 | 48 | Cd | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.000 |

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PM Profile Speciation Report - continued (profile 17123)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 0.590 | 0.000 | 0.590 | 0.000 | 0.590 | 0.000 | 0.590 | 0.000 |
| 7440-36-0 | 51 | Sb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-39-3 | 56 | Ba | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-92-1 | 82 | Pb | 2.260 | 0.000 | 2.260 | 0.000 | 2.260 | 0.000 | 2.260 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 53.290 | | 53.290 | | 53.290 | | 53.290 | |

PM Profile Speciation Report

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Profile Name : Sewage Sludge Incineration
Profile Number : 17124
Data Quality : D

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Control Device : Scrubber
Reference(s) : 60
Data Source : Samples collected with a modified EPA Method 5 train were analyzed by X-ray fluorescence for elemental composition. Particle size distribution data were collected by cascade impactors. Data reflect average of tests conducted at a seven-chambered multiple-hearth furnace.

SCC Assignments: 50100506

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.240 0.370 0.550

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 0.340 | 0.000 | 0.340 | 0.000 | 0.340 | 0.000 | 0.340 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7429-90-5 | 13 | Al | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7440-21-3 | 14 | Si | 0.910 | 0.000 | 0.910 | 0.000 | 0.910 | 0.000 | 0.910 | 0.000 |
| 7723-14-0 | 15 | P | 0.840 | 0.000 | 0.840 | 0.000 | 0.840 | 0.000 | 0.840 | 0.000 |
| 7704-34-9 | 16 | S | 3.830 | 0.000 | 3.830 | 0.000 | 3.830 | 0.000 | 3.830 | 0.000 |
| 7782-50-5 | 17 | Cl | 2.910 | 0.000 | 2.910 | 0.000 | 2.910 | 0.000 | 2.910 | 0.000 |
| 7440-09-7 | 19 | K | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 | 0.180 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.230 | 0.000 | 0.230 | 0.000 | 0.230 | 0.000 | 0.230 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-32-6 | 22 | Ti | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7440-62-2 | 23 | V | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-47-3 | 24 | Cr | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.340 | 0.000 | 0.340 | 0.000 | 0.340 | 0.000 | 0.340 | 0.000 |
| 7440-48-4 | 27 | Co | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-02-0 | 28 | Ni | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-50-8 | 29 | Cu | 0.770 | 0.000 | 0.770 | 0.000 | 0.770 | 0.000 | 0.770 | 0.000 |
| 7440-66-6 | 30 | Zn | 2.690 | 0.000 | 2.690 | 0.000 | 2.690 | 0.000 | 2.690 | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 |
| 7726-95-6 | 35 | Br | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 | 0.260 | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-98-7 | 42 | Mo | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-43-9 | 48 | Cd | 2.770 | 0.000 | 2.770 | 0.000 | 2.770 | 0.000 | 2.770 | 0.000 |

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PM Profile Speciation Report - continued (profile 17124)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 1.160 | 0.000 | 1.160 | 0.000 | 1.160 | 0.000 | 1.160 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-92-1 | 82 | Pb | 3.140 | 0.000 | 3.140 | 0.000 | 3.140 | 0.000 | 3.140 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 20.930 | | 20.930 | | 20.930 | | 20.930 | |

## 3.11 METAL FABRICATION

Metal fabrication includes establishments engaged in fabricating ferrous and nonferrous metal products, such as metal cans, tinware, handtools, cutlery, general hardware, nonelectric heating apparatus, fabricated structural metal products, metal forgings, metal stampings, and a variety of metal and wire products. Emission sources include, but are not limited to, casting, rolling, forging, welding, and sandblasting of metals.

PM Profile Speciation Report

Profile Name : Metal Fabrication - Galvanizing (ZnO)
Profile Number : 25701
Data Quality : E

Control Device : Uncontrolled(1)
Reference(s) : 62,76
Data Source : Data taken from Reference 62. For details, consult Reference 76.

SCC Assignments: 034

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.820 | 0.890 | 0.920 |

Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-66-6 | 30 | Zn | 80.000 | 0.000 | 80.000 | 0.000 | 80.000 | 0.000 | 80.000 | 8.000 |
| TOTALS: | | | 80.000 | | 80.000 | | 80.000 | | 80.000 | |

(1) No control specified: thus assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Metal Fabrication - Sandblasting
Profile Number : 25702
Data Quality : E

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Control Device : Uncontrolled(1)
Reference(s) : 62,76
Data Source : Data taken from Reference 62. For details, consult Reference 76.

SCC Assignments: 30900202

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um(2) | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.800 | 0.000 | 0.800 | 0.000 | 0.800 | 0.000 | 0.800 | 0.080 |
| 7429-90-5 | 13 | Al | 0.750 | 0.000 | 0.750 | 0.000 | 0.750 | 0.000 | 0.750 | 0.075 |
| 7440-21-3 | 14 | Si | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 4.000 |
| 7704-34-9 | 16 | S | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.000 | 0.880 | 0.088 |
| 7782-50-5 | 17 | Cl | 2.800 | 0.000 | 2.800 | 0.000 | 2.800 | 0.000 | 2.800 | 0.280 |
| 7440-09-7 | 19 | K | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.070 |
| 7440-70-2 | 20 | Ca | 0.820 | 0.000 | 0.820 | 0.000 | 0.820 | 0.000 | 0.820 | 0.082 |
| 7440-32-6 | 22 | Ti | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.040 |
| 7440-62-2 | 23 | V | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.580 | 0.000 | 0.580 | 0.000 | 0.580 | 0.000 | 0.580 | 0.058 |
| 7439-96-5 | 25 | Mn | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.014 |
| 7439-89-6 | 26 | Fe | 6.300 | 0.000 | 6.300 | 0.000 | 6.300 | 0.000 | 6.300 | 0.630 |
| 7440-02-0 | 28 | Ni | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.032 |
| 7440-50-8 | 29 | Cu | 0.690 | 0.000 | 0.690 | 0.000 | 0.690 | 0.000 | 0.690 | 0.069 |
| 7440-66-6 | 30 | Zn | 0.470 | 0.000 | 0.470 | 0.000 | 0.470 | 0.000 | 0.470 | 0.047 |
| 7440-38-2 | 33 | As | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7726-95-6 | 35 | Br | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.580 | 0.000 | 0.580 | 0.000 | 0.580 | 0.000 | 0.580 | 0.058 |
| | 200 | TC | 0.500 | 0.000 | 0.500 | 0.000 | 0.500 | 0.000 | 0.500 | 0.050 |
| TOTALS: | | | 56.748 | | 56.748 | | 56.748 | | 56.748 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Metal Fabrication - Welding
Profile Number : 25703
Data Quality : E

---

Control Device : Uncontrolled(1)
Reference(s) : 62,93
Data Source : Data taken from Reference 62. For details, consult Reference 93.

SCC Assignments: 034

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.820 0.890 0.920

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(2) | | 0-10 um(2) | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-09-7 | 19 | K | 20.900 | 2.090 | 20.900 | 0.000 | 20.900 | 4.234 | 20.900 | 0.000 |
| 7440-70-2 | 20 | Ca | 19.400 | 1.940 | 19.400 | 0.000 | 19.400 | 3.931 | 19.400 | 0.000 |
| 7439-96-5 | 25 | Mn | 6.280 | 0.628 | 6.280 | 0.000 | 6.280 | 1.285 | 6.280 | 0.000 |
| 7439-89-6 | 26 | Fe | 24.600 | 2.460 | 24.600 | 0.000 | 24.600 | 4.980 | 24.600 | 0.000 |
| TOTALS: | | | 71.180 | | 71.180 | | 71.180 | | 71.180 | |

(1) No control specified: thus, assumed uncontrolled.
(2) Estimated / extrapolated.

## 3.12 HEAVY CONSTRUCTION

Heavy construction is a source of dust emissions that may have substantial temporary impact on local air quality. Building and road construction are the prevalent construction categories with the highest emissions potential. Emissions during the construction of a building or road are associated with land clearing, blasting, ground excavation, cut and fill operations, and the construction of the particular facility itself. Dust emissions vary substantially from day to day depending on the level of activity, the specific operations, and the prevailing weather. A large portion of the emissions result from equipment traffic over temporary roads at the construction site.

PM Profile Speciation Report

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Profile Name : Excavation - El Segundo,CA
Profile Number : 44101
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Soil sample from excavation site. Analyzed using XRF.

SCC Assignments: 015

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 11.513 | 1.727 | 9.749 | 1.462 | 9.873 | 0.973 | 9.873 | 0.000 |
| 7440-21-3 | 14 | Si | 24.710 | 3.707 | 21.239 | 3.186 | 21.483 | 2.108 | 21.483 | 0.000 |
| 7723-14-0 | 15 | P | 0.033 | 0.007 | 0.025 | 0.005 | 0.025 | 0.003 | 0.025 | 0.000 |
| 7704-34-9 | 16 | S | 0.350 | 0.018 | 0.108 | 0.005 | 0.125 | 0.014 | 0.125 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.035 | 0.002 | 0.019 | 0.001 | 0.020 | 0.002 | 0.020 | 0.000 |
| 7440-09-7 | 19 | K | 1.548 | 0.077 | 1.721 | 0.086 | 1.709 | 0.085 | 1.709 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.186 | 0.059 | 1.359 | 0.068 | 1.347 | 0.066 | 1.347 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.578 | 0.032 | 0.612 | 0.032 | 0.609 | 0.032 | 0.609 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.008 | 0.021 | 0.007 | 0.022 | 0.004 | 0.022 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.023 | 0.004 | 0.020 | 0.002 | 0.020 | 0.002 | 0.020 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.112 | 0.008 | 0.133 | 0.007 | 0.131 | 0.007 | 0.131 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.243 | 0.267 | 5.655 | 0.285 | 5.626 | 0.282 | 5.626 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.009 | 0.002 | 0.008 | 0.001 | 0.008 | 0.001 | 0.008 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.008 | 0.002 | 0.004 | 0.001 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.023 | 0.003 | 0.014 | 0.001 | 0.015 | 0.002 | 0.015 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.004 | 0.000 | 0.002 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.002 | 0.004 | 0.001 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.014 | 0.001 | 0.013 | 0.001 | 0.013 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.020 | 0.003 | 0.037 | 0.002 | 0.036 | 0.002 | 0.036 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.016 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.009 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.010 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.012 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.017 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.020 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.024 | 0.000 | 0.008 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.040 | 0.055 | 0.016 | 0.017 | 0.018 | 0.016 | 0.018 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.099 | 0.000 | 0.032 | 0.000 | 0.029 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.183 | 0.000 | 0.055 | 0.000 | 0.053 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.011 | 0.006 | 0.024 | 0.002 | 0.024 | 0.002 | 0.024 | 0.000 |
| TOTALS: | | | 45.476 | | 40.782 | | 41.113 | | 41.113 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Excavation - Haul Road
Profile Number : 44102
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Soil sample from haul road at highway construction site.
Analyzed using XRF.

SCC Assignments: 30100103

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 11.041 | 1.656 | 10.292 | 1.544 | 10.325 | 0.993 | 10.325 | 0.000 |
| 7440-21-3 | 14 | Si | 22.441 | 3.366 | 21.196 | 3.179 | 21.250 | 2.036 | 21.250 | 0.000 |
| 7723-14-0 | 15 | P | 0.033 | 0.007 | 0.000 | 0.000 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7704-34-9 | 16 | S | 0.250 | 0.013 | 0.082 | 0.004 | 0.090 | 0.010 | 0.090 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.087 | 0.004 | 0.021 | 0.001 | 0.024 | 0.004 | 0.024 | 0.000 |
| 7440-09-7 | 19 | K | 1.393 | 0.070 | 1.645 | 0.082 | 1.634 | 0.079 | 1.634 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.371 | 0.069 | 1.278 | 0.064 | 1.282 | 0.069 | 1.282 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.503 | 0.029 | 0.551 | 0.030 | 0.549 | 0.028 | 0.549 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.007 | 0.024 | 0.006 | 0.024 | 0.004 | 0.024 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.003 | 0.023 | 0.002 | 0.022 | 0.002 | 0.022 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.101 | 0.007 | 0.126 | 0.007 | 0.125 | 0.007 | 0.125 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.112 | 0.261 | 5.532 | 0.279 | 5.513 | 0.275 | 5.513 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.002 | 0.008 | 0.001 | 0.008 | 0.001 | 0.008 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.018 | 0.003 | 0.006 | 0.001 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.079 | 0.006 | 0.018 | 0.001 | 0.021 | 0.003 | 0.021 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.021 | 0.004 | 0.000 | 0.002 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.003 | 0.013 | 0.001 | 0.013 | 0.001 | 0.013 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.017 | 0.004 | 0.032 | 0.002 | 0.031 | 0.002 | 0.031 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.004 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.018 | 0.000 | 0.004 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.011 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.012 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.014 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.018 | 0.000 | 0.004 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.023 | 0.000 | 0.005 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.027 | 0.000 | 0.006 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.056 | 0.000 | 0.012 | 0.000 | 0.015 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.113 | 0.046 | 0.024 | 0.044 | 0.031 | 0.044 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.202 | 0.025 | 0.040 | 0.024 | 0.054 | 0.024 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.007 | 0.024 | 0.002 | 0.023 | 0.002 | 0.023 | 0.000 |
| TOTALS: | | | 42.513 | | 40.943 | | 41.013 | | 41.013 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Excavation - Rock Crushing
Profile Number : 44103
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Dust sample collected from rock crushing site. Analyzed using XRF.

SCC Assignments: 30502001

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.300 0.810

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 11.539 | 1.731 | 9.681 | 1.452 | 9.857 | 1.093 | 9.857 | 0.000 |
| 7440-21-3 | 14 | Si | 34.003 | 5.100 | 29.414 | 4.412 | 29.849 | 3.277 | 29.849 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.028 | 0.001 | 0.000 | 0.000 | 0.003 | 0.001 | 0.003 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.014 | 0.001 | 0.000 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-09-7 | 19 | K | 2.715 | 0.136 | 2.721 | 0.136 | 2.720 | 0.165 | 2.720 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.509 | 0.075 | 1.732 | 0.087 | 1.711 | 0.100 | 1.711 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.359 | 0.020 | 0.339 | 0.022 | 0.341 | 0.025 | 0.341 | 0.000 |
| 7440-62-2 | 23 | V | 0.032 | 0.005 | 0.008 | 0.006 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.004 | 0.002 | 0.007 | 0.001 | 0.006 | 0.002 | 0.006 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.119 | 0.007 | 0.117 | 0.006 | 0.117 | 0.010 | 0.117 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.958 | 0.151 | 2.908 | 0.147 | 2.912 | 0.179 | 2.912 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.003 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 | 0.003 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.007 | 0.001 | 0.005 | 0.001 | 0.005 | 0.002 | 0.005 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.023 | 0.002 | 0.010 | 0.001 | 0.011 | 0.002 | 0.011 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.006 | 0.002 | 0.012 | 0.001 | 0.012 | 0.002 | 0.012 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.043 | 0.003 | 0.057 | 0.003 | 0.056 | 0.006 | 0.056 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.010 | 0.000 | 0.005 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.006 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.006 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.008 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.012 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.012 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.015 | 0.000 | 0.006 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.034 | 0.000 | 0.013 | 0.000 | 0.012 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.063 | 0.027 | 0.027 | 0.025 | 0.024 | 0.025 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.117 | 0.000 | 0.043 | 0.000 | 0.041 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.003 | 0.004 | 0.014 | 0.002 | 0.013 | 0.003 | 0.013 | 0.000 |
| TOTALS: | | | 53.368 | | 47.055 | | 47.653 | | 47.653 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report.

---

Profile Name : Soil Dust - Sandblasting & Plastering
Profile Number : 44104
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Dust sample collected from concrete structure sandblasting, plastering, and wallboarding site. Analyzed using XRF.

SCC Assignments: 015

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.620 0.850

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %Wt | unc | %Wt | unc | %Wt | unc | %Wt | unc |
| 7429-90-5 | 13 | Al | 5.553 | 0.833 | 4.944 | 0.742 | 4.984 | 0.627 | 4.984 | 0.000 |
| 7440-21-3 | 14 | Si | 16.443 | 2.466 | 14.210 | 2.132 | 14.355 | 1.817 | 14.355 | 0.000 |
| 7723-14-0 | 15 | P | 0.031 | 0.006 | 0.000 | 0.000 | 0.002 | 0.003 | 0.002 | 0.000 |
| 7704-34-9 | 16 | S | 1.982 | 0.099 | 1.524 | 0.076 | 1.554 | 0.133 | 1.554 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.022 | 0.001 | 0.016 | 0.001 | 0.016 | 0.004 | 0.016 | 0.000 |
| 7440-09-7 | 19 | K | 1.288 | 0.064 | 1.353 | 0.068 | 1.349 | 0.100 | 1.349 | 0.000 |
| 7440-70-2 | 20 | Ca | 14.350 | 0.718 | 14.212 | 0.711 | 14.221 | 1.011 | 14.221 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.245 | 0.014 | 0.223 | 0.013 | 0.224 | 0.023 | 0.224 | 0.000 |
| 7440-62-2 | 23 | V | 0.013 | 0.003 | 0.005 | 0.004 | 0.005 | 0.003 | 0.005 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.022 | 0.002 | 0.011 | 0.001 | 0.012 | 0.004 | 0.012 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.051 | 0.004 | 0.062 | 0.003 | 0.061 | 0.009 | 0.061 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.325 | 0.118 | 2.377 | 0.120 | 2.374 | 0.173 | 2.374 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.001 | 0.005 | 0.000 | 0.004 | 0.002 | 0.004 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.007 | 0.001 | 0.008 | 0.001 | 0.008 | 0.003 | 0.008 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.181 | 0.010 | 0.131 | 0.007 | 0.134 | 0.016 | 0.134 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.006 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.001 | 0.003 | 0.000 | 0.003 | 0.002 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.009 | 0.001 | 0.009 | 0.003 | 0.009 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.028 | 0.002 | 0.043 | 0.002 | 0.042 | 0.007 | 0.042 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.008 | 0.006 | 0.003 | 0.005 | 0.004 | 0.005 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.011 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.013 | 0.000 | 0.004 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.028 | 0.000 | 0.008 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.052 | 0.015 | 0.015 | 0.014 | 0.021 | 0.014 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.092 | 0.000 | 0.025 | 0.000 | 0.036 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.005 | 0.003 | 0.015 | 0.001 | 0.015 | 0.004 | 0.015 | 0.000 |
| TOTALS: | | | 42.557 | | 39.173 | | 39.392 | | 39.392 | |

(1) Estimated / extrapolated.

## 3.13 UNPAVED ROADS

Dust particles can become airborne on unpaved roads by vehicular traffic and wind action can increase the activity. Particulate emissions on unpaved roads can be controlled to some degree by chemical stabilizers.

PM Profile Speciation Report

---

Profile Name : Unpaved Road Dust (Copper Mine)
Profile Number : 41201
Data Quality : D/E

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Control Device : Not applicable
Reference(s) : 44
Data Source : Bulk sample sieved and resuspended.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.300 | 0.590 | 0.680 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 14.618 | 1.462 | 10.448 | 1.045 | 12.288 | 1.373 | 12.288 | 0.000 |
| 7440-21-3 | 14 | Si | 28.738 | 2.874 | 22.471 | 2.247 | 25.236 | 2.788 | 25.236 | 0.000 |
| 7723-14-0 | 15 | P | 0.282 | 0.028 | 0.218 | 0.022 | 0.246 | 0.027 | 0.246 | 0.000 |
| 7704-34-9 | 16 | S | 1.532 | 0.153 | 1.817 | 0.182 | 1.691 | 0.182 | 1.691 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.215 | 0.021 | 0.185 | 0.018 | 0.198 | 0.021 | 0.198 | 0.000 |
| 7440-09-7 | 19 | K | 3.204 | 0.320 | 3.097 | 0.310 | 3.144 | 0.340 | 3.144 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.420 | 0.342 | 4.028 | 0.403 | 3.760 | 0.404 | 3.760 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.331 | 0.033 | 0.402 | 0.040 | 0.371 | 0.040 | 0.371 | 0.000 |
| 7440-62-2 | 23 | V | 0.030 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.025 | 0.000 | 0.023 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.186 | 0.019 | 0.160 | 0.016 | 0.171 | 0.019 | 0.171 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.371 | 0.437 | 4.441 | 0.444 | 4.410 | 0.476 | 4.410 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | 0.012 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 1.436 | 0.144 | 1.431 | 0.143 | 1.433 | 0.155 | 1.433 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.535 | 0.053 | 0.546 | 0.055 | 0.541 | 0.058 | 0.541 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.046 | 0.000 | 0.065 | 0.000 | 0.057 | 0.000 | 0.057 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | 0.019 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.024 | 0.000 | 0.034 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-65-5 | 39 | Y | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-98-7 | 42 | Mo | < | 0.000 | 0.029 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-74-6 | 49 | In | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.016 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.012 | 0.023 | 0.022 | NE | 0.000 | NE | 0.000 |
| 7439-91-0 | 57 | La | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.117 | 0.012 | 0.100 | 0.000 | 0.107 | 0.000 | 0.107 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 59.110 | | 49.580 | | 53.738 | | 53.738 | |

PM Profile Speciation Report

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Profile Name : Unpaved Road Dust - Haul Road
Profile Number : 41203
Data Quality : D/E

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Control Device : Not applicable
Reference(s) : 44
Data Source : Sampled near a copper ore concentrator. Bulk sample sieved and resuspended.

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.300 | 0.590 | 0.680 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 17.765 | 1.776 | 12.872 | 1.287 | 15.031 | 1.676 | 15.031 | 0.000 |
| 7440-21-3 | 14 | Si | 34.358 | 3.436 | 25.981 | 2.598 | 29.677 | 3.292 | 29.677 | 0.000 |
| 7723-14-0 | 15 | P | 0.427 | 0.043 | 0.241 | 0.024 | 0.323 | 0.038 | 0.323 | 0.000 |
| 7704-34-9 | 16 | S | 2.810 | 0.281 | 2.277 | 0.228 | 2.512 | 0.276 | 2.512 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.726 | 0.073 | 0.496 | 0.050 | 0.597 | 0.067 | 0.597 | 0.000 |
| 7440-09-7 | 19 | K | 3.504 | 0.350 | 3.554 | 0.355 | 3.532 | 0.381 | 3.532 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.128 | 0.113 | 1.671 | 0.167 | 1.431 | 0.154 | 1.431 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.420 | 0.042 | 0.501 | 0.050 | 0.465 | 0.050 | 0.465 | 0.000 |
| 7440-62-2 | 23 | V | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.027 | 0.000 | 0.021 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.288 | 0.029 | 0.255 | 0.025 | 0.270 | 0.029 | 0.270 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.364 | 0.436 | 3.779 | 0.378 | 4.037 | 0.441 | 4.037 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.012 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 1.393 | 0.139 | 0.989 | 0.099 | 1.167 | 0.130 | 1.167 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.568 | 0.057 | 0.504 | 0.050 | 0.532 | 0.058 | 0.532 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.030 | 0.000 | 0.016 | 0.000 | 0.022 | 0.000 | 0.022 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.014 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | 0.020 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.029 | 0.000 | 0.029 | 0.000 | 0.029 | 0.000 | 0.029 | 0.000 |
| 7440-65-5 | 39 | Y | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.017 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.024 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | 0.034 | 0.036 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-74-6 | 49 | In | 0.045 | 0.038 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.044 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.080 | < | 0.018 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.274 | 0.214 | 0.064 | 0.049 | 0.157 | 0.098 | 0.157 | 0.000 |
| 7439-91-0 | 57 | La | < | 0.000 | < | 0.076 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41203)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.170 | 0.018 | 0.102 | 0.010 | 0.132 | 0.015 | 0.132 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 68.421 | | 53.407 | | 59.973 | | 59.973 | |

PM Profile Speciation Report

---

Profile Name : Unpaved Road Dust - East Helena, Montana
Profile Number : 41204
Data Quality : B/C

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Control Device : Not applicable
Reference(s) : 43
Data Source : Sampled near a primary Pb smelter and Zn and Cu oxide manufacturing plants. Samples sieved and resuspended.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.420 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 13.343 | 1.334 | 9.347 | 0.935 | 12.072 | 1.924 | 9.937 | 0.994 |
| 7440-21-3 | 14 | Si | 37.418 | 3.742 | 29.370 | 2.937 | 34.857 | 5.618 | 32.679 | 3.268 |
| 7723-14-0 | 15 | P | 0.224 | 0.025 | 0.149 | 0.015 | 0.200 | 0.033 | 0.154 | 0.015 |
| 7704-34-9 | 16 | S | 0.419 | 0.060 | 0.248 | 0.025 | 0.365 | 0.065 | 0.236 | 0.024 |
| 7782-50-5 | 17 | Cl | 0.181 | 0.028 | 0.113 | 0.011 | 0.159 | 0.029 | 0.125 | 0.012 |
| 7440-09-7 | 19 | K | 1.725 | 0.172 | 2.139 | 0.214 | 1.857 | 0.324 | 2.242 | 0.224 |
| 7440-70-2 | 20 | Ca | 6.194 | 0.619 | 3.994 | 0.399 | 5.494 | 0.870 | 3.854 | 0.385 |
| 7440-32-6 | 22 | Ti | 0.741 | 0.074 | 0.433 | 0.043 | 0.643 | 0.101 | 0.473 | 0.047 |
| 7440-62-2 | 23 | V | 0.039 | 0.000 | 0.016 | 0.000 | 0.032 | 0.000 | 0.023 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.021 | 0.000 | 0.019 | 0.000 | 0.020 | 0.000 | 0.021 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.049 | 0.000 | 0.040 | 0.000 | 0.046 | 0.000 | 0.037 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.340 | 0.234 | 2.158 | 0.216 | 2.282 | 0.376 | 2.213 | 0.221 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.013 | 0.000 | 0.014 | 0.000 | 0.013 | 0.000 | 0.024 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.028 | 0.000 | 0.030 | 0.000 | 0.029 | 0.000 | 0.029 | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.027 | 0.000 | 0.033 | 0.000 | 0.029 | 0.000 | 0.037 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.052 | 0.019 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.025 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.039 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-74-6 | 49 | In | < | 0.042 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.046 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | 0.028 | 0.089 | < | 0.014 | NE | 0.000 | 0.011 | 0.015 |
| 7440-39-3 | 56 | Ba | 0.320 | 0.250 | 0.306 | 0.047 | 0.316 | 0.179 | 0.270 | 0.051 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.042 | 0.014 | 0.027 | 0.000 | 0.037 | 0.000 | 0.035 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 63.204 | | 48.436 | | 58.451 | | 52.400 | |

PM Profile Speciation Report

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Profile Name : Unpaved Road Dust - Riverside, CA
Profile Number : 41205
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 055

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.300 | 0.590 | 0.730 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 9.890 | 1.484 | 9.231 | 1.385 | 9.267 | 1.283 | 9.267 | 0.000 |
| 7440-21-3 | 14 | Si | 20.360 | 3.054 | 19.190 | 2.878 | 19.253 | 2.651 | 19.253 | 0.000 |
| 7723-14-0 | 15 | P | 0.212 | 0.043 | 0.175 | 0.035 | 0.177 | 0.035 | 0.177 | 0.000 |
| 7704-34-9 | 16 | S | 0.406 | 0.020 | 0.332 | 0.017 | 0.336 | 0.037 | 0.336 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.157 | 0.008 | 0.179 | 0.009 | 0.177 | 0.020 | 0.177 | 0.000 |
| 7440-09-7 | 19 | K | 1.981 | 0.099 | 2.227 | 0.111 | 2.213 | 0.176 | 2.213 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.831 | 0.142 | 2.900 | 0.145 | 2.897 | 0.238 | 2.897 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.529 | 0.027 | 0.556 | 0.029 | 0.554 | 0.051 | 0.554 | 0.000 |
| 7440-62-2 | 23 | V | 0.038 | 0.006 | 0.025 | 0.006 | 0.026 | 0.008 | 0.026 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.002 | 0.029 | 0.002 | 0.029 | 0.006 | 0.029 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.159 | 0.008 | 0.150 | 0.008 | 0.150 | 0.019 | 0.150 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.671 | 0.286 | 5.955 | 0.299 | 5.940 | 0.476 | 5.940 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.009 | 0.001 | 0.007 | 0.001 | 0.007 | 0.003 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.011 | 0.002 | 0.007 | 0.001 | 0.007 | 0.003 | 0.007 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.028 | 0.002 | 0.026 | 0.001 | 0.027 | 0.006 | 0.027 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.003 | 0.001 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.003 | 0.000 | 0.003 | 0.002 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.007 | 0.002 | 0.016 | 0.001 | 0.016 | 0.005 | 0.016 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.012 | 0.002 | 0.028 | 0.002 | 0.027 | 0.006 | 0.027 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.006 | 0.001 | 0.006 | 0.003 | 0.006 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.011 | 0.000 | 0.003 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.007 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.007 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.012 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.014 | 0.000 | 0.003 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.017 | 0.000 | 0.003 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.038 | 0.000 | 0.007 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.071 | 0.050 | 0.013 | 0.048 | 0.031 | 0.048 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.128 | 0.000 | 0.022 | 0.000 | 0.055 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.013 | 0.004 | 0.030 | 0.002 | 0.029 | 0.007 | 0.029 | 0.000 |
| TOTALS: | | | 42.352 | | 41.122 | | 41.189 | | 41.189 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Unpaved Road Dust - Composite
Profile Number : 41220
Data Quality : D

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Control Device : Not applicable
Reference(s) : 44,43
Data Source : Developed from profiles 41201, 41203, and 41204.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.300 0.590 0.680

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 15.242 | 1.535 | 10.889 | 1.099 | 12.809 | 1.435 | 3.312 | 0.574 |
| 7440-21-3 | 14 | Si | 33.505 | 3.370 | 25.941 | 2.609 | 29.278 | 3.244 | 10.893 | 1.887 |
| 7723-14-0 | 15 | P | 0.311 | 0.033 | 0.203 | 0.021 | 0.250 | 0.029 | 0.051 | 0.009 |
| 7704-34-9 | 16 | S | 1.587 | 0.188 | 1.447 | 0.169 | 1.509 | 0.174 | 0.079 | 0.014 |
| 7782-50-5 | 17 | Cl | 0.374 | 0.047 | 0.265 | 0.031 | 0.313 | 0.038 | 0.042 | 0.007 |
| 7440-09-7 | 19 | K | 2.811 | 0.291 | 2.930 | 0.299 | 2.877 | 0.313 | 0.747 | 0.129 |
| 7440-70-2 | 20 | Ca | 3.581 | 0.413 | 3.231 | 0.341 | 3.385 | 0.383 | 1.285 | 0.222 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.497 | 0.053 | 0.445 | 0.045 | 0.468 | 0.052 | 0.158 | 0.027 |
| 7440-62-2 | 23 | V | 0.035 | 0.000 | 0.027 | 0.000 | 0.031 | 0.003 | 0.008 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.000 | 0.021 | 0.000 | 0.022 | 0.002 | 0.007 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.174 | 0.020 | 0.152 | 0.017 | 0.162 | 0.019 | 0.012 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.692 | 0.381 | 3.459 | 0.359 | 3.562 | 0.391 | 0.738 | 0.128 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.947 | 0.116 | 0.811 | 0.100 | 0.871 | 0.103 | 0.008 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.377 | 0.045 | 0.360 | 0.043 | 0.367 | 0.043 | 0.010 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.025 | 0.000 | 0.027 | 0.000 | 0.026 | 0.002 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.005 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.013 | 0.000 | 0.007 | 0.001 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.027 | 0.000 | 0.032 | 0.000 | 0.030 | 0.003 | 0.012 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.010 | 0.000 | 0.005 | 0.001 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.017 | 0.015 | 0.000 | 0.000 | 0.008 | 0.007 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.020 | 0.000 | 0.000 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.011 | 0.031 | 0.000 | 0.000 | 0.005 | 0.014 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.015 | 0.033 | 0.000 | 0.000 | 0.007 | 0.014 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 41220)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 0.000 | 0.037 | 0.000 | 0.000 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.009 | 0.070 | 0.000 | 0.013 | 0.004 | 0.031 | 0.004 | 0.009 |
| 7440-39-3 | 56 | Ba | 0.198 | 0.190 | 0.131 | 0.041 | 0.161 | 0.087 | 0.090 | 0.029 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.044 | 0.000 | 0.019 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.110 | 0.015 | 0.076 | 0.006 | 0.091 | 0.011 | 0.012 | 0.000 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 63.578 | | 50.474 | | 56.254 | | 17.468 | |

## 3.14 PAVED ROADS

Reentrained dust from paved roads consists mostly of sand and soil. Road dust also contains particulates from engine exhaust, wear of bearings and brake linings, and tire abrasion. Particulate emissions are further generated when wind activity is high (>20 kilometers per hour). Emission rates are chiefly affected by volume of traffic, and quantity and size of dust particles.

PM Profile Speciation Report

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Profile Name : Paved Road Dust Missoula, Montana
Profile Number : 41101
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 28
Data Source : Analysis by XRF and carbon oxidation. Sample resuspended through a dichotomous sampler.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.960 | 0.060 | 0.960 | 0.060 | 0.960 | 0.119 | 0.960 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.000 | 0.130 | 1.000 | 0.130 | 1.000 | 0.154 | 1.000 | 0.000 |
| 7429-90-5 | 13 | Al | 8.100 | 1.000 | 6.500 | 1.000 | 7.409 | 1.158 | 7.409 | 0.000 |
| 7440-21-3 | 14 | Si | 23.800 | 3.000 | 28.000 | 3.000 | 25.614 | 3.812 | 25.614 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | 0.030 | 0.016 | 0.032 | 0.016 | 0.031 | 0.013 | 0.031 | 0.000 |
| 7440-09-7 | 19 | K | 2.300 | 0.500 | 2.300 | 0.500 | 2.300 | 0.479 | 2.300 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.700 | 0.100 | 1.700 | 0.100 | 1.700 | 0.209 | 1.700 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.260 | 0.020 | 0.260 | 0.020 | 0.260 | 0.034 | 0.260 | 0.000 |
| 7440-62-2 | 23 | V | 0.004 | 0.001 | 0.004 | 0.001 | 0.004 | 0.001 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.026 | 0.001 | 0.026 | 0.001 | 0.026 | 0.003 | 0.026 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.200 | 0.400 | 3.200 | 0.400 | 3.200 | 0.485 | 3.200 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.110 | 0.030 | 0.110 | 0.030 | 0.110 | 0.027 | 0.110 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.040 | 0.010 | 0.040 | 0.010 | 0.040 | 0.009 | 0.040 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - - continued (profile 41101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.130 | 0.020 | 0.130 | 0.020 | 0.130 | 0.022 | 0.130 | 0.000 |
| | 201 | OC | 10.000 | 0.000 | 10.000 | 0.000 | 10.000 | 0.000 | 10.000 | 0.000 |
| | 202 | EC | 1.400 | 0.000 | 1.400 | 0.000 | 1.400 | 0.000 | 1.400 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 53.062 | | 55.664 | | 54.186 | | 54.186 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Juneau, Alaska
Profile Number : 41102
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 19
Data Source : Composite of 3 subsamples (fine fraction). Resuspended and analyzed by XRF.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 10.900 | 0.000 | 10.900 | 0.580 | 10.900 | 1.282 | 10.900 | 0.580 |
| 7440-21-3 | 14 | Si | 32.800 | 0.000 | 32.800 | 1.680 | 32.800 | 3.848 | 32.800 | 1.680 |
| 7723-14-0 | 15 | P | 0.190 | 0.000 | 0.190 | 0.040 | 0.190 | 0.031 | 0.190 | 0.040 |
| 7704-34-9 | 16 | S | 0.250 | 0.000 | 0.250 | 0.060 | 0.250 | 0.044 | 0.250 | 0.060 |
| 7782-50-5 | 17 | Cl | 0.150 | 0.000 | 0.150 | 0.020 | 0.150 | 0.020 | 0.150 | 0.020 |
| 7440-09-7 | 19 | K | 1.460 | 0.000 | 1.460 | 0.080 | 1.460 | 0.172 | 1.460 | 0.080 |
| 7440-70-2 | 20 | Ca | 3.290 | 0.000 | 3.290 | 0.170 | 3.290 | 0.386 | 3.290 | 0.170 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.810 | 0.000 | 0.810 | 0.040 | 0.810 | 0.095 | 0.810 | 0.040 |
| 7440-62-2 | 23 | V | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.006 | 0.050 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 | 0.030 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.130 | 0.000 | 0.130 | 0.000 | 0.130 | 0.015 | 0.130 | 0.000 |
| 7439-89-6 | 26 | Fe | 7.190 | 0.000 | 7.190 | 0.370 | 7.190 | 0.844 | 7.190 | 0.370 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 | 0.010 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 | 0.010 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.080 | 0.700 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.002 | 0.020 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.006 | 0.050 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.010 | 0.000 | 0.010 | 0.020 | 0.010 | 0.011 | 0.010 | 0.020 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | 0.080 | 0.000 | 0.080 | 0.030 | 0.080 | 0.019 | 0.080 | 0.030 |
| 7440-36-0 | 51 | Sb | 0.030 | 0.000 | 0.030 | 0.040 | 0.030 | 0.023 | 0.030 | 0.040 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.280 | 0.000 | 0.280 | 0.160 | 0.280 | 0.096 | 0.280 | 0.160 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.530 | 0.000 | 0.530 | 0.030 | 0.530 | 0.063 | 0.530 | 0.030 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | 0.750 | 0.000 | 0.750 | 0.180 | 0.750 | 0.133 | 0.750 | 0.180 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 59.720 | | 59.720 | | 59.720 | | 59.720 | |

PM Profile Speciation Report

Profile Name : Paved Road Dust - Lewiston, Idaho
Profile Number : 41103
Data Quality : C/E

Control Device : Not applicable
Reference(s) : 42
Data Source : Resuspended and analyzed by XRF.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 1.300 | 0.200 | 1.600 | 0.100 | 1.430 | 0.209 | 1.430 | 0.000 |
| 7439-95-4 | 12 | Mg | 2.200 | 0.500 | 1.600 | 0.200 | 1.941 | 0.376 | 1.941 | 0.000 |
| 7429-90-5 | 13 | Al | 11.600 | 0.700 | 6.900 | 0.300 | 9.570 | 1.168 | 9.570 | 0.000 |
| 7440-21-3 | 14 | Si | 36.000 | 2.000 | 24.000 | 1.000 | 30.818 | 3.701 | 30.818 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.600 | 0.100 | 0.360 | 0.020 | 0.496 | 0.081 | 0.496 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.310 | 0.070 | 0.140 | 0.000 | 0.237 | 0.000 | 0.237 | 0.000 |
| 7440-09-7 | 19 | K | 1.180 | 0.090 | 1.200 | 0.060 | 1.189 | 0.149 | 1.189 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.400 | 0.100 | 2.800 | 0.100 | 2.573 | 0.307 | 2.573 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.630 | 0.040 | 0.860 | 0.040 | 0.729 | 0.091 | 0.729 | 0.000 |
| 7440-62-2 | 23 | V | 0.020 | 0.010 | 0.030 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.120 | 0.020 | 0.130 | 0.000 | 0.124 | 0.000 | 0.124 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.700 | 0.300 | 6.600 | 0.300 | 6.089 | 0.741 | 6.089 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.040 | 0.000 | 0.010 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.040 | 0.020 | 0.010 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.160 | 0.020 | 0.080 | 0.040 | 0.125 | 0.029 | 0.125 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.020 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

PM Profile Speciation Report - continued (profile 41103)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.330 | 0.050 | 0.140 | 0.000 | 0.248 | 0.000 | 0.248 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 62.680 | | 46.490 | | 55.677 | | 55.677 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Butte, Montana
Profile Number : 41104
Data Quality : D/E

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Control Device : Not applicable
Reference(s) : 44
Data Source : Road near copper mine. Bulk sample sieved and resuspended.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 13.493 | 1.349 | 8.195 | 0.819 | 11.205 | 1.553 | 11.205 | 0.000 |
| 7440-21-3 | 14 | Si | 34.850 | 3.493 | 23.641 | 2.364 | 30.010 | 4.146 | 30.010 | 0.000 |
| 7723-14-0 | 15 | P | 0.406 | 0.041 | 0.234 | 0.023 | 0.332 | 0.046 | 0.332 | 0.000 |
| 7704-34-9 | 16 | S | 1.029 | 0.103 | 0.750 | 0.075 | 0.909 | 0.125 | 0.909 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.173 | 0.022 | 0.127 | 0.013 | 0.153 | 0.023 | 0.153 | 0.000 |
| 7440-09-7 | 19 | K | 2.374 | 0.237 | 2.330 | 0.233 | 2.355 | 0.327 | 2.355 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.937 | 0.394 | 4.091 | 0.409 | 4.003 | 0.559 | 4.003 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.336 | 0.037 | 0.409 | 0.041 | 0.368 | 0.053 | 0.368 | 0.000 |
| 7440-62-2 | 23 | V | 0.031 | 0.000 | 0.028 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.134 | 0.013 | 0.116 | 0.012 | 0.126 | 0.017 | 0.126 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.354 | 0.435 | 4.052 | 0.405 | 4.224 | 0.585 | 4.224 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.013 | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.327 | 0.033 | 0.302 | 0.030 | 0.316 | 0.044 | 0.316 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.254 | 0.025 | 2.100 | 0.021 | 1.051 | 0.171 | 1.051 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | 0.023 | 0.000 | 0.016 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | 0.015 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.027 | 0.000 | 0.035 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7439-98-7 | 42 | Mo | < | 0.000 | 0.020 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-05-3 | 46 | Pd | 0.023 | 0.014 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.018 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.026 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-74-6 | 49 | In | < | 0.029 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.032 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | 0.091 | 0.057 | 0.019 | 0.000 | 0.060 | 0.000 | 0.060 | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.162 | < | 0.024 | NE | 0.000 | NE | 0.000 |
| 7439-91-0 | 57 | La | < | 0.000 | < | 0.035 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41104)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.178 | 0.018 | 0.125 | 0.012 | 0.155 | 0.021 | 0.155 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 62.085 | | 46.637 | | 55.379 | | 55.379 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - East Helena, Montana
Profile Number : 41105
Data Quality : C/D

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Control Device : Not applicable
Reference(s) : 43
Data Source : Road dust near a primary Pb smelter and Zn and Cu oxide manufacturing plants. Samples sieved and resuspended.

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 8.821 | 0.882 | 7.415 | 0.741 | 8.214 | 1.134 | 5.586 | 0.559 |
| 7440-21-3 | 14 | Si | 26.334 | 2.633 | 25.299 | 2.530 | 25.887 | 3.594 | 19.943 | 1.994 |
| 7723-14-0 | 15 | P | 0.287 | 0.040 | 0.217 | 0.022 | 0.257 | 0.039 | 0.131 | 0.013 |
| 7704-34-9 | 16 | S | 2.076 | 0.251 | 1.310 | 0.131 | 1.745 | 0.255 | 0.856 | 0.086 |
| 7782-50-5 | 17 | Cl | 0.373 | 0.061 | 0.134 | 0.017 | 0.270 | 0.048 | 0.063 | 0.012 |
| 7440-09-7 | 19 | K | 1.560 | 0.156 | 1.724 | 0.172 | 1.631 | 0.229 | 1.216 | 0.122 |
| 7440-70-2 | 20 | Ca | 5.859 | 0.586 | 6.973 | 0.697 | 6.340 | 0.896 | 5.583 | 0.558 |
| 7440-32-6 | 22 | Ti | 0.349 | 0.035 | 0.397 | 0.040 | 0.370 | 0.052 | 0.309 | 0.031 |
| 7440-62-2 | 23 | V | 0.023 | 0.000 | 0.024 | 0.000 | 0.023 | 0.000 | 0.018 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | 0.024 | 0.000 | NE | 0.000 | 0.018 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.140 | 0.015 | 0.137 | 0.014 | 0.139 | 0.020 | 0.106 | 0.011 |
| 7439-89-6 | 26 | Fe | 3.885 | 0.388 | 4.341 | 0.434 | 4.082 | 0.573 | 3.109 | 0.311 |
| 7440-02-0 | 28 | Ni | < | 0.000 | 0.014 | 0.000 | NE | 0.000 | 0.011 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.382 | 0.038 | 0.507 | 0.051 | 0.436 | 0.063 | 0.503 | 0.050 |
| 7440-66-6 | 30 | Zn | 1.289 | 0.129 | 0.841 | 0.084 | 1.096 | 0.151 | 0.590 | 0.059 |
| 7440-38-2 | 33 | As | 0.342 | 0.052 | 0.212 | 0.021 | 0.286 | 0.045 | 0.153 | 0.015 |
| 7782-49-2 | 34 | Se | 0.011 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.108 | 0.013 | 0.029 | 0.000 | 0.074 | 0.000 | 0.023 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.022 | 0.000 | 0.035 | 0.000 | 0.028 | 0.000 | 0.026 | 0.000 |
| 7440-05-3 | 46 | Pd | < | 0.027 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.024 | 0.043 | 0.011 | 0.000 | 0.018 | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.226 | 0.068 | 0.090 | 0.015 | 0.167 | 0.044 | 0.040 | 0.000 |
| 7440-74-6 | 49 | In | < | 0.069 | < | 0.014 | NE | 0.000 | 0.023 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.048 | 0.079 | 0.034 | 0.016 | 0.042 | 0.046 | 0.028 | 0.011 |
| 7440-36-0 | 51 | Sb | 0.123 | 0.147 | 0.082 | 0.031 | 0.105 | 0.086 | 0.055 | 0.022 |
| 7440-39-3 | 56 | Ba | 0.099 | 0.376 | 0.076 | 0.074 | 0.089 | 0.218 | < | 0.052 |
| 7439-97-6 | 80 | Hg | 0.015 | 0.012 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 2.473 | 0.247 | 1.909 | 0.191 | 2.229 | 0.307 | 1.507 | 0.151 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 54.869 | | 51.835 | | 53.528 | | 39.897 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Medford OR
Profile Number : 41106
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 45
Data Source : Resuspended and sampled with a dichotomous sampler.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 2.000 | 0.300 | 2.000 | 0.300 | 2.000 | 0.331 | 2.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 2.000 | 0.300 | 1.900 | 0.100 | 1.957 | 0.285 | 1.957 | 0.000 |
| 7429-90-5 | 13 | Al | 8.100 | 0.300 | 8.200 | 0.500 | 8.143 | 0.984 | 8.143 | 0.000 |
| 7440-21-3 | 14 | Si | 23.800 | 1.300 | 24.800 | 1.300 | 24.232 | 2.953 | 24.232 | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.400 | 0.100 | 0.320 | 0.200 | 0.365 | 0.134 | 0.365 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.040 | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 0.920 | 0.080 | 0.830 | 0.080 | 0.881 | 0.119 | 0.881 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.500 | 1.100 | 2.400 | 1.200 | 2.457 | 0.966 | 2.457 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.650 | 0.110 | 0.540 | 0.060 | 0.603 | 0.098 | 0.603 | 0.000 |
| 7440-62-2 | 23 | V | 0.023 | 0.000 | 0.031 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.110 | 0.000 | 0.120 | 0.020 | 0.114 | 0.000 | 0.114 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.900 | 0.400 | 4.700 | 0.400 | 4.814 | 0.633 | 4.814 | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.000 | 0.100 | 0.000 | 0.049 | 0.000 | 0.049 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.040 | 0.030 | 0.080 | 0.090 | 0.057 | 0.054 | 0.057 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.040 | 0.020 | 0.046 | 0.000 | 0.046 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41106)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.130 | 0.040 | 0.090 | 0.040 | 0.113 | 0.035 | 0.113 | 0.000 |
| | 201 | OC | 10.000 | 2.000 | 8.700 | 1.900 | 9.439 | 1.895 | 9.439 | 0.000 |
| | 202 | EC | 1.400 | 0.500 | 1.600 | 0.800 | 1.486 | 0.563 | 1.486 | 0.000 |
| | 203 | SO4 | 0.240 | 0.170 | 0.230 | 0.120 | 0.236 | 0.121 | 0.236 | 0.000 |
| | 204 | NO3 | 0.100 | 0.030 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 57.439 | | 56.707 | | 57.044 | | 57.044 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Portland, OR
Profile Number : 41107
Data Quality : A/C

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Control Device : Not applicable
Reference(s) : 46
Data Source : Resuspended and sampled with a 2-stage virtual impactor with a Method 5 heated probe. No dilution air. Analysis is by XRF, INNA, IC, and carbon oxidation.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.010 | 0.008 | 0.007 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 1.250 | 0.340 | 1.750 | 0.091 | 1.466 | 0.264 | 1.466 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.300 | 0.270 | 1.540 | 0.140 | 1.404 | 0.237 | 1.404 | 0.000 |
| 7429-90-5 | 13 | Al | 8.840 | 2.710 | 6.600 | 0.700 | 7.873 | 1.821 | 7.873 | 0.000 |
| 7440-21-3 | 14 | Si | 22.300 | 1.100 | 28.400 | 0.790 | 24.934 | 3.002 | 24.934 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.370 | 0.140 | < | 0.020 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.010 | < | 0.020 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 1.030 | 0.060 | 1.030 | 0.058 | 1.030 | 0.126 | 1.030 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.440 | 0.400 | 3.000 | 0.220 | 2.682 | 0.405 | 2.682 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.640 | 0.120 | 1.010 | 0.180 | 0.800 | 0.156 | 0.800 | 0.000 |
| 7440-62-2 | 23 | V | 0.023 | 0.005 | 0.027 | 0.005 | 0.025 | 0.005 | 0.025 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.045 | 0.017 | 0.045 | 0.017 | 0.045 | 0.015 | 0.045 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.123 | 0.017 | 0.100 | 0.011 | 0.113 | 0.017 | 0.113 | 0.000 |
| 7439-89-6 | 26 | Fe | 6.000 | 0.600 | 5.730 | 0.290 | 5.883 | 0.767 | 5.883 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.009 | 0.003 | 0.004 | 0.003 | 0.007 | 0.003 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.030 | 0.012 | 0.030 | 0.012 | 0.030 | 0.010 | 0.030 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.110 | 0.037 | 0.110 | 0.037 | 0.110 | 0.032 | 0.110 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.020 | 0.006 | 0.008 | 0.009 | 0.015 | 0.006 | 0.015 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41107)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.370 | 0.150 | 0.370 | 0.150 | 0.370 | 0.128 | 0.370 | 0.000 |
| | 201 | OC | 11.800 | 4.300 | 3.340 | 0.980 | 8.147 | 2.693 | 8.147 | 0.000 |
| | 202 | EC | 1.850 | 0.910 | 1.550 | 0.780 | 1.720 | 0.708 | 1.720 | 0.000 |
| | 203 | SO4 | 0.420 | 0.310 | 0.074 | 0.045 | 0.271 | 0.181 | 0.271 | 0.000 |
| | 204 | NO3 | NA | 0.000 | 0.020 | 0.010 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 58.970 | | 54.746 | | 56.925 | | 56.925 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Alabama
Profile Number : 41109
Data Quality : D/E

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Control Device : Not applicable
Reference(s) : 48
Data Source : Resuspended and sampled with a dichotomous sampler.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 9.280 | 2.970 | 6.320 | 1.200 | 8.002 | 2.031 | 8.002 | 0.000 |
| 7440-21-3 | 14 | Si | 19.700 | 6.200 | 23.900 | 4.800 | 21.514 | 5.103 | 21.514 | 0.000 |
| 7723-14-0 | 15 | P | 0.123 | 0.104 | 0.239 | 0.048 | 0.173 | 0.069 | 0.173 | 0.000 |
| 7704-34-9 | 16 | S | 0.800 | 0.384 | 0.612 | 0.120 | 0.719 | 0.242 | 0.719 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.247 | 0.163 | 0.230 | 0.046 | 0.240 | 0.100 | 0.240 | 0.000 |
| 7440-09-7 | 19 | K | 0.494 | 0.174 | 0.595 | 0.120 | 0.538 | 0.135 | 0.538 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.150 | 1.090 | 7.990 | 1.600 | 5.240 | 1.299 | 5.240 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.444 | 0.147 | 0.466 | 0.094 | 0.454 | 0.112 | 0.454 | 0.000 |
| 7440-62-2 | 23 | V | 0.030 | 0.022 | 0.014 | 0.004 | 0.023 | 0.013 | 0.023 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.270 | 0.025 | 0.023 | 0.004 | 0.163 | 0.026 | 0.163 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.080 | 0.035 | 0.070 | 0.014 | 0.076 | 0.023 | 0.076 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.140 | 1.010 | 2.750 | 0.560 | 2.972 | 0.737 | 2.972 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.023 | 0.013 | 0.003 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.026 | 0.016 | 0.004 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.090 | 0.037 | 0.119 | 0.024 | 0.103 | 0.028 | 0.103 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.005 | 0.017 | < | 0.002 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.055 | < | 0.008 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | 0.010 | 0.018 | 0.001 | 0.002 | 0.006 | 0.010 | 0.006 | 0.000 |
| 7726-95-6 | 35 | Br | 0.036 | 0.027 | 0.013 | 0.003 | 0.026 | 0.016 | 0.026 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41109)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.187 | 0.103 | 0.163 | 0.032 | 0.177 | 0.064 | 0.177 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 38.086 | | 43.534 | | 40.426 | | 40.426 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Spokane, WA
Profile Number : 41110
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 27
Data Source : Resuspended and analyzed by XRF.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | 1.870 | 0.150 | 1.870 | 0.150 | 1.870 | 0.244 | 1.870 | 0.000 |
| 7429-90-5 | 13 | Al | 11.010 | 0.780 | 11.010 | 0.780 | 11.010 | 1.399 | 11.010 | 0.000 |
| 7440-21-3 | 14 | Si | 27.970 | 1.930 | 27.970 | 1.930 | 27.970 | 3.537 | 27.970 | 0.000 |
| 7723-14-0 | 15 | P | 0.300 | 0.030 | 0.300 | 0.030 | 0.300 | 0.042 | 0.300 | 0.000 |
| 7704-34-9 | 16 | S | 0.370 | 0.100 | 0.370 | 0.100 | 0.370 | 0.091 | 0.370 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.110 | 0.050 | 0.110 | 0.050 | 0.110 | 0.042 | 0.110 | 0.000 |
| 7440-09-7 | 19 | K | 1.540 | 0.130 | 1.540 | 0.130 | 1.540 | 0.204 | 1.540 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.790 | 0.070 | 0.790 | 0.070 | 0.790 | 0.106 | 0.790 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.440 | 0.040 | 0.440 | 0.040 | 0.440 | 0.059 | 0.440 | 0.000 |
| 7440-62-2 | 23 | V | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.240 | 0.020 | 0.240 | 0.020 | 0.240 | 0.032 | 0.240 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.280 | 0.370 | 5.280 | 0.370 | 5.280 | 0.670 | 5.280 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.060 | 0.050 | 0.060 | 0.050 | 0.049 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41110)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.110 | 0.020 | 0.110 | 0.020 | 0.110 | 0.020 | 0.110 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 50.170 | | 50.170 | | 50.170 | | 50.170 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Pasadena Freeway (CA)
Profile Number : 41111
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | 13 | Al | 6.571 | 0.986 | 6.920 | 1.038 | 6.880 | 1.170 | 6.880 | 0.000 |
| 7440-21-3 | 14 | Si | 23.703 | 3.555 | 22.315 | 3.347 | 22.474 | 3.964 | 22.474 | 0.000 |
| 7723-14-0 | 15 | P | 0.059 | 0.012 | 0.056 | 0.011 | 0.057 | 0.015 | 0.057 | 0.000 |
| 7704-34-9 | 16 | S | 0.356 | 0.018 | 0.000 | 0.000 | 0.041 | 0.030 | 0.041 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.025 | 0.001 | 0.000 | 0.000 | 0.003 | 0.002 | 0.003 | 0.000 |
| 7440-09-7 | 19 | K | 0.643 | 0.032 | 1.017 | 0.051 | 0.974 | 0.096 | 0.974 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.149 | 0.157 | 4.984 | 0.249 | 4.774 | 0.441 | 4.774 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.392 | 0.020 | 0.493 | 0.027 | 0.482 | 0.055 | 0.482 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.004 | 0.006 | 0.006 | 0.009 | 0.006 | 0.009 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.019 | 0.002 | 0.022 | 0.002 | 0.022 | 0.006 | 0.022 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.059 | 0.003 | 0.108 | 0.006 | 0.102 | 0.015 | 0.102 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.704 | 0.187 | 5.997 | 0.302 | 5.735 | 0.525 | 5.735 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.001 | 0.020 | 0.001 | 0.020 | 0.006 | 0.020 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.032 | 0.002 | 0.037 | 0.002 | 0.036 | 0.008 | 0.036 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.571 | 0.029 | 0.580 | 0.029 | 0.579 | 0.069 | 0.579 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.005 | 0.001 | 0.005 | 0.001 | 0.005 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.074 | 0.000 | 0.084 | 0.001 | 0.076 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.004 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.004 | 0.001 | 0.009 | 0.001 | 0.009 | 0.004 | 0.009 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.094 | 0.005 | 0.148 | 0.008 | 0.142 | 0.019 | 0.142 | 0.000 |
| 7440-65-5 | 39 | Y | 0.004 | 0.004 | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.009 | 0.007 | 0.000 | 0.009 | 0.001 | 0.008 | 0.001 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.004 | 0.001 | 0.002 | 0.001 | 0.003 | 0.001 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.005 | 0.003 | 0.003 | 0.003 | 0.004 | 0.003 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.006 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.007 | 0.000 | 0.004 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.015 | 0.000 | 0.009 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.031 | 0.117 | 0.019 | 0.104 | 0.027 | 0.104 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.054 | 0.000 | 0.030 | 0.000 | 0.038 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.344 | 0.068 | 1.526 | 0.077 | 1.505 | 0.162 | 1.505 | 0.000 |

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PM Profile Speciation Report - continued (profile 41111)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 17.574 | 1.597 | 14.502 | 71.384 | 14.854 | 53.840 | 14.854 | 0.000 |
| | 202 | EC | 0.451 | 0.130 | 0.401 | 0.074 | 0.407 | 0.105 | 0.407 | 0.000 |
| TOTALS: | | | 58.815 | | 59.269 | | 59.222 | | 59.222 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Artesia Freeway (CA)
Profile Number : 41112
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | 13 | Al | 6.371 | 0.956 | 6.460 | 0.969 | 6.454 | 1.111 | 6.454 | 0.000 |
| 7440-21-3 | 14 | Si | 17.995 | 2.699 | 17.486 | 2.623 | 17.524 | 3.060 | 17.524 | 0.000 |
| 7723-14-0 | 15 | P | 0.039 | 0.008 | 0.035 | 0.007 | 0.035 | 0.011 | 0.035 | 0.000 |
| 7704-34-9 | 16 | S | 0.874 | 0.044 | 0.718 | 0.036 | 0.730 | 0.095 | 0.730 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.190 | 0.010 | 0.200 | 0.010 | 0.199 | 0.027 | 0.199 | 0.000 |
| 7440-09-7 | 19 | K | 1.242 | 0.062 | 1.691 | 0.085 | 1.658 | 0.164 | 1.658 | 0.000 |
| 7440-70-2 | 20 | Ca | 4.081 | 0.204 | 4.512 | 0.226 | 4.480 | 0.471 | 4.480 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.544 | 0.028 | 0.593 | 0.033 | 0.589 | 0.069 | 0.589 | 0.000 |
| 7440-62-2 | 23 | V | 0.029 | 0.006 | 0.002 | 0.007 | 0.004 | 0.007 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.002 | 0.020 | 0.002 | 0.020 | 0.006 | 0.020 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.094 | 0.005 | 0.122 | 0.006 | 0.120 | 0.018 | 0.120 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.530 | 0.229 | 5.534 | 0.278 | 5.460 | 0.548 | 5.460 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.002 | 0.019 | 0.001 | 0.019 | 0.006 | 0.019 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.044 | 0.003 | 0.034 | 0.002 | 0.034 | 0.008 | 0.034 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.253 | 0.013 | 0.195 | 0.010 | 0.199 | 0.030 | 0.199 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.016 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.008 | 0.001 | 0.011 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.006 | 0.001 | 0.012 | 0.001 | 0.012 | 0.004 | 0.012 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.072 | 0.004 | 0.112 | 0.006 | 0.109 | 0.016 | 0.109 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.005 | 0.009 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.008 | 0.013 | 0.003 | 0.012 | 0.007 | 0.012 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.010 | 0.000 | 0.004 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.013 | 0.000 | 0.005 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.027 | 0.000 | 0.010 | 0.000 | 0.017 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.052 | 0.052 | 0.145 | 0.020 | 0.139 | 0.037 | 0.139 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.093 | 0.000 | 0.033 | 0.000 | 0.058 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.001 | 0.000 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.288 | 0.015 | 0.278 | 0.014 | 0.279 | 0.037 | 0.279 | 0.000 |
| TOTALS: | | | 36.759 | | 38.194 | | 38.090 | | 38.090 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Long Beach Blvd. (CA)
Profile Number : 41113
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 5.611 | 0.842 | 5.681 | 0.852 | 5.676 | 0.978 | 5.676 | 0.000 |
| 7440-21-3 | 14 | Si | 17.174 | 2.576 | 16.088 | 2.413 | 16.165 | 2.866 | 16.165 | 0.000 |
| 7723-14-0 | 15 | P | 0.250 | 0.050 | 0.210 | 0.042 | 0.213 | 0.052 | 0.213 | 0.000 |
| 7704-34-9 | 16 | S | 0.576 | 0.029 | 0.531 | 0.027 | 0.535 | 0.067 | 0.535 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.268 | 0.013 | 0.258 | 0.013 | 0.258 | 0.035 | 0.258 | 0.000 |
| 7440-09-7 | 19 | K | 1.260 | 0.063 | 1.633 | 0.082 | 1.606 | 0.162 | 1.606 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.836 | 0.192 | 3.747 | 0.187 | 3.753 | 0.421 | 3.753 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.347 | 0.018 | 0.415 | 0.023 | 0.410 | 0.048 | 0.410 | 0.000 |
| 7440-62-2 | 23 | V | 0.028 | 0.004 | 0.020 | 0.006 | 0.021 | 0.008 | 0.021 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.002 | 0.030 | 0.002 | 0.029 | 0.007 | 0.029 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.091 | 0.005 | 0.104 | 0.005 | 0.103 | 0.016 | 0.103 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.967 | 0.200 | 4.779 | 0.240 | 4.721 | 0.477 | 4.721 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.002 | 0.014 | 0.001 | 0.014 | 0.005 | 0.014 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.025 | 0.002 | 0.025 | 0.001 | 0.025 | 0.007 | 0.025 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.306 | 0.016 | 0.273 | 0.014 | 0.275 | 0.038 | 0.275 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.004 | 0.017 | 0.000 | 0.016 | 0.000 | 0.015 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.005 | 0.002 | 0.009 | 0.001 | 0.009 | 0.004 | 0.009 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.002 | 0.011 | 0.001 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.028 | 0.003 | 0.053 | 0.003 | 0.051 | 0.010 | 0.051 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.012 | 0.014 | 0.004 | 0.013 | 0.009 | 0.013 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.010 | 0.000 | 0.002 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.013 | 0.000 | 0.003 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.016 | 0.000 | 0.004 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.020 | 0.007 | 0.005 | 0.006 | 0.012 | 0.006 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.043 | 0.000 | 0.011 | 0.000 | 0.026 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.081 | 0.072 | 0.020 | 0.067 | 0.050 | 0.067 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.147 | 0.000 | 0.035 | 0.000 | 0.088 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.302 | 0.017 | 0.284 | 0.014 | 0.285 | 0.038 | 0.285 | 0.000 |
| TOTALS: | | | 34.118 | | 34.258 | | 34.245 | | 34.245 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Long Beach, CA
Profile Number : 41114
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 5.185 | 0.778 | 5.181 | 0.777 | 5.181 | 0.898 | 5.181 | 0.000 |
| 7440-21-3 | 14 | Si | 13.459 | 2.019 | 14.306 | 2.146 | 14.251 | 2.405 | 14.251 | 0.000 |
| 7723-14-0 | 15 | P | 0.254 | 0.051 | 0.227 | 0.046 | 0.229 | 0.054 | 0.229 | 0.000 |
| 7704-34-9 | 16 | S | 1.002 | 0.050 | 0.903 | 0.045 | 0.909 | 0.111 | 0.909 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.406 | 0.020 | 0.460 | 0.023 | 0.456 | 0.053 | 0.456 | 0.000 |
| 7440-09-7 | 19 | K | 1.222 | 0.061 | 1.551 | 0.078 | 1.530 | 0.156 | 1.530 | 0.000 |
| 7440-70-2 | 20 | Ca | 4.193 | 0.210 | 3.929 | 0.196 | 3.946 | 0.453 | 3.946 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.328 | 0.017 | 0.404 | 0.022 | 0.400 | 0.047 | 0.400 | 0.000 |
| 7440-62-2 | 23 | V | 0.027 | 0.004 | 0.016 | 0.005 | 0.017 | 0.007 | 0.017 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.022 | 0.002 | 0.027 | 0.002 | 0.027 | 0.007 | 0.027 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.083 | 0.005 | 0.092 | 0.005 | 0.092 | 0.015 | 0.092 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.692 | 0.187 | 4.314 | 0.217 | 4.274 | 0.438 | 4.274 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.012 | 0.002 | 0.013 | 0.001 | 0.013 | 0.005 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.025 | 0.002 | 0.026 | 0.001 | 0.026 | 0.007 | 0.026 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.223 | 0.012 | 0.226 | 0.011 | 0.225 | 0.030 | 0.225 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.009 | 0.000 | 0.009 | 0.001 | 0.008 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.007 | 0.002 | 0.009 | 0.001 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.002 | 0.011 | 0.001 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.038 | 0.003 | 0.083 | 0.004 | 0.081 | 0.013 | 0.081 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.013 | 0.015 | 0.005 | 0.014 | 0.010 | 0.014 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.010 | 0.000 | 0.002 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.014 | 0.008 | 0.003 | 0.007 | 0.009 | 0.007 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.017 | 0.000 | 0.003 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.021 | 0.008 | 0.004 | 0.008 | 0.013 | 0.008 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.046 | 0.000 | 0.009 | 0.000 | 0.027 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.086 | 0.104 | 0.018 | 0.097 | 0.052 | 0.097 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.157 | 0.000 | 0.029 | 0.000 | 0.092 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.156 | 0.010 | 0.152 | 0.008 | 0.153 | 0.023 | 0.153 | 0.000 |

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PM Profile Speciation Report - continued (profile 41114)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 19.626 | 3.184 | 18.959 | 1.465 | 19.002 | 2.858 | 19.002 | 0.000 |
| | 202 | EC | 2.213 | 0.407 | 1.188 | 0.100 | 1.254 | 0.311 | 1.254 | 0.000 |
| TOTALS: | | | 52.184 | | 52.212 | | 52.211 | | 52.211 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - La Cienega Blvd. (CA)
Profile Number : 41115
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 5.837 | 0.876 | 8.096 | 1.214 | 7.957 | 1.236 | 7.957 | 0.000 |
| 7440-21-3 | 14 | Si | 14.851 | 2.228 | 20.769 | 3.115 | 20.406 | 3.156 | 20.406 | 0.000 |
| 7723-14-0 | 15 | P | 0.023 | 0.005 | 0.028 | 0.006 | 0.028 | 0.008 | 0.028 | 0.000 |
| 7704-34-9 | 16 | S | 0.220 | 0.011 | 0.184 | 0.009 | 0.186 | 0.028 | 0.186 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.067 | 0.003 | 0.059 | 0.003 | 0.059 | 0.012 | 0.059 | 0.000 |
| 7440-09-7 | 19 | K | 0.915 | 0.046 | 1.698 | 0.085 | 1.650 | 0.148 | 1.650 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.622 | 0.081 | 2.336 | 0.117 | 2.292 | 0.219 | 2.292 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.308 | 0.016 | 0.517 | 0.028 | 0.504 | 0.052 | 0.504 | 0.000 |
| 7440-62-2 | 23 | V | 0.017 | 0.004 | 0.011 | 0.006 | 0.011 | 0.007 | 0.011 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.009 | 0.001 | 0.018 | 0.002 | 0.018 | 0.005 | 0.018 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.063 | 0.004 | 0.111 | 0.006 | 0.108 | 0.016 | 0.108 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.268 | 0.165 | 5.302 | 0.267 | 5.177 | 0.465 | 5.177 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.001 | 0.011 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.010 | 0.001 | 0.013 | 0.001 | 0.013 | 0.005 | 0.013 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.046 | 0.003 | 0.062 | 0.003 | 0.061 | 0.011 | 0.061 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.002 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.004 | 0.000 | 0.004 | 0.003 | 0.004 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.003 | 0.001 | 0.014 | 0.001 | 0.013 | 0.005 | 0.013 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.014 | 0.002 | 0.040 | 0.002 | 0.038 | 0.008 | 0.038 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.007 | 0.005 | 0.004 | 0.005 | 0.006 | 0.005 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.004 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.006 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.008 | 0.000 | 0.003 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.010 | 0.000 | 0.003 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.011 | 0.004 | 0.004 | 0.004 | 0.008 | 0.004 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.025 | 0.005 | 0.009 | 0.005 | 0.016 | 0.005 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.048 | 0.099 | 0.018 | 0.093 | 0.033 | 0.093 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.087 | 0.000 | 0.029 | 0.000 | 0.054 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.026 | 0.003 | 0.049 | 0.003 | 0.048 | 0.009 | 0.048 | 0.000 |
| TOTALS: | | | 27.311 | | 39.436 | | 38.692 | | 38.692 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Hawthorne, CA
Profile Number : 41116
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 6.146 | 0.922 | 5.810 | 0.872 | 5.830 | 1.033 | 5.830 | 0.000 |
| 7440-21-3 | 14 | Si | 17.411 | 2.612 | 15.633 | 2.345 | 15.739 | 2.845 | 15.739 | 0.000 |
| 7723-14-0 | 15 | P | 0.040 | 0.008 | 0.031 | 0.006 | 0.032 | 0.010 | 0.032 | 0.000 |
| 7704-34-9 | 16 | S | 0.648 | 0.032 | 0.398 | 0.020 | 0.413 | 0.066 | 0.413 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.130 | 0.007 | 0.134 | 0.007 | 0.134 | 0.020 | 0.134 | 0.000 |
| 7440-09-7 | 19 | K | 1.080 | 0.054 | 1.414 | 0.071 | 1.394 | 0.141 | 1.394 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.864 | 0.143 | 2.618 | 0.131 | 2.633 | 0.308 | 2.633 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.326 | 0.017 | 0.408 | 0.023 | 0.403 | 0.047 | 0.403 | 0.000 |
| 7440-62-2 | 23 | V | 0.024 | 0.004 | 0.009 | 0.005 | 0.010 | 0.006 | 0.010 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.018 | 0.002 | 0.017 | 0.002 | 0.017 | 0.005 | 0.017 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.076 | 0.004 | 0.101 | 0.005 | 0.100 | 0.015 | 0.100 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.530 | 0.178 | 4.245 | 0.214 | 4.202 | 0.425 | 4.202 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.016 | 0.002 | 0.013 | 0.001 | 0.013 | 0.005 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.031 | 0.002 | 0.020 | 0.001 | 0.021 | 0.006 | 0.021 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.164 | 0.009 | 0.162 | 0.008 | 0.162 | 0.023 | 0.162 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.004 | 0.011 | 0.000 | 0.007 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.008 | 0.001 | 0.008 | 0.001 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.004 | 0.001 | 0.012 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.044 | 0.003 | 0.076 | 0.004 | 0.074 | 0.012 | 0.074 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.009 | 0.008 | 0.005 | 0.007 | 0.007 | 0.007 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.006 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.009 | 0.000 | 0.003 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.011 | 0.000 | 0.004 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.014 | 0.000 | 0.005 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.030 | 0.000 | 0.010 | 0.000 | 0.018 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.056 | 0.085 | 0.019 | 0.080 | 0.037 | 0.080 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.102 | 0.004 | 0.032 | 0.003 | 0.063 | 0.003 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.180 | 0.010 | 0.132 | 0.007 | 0.135 | 0.023 | 0.135 | 0.000 |
| TOTALS: | | | 32.744 | | 31.339 | | 31.422 | | 31.422 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Victory Blvd. (CA)
Profile Number : 41117
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 4.062 | 0.609 | 4.913 | 0.737 | 4.880 | 0.787 | 4.880 | 0.000 |
| 7440-21-3 | 14 | Si | 12.435 | 1.865 | 13.602 | 2.040 | 13.557 | 2.259 | 13.557 | 0.000 |
| 7723-14-0 | 15 | P | 0.325 | 0.065 | 0.283 | 0.057 | 0.284 | 0.067 | 0.284 | 0.000 |
| 7704-34-9 | 16 | S | 0.864 | 0.043 | 0.700 | 0.035 | 0.707 | 0.093 | 0.707 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.368 | 0.018 | 0.389 | 0.019 | 0.388 | 0.047 | 0.388 | 0.000 |
| 7440-09-7 | 19 | K | 0.836 | 0.042 | 1.332 | 0.067 | 1.312 | 0.123 | 1.312 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.941 | 0.197 | 4.986 | 0.249 | 4.946 | 0.485 | 4.946 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.331 | 0.017 | 0.441 | 0.023 | 0.437 | 0.049 | 0.437 | 0.000 |
| 7440-62-2 | 23 | V | 0.022 | 0.004 | 0.020 | 0.005 | 0.020 | 0.007 | 0.020 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.023 | 0.002 | 0.031 | 0.002 | 0.031 | 0.007 | 0.031 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.067 | 0.004 | 0.092 | 0.005 | 0.091 | 0.014 | 0.091 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.538 | 0.179 | 4.618 | 0.232 | 4.576 | 0.444 | 4.576 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.011 | 0.001 | 0.013 | 0.001 | 0.013 | 0.005 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.041 | 0.003 | 0.040 | 0.002 | 0.040 | 0.009 | 0.040 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.267 | 0.014 | 0.275 | 0.014 | 0.275 | 0.036 | 0.275 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.009 | 0.016 | 0.000 | 0.018 | 0.000 | 0.017 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.008 | 0.001 | 0.012 | 0.001 | 0.012 | 0.004 | 0.012 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.010 | 0.001 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.019 | 0.002 | 0.054 | 0.003 | 0.052 | 0.010 | 0.052 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.011 | 0.009 | 0.004 | 0.009 | 0.008 | 0.009 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.006 | 0.003 | 0.002 | 0.003 | 0.004 | 0.003 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.006 | 0.000 | 0.001 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.011 | 0.000 | 0.002 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.014 | 0.000 | 0.003 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.017 | 0.000 | 0.004 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.037 | 0.000 | 0.008 | 0.000 | 0.022 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.070 | 0.081 | 0.015 | 0.078 | 0.043 | 0.078 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.125 | 0.000 | 0.026 | 0.000 | 0.074 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.281 | 0.015 | 0.334 | 0.017 | 0.332 | 0.040 | 0.332 | 0.000 |
| TOTALS: | | | 27.449 | | 32.238 | | 32.053 | | 32.053 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Burbank, CA
Profile Number : 41118
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 4.511 | 0.677 | 5.034 | 0.755 | 5.002 | 0.832 | 5.002 | 0.000 |
| 7440-21-3 | 14 | Si | 12.666 | 1.900 | 14.087 | 2.113 | 14.000 | 2.324 | 14.000 | 0.000 |
| 7723-14-0 | 15 | P | 0.223 | 0.045 | 0.213 | 0.043 | 0.214 | 0.049 | 0.214 | 0.000 |
| 7704-34-9 | 16 | S | 0.872 | 0.044 | 0.703 | 0.035 | 0.713 | 0.094 | 0.713 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.348 | 0.017 | 0.355 | 0.018 | 0.355 | 0.044 | 0.355 | 0.000 |
| 7440-09-7 | 19 | K | 0.918 | 0.046 | 1.352 | 0.068 | 1.326 | 0.129 | 1.326 | 0.000 |
| 7440-70-2 | 20 | Ca | 5.542 | 0.277 | 5.732 | 0.287 | 5.721 | 0.620 | 5.721 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.334 | 0.018 | 0.432 | 0.023 | 0.426 | 0.048 | 0.426 | 0.000 |
| 7440-62-2 | 23 | V | 0.021 | 0.004 | 0.020 | 0.006 | 0.020 | 0.007 | 0.020 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.002 | 0.027 | 0.002 | 0.026 | 0.007 | 0.026 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.076 | 0.005 | 0.095 | 0.005 | 0.094 | 0.015 | 0.094 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.319 | 0.168 | 4.280 | 0.215 | 4.221 | 0.414 | 4.221 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.009 | 0.002 | 0.013 | 0.001 | 0.013 | 0.005 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.025 | 0.002 | 0.026 | 0.002 | 0.026 | 0.007 | 0.026 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.217 | 0.012 | 0.215 | 0.011 | 0.216 | 0.029 | 0.216 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.011 | 0.000 | 0.013 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.004 | 0.002 | 0.009 | 0.001 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.010 | 0.001 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.028 | 0.003 | 0.051 | 0.003 | 0.049 | 0.010 | 0.049 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.012 | 0.000 | 0.004 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.010 | 0.000 | 0.002 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.013 | 0.011 | 0.003 | 0.010 | 0.009 | 0.010 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.016 | 0.000 | 0.004 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.019 | 0.013 | 0.005 | 0.012 | 0.012 | 0.012 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.043 | 0.000 | 0.010 | 0.000 | 0.025 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.080 | 0.067 | 0.019 | 0.062 | 0.048 | 0.062 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.145 | 0.000 | 0.032 | 0.000 | 0.086 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.181 | 0.011 | 0.225 | 0.012 | 0.223 | 0.028 | 0.223 | 0.000 |

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PM Profile Speciation Report - continued (profile 41118)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 10.647 | 1.669 | 15.978 | 2.162 | 15.651 | 2.266 | 15.651 | 0.000 |
| | 202 | EC | 0.999 | 0.207 | 1.778 | 0.225 | 1.730 | 0.248 | 1.730 | 0.000 |
| TOTALS: | | | 40.966 | | 50.726 | | 50.128 | | 50.128 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - North Main St., Los Angeles, CA
Profile Number : 41119
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %Wt | unc | %Wt | unc | %Wt | unc | %Wt | unc |
| 7429-90-5 | 13 | Al | 2.893 | 0.434 | 3.734 | 0.560 | 3.689 | 0.586 | 3.689 | 0.000 |
| 7440-21-3 | 14 | Si | 9.439 | 1.416 | 10.987 | 1.648 | 10.905 | 1.781 | 10.905 | 0.000 |
| 7723-14-0 | 15 | P | 0.524 | 0.105 | 0.496 | 0.099 | 0.498 | 0.111 | 0.498 | 0.000 |
| 7704-34-9 | 16 | S | 0.852 | 0.043 | 0.782 | 0.039 | 0.785 | 0.096 | 0.785 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.352 | 0.018 | 0.428 | 0.021 | 0.424 | 0.049 | 0.424 | 0.000 |
| 7440-09-7 | 19 | K | 0.663 | 0.033 | 1.107 | 0.055 | 1.084 | 0.102 | 1.084 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.609 | 0.180 | 4.405 | 0.220 | 4.363 | 0.437 | 4.363 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.258 | 0.014 | 0.354 | 0.020 | 0.349 | 0.040 | 0.349 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.004 | 0.019 | 0.005 | 0.019 | 0.007 | 0.019 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.031 | 0.002 | 0.039 | 0.002 | 0.039 | 0.008 | 0.039 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.078 | 0.005 | 0.089 | 0.005 | 0.088 | 0.014 | 0.088 | 0.000 |
| 7439-89-6 | 26 | Fe | 7.120 | 0.359 | 6.131 | 0.308 | 6.184 | 0.744 | 6.184 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.011 | 0.002 | 0.013 | 0.001 | 0.012 | 0.004 | 0.012 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.003 | 0.059 | 0.003 | 0.059 | 0.011 | 0.059 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.398 | 0.021 | 0.437 | 0.022 | 0.435 | 0.052 | 0.435 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.006 | 0.008 | 0.000 | 0.010 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.006 | 0.001 | 0.006 | 0.003 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.009 | 0.001 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.030 | 0.003 | 0.084 | 0.004 | 0.081 | 0.013 | 0.081 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.012 | 0.013 | 0.005 | 0.012 | 0.009 | 0.012 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.007 | 0.004 | 0.002 | 0.003 | 0.005 | 0.003 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.012 | 0.000 | 0.003 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.014 | 0.000 | 0.003 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.017 | 0.012 | 0.004 | 0.012 | 0.011 | 0.012 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.039 | 0.000 | 0.009 | 0.000 | 0.023 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.073 | 0.091 | 0.018 | 0.086 | 0.045 | 0.086 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.130 | 0.000 | 0.030 | 0.000 | 0.077 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.137 | 0.009 | 0.175 | 0.009 | 0.173 | 0.023 | 0.173 | 0.000 |

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PM Profile Speciation Report - continued (profile 41119)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 19.267 | 5.454 | 21.522 | 1.630 | 21.403 | 3.877 | 21.403 | 0.000 |
| | 202 | EC | 0.858 | 0.429 | 1.718 | 0.137 | 1.672 | 0.295 | 1.672 | 0.000 |
| TOTALS: | | | 46.604 | | 52.714 | | 52.389 | | 52.389 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Los Angeles, CA
Profile Number : 41120
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 4.456 | 0.669 | 4.859 | 0.729 | 4.843 | 0.811 | 4.843 | 0.000 |
| 7440-21-3 | 14 | Si | 10.398 | 1.560 | 11.889 | 1.783 | 11.827 | 1.940 | 11.827 | 0.000 |
| 7723-14-0 | 15 | P | 0.223 | 0.045 | 0.224 | 0.045 | 0.224 | 0.051 | 0.224 | 0.000 |
| 7704-34-9 | 16 | S | 0.943 | 0.047 | 0.838 | 0.042 | 0.843 | 0.104 | 0.843 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.270 | 0.014 | 0.300 | 0.015 | 0.299 | 0.037 | 0.299 | 0.000 |
| 7440-09-7 | 19 | K | 0.641 | 0.032 | 1.059 | 0.053 | 1.041 | 0.098 | 1.041 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.877 | 0.144 | 3.715 | 0.186 | 3.680 | 0.360 | 3.680 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.352 | 0.019 | 0.560 | 0.029 | 0.552 | 0.057 | 0.552 | 0.000 |
| 7440-62-2 | 23 | V | 0.031 | 0.005 | 0.033 | 0.007 | 0.033 | 0.009 | 0.033 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.066 | 0.004 | 0.103 | 0.005 | 0.101 | 0.015 | 0.101 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.077 | 0.005 | 0.080 | 0.004 | 0.080 | 0.014 | 0.080 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.301 | 0.167 | 4.621 | 0.232 | 4.566 | 0.431 | 4.566 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.048 | 0.003 | 0.070 | 0.004 | 0.069 | 0.012 | 0.069 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.056 | 0.004 | 0.061 | 0.003 | 0.061 | 0.011 | 0.061 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.458 | 0.024 | 0.426 | 0.021 | 0.427 | 0.055 | 0.427 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.014 | 0.016 | 0.000 | 0.017 | 0.001 | 0.016 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.002 | 0.006 | 0.001 | 0.006 | 0.003 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.009 | 0.001 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.012 | 0.003 | 0.066 | 0.003 | 0.064 | 0.011 | 0.064 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.014 | 0.005 | 0.005 | 0.005 | 0.009 | 0.005 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.008 | 0.016 | 0.003 | 0.015 | 0.007 | 0.015 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.010 | 0.000 | 0.002 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.014 | 0.000 | 0.003 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.017 | 0.000 | 0.004 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.021 | 0.007 | 0.004 | 0.007 | 0.013 | 0.007 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.046 | 0.000 | 0.009 | 0.000 | 0.027 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.085 | 0.050 | 0.019 | 0.048 | 0.051 | 0.048 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.157 | 0.000 | 0.032 | 0.000 | 0.092 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.282 | 0.016 | 0.307 | 0.016 | 0.306 | 0.038 | 0.306 | 0.000 |
| TOTALS: | | | 24.507 | | 29.304 | | 29.106 | | 29.106 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - South Harbor Blvd., Anaheim, CA
Profile Number : 41121
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 3.821 | 0.573 | 3.720 | 0.558 | 3.726 | 0.654 | 3.726 | 0.000 |
| 7440-21-3 | 14 | Si | 10.645 | 1.597 | 11.378 | 1.707 | 11.337 | 1.909 | 11.337 | 0.000 |
| 7723-14-0 | 15 | P | 0.191 | 0.038 | 0.185 | 0.037 | 0.186 | 0.043 | 0.186 | 0.000 |
| 7704-34-9 | 16 | S | 1.209 | 0.060 | 1.237 | 0.062 | 1.235 | 0.140 | 1.235 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.818 | 0.041 | 0.797 | 0.040 | 0.798 | 0.095 | 0.798 | 0.000 |
| 7440-09-7 | 19 | K | 0.847 | 0.042 | 1.320 | 0.066 | 1.293 | 0.123 | 1.293 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.108 | 0.155 | 3.864 | 0.193 | 3.822 | 0.381 | 3.822 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.188 | 0.011 | 0.288 | 0.017 | 0.283 | 0.033 | 0.283 | 0.000 |
| 7440-62-2 | 23 | V | 0.017 | 0.003 | 0.015 | 0.005 | 0.015 | 0.006 | 0.015 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.023 | 0.002 | 0.036 | 0.002 | 0.035 | 0.008 | 0.035 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.004 | 0.073 | 0.004 | 0.072 | 0.012 | 0.072 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.268 | 0.115 | 3.416 | 0.172 | 3.353 | 0.311 | 3.353 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.008 | 0.002 | 0.012 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.041 | 0.003 | 0.017 | 0.001 | 0.018 | 0.006 | 0.018 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.220 | 0.012 | 0.178 | 0.009 | 0.181 | 0.028 | 0.181 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.008 | 0.000 | 0.009 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.007 | 0.002 | 0.011 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.011 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.081 | 0.005 | 0.132 | 0.007 | 0.129 | 0.018 | 0.129 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.015 | 0.015 | 0.008 | 0.014 | 0.011 | 0.014 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.009 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.009 | 0.004 | 0.002 | 0.003 | 0.006 | 0.003 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.012 | 0.005 | 0.002 | 0.004 | 0.007 | 0.004 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.015 | 0.005 | 0.003 | 0.005 | 0.009 | 0.005 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.019 | 0.000 | 0.004 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.023 | 0.008 | 0.005 | 0.008 | 0.014 | 0.008 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.050 | 0.000 | 0.010 | 0.000 | 0.030 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.094 | 0.108 | 0.020 | 0.102 | 0.057 | 0.102 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.171 | 0.000 | 0.033 | 0.000 | 0.100 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.126 | 0.009 | 0.169 | 0.009 | 0.167 | 0.022 | 0.167 | 0.000 |
| TOTALS: | | | 23.670 | | 27.004 | | 26.819 | | 26.819 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Anaheim, CA
Profile Number : 41122
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 4.994 | 0.749 | 5.259 | 0.789 | 5.243 | 0.890 | 5.243 | 0.000 |
| 7440-21-3 | 14 | Si | 14.029 | 2.104 | 14.421 | 2.163 | 14.397 | 2.460 | 14.397 | 0.000 |
| 7723-14-0 | 15 | P | 0.290 | 0.058 | 0.237 | 0.047 | 0.240 | 0.059 | 0.240 | 0.000 |
| 7704-34-9 | 16 | S | 0.941 | 0.047 | 0.899 | 0.045 | 0.902 | 0.107 | 0.902 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.412 | 0.021 | 0.414 | 0.021 | 0.414 | 0.051 | 0.414 | 0.000 |
| 7440-09-7 | 19 | K | 1.073 | 0.054 | 1.461 | 0.073 | 1.438 | 0.143 | 1.438 | 0.000 |
| 7440-70-2 | 20 | Ca | 4.890 | 0.244 | 5.325 | 0.266 | 5.299 | 0.560 | 5.299 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.338 | 0.018 | 0.424 | 0.022 | 0.419 | 0.048 | 0.419 | 0.000 |
| 7440-62-2 | 23 | V | 0.024 | 0.004 | 0.020 | 0.005 | 0.021 | 0.007 | 0.021 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.022 | 0.002 | 0.026 | 0.002 | 0.026 | 0.007 | 0.026 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.098 | 0.005 | 0.107 | 0.005 | 0.107 | 0.017 | 0.107 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.550 | 0.179 | 4.306 | 0.217 | 4.261 | 0.429 | 4.261 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.015 | 0.001 | 0.015 | 0.001 | 0.015 | 0.005 | 0.015 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.023 | 0.002 | 0.021 | 0.001 | 0.021 | 0.006 | 0.021 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.202 | 0.010 | 0.196 | 0.010 | 0.196 | 0.027 | 0.196 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.010 | 0.000 | 0.010 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.005 | 0.001 | 0.007 | 0.001 | 0.007 | 0.003 | 0.007 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.001 | 0.011 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.035 | 0.002 | 0.058 | 0.003 | 0.056 | 0.010 | 0.056 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.007 | 0.010 | 0.004 | 0.009 | 0.006 | 0.009 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.004 | 0.003 | 0.001 | 0.003 | 0.003 | 0.003 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.004 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.007 | 0.004 | 0.002 | 0.004 | 0.005 | 0.004 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.008 | 0.000 | 0.003 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.010 | 0.006 | 0.003 | 0.006 | 0.007 | 0.006 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.023 | 0.000 | 0.007 | 0.000 | 0.014 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.042 | 0.017 | 0.014 | 0.016 | 0.027 | 0.016 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.076 | 0.000 | 0.023 | 0.000 | 0.047 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.167 | 0.009 | 0.174 | 0.009 | 0.174 | 0.024 | 0.174 | 0.000 |
| TOTALS: | | | 31.114 | | 33.422 | | 33.286 | | 33.286 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Riverside, CA
Profile Number : 41123
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 8.320 | 1.248 | 7.123 | 1.068 | 7.213 | 1.331 | 7.213 | 0.000 |
| 7440-21-3 | 14 | Si | 18.597 | 2.790 | 16.470 | 2.471 | 16.630 | 3.019 | 16.630 | 0.000 |
| 7723-14-0 | 15 | P | 0.228 | 0.046 | 0.187 | 0.037 | 0.190 | 0.047 | 0.190 | 0.000 |
| 7704-34-9 | 16 | S | 0.739 | 0.037 | 0.555 | 0.028 | 0.569 | 0.079 | 0.569 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.241 | 0.012 | 0.232 | 0.012 | 0.233 | 0.032 | 0.233 | 0.000 |
| 7440-09-7 | 19 | K | 1.667 | 0.083 | 1.913 | 0.096 | 1.894 | 0.200 | 1.894 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.793 | 0.190 | 3.590 | 0.180 | 3.605 | 0.412 | 3.605 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.458 | 0.024 | 0.496 | 0.026 | 0.493 | 0.058 | 0.493 | 0.000 |
| 7440-62-2 | 23 | V | 0.028 | 0.005 | 0.022 | 0.006 | 0.023 | 0.008 | 0.023 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.025 | 0.002 | 0.027 | 0.002 | 0.027 | 0.007 | 0.027 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.117 | 0.006 | 0.119 | 0.006 | 0.119 | 0.018 | 0.119 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.789 | 0.241 | 5.117 | 0.257 | 5.093 | 0.544 | 5.093 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.008 | 0.001 | 0.008 | 0.001 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.010 | 0.001 | 0.010 | 0.001 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.087 | 0.005 | 0.086 | 0.004 | 0.086 | 0.015 | 0.086 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.012 | 0.007 | 0.000 | 0.006 | 0.001 | 0.006 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.003 | 0.001 | 0.007 | 0.001 | 0.006 | 0.003 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.005 | 0.001 | 0.014 | 0.001 | 0.014 | 0.005 | 0.014 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.028 | 0.002 | 0.044 | 0.002 | 0.043 | 0.009 | 0.043 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.009 | 0.000 | 0.004 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.009 | 0.000 | 0.003 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.011 | 0.000 | 0.003 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.014 | 0.000 | 0.004 | 0.000 | 0.008 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.031 | 0.000 | 0.009 | 0.000 | 0.019 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.058 | 0.055 | 0.017 | 0.051 | 0.036 | 0.051 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.105 | 0.000 | 0.029 | 0.000 | 0.063 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.101 | 0.007 | 0.114 | 0.006 | 0.113 | 0.017 | 0.113 | 0.000 |

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PM Profile Speciation Report - continued (profile 41123)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 7.478 | 1.527 | 11.801 | 0.948 | 11.475 | 1.446 | 11.475 | 0.000 |
| | 202 | EC | 0.419 | 0.174 | 0.174 | 0.051 | 0.192 | 0.113 | 0.192 | 0.000 |
| TOTALS: | | | 47.153 | | 48.164 | | 48.088 | | 48.088 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Sepulveda Tunnel, Los Angeles,CA
Profile Number : 41124
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 7.087 | 0.357 | 7.353 | 0.368 | 7.336 | 0.792 | 7.336 | 0.000 |
| 7440-21-3 | 14 | Si | 17.853 | 0.894 | 20.843 | 1.045 | 20.653 | 2.090 | 20.653 | 0.000 |
| 7723-14-0 | 15 | P | 0.250 | 0.050 | 0.174 | 0.035 | 0.179 | 0.048 | 0.179 | 0.000 |
| 7704-34-9 | 16 | S | 2.066 | 0.116 | 1.145 | 0.072 | 1.204 | 0.202 | 1.204 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.317 | 0.022 | 0.312 | 0.018 | 0.312 | 0.042 | 0.312 | 0.000 |
| 7440-09-7 | 19 | K | 0.917 | 0.048 | 1.532 | 0.077 | 1.493 | 0.139 | 1.493 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.338 | 0.168 | 3.058 | 0.154 | 3.076 | 0.359 | 3.076 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.517 | 0.027 | 0.620 | 0.033 | 0.614 | 0.069 | 0.614 | 0.000 |
| 7440-62-2 | 23 | V | 0.026 | 0.006 | 0.021 | 0.007 | 0.021 | 0.009 | 0.021 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.027 | 0.002 | 0.039 | 0.002 | 0.039 | 0.008 | 0.039 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.072 | 0.004 | 0.104 | 0.005 | 0.102 | 0.015 | 0.102 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.673 | 0.186 | 5.530 | 0.278 | 5.413 | 0.499 | 5.413 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.013 | 0.001 | 0.009 | 0.001 | 0.009 | 0.004 | 0.009 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.077 | 0.004 | 0.095 | 0.005 | 0.094 | 0.015 | 0.094 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.263 | 0.014 | 0.269 | 0.014 | 0.268 | 0.035 | 0.268 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.002 | 0.003 | 0.002 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.021 | 0.000 | 0.024 | 0.000 | 0.021 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.001 | 0.000 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.020 | 0.002 | 0.025 | 0.001 | 0.025 | 0.007 | 0.025 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.013 | 0.001 | 0.012 | 0.004 | 0.012 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.231 | 0.012 | 0.443 | 0.022 | 0.429 | 0.044 | 0.429 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.083 | 0.016 | 0.012 | 0.024 | 0.016 | 0.022 | 0.016 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.011 | 0.006 | 0.000 | 0.002 | 0.001 | 0.004 | 0.001 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.009 | 0.007 | 0.000 | 0.002 | 0.001 | 0.005 | 0.001 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.012 | 0.009 | 0.006 | 0.003 | 0.007 | 0.007 | 0.007 | 0.000 |
| 7440-74-6 | 49 | In | 0.004 | 0.012 | 0.000 | 0.004 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.003 | 0.014 | 0.000 | 0.005 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.031 | 0.018 | 0.010 | 0.016 | 0.020 | 0.016 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.091 | 0.059 | 0.162 | 0.021 | 0.158 | 0.042 | 0.158 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.105 | 0.042 | 0.033 | 0.039 | 0.065 | 0.039 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.001 | 0.002 | 0.000 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.368 | 0.019 | 0.429 | 0.022 | 0.425 | 0.050 | 0.425 | 0.000 |

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PM Profile Speciation Report - continued (profile 41124)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 13.780 | 2.758 | 12.805 | 0.916 | 12.867 | 2.169 | 12.867 | 0.000 |
| | 202 | EC | 1.753 | 0.581 | 0.579 | 0.050 | 0.653 | 0.363 | 0.653 | 0.000 |
| TOTALS: | | | 52.866 | | 55.644 | | 55.467 | | 55.467 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Composite
Profile Number : 41130
Data Quality : E

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Control Device : Not applicable
Reference(s) : 19,27,28,42,43,44,45,46,48
Data Source : Developed from profiles 41101, 41102, 41103, 41104, 41105, 41106, 41107, 41109, and 41110.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Species | | | | | | | | | |
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.003 | 0.001 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.551 | 0.158 | 0.631 | 0.106 | 0.586 | 0.127 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.837 | 0.213 | 0.791 | 0.104 | 0.817 | 0.163 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 7.924 | 1.447 | 7.204 | 0.737 | 7.613 | 1.262 | 1.649 | 0.255 |
| 7440-21-3 | 14 | Si | 21.475 | 2.778 | 23.881 | 2.321 | 22.514 | 3.300 | 5.274 | 0.825 |
| 7723-14-0 | 15 | P | 0.112 | 0.039 | 0.118 | 0.024 | 0.114 | 0.029 | 0.032 | 0.013 |
| 7704-34-9 | 16 | S | 0.565 | 0.165 | 0.397 | 0.096 | 0.492 | 0.122 | 0.111 | 0.033 |
| 7782-50-5 | 17 | Cl | 0.128 | 0.062 | 0.092 | 0.025 | 0.113 | 0.040 | 0.021 | 0.007 |
| 7440-09-7 | 19 | K | 1.140 | 0.199 | 1.301 | 0.196 | 1.209 | 0.211 | 0.268 | 0.046 |
| 7440-70-2 | 20 | Ca | 2.278 | 0.555 | 3.303 | 0.690 | 2.721 | 0.597 | 0.887 | 0.184 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.375 | 0.074 | 0.519 | 0.073 | 0.437 | 0.078 | 0.112 | 0.016 |
| 7440-62-2 | 23 | V | 0.017 | 0.008 | 0.023 | 0.002 | 0.020 | 0.005 | 0.007 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.040 | 0.010 | 0.021 | 0.006 | 0.032 | 0.007 | 0.005 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.097 | 0.016 | 0.107 | 0.012 | 0.101 | 0.016 | 0.024 | 0.003 |
| 7439-89-6 | 26 | Fe | 3.646 | 0.476 | 4.384 | 0.379 | 3.965 | 0.574 | 1.030 | 0.153 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.008 | 0.007 | 0.016 | 0.001 | 0.012 | 0.004 | 0.002 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.095 | 0.024 | 0.109 | 0.036 | 0.101 | 0.027 | 0.051 | 0.016 |
| 7440-66-6 | 30 | Zn | 0.202 | 0.045 | 0.406 | 0.034 | 0.290 | 0.049 | 0.129 | 0.019 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.005 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.037 | 0.024 | 0.023 | 0.007 | 0.031 | 0.015 | 0.015 | 0.005 |
| 7782-49-2 | 34 | Se | 0.002 | 0.006 | 0.000 | 0.001 | 0.001 | 0.003 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.019 | 0.010 | 0.007 | 0.003 | 0.014 | 0.006 | 0.004 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.006 | 0.000 | 0.013 | 0.000 | 0.009 | 0.001 | 0.008 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.001 | 0.006 | 0.000 | 0.004 | 0.001 | 0.006 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.002 | 0.010 | 0.000 | 0.000 | 0.001 | 0.005 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.002 | 0.015 | 0.001 | 0.000 | 0.002 | 0.008 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.028 | 0.030 | 0.014 | 0.020 | 0.022 | 0.020 | 0.004 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.024 | 0.000 | 0.004 | 0.000 | 0.014 | 0.002 | 0.000 |

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PM Profile Speciation Report - continued (profile 41130)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 0.005 | 0.027 | 0.011 | 0.011 | 0.008 | 0.017 | 0.011 | 0.010 |
| 7440-36-0 | 51 | Sb | 0.021 | 0.050 | 0.013 | 0.016 | 0.018 | 0.030 | 0.008 | 0.014 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.010 | 0.129 | 0.036 | 0.056 | 0.021 | 0.080 | 0.028 | 0.053 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.011 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.004 | 0.000 | 0.000 | 0.001 | 0.002 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.391 | 0.100 | 0.357 | 0.080 | 0.376 | 0.084 | 0.204 | 0.049 |
| | 201 | OC | 3.180 | 1.500 | 2.204 | 0.676 | 2.759 | 0.985 | 0.000 | 0.000 |
| | 202 | EC | 0.465 | 0.328 | 0.455 | 0.353 | 0.461 | 0.279 | 0.000 | 0.000 |
| | 203 | SO4 | 0.066 | 0.112 | 0.105 | 0.070 | 0.083 | 0.076 | 0.075 | 0.057 |
| | 204 | NO3 | 0.010 | 0.009 | 0.002 | 0.003 | 0.007 | 0.006 | 0.000 | 0.000 |
| TOTALS: | | | 43.737 | | 46.550 | | 44.953 | | 9.962 | |

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Freeway Composite
Profile Number : 41131
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed from profiles 41111 and 41112.

SCC Assignments: 113

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 6.471 | 0.710 | 6.690 | 0.710 | 6.667 | 0.935 | 6.667 | 0.000 |
| 7440-21-3 | 14 | Si | 20.849 | 2.854 | 19.901 | 2.415 | 19.999 | 3.171 | 19.999 | 0.000 |
| 7723-14-0 | 15 | P | 0.049 | 0.010 | 0.046 | 0.011 | 0.046 | 0.014 | 0.046 | 0.000 |
| 7704-34-9 | 16 | S | 0.615 | 0.259 | 0.359 | 0.359 | 0.385 | 0.313 | 0.385 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.107 | 0.083 | 0.100 | 0.100 | 0.101 | 0.090 | 0.101 | 0.000 |
| 7440-09-7 | 19 | K | 0.943 | 0.300 | 1.354 | 0.337 | 1.316 | 0.327 | 1.316 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.615 | 0.466 | 4.748 | 0.236 | 4.627 | 0.515 | 4.627 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.468 | 0.076 | 0.543 | 0.050 | 0.535 | 0.080 | 0.535 | 0.000 |
| 7440-62-2 | 23 | V | 0.027 | 0.004 | 0.004 | 0.005 | 0.006 | 0.005 | 0.006 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.001 | 0.021 | 0.001 | 0.021 | 0.006 | 0.021 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.076 | 0.018 | 0.115 | 0.007 | 0.111 | 0.019 | 0.111 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.117 | 0.413 | 5.765 | 0.232 | 5.597 | 0.557 | 5.597 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.001 | 0.019 | 0.001 | 0.019 | 0.006 | 0.019 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.038 | 0.006 | 0.035 | 0.001 | 0.035 | 0.009 | 0.035 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.412 | 0.159 | 0.388 | 0.193 | 0.389 | 0.177 | 0.389 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.002 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.004 | 0.038 | 0.000 | 0.043 | 0.000 | 0.039 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.006 | 0.002 | 0.006 | 0.005 | 0.006 | 0.005 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.005 | 0.001 | 0.011 | 0.002 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.083 | 0.011 | 0.130 | 0.018 | 0.126 | 0.022 | 0.126 | 0.000 |
| 7440-65-5 | 39 | Y | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.007 | 0.006 | 0.000 | 0.006 | 0.001 | 0.005 | 0.001 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.004 | 0.001 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.005 | 0.008 | 0.005 | 0.007 | 0.006 | 0.007 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.006 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.007 | 0.000 | 0.003 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.016 | 0.000 | 0.007 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.026 | 0.030 | 0.131 | 0.014 | 0.121 | 0.026 | 0.121 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.054 | 0.000 | 0.022 | 0.000 | 0.035 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.816 | 0.528 | 0.902 | 0.624 | 0.892 | 0.565 | 0.892 | 0.000 |
| | 201 | OC | 17.574 | 1.666 | 14.502 | 1.289 | 14.854 | 2.129 | 14.854 | 0.000 |
| | 202 | EC | 0.451 | 0.131 | 0.401 | 0.074 | 0.407 | 0.105 | 0.407 | 0.000 |
| TOTALS: | | | 56.800 | | 56.184 | | 56.282 | | 56.282 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Composite-Long Beach,CA
Profile Number : 41132
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed from profiles 41113 and 41114.

SCC Assignments: 113

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 5.398 | 0.611 | 5.431 | 0.577 | 5.429 | 0.775 | 5.429 | 0.000 |
| 7440-21-3 | 14 | Si | 15.316 | 1.857 | 15.197 | 1.615 | 15.208 | 2.209 | 15.208 | 0.000 |
| 7723-14-0 | 15 | P | 0.252 | 0.037 | 0.219 | 0.031 | 0.221 | 0.043 | 0.221 | 0.000 |
| 7704-34-9 | 16 | S | 0.789 | 0.213 | 0.717 | 0.186 | 0.722 | 0.202 | 0.722 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.337 | 0.069 | 0.359 | 0.101 | 0.357 | 0.095 | 0.357 | 0.000 |
| 7440-09-7 | 19 | K | 1.241 | 0.066 | 1.592 | 0.057 | 1.568 | 0.154 | 1.568 | 0.000 |
| 7440-70-2 | 20 | Ca | 4.014 | 0.213 | 3.838 | 0.136 | 3.849 | 0.427 | 3.849 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.337 | 0.018 | 0.410 | 0.016 | 0.405 | 0.046 | 0.405 | 0.000 |
| 7440-62-2 | 23 | V | 0.027 | 0.003 | 0.018 | 0.004 | 0.019 | 0.007 | 0.019 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.023 | 0.002 | 0.029 | 0.001 | 0.028 | 0.007 | 0.028 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.087 | 0.005 | 0.098 | 0.006 | 0.097 | 0.016 | 0.097 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.830 | 0.204 | 4.546 | 0.232 | 4.497 | 0.460 | 4.497 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.013 | 0.001 | 0.014 | 0.001 | 0.014 | 0.005 | 0.014 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.025 | 0.002 | 0.025 | 0.001 | 0.025 | 0.007 | 0.025 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.264 | 0.041 | 0.249 | 0.024 | 0.250 | 0.043 | 0.250 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.006 | 0.010 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.006 | 0.001 | 0.009 | 0.000 | 0.009 | 0.004 | 0.009 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.001 | 0.011 | 0.001 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.033 | 0.005 | 0.068 | 0.015 | 0.066 | 0.016 | 0.066 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.009 | 0.014 | 0.003 | 0.014 | 0.007 | 0.014 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.006 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.006 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.010 | 0.004 | 0.004 | 0.004 | 0.007 | 0.004 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.012 | 0.000 | 0.003 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.014 | 0.007 | 0.003 | 0.007 | 0.009 | 0.007 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.031 | 0.000 | 0.007 | 0.000 | 0.019 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.059 | 0.088 | 0.016 | 0.082 | 0.038 | 0.082 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.108 | 0.000 | 0.023 | 0.000 | 0.063 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.229 | 0.073 | 0.218 | 0.066 | 0.219 | 0.071 | 0.219 | 0.000 |
| | 201 | OC | 19.626 | 3.370 | 18.959 | 1.467 | 19.002 | 2.926 | 19.002 | 0.000 |
| | 202 | EC | 2.213 | 0.425 | 1.188 | 0.100 | 1.254 | 0.319 | 1.254 | 0.000 |
| TOTALS: | | | 54.069 | | 53.308 | | 53.356 | | 53.356 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Hawthorne Composite
Profile Number : 41133
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed from profiles 41115 and 41116.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 5.992 | 0.676 | 6.953 | 1.143 | 6.894 | 1.134 | 6.894 | 0.000 |
| 7440-21-3 | 14 | Si | 16.131 | 1.826 | 18.201 | 2.568 | 18.072 | 2.756 | 18.072 | 0.000 |
| 7723-14-0 | 15 | P | 0.031 | 0.008 | 0.030 | 0.004 | 0.030 | 0.009 | 0.030 | 0.000 |
| 7704-34-9 | 16 | S | 0.434 | 0.214 | 0.291 | 0.107 | 0.299 | 0.152 | 0.299 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.099 | 0.031 | 0.096 | 0.038 | 0.097 | 0.037 | 0.097 | 0.000 |
| 7440-09-7 | 19 | K | 0.998 | 0.083 | 1.556 | 0.142 | 1.522 | 0.173 | 1.522 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.243 | 0.621 | 2.477 | 0.141 | 2.462 | 0.438 | 2.462 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.317 | 0.017 | 0.463 | 0.055 | 0.454 | 0.062 | 0.454 | 0.000 |
| 7440-62-2 | 23 | V | 0.020 | 0.003 | 0.010 | 0.004 | 0.010 | 0.005 | 0.010 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.014 | 0.004 | 0.018 | 0.001 | 0.017 | 0.006 | 0.017 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.070 | 0.007 | 0.106 | 0.005 | 0.104 | 0.016 | 0.104 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.399 | 0.178 | 4.773 | 0.529 | 4.690 | 0.569 | 4.690 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.012 | 0.005 | 0.012 | 0.001 | 0.012 | 0.005 | 0.012 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.021 | 0.010 | 0.017 | 0.004 | 0.017 | 0.008 | 0.017 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.105 | 0.059 | 0.112 | 0.050 | 0.111 | 0.053 | 0.111 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.005 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.005 | 0.003 | 0.006 | 0.002 | 0.006 | 0.004 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.004 | 0.001 | 0.013 | 0.001 | 0.012 | 0.004 | 0.012 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.029 | 0.015 | 0.058 | 0.018 | 0.056 | 0.019 | 0.056 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.006 | 0.006 | 0.003 | 0.006 | 0.005 | 0.006 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.004 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.004 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.005 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.006 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.007 | 0.000 | 0.003 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.009 | 0.002 | 0.003 | 0.002 | 0.006 | 0.002 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.019 | 0.003 | 0.007 | 0.002 | 0.012 | 0.002 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.037 | 0.092 | 0.013 | 0.086 | 0.026 | 0.086 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.067 | 0.002 | 0.022 | 0.002 | 0.041 | 0.002 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.103 | 0.077 | 0.091 | 0.042 | 0.092 | 0.056 | 0.092 | 0.000 |
| TOTALS: | | | 30.030 | | 35.389 | | 35.056 | | 35.056 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Burbank Composite
Profile Number : 41134
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed from profiles 41117 amd 41118.

SCC Assignments: 113

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.250 | 0.370 | 0.440 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 4.286 | 0.492 | 4.974 | 0.528 | 4.941 | 0.665 | 4.941 | 0.000 |
| 7440-21-3 | 14 | Si | 12.550 | 1.439 | 13.845 | 1.469 | 13.779 | 1.884 | 13.779 | 0.000 |
| 7723-14-0 | 15 | P | 0.274 | 0.051 | 0.248 | 0.035 | 0.249 | 0.051 | 0.249 | 0.000 |
| 7704-34-9 | 16 | S | 0.868 | 0.049 | 0.702 | 0.025 | 0.710 | 0.093 | 0.710 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.358 | 0.020 | 0.372 | 0.017 | 0.371 | 0.046 | 0.371 | 0.000 |
| 7440-09-7 | 19 | K | 0.877 | 0.049 | 1.342 | 0.048 | 1.319 | 0.121 | 1.319 | 0.000 |
| 7440-70-2 | 20 | Ca | 4.742 | 0.801 | 5.359 | 0.373 | 5.333 | 0.729 | 5.333 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.332 | 0.019 | 0.436 | 0.017 | 0.431 | 0.047 | 0.431 | 0.000 |
| 7440-62-2 | 23 | V | 0.022 | 0.003 | 0.020 | 0.004 | 0.020 | 0.007 | 0.020 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.021 | 0.002 | 0.029 | 0.002 | 0.028 | 0.007 | 0.028 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.071 | 0.005 | 0.093 | 0.003 | 0.092 | 0.014 | 0.092 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.428 | 0.193 | 4.449 | 0.169 | 4.399 | 0.418 | 4.399 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.001 | 0.013 | 0.001 | 0.013 | 0.004 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.033 | 0.008 | 0.033 | 0.007 | 0.033 | 0.010 | 0.033 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.242 | 0.025 | 0.245 | 0.030 | 0.245 | 0.040 | 0.245 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.007 | 0.010 | 0.000 | 0.011 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.006 | 0.002 | 0.010 | 0.002 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.010 | 0.001 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.023 | 0.004 | 0.052 | 0.002 | 0.051 | 0.010 | 0.051 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.008 | 0.005 | 0.005 | 0.004 | 0.006 | 0.004 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.002 | 0.002 | 0.002 | 0.003 | 0.002 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.001 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.009 | 0.005 | 0.005 | 0.005 | 0.007 | 0.005 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.011 | 0.000 | 0.002 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.013 | 0.006 | 0.006 | 0.006 | 0.009 | 0.006 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.028 | 0.000 | 0.006 | 0.000 | 0.017 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.053 | 0.074 | 0.012 | 0.070 | 0.033 | 0.070 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.096 | 0.000 | 0.020 | 0.000 | 0.057 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.231 | 0.050 | 0.280 | 0.054 | 0.277 | 0.059 | 0.277 | 0.000 |
| | 201 | OC | 10.647 | 1.789 | 15.978 | 2.163 | 15.651 | 2.296 | 15.651 | 0.000 |
| | 202 | EC | 0.999 | 0.216 | 1.778 | 0.225 | 1.730 | 0.251 | 1.730 | 0.000 |
| TOTALS: | | | 40.028 | | 50.360 | | 49.779 | | 49.779 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Los Angeles Composite
Profile Number : 41135
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed from profiles 41119 and 41120.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 3.675 | 0.782 | 4.297 | 0.563 | 4.266 | 0.728 | 4.266 | 0.000 |
| 7440-21-3 | 14 | Si | 9.919 | 1.170 | 11.438 | 1.215 | 11.366 | 1.534 | 11.366 | 0.000 |
| 7723-14-0 | 15 | P | 0.373 | 0.150 | 0.360 | 0.136 | 0.361 | 0.140 | 0.361 | 0.000 |
| 7704-34-9 | 16 | S | 0.898 | 0.056 | 0.810 | 0.029 | 0.814 | 0.100 | 0.814 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.311 | 0.041 | 0.364 | 0.064 | 0.361 | 0.067 | 0.361 | 0.000 |
| 7440-09-7 | 19 | K | 0.652 | 0.040 | 1.083 | 0.038 | 1.062 | 0.097 | 1.062 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.243 | 0.366 | 4.060 | 0.345 | 4.022 | 0.488 | 4.022 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.305 | 0.047 | 0.457 | 0.103 | 0.450 | 0.093 | 0.450 | 0.000 |
| 7440-62-2 | 23 | V | 0.028 | 0.003 | 0.026 | 0.007 | 0.026 | 0.009 | 0.026 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.048 | 0.018 | 0.071 | 0.032 | 0.070 | 0.028 | 0.070 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.078 | 0.005 | 0.084 | 0.004 | 0.084 | 0.014 | 0.084 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.210 | 1.910 | 5.376 | 0.755 | 5.375 | 1.333 | 5.375 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.029 | 0.019 | 0.041 | 0.029 | 0.041 | 0.026 | 0.041 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.053 | 0.004 | 0.060 | 0.002 | 0.060 | 0.011 | 0.060 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.428 | 0.030 | 0.431 | 0.015 | 0.431 | 0.053 | 0.431 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.010 | 0.009 | 0.000 | 0.010 | 0.000 | 0.009 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.006 | 0.000 | 0.006 | 0.003 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.009 | 0.000 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.021 | 0.009 | 0.075 | 0.009 | 0.072 | 0.014 | 0.072 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.009 | 0.009 | 0.004 | 0.008 | 0.007 | 0.008 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.010 | 0.006 | 0.009 | 0.007 | 0.009 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.001 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.009 | 0.000 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.011 | 0.000 | 0.003 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.014 | 0.010 | 0.003 | 0.009 | 0.009 | 0.009 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.030 | 0.000 | 0.007 | 0.000 | 0.018 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.056 | 0.070 | 0.021 | 0.067 | 0.037 | 0.067 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.102 | 0.000 | 0.022 | 0.000 | 0.060 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.209 | 0.073 | 0.241 | 0.066 | 0.240 | 0.071 | 0.240 | 0.000 |
| | 201 | OC | 19.267 | 5.579 | 21.522 | 1.631 | 21.403 | 3.935 | 21.403 | 0.000 |
| | 202 | EC | 0.858 | 0.432 | 1.718 | 0.137 | 1.672 | 0.296 | 1.672 | 0.000 |
| TOTALS: | | | 45.617 | | 52.628 | | 52.283 | | 52.283 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - Anaheim Composite
Profile Number : 41136
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed from profiles 41121 and 41122.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 4.407 | 0.586 | 4.490 | 0.769 | 4.484 | 0.803 | 4.484 | 0.000 |
| 7440-21-3 | 14 | Si | 12.337 | 1.692 | 12.899 | 1.521 | 12.867 | 1.944 | 12.867 | 0.000 |
| 7723-14-0 | 15 | P | 0.241 | 0.049 | 0.211 | 0.030 | 0.213 | 0.046 | 0.213 | 0.000 |
| 7704-34-9 | 16 | S | 1.075 | 0.134 | 1.068 | 0.169 | 1.069 | 0.186 | 1.069 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.615 | 0.203 | 0.606 | 0.192 | 0.606 | 0.197 | 0.606 | 0.000 |
| 7440-09-7 | 19 | K | 0.960 | 0.113 | 1.390 | 0.071 | 1.366 | 0.145 | 1.366 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.999 | 0.891 | 4.595 | 0.731 | 4.561 | 0.859 | 4.561 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.263 | 0.075 | 0.356 | 0.068 | 0.351 | 0.076 | 0.351 | 0.000 |
| 7440-62-2 | 23 | V | 0.021 | 0.003 | 0.018 | 0.003 | 0.018 | 0.006 | 0.018 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.023 | 0.002 | 0.031 | 0.005 | 0.031 | 0.008 | 0.031 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.074 | 0.024 | 0.090 | 0.017 | 0.089 | 0.023 | 0.089 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.909 | 0.641 | 3.861 | 0.445 | 3.807 | 0.594 | 3.807 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.011 | 0.003 | 0.013 | 0.002 | 0.013 | 0.005 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.032 | 0.009 | 0.019 | 0.002 | 0.020 | 0.008 | 0.020 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.211 | 0.012 | 0.187 | 0.009 | 0.189 | 0.027 | 0.189 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.006 | 0.000 | 0.007 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.006 | 0.001 | 0.009 | 0.002 | 0.009 | 0.004 | 0.009 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.001 | 0.011 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.058 | 0.023 | 0.095 | 0.037 | 0.093 | 0.034 | 0.093 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.008 | 0.012 | 0.004 | 0.012 | 0.007 | 0.012 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.001 | 0.001 | 0.001 | 0.003 | 0.001 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.002 | 0.002 | 0.002 | 0.003 | 0.002 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.006 | 0.002 | 0.002 | 0.002 | 0.004 | 0.002 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.008 | 0.005 | 0.002 | 0.004 | 0.006 | 0.004 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.010 | 0.000 | 0.002 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.013 | 0.007 | 0.003 | 0.007 | 0.008 | 0.007 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.028 | 0.000 | 0.006 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.052 | 0.062 | 0.046 | 0.059 | 0.046 | 0.059 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.094 | 0.000 | 0.020 | 0.000 | 0.055 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.147 | 0.020 | 0.172 | 0.006 | 0.170 | 0.025 | 0.170 | 0.000 |
| TOTALS: | | | 27.393 | | 30.213 | | 30.055 | | 30.055 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Paved Road Dust - SCAB Composite
Profile Number : 41137
Data Quality : C

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Control Device : Not Applicable
Reference(s) : SOCAB
Data Source : Developed from profiles 41131, 41132, 41133, 41134, 41135, 41123, and 41124.

SCC Assignments: 113

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 5.704 | 0.556 | 5.914 | 0.443 | 5.904 | 0.737 | 5.904 | 0.000 |
| 7440-21-3 | 14 | Si | 15.444 | 1.296 | 16.099 | 1.191 | 16.072 | 1.936 | 16.072 | 0.000 |
| 7723-14-0 | 15 | P | 0.212 | 0.041 | 0.184 | 0.038 | 0.186 | 0.045 | 0.186 | 0.000 |
| 7704-34-9 | 16 | S | 0.935 | 0.175 | 0.706 | 0.108 | 0.721 | 0.157 | 0.721 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.298 | 0.058 | 0.305 | 0.059 | 0.305 | 0.066 | 0.305 | 0.000 |
| 7440-09-7 | 19 | K | 1.032 | 0.107 | 1.470 | 0.085 | 1.443 | 0.154 | 1.443 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.623 | 0.257 | 3.966 | 0.332 | 3.942 | 0.474 | 3.942 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.375 | 0.033 | 0.473 | 0.029 | 0.467 | 0.056 | 0.467 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.001 | 0.017 | 0.003 | 0.018 | 0.006 | 0.018 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.025 | 0.004 | 0.033 | 0.006 | 0.033 | 0.009 | 0.033 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.081 | 0.006 | 0.101 | 0.004 | 0.100 | 0.015 | 0.100 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.920 | 0.269 | 4.927 | 0.225 | 4.859 | 0.487 | 4.859 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.002 | 0.016 | 0.004 | 0.016 | 0.006 | 0.016 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.036 | 0.007 | 0.037 | 0.010 | 0.037 | 0.012 | 0.037 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.251 | 0.044 | 0.246 | 0.043 | 0.246 | 0.051 | 0.246 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.006 | 0.006 | 0.000 | 0.007 | 0.000 | 0.006 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.007 | 0.002 | 0.010 | 0.002 | 0.010 | 0.004 | 0.010 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.001 | 0.012 | 0.001 | 0.011 | 0.004 | 0.011 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.063 | 0.025 | 0.121 | 0.047 | 0.117 | 0.041 | 0.117 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.011 | 0.010 | 0.007 | 0.003 | 0.008 | 0.007 | 0.008 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.002 | 0.002 | 0.001 | 0.002 | 0.002 | 0.002 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.001 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.002 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.001 | 0.003 | 0.004 | 0.001 | 0.003 | 0.003 | 0.003 | 0.000 |
| 7440-74-6 | 49 | In | 0.001 | 0.004 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.004 | 0.004 | 0.001 | 0.004 | 0.004 | 0.004 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.010 | 0.003 | 0.003 | 0.002 | 0.006 | 0.002 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.015 | 0.018 | 0.092 | 0.013 | 0.087 | 0.019 | 0.087 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.033 | 0.006 | 0.009 | 0.005 | 0.020 | 0.005 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.275 | 0.083 | 0.306 | 0.093 | 0.303 | 0.091 | 0.303 | 0.000 |
| | 201 | OC | 14.729 | 2.023 | 15.928 | 1.520 | 15.875 | 2.208 | 15.875 | 0.000 |

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PM Profile Speciation Report - continued (profile 41137)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 202 | EC | 1.116 | 0.295 | 0.973 | 0.281 | 0.985 | 0.292 | 0.985 | 0.000 |
| TOTALS: | | | 48.203 | | 51.963 | | 51.761 | | 51.761 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Road Sand and Salt Mixture
Profile Number : 41401
Data Quality : C/D

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Control Device : Not applicable
Reference(s) : 43
Data Source : Sample sieved and resuspended.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.250 0.370 0.440

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 13.453 | 1.345 | 7.848 | 0.785 | 11.033 | 1.533 | 8.638 | 0.864 |
| 7440-21-3 | 14 | Si | 33.403 | 3.340 | 20.909 | 2.091 | 28.008 | 3.878 | 23.964 | 2.396 |
| 7723-14-0 | 15 | P | 0.393 | 0.039 | 0.260 | 0.026 | 0.336 | 0.046 | 0.260 | 0.026 |
| 7704-34-9 | 16 | S | 0.977 | 0.105 | 0.706 | 0.071 | 0.860 | 0.121 | 0.754 | 0.075 |
| 7782-50-5 | 17 | Cl | 8.375 | 0.837 | 8.832 | 0.883 | 8.572 | 1.198 | 10.095 | 1.009 |
| 7440-09-7 | 19 | K | 1.425 | 0.142 | 1.194 | 0.119 | 1.325 | 0.183 | 1.191 | 0.119 |
| 7440-70-2 | 20 | Ca | 3.735 | 0.373 | 2.387 | 0.239 | 3.153 | 0.436 | 2.388 | 0.239 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.385 | 0.038 | 0.353 | 0.035 | 0.371 | 0.051 | 0.388 | 0.039 |
| 7440-62-2 | 23 | V | 0.030 | 0.000 | 0.022 | 0.000 | 0.027 | 0.000 | 0.023 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.037 | 0.000 | 0.025 | 0.000 | 0.032 | 0.000 | 0.025 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.122 | 0.012 | 0.087 | 0.000 | 0.107 | 0.000 | 0.089 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.970 | 0.497 | 3.775 | 0.377 | 4.454 | 0.614 | 4.059 | 0.406 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.020 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.292 | 0.029 | 0.169 | 0.017 | 0.239 | 0.033 | 0.151 | 0.015 |
| 7440-66-6 | 30 | Zn | 0.253 | 0.025 | 0.123 | 0.012 | 0.197 | 0.028 | 0.052 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.016 | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.027 | 0.000 | 0.021 | 0.000 | 0.024 | 0.000 | 0.026 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.036 | 0.023 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.057 | 0.031 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.044 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-74-6 | 49 | In | < | 0.052 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | 0.032 | 0.058 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.107 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.285 | < | 0.000 | NE | 0.000 | < | 0.027 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41401)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.253 | 0.027 | 0.107 | 0.011 | 0.190 | 0.028 | 0.049 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 68.291 | | 46.818 | | 58.928 | | 52.152 | |

## 3.15 NATURAL SOURCES

Natural sources of particulate emissions include sources such as marine aerosols, volcanic ash, and soil dust. Marine aerosol particulates would be most significant in coastal areas. Volcanic ash and soil dust would be more significant in rural areas than urban areas.

PM Profile Speciation Report

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Profile Name : Soil Dust - Des Moines, IA
Profile Number : 41301
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 26
Data Source : XRF, C, and CO3 analysis of resuspended soils. Each sample was a composite of 3 subsamples.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.020 | 0.040 | 0.080 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 3.717 | 0.000 | 3.717 | 0.000 | 3.717 | 0.186 | 3.717 | 0.000 |
| 7440-21-3 | 14 | Si | 15.631 | 0.000 | 15.631 | 0.000 | 15.631 | 0.782 | 15.631 | 0.000 |
| 7723-14-0 | 15 | P | 0.108 | 0.000 | 0.108 | 0.000 | 0.108 | 0.005 | 0.108 | 0.000 |
| 7704-34-9 | 16 | S | 0.746 | 0.000 | 0.746 | 0.000 | 0.746 | 0.037 | 0.746 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.192 | 0.000 | 0.192 | 0.000 | 0.192 | 0.010 | 0.192 | 0.000 |
| 7440-09-7 | 19 | K | 0.596 | 0.000 | 0.596 | 0.000 | 0.596 | 0.030 | 0.596 | 0.000 |
| 7440-70-2 | 20 | Ca | 10.007 | 0.000 | 10.007 | 0.000 | 10.007 | 0.500 | 10.007 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.197 | 0.000 | 0.197 | 0.000 | 0.197 | 0.010 | 0.197 | 0.000 |
| 7440-62-2 | 23 | V | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.001 | 0.017 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.001 | 0.017 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.005 | 0.092 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.950 | 0.000 | 3.950 | 0.000 | 3.950 | 0.198 | 3.950 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.001 | 0.027 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.002 | 0.044 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.028 | 0.000 | 0.028 | 0.000 | 0.028 | 0.001 | 0.028 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.002 | 0.033 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41301)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.003 | 0.066 | 0.000 |
| | 200 | TC | 1.962 | 0.000 | 1.962 | 0.000 | 1.962 | 0.098 | 1.962 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 206 | CO3 | 24.651 | 0.000 | 24.651 | 0.000 | 24.651 | 1.233 | 24.651 | 0.000 |
| TOTALS: | | | 62.103 | | 62.103 | | 62.103 | | 62.103 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Seattle, WA
Profile Number : 41302
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 27
Data Source : Resuspended through a dichotomous impactor and analyzed by XRF, INNA, and carbon oxidation.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | 1.280 | 0.108 | 1.280 | 0.000 | 1.280 | 0.069 | 1.280 | 0.000 |
| 7429-90-5 | 13 | Al | 11.120 | 0.743 | 11.120 | 0.000 | 11.120 | 0.586 | 11.120 | 0.000 |
| 7440-21-3 | 14 | Si | 27.336 | 1.780 | 27.336 | 0.000 | 27.336 | 1.437 | 27.336 | 0.000 |
| 7723-14-0 | 15 | P | 0.336 | 0.031 | 0.336 | 0.000 | 0.336 | 0.019 | 0.336 | 0.000 |
| 7704-34-9 | 16 | S | 0.380 | 0.088 | 0.380 | 0.000 | 0.380 | 0.029 | 0.380 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.024 | 0.035 | 0.024 | 0.000 | 0.024 | 0.009 | 0.024 | 0.000 |
| 7440-09-7 | 19 | K | 0.719 | 0.066 | 0.719 | 0.000 | 0.719 | 0.040 | 0.719 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.864 | 0.070 | 0.864 | 0.000 | 0.864 | 0.047 | 0.864 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.440 | 0.038 | 0.440 | 0.000 | 0.440 | 0.024 | 0.440 | 0.000 |
| 7440-62-2 | 23 | V | 0.039 | 0.009 | 0.039 | 0.000 | 0.039 | 0.003 | 0.039 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.144 | 0.014 | 0.144 | 0.000 | 0.144 | 0.008 | 0.144 | 0.000 |
| 7439-89-6 | 26 | Fe | 4.989 | 0.340 | 4.989 | 0.000 | 4.989 | 0.264 | 4.989 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.008 | 0.006 | 0.008 | 0.000 | 0.008 | 0.002 | 0.008 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.042 | 0.008 | 0.042 | 0.000 | 0.042 | 0.003 | 0.042 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.021 | 0.008 | 0.021 | 0.000 | 0.021 | 0.002 | 0.021 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.039 | 0.055 | 0.039 | 0.000 | 0.039 | 0.014 | 0.039 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41302)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.107 | 0.022 | 0.107 | 0.000 | 0.107 | 0.008 | 0.107 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 47.888 | | 47.888 | | 47.888 | | 47.888 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Visalia, CA
Profile Number : 41303
Data Quality : D/E

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Control Device : Not applicable
Reference(s) : 31
Data Source : 7 soil samples

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.020 | 0.040 | 0.080 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.060 | 1.200 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.020 | 0.400 | 0.000 |
| 7429-90-5 | 13 | Al | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.250 | 5.000 | 0.000 |
| 7440-21-3 | 14 | Si | 19.700 | 0.000 | 19.700 | 0.000 | 19.700 | 0.985 | 19.700 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.015 | 0.300 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| 7440-09-7 | 19 | K | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.075 | 1.500 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.500 | 0.000 | 2.500 | 0.000 | 2.500 | 0.125 | 2.500 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| 7440-62-2 | 23 | V | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.150 | 3.000 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.015 | 0.300 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.015 | 0.300 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.015 | 0.300 | 0.000 |

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PM Profile Speciation Report - continued (profile 41303)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 35.450 | | 35.450 | | 35.450 | | 35.450 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - South Bend, Indiana
Profile Number : 41304
Data Quality : B/C

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Control Device : Not applicable
Reference(s) : 32
Data Source : Sample is a mix of 3 subsamples. Total particulate composition assumed similar to coarse mode.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 9.040 | 2.299 | 7.581 | 0.433 | 7.946 | 0.718 | 7.581 | 0.433 |
| 7440-21-3 | 14 | Si | 29.675 | 7.270 | 30.660 | 1.684 | 30.414 | 2.399 | 30.660 | 1.684 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 7.323 | 2.135 | 0.302 | 0.064 | 2.057 | 0.594 | 0.302 | 0.064 |
| 7782-50-5 | 17 | Cl | 0.743 | 0.390 | 0.171 | 0.031 | 0.314 | 0.101 | 0.171 | 0.031 |
| 7440-09-7 | 19 | K | 1.563 | 4.680 | 1.500 | 0.099 | 1.516 | 1.173 | 1.500 | 0.099 |
| 7440-70-2 | 20 | Ca | 1.230 | 0.365 | 2.030 | 0.124 | 1.830 | 0.128 | 2.030 | 0.124 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.370 | 0.129 | 0.416 | 0.030 | 0.404 | 0.039 | 0.416 | 0.030 |
| 7440-62-2 | 23 | V | < | 0.000 | 0.016 | 0.006 | NE | 0.000 | 0.016 | 0.006 |
| 7440-47-3 | 24 | Cr | 0.061 | 0.061 | 0.032 | 0.006 | 0.039 | 0.016 | 0.032 | 0.006 |
| 7439-96-5 | 25 | Mn | 0.136 | 0.074 | 0.120 | 0.010 | 0.124 | 0.020 | 0.120 | 0.010 |
| 7439-89-6 | 26 | Fe | 4.138 | 1.069 | 3.535 | 0.206 | 3.686 | 0.333 | 3.535 | 0.206 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.028 | 0.051 | 0.006 | 0.003 | 0.011 | 0.013 | 0.006 | 0.003 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | 0.280 | 0.101 | 0.071 | 0.009 | 0.123 | 0.027 | 0.071 | 0.009 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.280 | 0.106 | 0.003 | 0.004 | 0.072 | 0.028 | 0.003 | 0.004 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41304)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.143 | 0.436 | 0.083 | 0.016 | 0.098 | 0.109 | 0.083 | 0.016 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 55.010 | | 46.526 | | 48.634 | | 46.526 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Houston, TX
Profile Number : 41305
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 40
Data Source : Reintrained soil dust analyzed by XRF.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 5.600 | 0.000 | 5.600 | 2.800 | 5.600 | 0.754 | 5.600 | 2.800 |
| 7440-21-3 | 14 | Si | 17.200 | 0.000 | 17.200 | 5.300 | 17.200 | 1.580 | 17.200 | 5.300 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | 0.900 | 0.000 | 0.900 | 0.135 | 0.900 | 0.056 | 0.900 | 0.135 |
| 7440-70-2 | 20 | Ca | 7.000 | 0.000 | 7.000 | 1.050 | 7.000 | 0.438 | 7.000 | 1.050 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.400 | 0.000 | 0.400 | 0.060 | 0.400 | 0.025 | 0.400 | 0.060 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.060 | 0.000 | 0.060 | 0.009 | 0.060 | 0.004 | 0.060 | 0.009 |
| 7439-89-6 | 26 | Fe | 2.800 | 0.000 | 2.800 | 0.420 | 2.800 | 0.175 | 2.800 | 0.420 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.500 | 0.000 | 0.500 | 0.075 | 0.500 | 0.031 | 0.500 | 0.075 |
| 7440-66-6 | 30 | Zn | 0.300 | 0.000 | 0.300 | 0.045 | 0.300 | 0.019 | 0.300 | 0.045 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41305)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.040 | 0.000 | 0.040 | 0.006 | 0.040 | 0.003 | 0.040 | 0.006 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 34.800 | | 34.800 | | 34.800 | | 34.800 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - East Helena, Montana
Profile Number : 41306
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 43
Data Source : Resuspended and analyzed by XRF.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 1.000 | 0.200 | 1.100 | 0.100 | 1.075 | 0.077 | 1.075 | 0.000 |
| 7439-95-4 | 12 | Mg | 2.000 | 0.700 | 1.900 | 0.300 | 1.925 | 0.214 | 1.925 | 0.000 |
| 7429-90-5 | 13 | Al | 18.000 | 1.000 | 9.500 | 0.500 | 11.625 | 0.772 | 11.625 | 0.000 |
| 7440-21-3 | 14 | Si | 48.000 | 2.000 | 29.000 | 1.000 | 33.750 | 2.060 | 33.750 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.240 | 0.150 | 0.200 | 0.020 | 0.210 | 0.039 | 0.210 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.200 | 0.080 | 0.120 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 |
| 7440-09-7 | 19 | K | 2.000 | 0.100 | 1.800 | 0.100 | 1.850 | 0.101 | 1.850 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.800 | 0.100 | 1.730 | 0.090 | 1.747 | 0.094 | 1.747 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.760 | 0.060 | 0.790 | 0.040 | 0.782 | 0.043 | 0.782 | 0.000 |
| 7440-62-2 | 23 | V | 0.030 | 0.020 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.020 | 0.030 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.280 | 0.030 | 0.170 | 0.000 | 0.198 | 0.000 | 0.198 | 0.000 |
| 7439-89-6 | 26 | Fe | 8.500 | 0.500 | 6.900 | 0.300 | 7.300 | 0.414 | 7.300 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.030 | 0.020 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41306)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.080 | 0.060 | 0.010 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 82.960 | | 53.300 | | 60.716 | | 60.716 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Idaho
Profile Number : 41307
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 42
Data Source : Resuspended and analyzed by XRF.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 1.000 | 0.200 | 1.100 | 0.100 | 1.075 | 0.077 | 1.075 | 0.000 |
| 7439-95-4 | 12 | Mg | 2.000 | 0.700 | 1.900 | 0.300 | 1.925 | 0.214 | 1.925 | 0.000 |
| 7429-90-5 | 13 | Al | 18.000 | 1.000 | 9.500 | 0.500 | 11.625 | 0.772 | 11.625 | 0.000 |
| 7440-21-3 | 14 | Si | 48.000 | 2.000 | 29.000 | 1.000 | 33.750 | 2.060 | 33.750 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.240 | 0.150 | 0.200 | 0.020 | 0.210 | 0.039 | 0.210 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.200 | 0.080 | 0.120 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 |
| 7440-09-7 | 19 | K | 2.000 | 0.100 | 1.800 | 0.100 | 1.850 | 0.101 | 1.850 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.800 | 0.100 | 1.730 | 0.090 | 1.747 | 0.094 | 1.747 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.760 | 0.060 | 0.790 | 0.040 | 0.782 | 0.043 | 0.782 | 0.000 |
| 7440-62-2 | 23 | V | 0.030 | 0.020 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.020 | 0.030 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.280 | 0.030 | 0.170 | 0.000 | 0.198 | 0.000 | 0.198 | 0.000 |
| 7439-89-6 | 26 | Fe | 8.500 | 0.500 | 6.900 | 0.300 | 7.300 | 0.414 | 7.300 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.030 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | 0.020 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41307)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.080 | 0.060 | 0.010 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| | 201 | OC | NR | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NR | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NR | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NR | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 82.960 | | 53.300 | | 60.688 | | 60.688 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Creston, Iowa
Profile Number : 41308
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 26
Data Source : Resuspended soils analyzed by XRF and carbon oxidation.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 3.109 | 0.000 | 3.109 | 0.000 | 3.109 | 0.155 | 3.109 | 0.000 |
| 7440-21-3 | 14 | Si | 13.039 | 0.000 | 13.039 | 0.000 | 13.039 | 0.652 | 13.039 | 0.000 |
| 7723-14-0 | 15 | P | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.005 | 0.105 | 0.000 |
| 7704-34-9 | 16 | S | 0.824 | 0.000 | 0.824 | 0.000 | 0.824 | 0.041 | 0.824 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.262 | 0.000 | 0.262 | 0.000 | 0.262 | 0.013 | 0.262 | 0.000 |
| 7440-09-7 | 19 | K | 0.786 | 0.000 | 0.786 | 0.000 | 0.786 | 0.039 | 0.786 | 0.000 |
| 7440-70-2 | 20 | Ca | 15.195 | 0.000 | 15.195 | 0.000 | 15.195 | 0.760 | 15.195 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.199 | 0.000 | 0.199 | 0.000 | 0.199 | 0.010 | 0.199 | 0.000 |
| 7440-62-2 | 23 | V | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.001 | 0.014 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.001 | 0.020 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.072 | 0.000 | 0.072 | 0.000 | 0.072 | 0.004 | 0.072 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.390 | 0.000 | 3.390 | 0.000 | 3.390 | 0.169 | 3.390 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.001 | 0.018 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.047 | 0.000 | 0.047 | 0.000 | 0.047 | 0.002 | 0.047 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.001 | 0.018 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.047 | 0.000 | 0.047 | 0.000 | 0.047 | 0.002 | 0.047 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.002 | 0.039 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |

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PM Profile Specfation Report - continued (profile 41308)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.037 | 0.000 | 0.037 | 0.000 | 0.037 | 0.002 | 0.037 | 0.000 |
| | 200 | TC | 1.791 | 0.000 | 1.791 | 0.000 | 1.791 | 0.090 | 1.791 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 206 | CO3 | 28.368 | 0.000 | 28.368 | 0.000 | 28.368 | 1.418 | 28.368 | 0.000 |
| TOTALS: | | | 67.391 | | 67.391 | | 67.391 | | 67.391 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Council Bluffs, Iowa
Profile Number : 41309
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 26
Data Source : Resuspended and analyzed by XRF and carbon oxidation.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 5.160 | 0.000 | 5.160 | 0.000 | 5.160 | 0.258 | 5.160 | 0.000 |
| 7440-21-3 | 14 | Si | 21.693 | 0.000 | 21.693 | 0.000 | 21.693 | 1.085 | 21.693 | 0.000 |
| 7723-14-0 | 15 | P | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.006 | 0.120 | 0.000 |
| 7704-34-9 | 16 | S | 0.629 | 0.000 | 0.629 | 0.000 | 0.629 | 0.031 | 0.629 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.198 | 0.000 | 0.198 | 0.000 | 0.198 | 0.010 | 0.198 | 0.000 |
| 7440-09-7 | 19 | K | 1.138 | 0.000 | 1.138 | 0.000 | 1.138 | 0.057 | 1.138 | 0.000 |
| 7440-70-2 | 20 | Ca | 7.225 | 0.000 | 7.225 | 0.000 | 7.225 | 0.361 | 7.225 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.287 | 0.000 | 0.287 | 0.000 | 0.287 | 0.014 | 0.287 | 0.000 |
| 7440-62-2 | 23 | V | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.001 | 0.019 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.001 | 0.016 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.068 | 0.000 | 0.068 | 0.000 | 0.068 | 0.003 | 0.068 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.301 | 0.000 | 2.301 | 0.000 | 2.301 | 0.115 | 2.301 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.064 | 0.000 | 0.064 | 0.000 | 0.064 | 0.003 | 0.064 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.001 | 0.015 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.001 | 0.026 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | 0.209 | 0.000 | 0.209 | 0.000 | 0.209 | 0.010 | 0.209 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.049 | 0.000 | 0.049 | 0.000 | 0.049 | 0.002 | 0.049 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41309)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.069 | 0.000 | 0.069 | 0.000 | 0.069 | 0.003 | 0.069 | 0.000 |
| | 200 | TC | 2.295 | 0.000 | 2.295 | 0.000 | 2.295 | 0.115 | 2.295 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 206 | CO3 | 12.495 | 0.000 | 12.495 | 0.000 | 12.495 | 0.625 | 12.495 | 0.000 |
| TOTALS: | | | 54.095 | | 54.095 | | 54.095 | | 54.095 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Sioux City, Iowa
Profile Number : 41310
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 26
Data Source : Resuspended and anlyzed by XRF and carbon oxidation.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.020 | 0.040 | 0.080 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 4.926 | 0.000 | 4.926 | 0.000 | 4.926 | 0.246 | 4.926 | 0.000 |
| 7440-21-3 | 14 | Si | 20.697 | 0.000 | 20.697 | 0.000 | 20.697 | 1.035 | 20.697 | 0.000 |
| 7723-14-0 | 15 | P | 0.094 | 0.000 | 0.094 | 0.000 | 0.094 | 0.005 | 0.094 | 0.000 |
| 7704-34-9 | 16 | S | 0.220 | 0.000 | 0.220 | 0.000 | 0.220 | 0.011 | 0.220 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.005 | 0.100 | 0.000 |
| 7440-09-7 | 19 | K | 1.055 | 0.000 | 1.055 | 0.000 | 1.055 | 0.053 | 1.055 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.998 | 0.000 | 3.998 | 0.000 | 3.998 | 0.200 | 3.998 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.319 | 0.000 | 0.319 | 0.000 | 0.319 | 0.016 | 0.319 | 0.000 |
| 7440-62-2 | 23 | V | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.001 | 0.021 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.001 | 0.017 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.153 | 0.000 | 0.153 | 0.000 | 0.153 | 0.008 | 0.153 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.011 | 0.000 | 3.011 | 0.000 | 3.011 | 0.151 | 3.011 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.002 | 0.035 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.001 | 0.018 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.114 | 0.000 | 0.114 | 0.000 | 0.114 | 0.006 | 0.114 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41310)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.042 | 0.000 | 0.042 | 0.000 | 0.042 | 0.002 | 0.042 | 0.000 |
| | 200 | TC | 2.313 | 0.000 | 2.313 | 0.000 | 2.313 | 0.116 | 2.313 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 206 | CO3 | 17.971 | 0.000 | 17.971 | 0.000 | 17.971 | 0.899 | 17.971 | 0.000 |
| TOTALS: | | | 55.124 | | 55.124 | | 55.124 | | 55.124 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Cedar Rapids, Iowa
Profile Number : 41311
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 26
Data Source : Resuspended and analyzed by XRF and carbon oxidation.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 1.906 | 0.000 | 1.906 | 0.000 | 1.906 | 0.095 | 1.906 | 0.000 |
| 7440-21-3 | 14 | Si | 7.171 | 0.000 | 7.171 | 0.000 | 7.171 | 0.359 | 7.171 | 0.000 |
| 7723-14-0 | 15 | P | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.002 | 0.040 | 0.000 |
| 7704-34-9 | 16 | S | 0.895 | 0.000 | 0.895 | 0.000 | 0.895 | 0.045 | 0.895 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.360 | 0.000 | 0.360 | 0.000 | 0.360 | 0.018 | 0.360 | 0.000 |
| 7440-09-7 | 19 | K | 0.821 | 0.000 | 0.821 | 0.000 | 0.821 | 0.041 | 0.821 | 0.000 |
| 7440-70-2 | 20 | Ca | 25.808 | 0.000 | 25.808 | 0.000 | 25.808 | 1.290 | 25.808 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.088 | 0.000 | 0.088 | 0.000 | 0.088 | 0.004 | 0.088 | 0.000 |
| 7440-62-2 | 23 | V | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.138 | 0.000 | 0.138 | 0.000 | 0.138 | 0.007 | 0.138 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.865 | 0.000 | 0.865 | 0.000 | 0.865 | 0.043 | 0.865 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.029 | 0.000 | 0.029 | 0.000 | 0.029 | 0.001 | 0.029 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.001 | 0.026 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41311)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.029 | 0.000 | 0.029 | 0.000 | 0.029 | 0.001 | 0.029 | 0.000 |
| | 200 | TC | 3.222 | 0.000 | 3.222 | 0.000 | 3.222 | 0.161 | 3.222 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 206 | CO3 | 36.189 | 0.000 | 36.189 | 0.000 | 36.189 | 1.809 | 36.189 | 0.000 |
| TOTALS: | | | 77.608 | | 77.608 | | 77.608 | | 77.608 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Davenport, Iowa
Profile Number : 41312
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 26
Data Source : Resuspended and analyzed by XRF and carbon oxidation.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 2.333 | 0.000 | 2.333 | 0.000 | 2.333 | 0.117 | 2.333 | 0.000 |
| 7440-21-3 | 14 | Si | 7.958 | 0.000 | 7.958 | 0.000 | 7.958 | 0.398 | 7.958 | 0.000 |
| 7723-14-0 | 15 | P | 0.057 | 0.000 | 0.057 | 0.000 | 0.057 | 0.003 | 0.057 | 0.000 |
| 7704-34-9 | 16 | S | 0.663 | 0.000 | 0.663 | 0.000 | 0.663 | 0.033 | 0.663 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.314 | 0.000 | 0.314 | 0.000 | 0.314 | 0.016 | 0.314 | 0.000 |
| 7440-09-7 | 19 | K | 0.602 | 0.000 | 0.602 | 0.000 | 0.602 | 0.030 | 0.602 | 0.000 |
| 7440-70-2 | 20 | Ca | 20.428 | 0.000 | 20.428 | 0.000 | 20.428 | 1.021 | 20.428 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.163 | 0.000 | 0.163 | 0.000 | 0.163 | 0.008 | 0.163 | 0.000 |
| 7440-62-2 | 23 | V | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.001 | 0.011 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.004 | 0.070 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.502 | 0.000 | 1.502 | 0.000 | 1.502 | 0.075 | 1.502 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.001 | 0.014 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.003 | 0.060 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.052 | 0.000 | 0.052 | 0.000 | 0.052 | 0.003 | 0.052 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41312)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.123 | 0.000 | 0.123 | 0.000 | 0.123 | 0.006 | 0.123 | 0.000 |
| | 200 | TC | 3.942 | 0.000 | 3.942 | 0.000 | 3.942 | 0.197 | 3.942 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 206 | CO3 | 37.206 | 0.000 | 37.206 | 0.000 | 37.206 | 1.860 | 37.206 | 0.000 |
| TOTALS: | | | 75.525 | | 75.525 | | 75.525 | | 75.525 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Spokane, WA
Profile Number : 41313
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 27
Data Source : Resuspended and XRF analysis of fine fraction.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | 1.866 | 0.154 | 1.866 | 0.154 | 1.866 | 0.108 | 1.866 | 0.000 |
| 7429-90-5 | 13 | Al | 11.010 | 0.778 | 11.010 | 0.778 | 11.010 | 0.615 | 11.010 | 0.000 |
| 7440-21-3 | 14 | Si | 27.975 | 1.935 | 27.975 | 1.935 | 27.975 | 1.557 | 27.975 | 0.000 |
| 7723-14-0 | 15 | P | 0.299 | 0.031 | 0.299 | 0.031 | 0.299 | 0.019 | 0.299 | 0.000 |
| 7704-34-9 | 16 | S | 0.036 | 0.096 | 0.036 | 0.096 | 0.036 | 0.034 | 0.036 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.112 | 0.045 | 0.112 | 0.045 | 0.112 | 0.017 | 0.112 | 0.000 |
| 7440-09-7 | 19 | K | 1.545 | 0.127 | 1.545 | 0.127 | 1.545 | 0.089 | 1.545 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.795 | 0.070 | 0.795 | 0.070 | 0.795 | 0.047 | 0.795 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.442 | 0.040 | 0.442 | 0.040 | 0.442 | 0.026 | 0.442 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.009 | 0.025 | 0.009 | 0.025 | 0.003 | 0.025 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.240 | 0.022 | 0.240 | 0.022 | 0.240 | 0.014 | 0.240 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.280 | 0.375 | 5.280 | 0.375 | 5.280 | 0.295 | 5.280 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.008 | 0.010 | 0.008 | 0.010 | 0.003 | 0.010 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.180 | 0.007 | 0.180 | 0.007 | 0.180 | 0.009 | 0.180 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.027 | 0.007 | 0.027 | 0.007 | 0.027 | 0.003 | 0.027 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | 0.013 | 0.009 | 0.013 | 0.009 | 0.013 | 0.003 | 0.013 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | 0.053 | 0.064 | 0.053 | 0.064 | 0.053 | 0.023 | 0.053 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41313)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.106 | 0.025 | 0.106 | 0.025 | 0.106 | 0.010 | 0.106 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 50.014 | | 50.014 | | 50.014 | | 50.014 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Boise, Idaho
Profile Number : 41314
Data Quality : B/E

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Control Device : Not applicable
Reference(s) : 27
Data Source : Resuspended and XRF analysis of fine fraction.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | 0.904 | 0.068 | 0.904 | 0.000 | 0.904 | 0.048 | 0.904 | 0.000 |
| 7429-90-5 | 13 | Al | 8.160 | 0.460 | 8.160 | 0.000 | 8.160 | 0.424 | 8.160 | 0.000 |
| 7440-21-3 | 14 | Si | 30.273 | 1.660 | 30.273 | 0.000 | 30.273 | 1.570 | 30.273 | 0.000 |
| 7723-14-0 | 15 | P | 0.243 | 0.021 | 0.243 | 0.000 | 0.243 | 0.013 | 0.243 | 0.000 |
| 7704-34-9 | 16 | S | 0.524 | 0.080 | 0.524 | 0.000 | 0.524 | 0.033 | 0.524 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.083 | 0.030 | 0.083 | 0.000 | 0.083 | 0.009 | 0.083 | 0.000 |
| 7440-09-7 | 19 | K | 1.740 | 0.122 | 1.740 | 0.000 | 1.740 | 0.092 | 1.740 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.268 | 0.081 | 1.268 | 0.000 | 1.268 | 0.067 | 1.268 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.439 | 0.032 | 0.439 | 0.000 | 0.439 | 0.023 | 0.439 | 0.000 |
| 7440-62-2 | 23 | V | 0.033 | 0.007 | 0.033 | 0.000 | 0.033 | 0.002 | 0.033 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.097 | 0.009 | 0.097 | 0.000 | 0.097 | 0.005 | 0.097 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.406 | 0.199 | 3.406 | 0.000 | 3.406 | 0.177 | 3.406 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.007 | 0.004 | 0.007 | 0.000 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.081 | 0.009 | 0.081 | 0.000 | 0.081 | 0.005 | 0.081 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.035 | 0.007 | 0.035 | 0.000 | 0.035 | 0.002 | 0.035 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | 0.068 | 0.040 | 0.068 | 0.000 | 0.068 | 0.011 | 0.068 | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 41314)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.205 | 0.022 | 0.205 | 0.000 | 0.205 | 0.012 | 0.205 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 47.566 | | 47.566 | | 47.566 | | 47.566 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Bakersfield, CA
Profile Number : 41315
Data Quality : D/E

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Control Device : Not applicable
Reference(s) : 31
Data Source : Average values from 7 locations.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 0.800 | 0.000 | 0.800 | 0.000 | 0.800 | 0.040 | 0.800 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.600 | 0.000 | 0.600 | 0.000 | 0.600 | 0.030 | 0.600 | 0.000 |
| 7429-90-5 | 13 | Al | 4.700 | 0.000 | 4.700 | 0.000 | 4.700 | 0.235 | 4.700 | 0.000 |
| 7440-21-3 | 14 | Si | 14.000 | 0.000 | 14.000 | 0.000 | 14.000 | 0.700 | 14.000 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 0.500 | 0.000 | 0.500 | 0.000 | 0.500 | 0.025 | 0.500 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| 7440-09-7 | 19 | K | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.075 | 1.500 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.090 | 1.800 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| 7440-62-2 | 23 | V | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.200 | 0.000 | 3.200 | 0.000 | 3.200 | 0.160 | 3.200 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |

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PM Profile Speciation Report - continued (profile 41315)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.200 | 0.000 | 0.200 | 0.000 | 0.200 | 0.010 | 0.200 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 29.050 | | 29.050 | | 29.050 | | 29.050 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Pasedena, CA
Profile Number : 41316
Data Quality : D/E

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Control Device : Not applicable
Reference(s) : 30
Data Source : Unspecified analysis of soils.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | 2.500 | 0.000 | 2.500 | 0.000 | 2.500 | 0.125 | 2.500 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.400 | 0.000 | 1.400 | 0.000 | 1.400 | 0.070 | 1.400 | 0.000 |
| 7429-90-5 | 13 | Al | 8.200 | 0.000 | 8.200 | 0.000 | 8.200 | 0.410 | 8.200 | 0.000 |
| 7440-21-3 | 14 | Si | 20.000 | 0.000 | 20.000 | 0.000 | 20.000 | 1.000 | 20.000 | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7704-34-9 | 16 | S | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-50-5 | 17 | Cl | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-09-7 | 19 | K | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.075 | 1.500 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.075 | 1.500 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-32-6 | 22 | Ti | 0.400 | 0.000 | 0.400 | 0.000 | 0.400 | 0.020 | 0.400 | 0.000 |
| 7440-62-2 | 23 | V | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-47-3 | 24 | Cr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-96-5 | 25 | Mn | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.005 | 0.110 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.200 | 0.000 | 3.200 | 0.000 | 3.200 | 0.160 | 3.200 | 0.000 |
| 7440-48-4 | 27 | Co | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7726-95-6 | 35 | Br | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-22-4 | 47 | Ag | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-43-9 | 48 | Cd | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-31-5 | 50 | Sn | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-36-0 | 51 | Sb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-39-3 | 56 | Ba | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.003 | 0.060 | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |

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PM Profile Speciation Report - continued (profile 41316)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.001 | 0.020 | 0.000 |
| | 201 | OC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 202 | EC | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 38.910 | | 38.910 | | 38.910 | | 38.910 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Medford, OR
Profile Number : 41318
Data Quality : B/C

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Control Device : Not applicable
Reference(s) : 45
Data Source : Composite samples resuspended and samples using a 2-stage virtual impactor.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 1.500 | 0.500 | 1.700 | 0.400 | 1.650 | 0.179 | 1.650 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.900 | 0.600 | 1.500 | 0.300 | 1.600 | 0.188 | 1.600 | 0.000 |
| 7429-90-5 | 13 | Al | 9.500 | 0.100 | 8.900 | 0.200 | 9.050 | 0.464 | 9.050 | 0.000 |
| 7440-21-3 | 14 | Si | 26.600 | 1.400 | 2.700 | 1.400 | 8.675 | 1.067 | 8.675 | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.090 | 0.040 | 0.070 | 0.050 | 0.075 | 0.017 | 0.075 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.070 | 0.050 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 0.920 | 0.330 | 0.750 | 0.160 | 0.792 | 0.101 | 0.792 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.800 | 0.400 | 1.800 | 0.200 | 1.800 | 0.144 | 1.800 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 1.000 | 0.100 | 0.700 | 0.200 | 0.775 | 0.071 | 0.775 | 0.000 |
| 7440-62-2 | 23 | V | 0.024 | 0.000 | 0.033 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.160 | 0.070 | 0.180 | 0.050 | 0.175 | 0.023 | 0.175 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.300 | 0.600 | 5.500 | 0.800 | 5.450 | 0.368 | 5.450 | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.003 | 0.007 | 0.003 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.030 | 0.020 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.009 | 0.003 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41318)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.011 | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 4.400 | 1.700 | 3.700 | 0.700 | 3.875 | 0.503 | 3.875 | 0.000 |
| | 202 | EC | 0.600 | 0.400 | 0.700 | 0.700 | 0.675 | 0.204 | 0.675 | 0.000 |
| | 203 | SO4 | 0.100 | 0.040 | 0.060 | 0.060 | 0.070 | 0.018 | 0.070 | 0.000 |
| | 204 | NO3 | 0.100 | 0.040 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 54.145 | | 28.367 | | 34.767 | | 34.767 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Portland OR
Profile Number : 41319
Data Quality : A/C

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Control Device : Not applicable
Reference(s) : 46,54
Data Source : Composite of samples which were suspended and sampled with a 2-stagevirtual impactor with a Method 5 heated probe. No dilution air. Analysis by XRF, INNA, IC, and carbon oxidation.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.010 | 0.002 | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.690 | 0.380 | 1.300 | 0.500 | 1.147 | 0.165 | 1.147 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.760 | 0.620 | 1.200 | 0.310 | 1.340 | 0.189 | 1.340 | 0.000 |
| 7429-90-5 | 13 | Al | 11.700 | 2.200 | 7.200 | 1.700 | 8.325 | 0.848 | 8.325 | 0.000 |
| 7440-21-3 | 14 | Si | 25.400 | 3.400 | 29.700 | 1.500 | 28.625 | 1.665 | 28.625 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.070 | 0.030 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.010 | < | 0.010 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 1.000 | 0.280 | 2.200 | 0.240 | 1.900 | 0.126 | 1.900 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.930 | 0.370 | 1.400 | 0.670 | 1.282 | 0.200 | 1.282 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.760 | 0.240 | 0.820 | 0.150 | 0.805 | 0.081 | 0.805 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.006 | 0.017 | 0.006 | 0.019 | 0.002 | 0.019 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.030 | 0.008 | 0.010 | 0.006 | 0.015 | 0.003 | 0.015 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.200 | 0.090 | 0.085 | 0.028 | 0.114 | 0.025 | 0.114 | 0.000 |
| 7439-89-6 | 26 | Fe | 6.800 | 2.300 | 4.760 | 0.850 | 5.270 | 0.680 | 5.270 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.004 | 0.009 | 0.004 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.020 | 0.004 | 0.020 | 0.004 | 0.020 | 0.002 | 0.020 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.041 | 0.026 | 0.041 | 0.026 | 0.041 | 0.009 | 0.041 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.010 | < | 0.010 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41319)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.006 | 0.002 | 0.042 | 0.011 | 0.033 | 0.003 | 0.033 | 0.000 |
| | 201 | OC | 4.320 | 1.700 | 4.320 | 1.730 | 4.320 | 0.644 | 4.320 | 0.000 |
| | 202 | EC | 0.590 | 0.380 | 0.590 | 0.380 | 0.590 | 0.138 | 0.590 | 0.000 |
| | 203 | SO4 | NA | 0.050 | 0.004 | 0.001 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 1.000 | 0.009 | 0.005 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 54.342 | | 53.729 | | 53.846 | | 53.846 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Alabama
Profile Number : 41320
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 48
Data Source : Resuspended and sampled with a dichotomous sampler.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 1.500 | 0.500 | 1.700 | 0.400 | 1.650 | 0.179 | 1.650 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.900 | 0.600 | 1.500 | 0.300 | 1.600 | 0.188 | 1.600 | 0.000 |
| 7429-90-5 | 13 | Al | 9.500 | 0.100 | 8.900 | 0.200 | 9.050 | 0.464 | 9.050 | 0.000 |
| 7440-21-3 | 14 | Si | 26.600 | 1.400 | 27.000 | 1.400 | 26.900 | 1.429 | 26.900 | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.090 | 0.040 | 0.070 | 0.050 | 0.075 | 0.017 | 0.075 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.070 | 0.050 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 0.920 | 0.330 | 0.750 | 0.160 | 0.792 | 0.101 | 0.792 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.800 | 0.400 | 1.800 | 0.200 | 1.800 | 0.144 | 1.800 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 1.000 | 0.100 | 0.700 | 0.200 | 0.775 | 0.071 | 0.775 | 0.000 |
| 7440-62-2 | 23 | V | 0.024 | 0.000 | 0.033 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.160 | 0.070 | 0.180 | 0.050 | 0.175 | 0.023 | 0.175 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.300 | 0.600 | 5.500 | 0.800 | 5.450 | 0.368 | 5.450 | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.003 | 0.007 | 0.003 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.030 | 0.030 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.009 | 0.003 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 41320)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 0.011 | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 4.400 | 1.700 | 3.700 | 0.700 | 3.875 | 0.503 | 3.875 | 0.000 |
| | 202 | EC | 0.600 | 0.400 | 0.700 | 0.700 | 0.675 | 0.204 | 0.675 | 0.000 |
| | 203 | SO4 | 0.100 | 0.040 | 0.060 | 0.060 | 0.070 | 0.018 | 0.070 | 0.000 |
| | 204 | NO3 | 0.100 | 0.040 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 54.145 | | 52.667 | | 52.992 | | 52.992 | |

PM Profile Speciation Report

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Profile Name : Soil Dust - Laurel MD
Profile Number : 41321
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 64,85
Data Source : Sieved and resuspended; analyzed by PGAA and INAA.

SCC Assignments: 058

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.007 | 0.000 |
| 7440-23-5 | 11 | Na | 0.316 | 0.029 | 0.275 | 0.026 | 0.285 | 0.020 | 0.190 | 0.010 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 3.500 | 0.350 |
| 7429-90-5 | 13 | Al | 11.862 | 0.142 | 11.614 | 0.163 | 11.676 | 0.518 | 7.892 | 0.087 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 34.201 | 1.700 |
| 7782-50-5 | 17 | Cl | 0.608 | 0.045 | 0.541 | 0.018 | 0.558 | 0.030 | 0.019 | 0.001 |
| 7440-09-7 | 19 | K | 2.472 | 0.106 | 2.851 | 0.145 | 2.756 | 0.137 | 1.799 | 0.284 |
| 7440-22-2 | 21 | Sc | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.666 | 0.183 | 1.115 | 0.145 | 1.003 | 0.093 | 0.886 | 0.115 |
| 7440-62-2 | 23 | V | 0.022 | 0.002 | 0.023 | 0.002 | 0.023 | 0.002 | 0.009 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.006 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.103 | 0.005 | 0.101 | 0.005 | 0.101 | 0.006 | 0.067 | 0.002 |
| 7439-89-6 | 26 | Fe | 5.991 | 0.359 | 5.624 | 0.281 | 5.716 | 0.304 | 3.798 | 0.190 |
| 7440-48-4 | 27 | Co | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.009 | 0.001 | 0.013 | 0.003 | 0.012 | 0.002 | 0.011 | 0.001 |
| 7440-55-3 | 31 | Ga | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 |
| 7440-38-2 | 33 | As | 0.003 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.012 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.068 | 0.008 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.034 | 0.003 |
| 7439-91-0 | 57 | La | 0.007 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 | 0.005 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.009 | 0.001 | 0.009 | 0.001 | 0.009 | 0.001 | 0.007 | 0.000 |
| 7440-00-8 | 60 | Nd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 |
| 7440-19-9 | 62 | Sm | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-54-2 | 64 | Gd | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 |
| 7440-29-1 | 90 | Th | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 |
| TOTALS: | | | 22.082 | | 22.187 | | 22.160 | | 52.524 | |

(1) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Soil Dust - Washington,D.C. area
Profile Number : 41322
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 64,86
Data Source : Fifty-gram surface sample and one-kg subsurface sample collected at each of four sites. Analyzed by INAA and IPAA.

SCC Assignments: 058

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.026 |
| 7439-95-4 | 12 | Mg | 0.560 | 0.000 | 0.560 | 0.000 | 0.560 | 0.000 | 0.560 | 0.120 |
| 7429-90-5 | 13 | Al | 5.990 | 0.000 | 5.990 | 0.000 | 5.990 | 0.000 | 5.990 | 1.080 |
| 7440-21-3 | 14 | Si | 35.001 | 0.000 | 35.001 | 0.000 | 35.001 | 0.000 | 35.001 | 7.000 |
| 7440-70-2 | 20 | Ca | 0.490 | 0.000 | 0.490 | 0.000 | 0.490 | 0.000 | 0.490 | 0.150 |
| 7440-22-2 | 21 | Sc | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-62-2 | 23 | V | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.003 |
| 7440-47-3 | 24 | Cr | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.099 | 0.000 | 0.099 | 0.000 | 0.099 | 0.000 | 0.099 | 0.009 |
| 7439-89-6 | 26 | Fe | 3.780 | 0.000 | 3.780 | 0.000 | 3.780 | 0.000 | 3.780 | 0.600 |
| 7440-48-4 | 27 | Co | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.002 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.052 | 0.000 | 0.052 | 0.000 | 0.052 | 0.000 | 0.052 | 0.013 |
| 7439-91-0 | 57 | La | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 |
| 7440-45-1 | 58 | Ce | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.002 |
| 7440-19-9 | 62 | Sm | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-53-1 | 63 | Eu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-64-4 | 70 | Yb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-94-3 | 71 | Lu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-25-7 | 73 | Ta | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-29-1 | 90 | Th | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| TOTALS: | | | 46.340 | | 46.340 | | 46.340 | | 46.340 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Soil Dust - Riverside, CA
Profile Number : 41323
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 058

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 9.890 | 1.484 | 9.231 | 1.385 | 9.267 | 0.890 | 9.267 | 0.000 |
| 7440-21-3 | 14 | Si | 20.360 | 3.054 | 19.190 | 2.878 | 19.253 | 1.845 | 19.253 | 0.000 |
| 7723-14-0 | 15 | P | 0.212 | 0.043 | 0.175 | 0.035 | 0.177 | 0.022 | 0.177 | 0.000 |
| 7704-34-9 | 16 | S | 0.406 | 0.020 | 0.332 | 0.017 | 0.336 | 0.020 | 0.336 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.157 | 0.008 | 0.179 | 0.009 | 0.177 | 0.009 | 0.177 | 0.000 |
| 7440-09-7 | 19 | K | 1.981 | 0.099 | 2.227 | 0.111 | 2.213 | 0.109 | 2.213 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.831 | 0.142 | 2.900 | 0.145 | 2.897 | 0.148 | 2.897 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.529 | 0.027 | 0.556 | 0.029 | 0.554 | 0.029 | 0.554 | 0.000 |
| 7440-62-2 | 23 | V | 0.038 | 0.006 | 0.025 | 0.006 | 0.026 | 0.004 | 0.026 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.002 | 0.029 | 0.002 | 0.029 | 0.002 | 0.029 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.159 | 0.008 | 0.150 | 0.008 | 0.150 | 0.008 | 0.150 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.671 | 0.286 | 5.955 | 0.299 | 5.940 | 0.300 | 5.940 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.009 | 0.001 | 0.007 | 0.001 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.011 | 0.002 | 0.007 | 0.001 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.028 | 0.002 | 0.026 | 0.001 | 0.027 | 0.002 | 0.027 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.003 | 0.001 | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.003 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.003 | 0.000 | 0.003 | 0.001 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.007 | 0.002 | 0.016 | 0.001 | 0.016 | 0.001 | 0.016 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.012 | 0.002 | 0.028 | 0.002 | 0.027 | 0.002 | 0.027 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.006 | 0.001 | 0.006 | 0.001 | 0.006 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.011 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.007 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.007 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.012 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.014 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.017 | 0.000 | 0.003 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.038 | 0.000 | 0.007 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.071 | 0.050 | 0.013 | 0.048 | 0.019 | 0.048 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.128 | 0.000 | 0.022 | 0.000 | 0.034 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.013 | 0.004 | 0.030 | 0.002 | 0.029 | 0.002 | 0.029 | 0.000 |
| TOTALS: | | | 42.352 | | 41.122 | | 41.189 | | 41.189 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Soil Dust - Hawthorne, CA
Profile Number : 41324
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Surface dust sampled, aerosolized, and recollected with a Sierra dichotomous virtual impactor. Analyzed using XRF and flame ionization.

SCC Assignments: 058

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.020 | 0.040 | 0.080 |

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Total Particulate Matter -

| | | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Species | | | | | | | | | |
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 11.277 | 1.299 | 10.021 | 1.064 | 9.890 | 0.781 | 9.890 | 0.000 |
| 7440-21-3 | 14 | Si | 23.575 | 2.717 | 21.218 | 2.251 | 20.802 | 1.645 | 20.802 | 0.000 |
| 7723-14-0 | 15 | P | 0.033 | 0.005 | 0.012 | 0.012 | 0.011 | 0.006 | 0.011 | 0.000 |
| 7704-34-9 | 16 | S | 0.300 | 0.050 | 0.095 | 0.013 | 0.101 | 0.018 | 0.101 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.061 | 0.026 | 0.020 | 0.001 | 0.022 | 0.007 | 0.022 | 0.000 |
| 7440-09-7 | 19 | K | 1.470 | 0.084 | 1.683 | 0.060 | 1.622 | 0.077 | 1.622 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.278 | 0.092 | 1.319 | 0.047 | 1.275 | 0.065 | 1.275 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.541 | 0.038 | 0.581 | 0.031 | 0.558 | 0.030 | 0.558 | 0.000 |
| 7440-62-2 | 23 | V | 0.025 | 0.006 | 0.023 | 0.005 | 0.023 | 0.003 | 0.023 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.019 | 0.004 | 0.021 | 0.002 | 0.021 | 0.002 | 0.021 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.107 | 0.007 | 0.129 | 0.005 | 0.124 | 0.006 | 0.124 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.178 | 0.298 | 5.593 | 0.200 | 5.417 | 0.262 | 5.417 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.003 | 0.008 | 0.001 | 0.008 | 0.001 | 0.008 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.013 | 0.005 | 0.005 | 0.001 | 0.006 | 0.002 | 0.006 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.051 | 0.028 | 0.016 | 0.002 | 0.018 | 0.007 | 0.018 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.015 | 0.007 | 0.000 | 0.001 | 0.001 | 0.002 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.001 | 0.002 | 0.002 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.002 | 0.013 | 0.001 | 0.012 | 0.001 | 0.012 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.019 | 0.003 | 0.034 | 0.003 | 0.032 | 0.002 | 0.032 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.012 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.007 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.009 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.012 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.016 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.018 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.020 | 0.039 | 0.008 | 0.010 | 0.007 | 0.011 | 0.007 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.075 | 0.023 | 0.023 | 0.026 | 0.022 | 0.026 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.136 | 0.013 | 0.034 | 0.014 | 0.038 | 0.014 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.006 | 0.006 | 0.024 | 0.002 | 0.023 | 0.002 | 0.023 | 0.000 |
| TOTALS: | | | 43.997 | | 40.862 | | 40.015 | | 40.015 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Soil Dust - Composite
Profile Number : 41350
Data Quality : D

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Control Device : Not applicable
Reference(s) : 26,27,30,31,32,40,42,43,45,46,48,54
Data Source : Developed from profiles 41301, 41302, 41303, 41304, 41305, 41306, 41307, 41308, 41309, 41310, 41311, 41312, 41313, 41314, 41315, 41316, 41318, 41319, 41320, and 41401.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.299 | 0.195 | 0.495 | 0.176 | 0.446 | 0.069 | 0.237 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.716 | 0.334 | 0.593 | 0.159 | 0.624 | 0.098 | 0.126 | 0.000 |
| 7429-90-5 | 13 | Al | 6.289 | 0.898 | 5.547 | 0.818 | 5.732 | 0.424 | 3.204 | 0.680 |
| 7440-21-3 | 14 | Si | 17.014 | 2.261 | 16.860 | 1.576 | 16.898 | 1.092 | 11.143 | 1.389 |
| 7723-14-0 | 15 | P | 0.067 | 0.014 | 0.057 | 0.009 | 0.059 | 0.005 | 0.041 | 0.006 |
| 7704-34-9 | 16 | S | 0.525 | 0.494 | 0.293 | 0.036 | 0.351 | 0.126 | 0.307 | 0.023 |
| 7782-50-5 | 17 | Cl | 0.520 | 0.215 | 0.567 | 0.203 | 0.556 | 0.079 | 0.636 | 0.232 |
| 7440-09-7 | 19 | K | 0.728 | 1.083 | 0.997 | 0.099 | 0.930 | 0.275 | 0.689 | 0.047 |
| 7440-70-2 | 20 | Ca | 0.843 | 0.201 | 5.518 | 0.301 | 4.349 | 0.217 | 5.257 | 0.249 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.335 | 0.075 | 0.372 | 0.077 | 0.362 | 0.032 | 0.171 | 0.018 |
| 7440-62-2 | 23 | V | 0.014 | 0.007 | 0.016 | 0.003 | 0.015 | 0.002 | 0.012 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.011 | 0.016 | 0.014 | 0.002 | 0.013 | 0.004 | 0.013 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.096 | 0.037 | 0.105 | 0.018 | 0.103 | 0.011 | 0.056 | 0.003 |
| 7439-89-6 | 26 | Fe | 3.010 | 0.657 | 3.325 | 0.376 | 3.246 | 0.247 | 1.832 | 0.142 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.012 | 0.004 | 0.002 | 0.004 | 0.003 | 0.008 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.035 | 0.015 | 0.054 | 0.018 | 0.050 | 0.006 | 0.044 | 0.018 |
| 7440-66-6 | 30 | Zn | 0.039 | 0.025 | 0.046 | 0.013 | 0.045 | 0.007 | 0.042 | 0.011 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.016 | 0.024 | 0.002 | 0.002 | 0.005 | 0.006 | 0.007 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.005 | 0.003 | 0.012 | 0.002 | 0.010 | 0.001 | 0.014 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.002 | 0.005 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.003 | 0.007 | 0.000 | 0.000 | 0.001 | 0.002 | 0.003 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.008 | 0.024 | 0.003 | 0.015 | 0.004 | 0.007 | 0.003 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.012 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 41350)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 0.002 | 0.013 | 0.000 | 0.000 | 0.000 | 0.003 | 0.003 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.025 | 0.011 | 0.000 | 0.008 | 0.006 | 0.014 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.065 | 0.016 | 0.000 | 0.012 | 0.016 | 0.042 | 0.006 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.026 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.026 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.053 | 0.103 | 0.041 | 0.008 | 0.044 | 0.026 | 0.050 | 0.004 |
| | 200 | TC | 0.000 | 0.000 | 0.817 | 0.000 | 0.613 | 0.029 | 0.817 | 0.000 |
| | 201 | OC | 0.691 | 0.676 | 0.617 | 0.457 | 0.635 | 0.207 | 0.000 | 0.000 |
| | 202 | EC | 0.094 | 0.156 | 0.105 | 0.243 | 0.102 | 0.072 | 0.000 | 0.000 |
| | 203 | SO4 | 0.011 | 0.017 | 0.007 | 0.019 | 0.008 | 0.007 | 0.000 | 0.000 |
| | 204 | NO3 | 0.011 | 0.230 | 0.000 | 0.001 | 0.003 | 0.057 | 0.000 | 0.000 |
| | 206 | CO3 | 0.000 | 0.000 | 8.257 | 0.000 | 6.193 | 0.292 | 8.257 | 0.000 |
| TOTALS: | | | 31.441 | | 44.753 | | 41.423 | | 33.091 | |

PM Profile Speciation Report.

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Profile Name : Soil Dust - SCAB Composite
Profile Number : 41351
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Composite of surface dust samples collected to develop profile #41323 and #41324.

SCC Assignments: 058

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %Wt | unc | %Wt | unc | %Wt | unc | %Wt | unc |
| 7429-90-5 | 13 | Al | 10.583 | 1.011 | 9.626 | 0.873 | 9.683 | 0.673 | 9.683 | 0.000 |
| 7440-21-3 | 14 | Si | 21.968 | 2.095 | 20.204 | 1.827 | 20.310 | 1.403 | 20.310 | 0.000 |
| 7723-14-0 | 15 | P | 0.123 | 0.090 | 0.094 | 0.082 | 0.095 | 0.047 | 0.095 | 0.000 |
| 7704-34-9 | 16 | S | 0.353 | 0.053 | 0.213 | 0.118 | 0.221 | 0.062 | 0.221 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.109 | 0.048 | 0.099 | 0.079 | 0.100 | 0.042 | 0.100 | 0.000 |
| 7440-09-7 | 19 | K | 1.726 | 0.255 | 1.955 | 0.272 | 1.942 | 0.170 | 1.942 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.054 | 0.776 | 2.109 | 0.791 | 2.105 | 0.450 | 2.105 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.535 | 0.026 | 0.568 | 0.021 | 0.566 | 0.027 | 0.566 | 0.000 |
| 7440-62-2 | 23 | V | 0.031 | 0.006 | 0.024 | 0.004 | 0.025 | 0.003 | 0.025 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.021 | 0.002 | 0.025 | 0.004 | 0.025 | 0.002 | 0.025 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.133 | 0.026 | 0.139 | 0.010 | 0.139 | 0.011 | 0.139 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.424 | 0.247 | 5.774 | 0.181 | 5.755 | 0.264 | 5.755 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.008 | 0.002 | 0.008 | 0.001 | 0.008 | 0.001 | 0.008 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.012 | 0.003 | 0.006 | 0.001 | 0.006 | 0.001 | 0.006 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.040 | 0.014 | 0.021 | 0.005 | 0.022 | 0.005 | 0.022 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.002 | 0.001 | 0.000 | 0.002 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.012 | 0.004 | 0.000 | 0.001 | 0.001 | 0.001 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 | 0.003 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.004 | 0.003 | 0.015 | 0.002 | 0.014 | 0.001 | 0.014 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.015 | 0.003 | 0.031 | 0.003 | 0.030 | 0.002 | 0.030 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.003 | 0.003 | 0.003 | 0.002 | 0.003 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.006 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.008 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.011 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.012 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.010 | 0.027 | 0.004 | 0.006 | 0.005 | 0.007 | 0.005 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.052 | 0.037 | 0.014 | 0.035 | 0.015 | 0.035 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.094 | 0.006 | 0.020 | 0.006 | 0.026 | 0.006 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.009 | 0.004 | 0.027 | 0.003 | 0.026 | 0.002 | 0.026 | 0.000 |
| TOTALS: | | | 43.173 | | 40.991 | | 41.125 | | 41.125 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Marine Aerosol
Profile Number : 43101
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 46
Data Source : Estimate - Assumes a Cl:Na ratio of 1 and all constituents (except Cl) retain bulk sea water ratios.

SCC Assignments: 114

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.510 0.870

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 40.000 | 4.000 | 40.000 | 4.000 | 40.000 | 1.689 | 40.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 4.800 | 0.900 | 4.800 | 0.900 | 4.800 | 0.275 | 4.800 | 0.000 |
| 7429-90-5 | 13 | Al | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-21-3 | 14 | Si | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 3.300 | 1.300 | 3.300 | 1.300 | 3.300 | 0.337 | 3.300 | 0.000 |
| 7782-50-5 | 17 | Cl | 40.000 | 10.000 | 40.000 | 10.000 | 40.000 | 0.000 | 40.000 | 0.000 |
| 7440-09-7 | 19 | K | 1.400 | 0.200 | 1.400 | 0.200 | 1.400 | 0.069 | 1.400 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.400 | 0.200 | 1.400 | 0.200 | 1.400 | 0.069 | 1.400 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.200 | 0.050 | 0.200 | 0.050 | 0.200 | 0.014 | 0.200 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 43101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | 10.000 | 4.000 | 10.000 | 4.000 | 10.000 | 1.034 | 10.000 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 101.100 | | 101.100 | | 101.100 | | 101.100 | |

PM Profile Speciation Report

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Profile Name : Volcanic Ash
Profile Number : 43301
Data Quality : C/D

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Control Device : Not applicable
Reference(s) : 42
Data Source : Resuspended ash.

SCC Assignments: 115

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.485 0.390 0.553

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 3.400 | 0.100 | 3.400 | 0.100 | 3.400 | 0.609 | 3.400 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.800 | 0.020 | 0.800 | 0.020 | 0.800 | 0.143 | 0.800 | 0.000 |
| 7429-90-5 | 13 | Al | 8.600 | 0.200 | 8.600 | 0.200 | 8.600 | 1.529 | 8.600 | 0.000 |
| 7440-21-3 | 14 | Si | 32.000 | 1.000 | 32.000 | 1.000 | 32.000 | 5.041 | 32.000 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.060 | 0.020 | 0.060 | 0.020 | 0.060 | 0.027 | 0.060 | 0.000 |
| 7440-09-7 | 19 | K | 1.400 | 0.040 | 1.400 | 0.040 | 1.400 | 0.251 | 1.400 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.860 | 0.080 | 2.860 | 0.080 | 2.860 | 0.511 | 2.860 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 |
| 7440-62-2 | 23 | V | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 |
| 7439-89-6 | 26 | Fe | 2.490 | 0.070 | 2.490 | 0.070 | 2.490 | 0.445 | 2.490 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 |

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PM Profile Speciation Report - continued (profile 43301)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 52.080 | | 52.080 | | 52.080 | | 52.080 | |

PM Profile Speciation Report

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Profile Name : Limestone, Crustal
Profile Number : 43304
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,90
Data Source : Data taken from Reference 62. For details, consult Reference 90.

SCC Assignments: 115

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7439-95-4 | 12 | Mg | 4.700 | 0.000 | 4.700 | 0.000 | 4.700 | 0.000 | 4.700 | 0.470 |
| 7429-90-5 | 13 | Al | 0.420 | 0.000 | 0.420 | 0.000 | 0.420 | 0.000 | 0.420 | 0.042 |
| 7440-21-3 | 14 | Si | 2.400 | 0.000 | 2.400 | 0.000 | 2.400 | 0.000 | 2.400 | 0.240 |
| 7723-14-0 | 15 | P | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7704-34-9 | 16 | S | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.012 |
| 7782-50-5 | 17 | Cl | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.002 |
| 7440-09-7 | 19 | K | 0.270 | 0.000 | 0.270 | 0.000 | 0.270 | 0.000 | 0.270 | 0.027 |
| 7440-70-2 | 20 | Ca | 30.200 | 0.000 | 30.200 | 0.000 | 30.200 | 0.000 | 30.200 | 3.020 |
| 7440-32-6 | 22 | Ti | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.004 |
| 7440-62-2 | 23 | V | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.011 |
| 7439-89-6 | 26 | Fe | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 | 0.380 | 0.038 |
| 7440-02-0 | 28 | Ni | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.061 | 0.000 | 0.061 | 0.000 | 0.061 | 0.000 | 0.061 | 0.006 |
| 7440-39-3 | 56 | Ba | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| | 202 | EC | 11.400 | 0.000 | 11.400 | 0.000 | 11.400 | 0.000 | 11.400 | 1.140 |
| TOTALS: | | | 50.206 | | 50.206 | | 50.206 | | 50.206 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Shale, Crustal
Profile Number : 43305
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,90
Data Source : Data taken from Reference 62. For details, consult Reference 90.

SCC Assignments: 115

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.960 | 0.000 | 0.960 | 0.000 | 0.960 | 0.000 | 0.960 | 0.096 |
| 7439-95-4 | 12 | Mg | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.150 |
| 7429-90-5 | 13 | Al | 8.000 | 0.000 | 8.000 | 0.000 | 8.000 | 0.000 | 8.000 | 0.800 |
| 7440-21-3 | 14 | Si | 27.300 | 0.000 | 27.300 | 0.000 | 27.300 | 0.000 | 27.300 | 2.730 |
| 7723-14-0 | 15 | P | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.007 |
| 7704-34-9 | 16 | S | 0.240 | 0.000 | 0.240 | 0.000 | 0.240 | 0.000 | 0.240 | 0.024 |
| 7782-50-5 | 17 | Cl | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.002 |
| 7440-09-7 | 19 | K | 2.660 | 0.000 | 2.660 | 0.000 | 2.660 | 0.000 | 2.660 | 0.266 |
| 7440-70-2 | 20 | Ca | 2.210 | 0.000 | 2.210 | 0.000 | 2.210 | 0.000 | 2.210 | 0.221 |
| 7440-32-6 | 22 | Ti | 0.460 | 0.000 | 0.460 | 0.000 | 0.460 | 0.000 | 0.460 | 0.046 |
| 7440-62-2 | 23 | V | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.085 | 0.000 | 0.085 | 0.000 | 0.085 | 0.000 | 0.085 | 0.009 |
| 7439-89-6 | 26 | Fe | 4.720 | 0.000 | 4.720 | 0.000 | 4.720 | 0.000 | 4.720 | 0.472 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 |
| 7440-66-6 | 30 | Zn | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.003 |
| 7440-31-5 | 50 | Sn | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.058 | 0.000 | 0.058 | 0.000 | 0.058 | 0.000 | 0.058 | 0.006 |
| 7439-92-1 | 82 | Pb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| | 202 | EC | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.150 |
| TOTALS: | | | 49.872 | | 49.872 | | 49.872 | | 49.872 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Sandstone, Crustal
Profile Number : 43306
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,91
Data Source : Data taken from Reference 62. For details, consult Reference 91.

SCC Assignments: 115

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.334 | 0.000 | 0.334 | 0.000 | 0.334 | 0.000 | 0.334 | 0.067 |
| 7439-95-4 | 12 | Mg | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.140 |
| 7429-90-5 | 13 | Al | 2.523 | 0.000 | 2.523 | 0.000 | 2.523 | 0.000 | 2.523 | 0.505 |
| 7440-21-3 | 14 | Si | 36.580 | 0.000 | 36.580 | 0.000 | 36.580 | 0.000 | 36.580 | 7.316 |
| 7723-14-0 | 15 | P | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.007 |
| 7704-34-9 | 16 | S | 0.028 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 | 0.028 | 0.006 |
| 7440-09-7 | 19 | K | 1.087 | 0.000 | 1.087 | 0.000 | 1.087 | 0.000 | 1.087 | 0.218 |
| 7440-70-2 | 20 | Ca | 3.933 | 0.000 | 3.933 | 0.000 | 3.933 | 0.000 | 3.933 | 0.787 |
| 7440-32-6 | 22 | Ti | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 | 0.150 | 0.030 |
| 7439-89-6 | 26 | Fe | 0.981 | 0.000 | 0.981 | 0.000 | 0.981 | 0.000 | 0.981 | 0.196 |
| 7440-39-3 | 56 | Ba | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.009 |
| | 202 | EC | 1.373 | 0.000 | 1.373 | 0.000 | 1.373 | 0.000 | 1.373 | 0.275 |
| TOTALS: | | | 47.769 | | 47.769 | | 47.769 | | 47.769 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Sediment, Crustal
Profile Number : 43307
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,91
Data Source : Data taken from Reference 62. For details, consult Reference 91.

SCC Assignments: 115

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.839 | 0.000 | 0.839 | 0.000 | 0.839 | 0.000 | 0.839 | 0.168 |
| 7439-95-4 | 12 | Mg | 1.598 | 0.000 | 1.598 | 0.000 | 1.598 | 0.000 | 1.598 | 0.320 |
| 7429-90-5 | 13 | Al | 7.083 | 0.000 | 7.083 | 0.000 | 7.083 | 0.000 | 7.083 | 1.417 |
| 7440-21-3 | 14 | Si | 27.063 | 0.000 | 27.063 | 0.000 | 27.063 | 0.000 | 27.063 | 5.413 |
| 7723-14-0 | 15 | P | 0.057 | 0.000 | 0.057 | 0.000 | 0.057 | 0.000 | 0.057 | 0.011 |
| 7704-34-9 | 16 | S | 0.216 | 0.000 | 0.216 | 0.000 | 0.216 | 0.000 | 0.216 | 0.043 |
| 7440-09-7 | 19 | K | 2.374 | 0.000 | 2.374 | 0.000 | 2.374 | 0.000 | 2.374 | 0.475 |
| 7440-70-2 | 20 | Ca | 4.211 | 0.000 | 4.211 | 0.000 | 4.211 | 0.000 | 4.211 | 0.842 |
| 7440-32-6 | 22 | Ti | 0.341 | 0.000 | 0.341 | 0.000 | 0.341 | 0.000 | 0.341 | 0.068 |
| 7439-89-6 | 26 | Fe | 4.042 | 0.000 | 4.042 | 0.000 | 4.042 | 0.000 | 4.042 | 0.808 |
| | 202 | EC | 2.129 | 0.000 | 2.129 | 0.000 | 2.129 | 0.000 | 2.129 | 0.426 |
| TOTALS: | | | 49.953 | | 49.953 | | 49.953 | | 49.953 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Igneous Rock
Profile Number : 43308
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,91
Data Source : Data taken from Reference 62. For details, consult Reference 91.

SCC Assignments: 115

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 2.849 | 0.000 | 2.849 | 0.000 | 2.849 | 0.000 | 2.849 | 0.570 |
| 7439-95-4 | 12 | Mg | 2.105 | 0.000 | 2.105 | 0.000 | 2.105 | 0.000 | 2.105 | 0.421 |
| 7429-90-5 | 13 | Al | 8.115 | 0.000 | 8.115 | 0.000 | 8.115 | 0.000 | 8.115 | 1.623 |
| 7440-21-3 | 14 | Si | 27.618 | 0.000 | 27.618 | 0.000 | 27.618 | 0.000 | 27.618 | 5.524 |
| 7723-14-0 | 15 | P | 0.131 | 0.000 | 0.131 | 0.000 | 0.131 | 0.000 | 0.131 | 0.026 |
| 7440-09-7 | 19 | K | 2.598 | 0.000 | 2.598 | 0.000 | 2.598 | 0.000 | 2.598 | 0.520 |
| 7440-70-2 | 20 | Ca | 3.632 | 0.000 | 3.632 | 0.000 | 3.632 | 0.000 | 3.632 | 0.726 |
| 7440-32-6 | 22 | Ti | 0.629 | 0.000 | 0.629 | 0.000 | 0.629 | 0.000 | 0.629 | 0.126 |
| 7439-89-6 | 26 | Fe | 5.106 | 0.000 | 5.106 | 0.000 | 5.106 | 0.000 | 5.106 | 1.021 |
| 7440-39-3 | 56 | Ba | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.011 |
| | 202 | EC | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.006 |
| TOTALS: | | | 52.864 | | 52.864 | | 52.864 | | 52.864 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Earth's Crust
Profile Number : 43309
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,91
Data Source : Data taken from Reference 62. For details, consult Reference 91.

SCC Assignments: 115

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.020 0.040 0.080

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 2.360 | 0.000 | 2.360 | 0.000 | 2.360 | 0.000 | 2.360 | 0.708 |
| 7439-95-4 | 12 | Mg | 2.330 | 0.000 | 2.330 | 0.000 | 2.330 | 0.000 | 2.330 | 0.699 |
| 7429-90-5 | 13 | Al | 8.320 | 0.000 | 8.320 | 0.000 | 8.320 | 0.000 | 8.320 | 2.496 |
| 7440-21-3 | 14 | Si | 28.200 | 0.000 | 28.200 | 0.000 | 28.200 | 0.000 | 28.200 | 8.460 |
| 7723-14-0 | 15 | P | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.032 |
| 7704-34-9 | 16 | S | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.008 |
| 7782-50-5 | 17 | Cl | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.004 |
| 7440-09-7 | 19 | K | 2.090 | 0.000 | 2.090 | 0.000 | 2.090 | 0.000 | 2.090 | 0.627 |
| 7440-70-2 | 20 | Ca | 4.150 | 0.000 | 4.150 | 0.000 | 4.150 | 0.000 | 4.150 | 1.245 |
| 7440-32-6 | 22 | Ti | 0.570 | 0.000 | 0.570 | 0.000 | 0.570 | 0.000 | 0.570 | 0.171 |
| 7440-62-2 | 23 | V | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.004 |
| 7440-47-3 | 24 | Cr | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.003 |
| 7439-96-5 | 25 | Mn | 0.095 | 0.000 | 0.095 | 0.000 | 0.095 | 0.000 | 0.095 | 0.029 |
| 7439-89-6 | 26 | Fe | 5.630 | 0.000 | 5.630 | 0.000 | 5.630 | 0.000 | 5.630 | 1.689 |
| 7440-48-4 | 27 | Co | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 |
| 7440-02-0 | 28 | Ni | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.002 |
| 7440-50-8 | 29 | Cu | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.002 |
| 7440-55-3 | 31 | Ga | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.003 |
| 7440-24-6 | 38 | Sr | 0.038 | 0.000 | 0.038 | 0.000 | 0.038 | 0.000 | 0.038 | 0.011 |
| 7440-65-5 | 39 | Y | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.005 |
| 74400-30-1 | 41 | Nb | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.001 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.013 |
| 7439-91-0 | 57 | La | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 |

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PM Profile Speciation Report - continued (profile 43309)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um(1) %wt | 0-2.5 um(1) unc | 2.5-10 um(1) %wt | 2.5-10 um(1) unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.002 |
| 7440-00-8 | 60 | Nd | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-69-9 | 83 | Bi | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.006 |
| TOTALS: | | | 54.084 | | 54.084 | | 54.084 | | 54.084 | |

(1) Estimated / extrapolated.

## 3.16 WOOD COMBUSTION

Wood is burned in industrial/commercial boilers to obtain heat energy and to alleviate waste disposal problems in the pulp and paper industries. Residential wood burning is commonly used to supplement conventional heating systems. In the industrial sector, the burning of wood waste in boilers is mostly confined to those industries where wood is available as a byproduct. A variety of boiler configurations is used for burning wood waste. These include dutch oven configurations, spreader stokers, and tangentially-fired or cyclone-fired boilers. Residential woodstoves are usually radiating or circulatory designs constructed from cast iron, heavy gauge sheet metal, or stainless steel. Emissions from wood combustion are affected by furnace design and operating conditions, and fuel characteristics such as fuel composition, moisture content, and effective burning surface area.

PM Profile Speciation Report

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Profile Name : Wood Stoves - Pine Fuel
Profile Number : 42101
Data Quality : A/D

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Control Device : Uncontrolled
Reference(s) : 33
Data Source : Size-resolved samples(fine) taken using a dilution tunnel. XRF and carbon oxidation analysis. Profile based on emission weighted average of 6 samples.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.980 | 0.980 | 0.980 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7704-34-9 | 16 | S | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.020 | 0.100 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.100 | 0.000 | 0.100 | 0.000 | 0.100 | 0.020 | 0.100 | 0.000 |
| 7440-09-7 | 19 | K | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.200 | 1.000 | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 42101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| | 201 | OC | 38.700 | 0.000 | 38.700 | 0.000 | 38.700 | 7.740 | 38.700 | 0.000 |
| | 202 | EC | 4.500 | 0.000 | 4.500 | 0.000 | 4.500 | 0.900 | 4.500 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 44.400 | | 44.400 | | 44.400 | | 44.400 | |

PM Profile Speciation Report

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Profile Name : Wood Stoves - Average, All Fuels
Profile Number : 42102
Data Quality : A/D

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Control Device : Uncontrolled
Reference(s) : 33
Data Source : Size-resolved samples (fine) taken using a dilution tunnel. XRF and carbon oxidation analysis. Profile based on emission weighted average of 41 samples.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.980 | 0.980 | 0.980 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7704-34-9 | 16 | S | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.360 | 1.800 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.800 | 0.000 | 0.800 | 0.000 | 0.800 | 0.160 | 0.800 | 0.000 |
| 7440-09-7 | 19 | K | 8.000 | 0.000 | 8.000 | 0.000 | 8.000 | 1.600 | 8.000 | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 42102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| | 201 | OC | 35.900 | 0.000 | 35.900 | 0.000 | 35.900 | 7.180 | 35.900 | 0.000 |
| | 202 | EC | 6.400 | 0.000 | 6.400 | 0.000 | 6.400 | 1.280 | 6.400 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 52.900 | | 52.900 | | 52.900 | | 52.900 | |

PM Profile Speciation Report

---

Profile Name : Wood Stoves - Oak Fuel
Profile Number : 42103
Data Quality : A/D

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Control Device : Uncontrolled
Reference(s) : 33
Data Source : Size-resolved samples (fine) taken using a dilution tunnel. XRF and carbon oxidation analysis. Profile based on emission weighted average of 6 samples.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.980 | 0.980 | 0.980 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7704-34-9 | 16 | S | 1.600 | 0.000 | 1.600 | 0.000 | 1.600 | 0.320 | 1.600 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.360 | 1.800 | 0.000 |
| 7440-09-7 | 19 | K | 7.700 | 0.000 | 7.700 | 0.000 | 7.700 | 1.540 | 7.700 | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 42103)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| | 201 | OC | 29.200 | 0.000 | 29.200 | 0.000 | 29.200 | 5.840 | 29.200 | 0.000 |
| | 202 | EC | 7.200 | 0.000 | 7.200 | 0.000 | 7.200 | 1.440 | 7.200 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 47.500 | | 47.500 | | 47.500 | | 47.500 | |

PM Profile Speciation Report

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Profile Name : Fireplaces - Softwoods
Profile Number : 42201
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 34
Data Source : EC and OC analysis of 7 softwood and 14 hardwood tests using Method 5 train. Potassium values are an average of 3 tests burning pine and spruce.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.980 0.980 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-21-3 | 14 | Si | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7704-34-9 | 16 | S | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-50-5 | 17 | Cl | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-09-7 | 19 | K | 0.606 | 0.000 | 0.606 | 0.000 | 0.606 | 0.000 | 0.606 | 0.000 |
| 7440-70-2 | 20 | Ca | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-32-6 | 22 | Ti | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-62-2 | 23 | V | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-47-3 | 24 | Cr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-96-5 | 25 | Mn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-89-6 | 26 | Fe | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-02-0 | 28 | Ni | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-50-8 | 29 | Cu | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-66-6 | 30 | Zn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-56-4 | 32 | Ge | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-38-2 | 33 | As | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-49-2 | 34 | Se | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7726-95-6 | 35 | Br | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-24-6 | 38 | Sr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-43-9 | 48 | Cd | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-36-0 | 51 | Sb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-39-3 | 56 | Ba | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 42201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-97-6 | 80 | Hg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-92-1 | 82 | Pb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 201 | OC | 38.000 | 6.000 | 38.000 | 6.000 | 38.000 | 11.391 | 38.000 | 6.000 |
| | 202 | EC | 33.000 | 13.000 | 33.000 | 13.000 | 33.000 | 0.000 | 33.000 | 13.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 71.606 | | 71.606 | | 71.606 | | 71.606 | |

PM Profile Speciation Report

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Profile Name : Fireplaces - Hardwoods
Profile Number : 42202
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 34
Data Source : EC and OC analysis of 14 hardwood tests. Potassium values are an average of 3 red oak tests.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.980 | 0.980 | 0.980 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-21-3 | 14 | Si | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7704-34-9 | 16 | S | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-50-5 | 17 | Cl | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-09-7 | 19 | K | 1.030 | 0.000 | 1.030 | 0.000 | 1.030 | 0.000 | 1.030 | 0.000 |
| 7440-70-2 | 20 | Ca | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-32-6 | 22 | Ti | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-62-2 | 23 | V | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-47-3 | 24 | Cr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-96-5 | 25 | Mn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-89-6 | 26 | Fe | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-02-0 | 28 | Ni | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-50-8 | 29 | Cu | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-66-6 | 30 | Zn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-56-4 | 32 | Ge | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-38-2 | 33 | As | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-49-2 | 34 | Se | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7726-95-6 | 35 | Br | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-24-6 | 38 | Sr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-43-9 | 48 | Cd | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-36-0 | 51 | Sb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-39-3 | 56 | Ba | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-45-1 | 58 | Ce | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |

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PM Profile Speciation Report - continued (profile 42202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-92-1 | 82 | Pb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 201 | OC | 46.000 | 7.000 | 46.000 | 7.000 | 46.000 | 13.514 | 46.000 | 7.000 |
| | 202 | EC | 8.000 | 7.000 | 8.000 | 7.000 | 8.000 | 10.028 | 8.000 | 7.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 55.030 | | 55.030 | | 55.030 | | 55.030 | |

PM Profile Speciation Report

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Profile Name : Residential Wood Combustion - Composite
Profile Number : 42303
Data Quality : A/C

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Control Device : Uncontrolled
Reference(s) : 45
Data Source : Average of 16 samples from 8 sources: 45% fireplaces and 55% wood stoves.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.980 0.980 0.980

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.083 | 0.012 | 0.083 | 0.012 | 0.083 | 0.024 | 0.083 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.073 | 0.017 | 0.073 | 0.017 | 0.073 | 0.028 | 0.073 | 0.000 |
| 7429-90-5 | 13 | Al | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.182 | 0.019 | 0.182 | 0.019 | 0.182 | 0.045 | 0.182 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.509 | 0.031 | 0.509 | 0.031 | 0.509 | 0.111 | 0.509 | 0.000 |
| 7440-09-7 | 19 | K | 0.860 | 0.010 | 0.860 | 0.010 | 0.860 | 0.173 | 0.860 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.037 | 0.000 | 0.037 | 0.000 | 0.037 | 0.000 | 0.037 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 42303)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 47.500 | 13.800 | 47.500 | 13.800 | 47.500 | 0.000 | 47.500 | 0.000 |
| | 202 | EC | 12.800 | 8.400 | 12.800 | 8.400 | 12.800 | 12.152 | 12.800 | 0.000 |
| | 203 | SO4 | 0.289 | 0.021 | 0.289 | 0.021 | 0.289 | 0.065 | 0.289 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 62.421 | | 62.421 | | 62.421 | | 62.421 | |

PM Profile Speciation Report

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Profile Name : Slash Burning (Conifer-flaming phase)
Profile Number : 42305
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 20 meters above slash fire over three ten-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.900 | 0.960 | 0.990 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 2.734 | 3.664 | 2.734 | 0.000 | 2.734 | 0.000 | 2.734 | 0.000 |
| 7429-90-5 | 13 | Al | 0.120 | 0.083 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 |
| 7440-21-3 | 14 | Si | 0.091 | 0.064 | 0.091 | 0.000 | 0.091 | 0.000 | 0.091 | 0.000 |
| 7704-34-9 | 16 | S | 0.341 | 0.147 | 0.341 | 0.000 | 0.341 | 0.000 | 0.341 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.556 | 0.317 | 0.556 | 0.000 | 0.556 | 0.000 | 0.556 | 0.000 |
| 7440-09-7 | 19 | K | 1.419 | 0.809 | 1.419 | 0.000 | 1.419 | 0.000 | 1.419 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.182 | 0.231 | 0.182 | 0.000 | 0.182 | 0.000 | 0.182 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.218 | 0.220 | 0.218 | 0.000 | 0.218 | 0.000 | 0.218 | 0.000 |
| 7440-62-2 | 23 | V | 0.069 | 0.122 | 0.069 | 0.000 | 0.069 | 0.000 | 0.069 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.113 | 0.194 | 0.113 | 0.000 | 0.113 | 0.000 | 0.113 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.038 | 0.033 | 0.038 | 0.000 | 0.038 | 0.000 | 0.038 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.057 | 0.102 | 0.057 | 0.000 | 0.057 | 0.000 | 0.057 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.009 | 0.006 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.009 | 0.006 | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.118 | 0.094 | 0.118 | 0.000 | 0.118 | 0.000 | 0.118 | 0.000 |
| 7726-95-6 | 35 | Br | 0.048 | 0.021 | 0.048 | 0.000 | 0.048 | 0.000 | 0.048 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.154 | 0.097 | 0.154 | 0.000 | 0.154 | 0.000 | 0.154 | 0.000 |
| | 201 | OC | 36.400 | 11.284 | 36.400 | 0.000 | 36.400 | 0.000 | 36.400 | 0.000 |
| | 202 | EC | 18.600 | 12.462 | 18.600 | 0.000 | 18.600 | 0.000 | 18.600 | 0.000 |
| TOTALS: | | | 61.276 | | 61.276 | | 61.276 | | 61.276 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Conifer-smoldering phase)
Profile Number : 42306
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 10 meters above slash fire over three 180-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.900 | 0.960 | 0.990 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.732 | 0.483 | 0.732 | 0.000 | 0.732 | 0.000 | 0.732 | 0.000 |
| 7429-90-5 | 13 | Al | 0.101 | 0.097 | 0.101 | 0.000 | 0.101 | 0.000 | 0.101 | 0.000 |
| 7440-21-3 | 14 | Si | 0.167 | 0.197 | 0.167 | 0.000 | 0.167 | 0.000 | 0.167 | 0.000 |
| 7704-34-9 | 16 | S | 0.114 | 0.066 | 0.114 | 0.000 | 0.114 | 0.000 | 0.114 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.118 | 0.063 | 0.118 | 0.000 | 0.118 | 0.000 | 0.118 | 0.000 |
| 7440-09-7 | 19 | K | 0.126 | 0.063 | 0.126 | 0.000 | 0.126 | 0.000 | 0.126 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.127 | 0.103 | 0.127 | 0.000 | 0.127 | 0.000 | 0.127 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.124 | 0.089 | 0.124 | 0.000 | 0.124 | 0.000 | 0.124 | 0.000 |
| 7440-62-2 | 23 | V | 0.031 | 0.025 | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.024 | 0.016 | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.020 | 0.017 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.061 | 0.040 | 0.061 | 0.000 | 0.061 | 0.000 | 0.061 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.006 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.010 | 0.006 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.016 | 0.010 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 |
| 7726-95-6 | 35 | Br | 0.025 | 0.013 | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.078 | 0.055 | 0.078 | 0.000 | 0.078 | 0.000 | 0.078 | 0.000 |
| | 201 | OC | 51.900 | 8.304 | 51.900 | 0.000 | 51.900 | 0.000 | 51.900 | 0.000 |
| | 202 | EC | 3.400 | 0.782 | 3.400 | 0.000 | 3.400 | 0.000 | 3.400 | 0.000 |
| TOTALS: | | | 57.184 | | 57.184 | | 57.184 | | 57.184 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Hardwood-flaming phase)
Profile Number : 42307
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 20 meters above slash fire over three 10-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.280 | 0.434 | 0.280 | 0.000 | 0.280 | 0.000 | 0.280 | 0.000 |
| 7440-21-3 | 14 | Si | 0.427 | 0.521 | 0.427 | 0.000 | 0.427 | 0.000 | 0.427 | 0.000 |
| 7723-14-0 | 15 | P | 0.237 | 0.254 | 0.237 | 0.000 | 0.237 | 0.000 | 0.237 | 0.000 |
| 7704-34-9 | 16 | S | 1.118 | 1.219 | 1.118 | 0.000 | 1.118 | 0.000 | 1.118 | 0.000 |
| 7782-50-5 | 17 | Cl | 2.703 | 3.163 | 2.703 | 0.000 | 2.703 | 0.000 | 2.703 | 0.000 |
| 7440-09-7 | 19 | K | 5.014 | 6.217 | 5.014 | 0.000 | 5.014 | 0.000 | 5.014 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.181 | 0.398 | 0.181 | 0.000 | 0.181 | 0.000 | 0.181 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.019 | 0.029 | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.000 |
| 7440-62-2 | 23 | V | 0.006 | 0.009 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.018 | 0.043 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.023 | 0.030 | 0.023 | 0.000 | 0.023 | 0.000 | 0.023 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.107 | 0.227 | 0.107 | 0.000 | 0.107 | 0.000 | 0.107 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.024 | 0.054 | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.021 | 0.037 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.154 | 0.186 | 0.154 | 0.000 | 0.154 | 0.000 | 0.154 | 0.000 |
| 7726-95-6 | 35 | Br | 0.124 | 0.104 | 0.124 | 0.000 | 0.124 | 0.000 | 0.124 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.077 | 0.156 | 0.077 | 0.000 | 0.077 | 0.000 | 0.077 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.169 | 0.397 | 0.169 | 0.000 | 0.169 | 0.000 | 0.169 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.086 | 0.169 | 0.086 | 0.000 | 0.086 | 0.000 | 0.086 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.211 | 0.371 | 0.211 | 0.000 | 0.211 | 0.000 | 0.211 | 0.000 |
| | 201 | OC | 60.300 | 1.809 | 60.300 | 0.000 | 60.300 | 0.000 | 60.300 | 0.000 |
| | 202 | EC | 8.300 | 4.731 | 8.300 | 0.000 | 8.300 | 0.000 | 8.300 | 0.000 |
| TOTALS: | | | 79.599 | | 79.599 | | 79.599 | | 79.599 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Hardwood-smoldering phase)
Profile Number : 42308
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 10 meters above slash fire over three 180-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.181 | 0.161 | 0.181 | 0.000 | 0.181 | 0.000 | 0.181 | 0.000 |
| 7440-21-3 | 14 | Si | 0.336 | 0.407 | 0.336 | 0.000 | 0.336 | 0.000 | 0.336 | 0.000 |
| 7723-14-0 | 15 | P | 0.093 | 0.079 | 0.093 | 0.000 | 0.093 | 0.000 | 0.093 | 0.000 |
| 7704-34-9 | 16 | S | 0.503 | 0.483 | 0.503 | 0.000 | 0.503 | 0.000 | 0.503 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.468 | 0.225 | 0.468 | 0.000 | 0.468 | 0.000 | 0.468 | 0.000 |
| 7440-09-7 | 19 | K | 0.577 | 0.565 | 0.577 | 0.000 | 0.577 | 0.000 | 0.577 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.183 | 0.344 | 0.183 | 0.000 | 0.183 | 0.000 | 0.183 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.013 | 0.013 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-62-2 | 23 | V | 0.004 | 0.006 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.003 | 0.004 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.011 | 0.013 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.062 | 0.087 | 0.062 | 0.000 | 0.062 | 0.000 | 0.062 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.003 | 0.004 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.014 | 0.018 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7726-95-6 | 35 | Br | 0.019 | 0.010 | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.030 | 0.034 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.066 | 0.115 | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.043 | 0.066 | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.031 | 0.041 | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 |
| | 201 | OC | 61.700 | 2.468 | 61.700 | 0.000 | 61.700 | 0.000 | 61.700 | 0.000 |
| | 202 | EC | 2.700 | 0.999 | 2.700 | 0.000 | 2.700 | 0.000 | 2.700 | 0.000 |
| TOTALS: | | | 67.041 | | 67.041 | | 67.041 | | 67.041 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Ponderosa Pine-flaming phase)
Profile Number : 42309
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 20 meters above slash fire over three 10-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.081 | 0.038 | 0.081 | 0.000 | 0.081 | 0.000 | 0.081 | 0.000 |
| 7440-21-3 | 14 | Si | 0.152 | 0.082 | 0.152 | 0.000 | 0.152 | 0.000 | 0.152 | 0.000 |
| 7723-14-0 | 15 | P | 0.088 | 0.034 | 0.088 | 0.000 | 0.088 | 0.000 | 0.088 | 0.000 |
| 7704-34-9 | 16 | S | 0.556 | 0.295 | 0.556 | 0.000 | 0.556 | 0.000 | 0.556 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.554 | 0.332 | 0.554 | 0.000 | 0.554 | 0.000 | 0.554 | 0.000 |
| 7440-09-7 | 19 | K | 2.103 | 1.157 | 2.103 | 0.000 | 2.103 | 0.000 | 2.103 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.112 | 0.052 | 0.112 | 0.000 | 0.112 | 0.000 | 0.112 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.010 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-62-2 | 23 | V | 0.003 | 0.003 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.003 | 0.005 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.016 | 0.007 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.010 | 0.008 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.005 | 0.005 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.115 | 0.069 | 0.115 | 0.000 | 0.115 | 0.000 | 0.115 | 0.000 |
| 7726-95-6 | 35 | Br | 0.033 | 0.025 | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.028 | 0.018 | 0.028 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.045 | 0.048 | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.013 | 0.015 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.068 | 0.068 | 0.068 | 0.000 | 0.068 | 0.000 | 0.068 | 0.000 |
| | 201 | OC | 55.100 | 3.857 | 55.100 | 0.000 | 55.100 | 0.000 | 55.100 | 0.000 |
| | 202 | EC | 10.900 | 5.559 | 10.900 | 0.000 | 10.900 | 0.000 | 10.900 | 0.000 |
| TOTALS: | | | 69.995 | | 69.995 | | 69.995 | | 69.995 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Ponderosa Pine-smoldering phase)
Profile Number : 42310
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 10 meters above slash fire over three 180-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.105 | 0.069 | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.000 |
| 7440-21-3 | 14 | Si | 0.148 | 0.170 | 0.148 | 0.000 | 0.148 | 0.000 | 0.148 | 0.000 |
| 7723-14-0 | 15 | P | 0.048 | 0.023 | 0.048 | 0.000 | 0.048 | 0.000 | 0.048 | 0.000 |
| 7704-34-9 | 16 | S | 0.162 | 0.110 | 0.162 | 0.000 | 0.162 | 0.000 | 0.162 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.226 | 0.167 | 0.226 | 0.000 | 0.226 | 0.000 | 0.226 | 0.000 |
| 7440-09-7 | 19 | K | 0.501 | 0.396 | 0.501 | 0.000 | 0.501 | 0.000 | 0.501 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.073 | 0.094 | 0.073 | 0.000 | 0.073 | 0.000 | 0.073 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.005 | 0.008 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-62-2 | 23 | V | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.008 | 0.008 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.057 | 0.094 | 0.057 | 0.000 | 0.057 | 0.000 | 0.057 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.002 | 0.001 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.025 | 0.019 | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.000 |
| 7726-95-6 | 35 | Br | 0.008 | 0.005 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.018 | 0.013 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.014 | 0.010 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.018 | 0.014 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.019 | 0.013 | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.000 |
| | 201 | OC | 61.000 | 3.050 | 61.000 | 0.000 | 61.000 | 0.000 | 61.000 | 0.000 |
| | 202 | EC | 4.100 | 1.107 | 4.100 | 0.000 | 4.100 | 0.000 | 4.100 | 0.000 |
| TOTALS: | | | 66.539 | | 66.539 | | 66.539 | | 66.539 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Tractor-piled;flaming phase)
Profile Number : 42311
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 20 meters above slash fire over three 10-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.181 | 0.083 | 0.181 | 0.000 | 0.181 | 0.000 | 0.181 | 0.000 |
| 7440-21-3 | 14 | Si | 0.348 | 0.115 | 0.348 | 0.000 | 0.348 | 0.000 | 0.348 | 0.000 |
| 7723-14-0 | 15 | P | 0.128 | 0.040 | 0.128 | 0.000 | 0.128 | 0.000 | 0.128 | 0.000 |
| 7704-34-9 | 16 | S | 0.950 | 0.504 | 0.950 | 0.000 | 0.950 | 0.000 | 0.950 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.921 | 0.341 | 0.921 | 0.000 | 0.921 | 0.000 | 0.921 | 0.000 |
| 7440-09-7 | 19 | K | 3.895 | 2.298 | 3.895 | 0.000 | 3.895 | 0.000 | 3.895 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.619 | 0.142 | 0.619 | 0.000 | 0.619 | 0.000 | 0.619 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.018 | 0.017 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 |
| 7440-62-2 | 23 | V | 0.007 | 0.006 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.045 | 0.030 | 0.045 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.030 | 0.020 | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.011 | 0.013 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.007 | 0.009 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.389 | 0.222 | 0.389 | 0.000 | 0.389 | 0.000 | 0.389 | 0.000 |
| 7726-95-6 | 35 | Br | 0.146 | 0.105 | 0.146 | 0.000 | 0.146 | 0.000 | 0.146 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.172 | 0.127 | 0.172 | 0.000 | 0.172 | 0.000 | 0.172 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.066 | 0.104 | 0.066 | 0.000 | 0.066 | 0.000 | 0.066 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.196 | 0.182 | 0.196 | 0.000 | 0.196 | 0.000 | 0.196 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.234 | 0.201 | 0.234 | 0.000 | 0.234 | 0.000 | 0.234 | 0.000 |
| | 201 | OC | 49.000 | 5.390 | 49.000 | 0.000 | 49.000 | 0.000 | 49.000 | 0.000 |
| | 202 | EC | 8.200 | 3.690 | 8.200 | 0.000 | 8.200 | 0.000 | 8.200 | 0.000 |
| TOTALS: | | | 65.563 | | 65.563 | | 65.563 | | 65.563 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Tractor-piled;smoldering phase)
Profile Number : 42312
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 10 meters above slash fire over three 180-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.056 | 0.007 | 0.056 | 0.000 | 0.056 | 0.000 | 0.056 | 0.000 |
| 7440-21-3 | 14 | Si | 0.052 | 0.024 | 0.052 | 0.000 | 0.052 | 0.000 | 0.052 | 0.000 |
| 7723-14-0 | 15 | P | 0.039 | 0.007 | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 |
| 7704-34-9 | 16 | S | 0.228 | 0.043 | 0.228 | 0.000 | 0.228 | 0.000 | 0.228 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.227 | 0.018 | 0.227 | 0.000 | 0.227 | 0.000 | 0.227 | 0.000 |
| 7440-09-7 | 19 | K | 0.606 | 0.188 | 0.606 | 0.000 | 0.606 | 0.000 | 0.606 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.071 | 0.011 | 0.071 | 0.000 | 0.071 | 0.000 | 0.071 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-62-2 | 23 | V | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.005 | 0.003 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.003 | 0.005 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.027 | 0.045 | 0.027 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.012 | 0.005 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 |
| 7726-95-6 | 35 | Br | 0.012 | 0.003 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.008 | 0.010 | 0.008 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.015 | 0.022 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.010 | 0.004 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| | 201 | OC | 53.100 | 2.124 | 53.100 | 0.000 | 53.100 | 0.000 | 53.100 | 0.000 |
| | 202 | EC | 2.900 | 1.421 | 2.900 | 0.000 | 2.900 | 0.000 | 2.900 | 0.000 |
| TOTALS: | | | 57.374 | | 57.374 | | 57.374 | | 57.374 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Crane-piled;flaming phase)
Profile Number : 42313
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 20 meters above slash fire over three 10-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.025 | 0.009 | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.000 |
| 7440-21-3 | 14 | Si | 0.016 | 0.032 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 |
| 7723-14-0 | 15 | P | 0.011 | 0.004 | 0.011 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 |
| 7704-34-9 | 16 | S | 0.229 | 0.034 | 0.229 | 0.000 | 0.229 | 0.000 | 0.229 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.196 | 0.025 | 0.196 | 0.000 | 0.196 | 0.000 | 0.196 | 0.000 |
| 7440-09-7 | 19 | K | 1.195 | 0.215 | 1.195 | 0.000 | 1.195 | 0.000 | 1.195 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.074 | 0.019 | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-62-2 | 23 | V | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.019 | 0.005 | 0.019 | 0.000 | 0.019 | 0.000 | 0.019 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.006 | 0.004 | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.054 | 0.020 | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.000 |
| 7726-95-6 | 35 | Br | 0.004 | 0.003 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.005 | 0.004 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.001 | 0.002 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.005 | 0.010 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.007 | 0.008 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| | 201 | OC | 59.800 | 4.186 | 59.800 | 0.000 | 59.800 | 0.000 | 59.800 | 0.000 |
| | 202 | EC | 2.300 | 0.345 | 2.300 | 0.000 | 2.300 | 0.000 | 2.300 | 0.000 |
| TOTALS: | | | 63.950 | | 63.950 | | 63.950 | | 63.950 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Crane-piled;smoldering phase)
Profile Number : 42314
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 10 meters above slash fire over three 180-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.013 | 0.008 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-21-3 | 14 | Si | 0.013 | 0.012 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7723-14-0 | 15 | P | 0.007 | 0.004 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7704-34-9 | 16 | S | 0.125 | 0.051 | 0.125 | 0.000 | 0.125 | 0.000 | 0.125 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.107 | 0.046 | 0.107 | 0.000 | 0.107 | 0.000 | 0.107 | 0.000 |
| 7440-09-7 | 19 | K | 0.818 | 0.335 | 0.818 | 0.000 | 0.818 | 0.000 | 0.818 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.077 | 0.018 | 0.077 | 0.000 | 0.077 | 0.000 | 0.077 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.002 | 0.001 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.018 | 0.006 | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.007 | 0.002 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.012 | 0.004 | 0.012 | 0.000 | 0.012 | 0.000 | 0.012 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.004 | 0.005 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.004 | 0.003 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.003 | 0.002 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| | 201 | OC | 60.400 | 2.416 | 60.400 | 0.000 | 60.400 | 0.000 | 60.400 | 0.000 |
| | 202 | EC | 1.100 | 0.363 | 1.100 | 0.000 | 1.100 | 0.000 | 1.100 | 0.000 |
| TOTALS: | | | 62.714 | | 62.714 | | 62.714 | | 62.714 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Slash Burning (Chaparral;flaming phase)
Profile Number : 42315
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 20 meters above slash fire over three 10-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.261 | 0.227 | 0.261 | 0.000 | 0.261 | 0.000 | 0.261 | 0.000 |
| 7440-21-3 | 14 | Si | 0.699 | 0.377 | 0.699 | 0.000 | 0.699 | 0.000 | 0.699 | 0.000 |
| 7723-14-0 | 15 | P | 0.209 | 0.056 | 0.209 | 0.000 | 0.209 | 0.000 | 0.209 | 0.000 |
| 7704-34-9 | 16 | S | 2.297 | 0.850 | 2.297 | 0.000 | 2.297 | 0.000 | 2.297 | 0.000 |
| 7782-50-5 | 17 | Cl | 4.323 | 1.686 | 4.323 | 0.000 | 4.323 | 0.000 | 4.323 | 0.000 |
| 7440-09-7 | 19 | K | 9.896 | 3.563 | 9.896 | 0.000 | 9.896 | 0.000 | 9.896 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.581 | 0.308 | 0.581 | 0.000 | 0.581 | 0.000 | 0.581 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.015 | 0.013 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7440-62-2 | 23 | V | 0.004 | 0.005 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.010 | 0.006 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.121 | 0.071 | 0.121 | 0.000 | 0.121 | 0.000 | 0.121 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.002 | 0.001 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.003 | 0.001 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.181 | 0.056 | 0.181 | 0.000 | 0.181 | 0.000 | 0.181 | 0.000 |
| 7726-95-6 | 35 | Br | 0.110 | 0.057 | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.097 | 0.082 | 0.097 | 0.000 | 0.097 | 0.000 | 0.097 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.055 | 0.043 | 0.055 | 0.000 | 0.055 | 0.000 | 0.055 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.031 | 0.024 | 0.031 | 0.000 | 0.031 | 0.000 | 0.031 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.425 | 0.157 | 0.425 | 0.000 | 0.425 | 0.000 | 0.425 | 0.000 |
| | 201 | OC | 48.000 | 3.360 | 48.000 | 0.000 | 48.000 | 0.000 | 48.000 | 0.000 |
| | 202 | EC | 9.200 | 4.784 | 9.200 | 0.000 | 9.200 | 0.000 | 9.200 | 0.000 |
| TOTALS: | | | 76.520 | | 76.520 | | 76.520 | | 76.520 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Slash Burning (Chaparral;smoldering phase)
Profile Number : 42316
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 87
Data Source : Samples collected 10 meters above slash fire over three 180-minute periods. Analyzed by gas chromatography.

SCC Assignments: 062, 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.077 | 0.000 | 0.077 | 0.000 | 0.077 | 0.000 | 0.077 | 0.000 |
| 7440-21-3 | 14 | Si | 0.238 | 0.000 | 0.238 | 0.000 | 0.238 | 0.000 | 0.238 | 0.000 |
| 7723-14-0 | 15 | P | 0.096 | 0.000 | 0.096 | 0.000 | 0.096 | 0.000 | 0.096 | 0.000 |
| 7704-34-9 | 16 | S | 0.838 | 0.000 | 0.838 | 0.000 | 0.838 | 0.000 | 0.838 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.549 | 0.000 | 1.549 | 0.000 | 1.549 | 0.000 | 1.549 | 0.000 |
| 7440-09-7 | 19 | K | 3.988 | 0.000 | 3.988 | 0.000 | 3.988 | 0.000 | 3.988 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.268 | 0.000 | 0.268 | 0.000 | 0.268 | 0.000 | 0.268 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 |
| 7440-62-2 | 23 | V | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 | 0.040 | 0.000 |
| 7726-95-6 | 35 | Br | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 | 0.026 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.082 | 0.000 | 0.082 | 0.000 | 0.082 | 0.000 | 0.082 | 0.000 |
| | 201 | OC | 63.900 | 0.000 | 63.900 | 0.000 | 63.900 | 0.000 | 63.900 | 0.000 |
| | 202 | EC | 7.800 | 0.000 | 7.800 | 0.000 | 7.800 | 0.000 | 7.800 | 0.000 |
| TOTALS: | | | 78.999 | | 78.999 | | 78.999 | | 78.999 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Wood Combustion - Las Vegas Valley (1987)
Profile Number : 42317
Data Quality : C

---

Control Device : Not Applicable
Reference(s) : 81,88
Data Source : Samples collected with two dichotomous samplers. Analyzed using sequential thermal oxidation and XRF.

SCC Assignments: 006

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 1.000 1.000 1.000

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.300 | 0.030 | 0.000 | 0.000 | 0.300 | 0.000 | 0.300 | 0.000 |
| 7440-21-3 | 14 | Si | 0.800 | 0.080 | 0.000 | 0.000 | 0.800 | 0.000 | 0.800 | 0.000 |
| 7704-34-9 | 16 | S | 1.010 | 0.100 | 0.000 | 0.000 | 1.010 | 0.000 | 1.010 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.250 | 0.025 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 |
| 7440-09-7 | 19 | K | 0.870 | 0.100 | 0.000 | 0.000 | 0.870 | 0.000 | 0.870 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.250 | 0.025 | 0.000 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 |
| | 200 | TC | 61.000 | 10.000 | 0.000 | 0.000 | 61.000 | 0.000 | 61.000 | 0.000 |
| TOTALS: | | | 64.480 | | 0.000 | | 64.480 | | 64.480 | |

(1) Only data in the 0 - 2.5 um range were measured.

PM Profile Speciation Report

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Profile Name : Residential Wood Combustion
Profile Number : 42318
Data Quality : C

---

Control Device : Uncontrolled
Reference(s) : 62,89
Data Source : Data taken from Reference 62. For details, consult Reference 89.

SCC Assignments: 006

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 1.000 1.000 1.000

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.083 | 0.012 | 0.000 | 0.000 | 0.083 | 0.017 | 0.083 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.073 | 0.017 | 0.000 | 0.000 | 0.073 | 0.020 | 0.073 | 0.000 |
| 7429-90-5 | 13 | Al | 0.021 | 0.010 | 0.000 | 0.000 | 0.021 | 0.010 | 0.021 | 0.000 |
| 7704-34-9 | 16 | S | 0.182 | 0.019 | 0.000 | 0.000 | 0.182 | 0.032 | 0.182 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.509 | 0.031 | 0.000 | 0.000 | 0.509 | 0.078 | 0.509 | 0.000 |
| 7440-09-7 | 19 | K | 0.860 | 0.096 | 0.000 | 0.000 | 0.860 | 0.155 | 0.860 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.067 | 0.006 | 0.000 | 0.000 | 0.067 | 0.011 | 0.067 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.037 | 0.002 | 0.000 | 0.000 | 0.037 | 0.006 | 0.037 | 0.000 |
| | 201 | OC | 47.500 | 13.800 | 0.000 | 0.000 | 47.500 | 15.348 | 47.500 | 0.000 |
| | 202 | EC | 12.800 | 8.400 | 0.000 | 0.000 | 12.800 | 8.593 | 12.800 | 0.000 |
| | 203 | SO4 | 0.289 | 0.021 | 0.000 | 0.000 | 0.289 | 0.046 | 0.289 | 0.000 |
| TOTALS: | | | 62.421 | | 0.000 | | 62.421 | | 62.421 | |

(1) Only data in the 0 - 2.5 um range were measured.

PM Profile Speciation Report

---

Profile Name : Residential Wood Combustion Composite
Profile Number : 42319
Data Quality : C

---

Control Device : Uncontrolled
Reference(s) :
Data Source : Profile represents a composite of Profiles 42317 and 42318
for the elements AL, S, CL, and K.

SCC Assignments: 006

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 1.000 1.000 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 0.161 | 0.000 | 0.000 | 0.000 | 0.161 | 0.000 | 0.161 | 0.000 |
| 7704-34-9 | 16 | S | 0.596 | 0.000 | 0.000 | 0.000 | 0.596 | 0.000 | 0.596 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.380 | 0.000 | 0.000 | 0.000 | 0.380 | 0.000 | 0.380 | 0.000 |
| 7440-09-7 | 19 | K | 0.865 | 0.000 | 0.000 | 0.000 | 0.865 | 0.000 | 0.865 | 0.000 |
| TOTALS: | | | 2.002 | | 0.000 | | 2.002 | | 2.002 | |

(1) Uncertainty not evaluated.
(2) Only data in the 0 - 2.5 um range was measured.

PM Profile Speciation Report

---

Profile Name : Composite of Residential Wood Burning Sources
Profile Number : 42330
Data Quality : D

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Control Device : Uncontrolled
Reference(s) : 34,35,45
Data Source : Developed from profiles 42102, 42201, 42202, and 42303.

SCC Assignments:

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.980 | 0.980 | 0.980 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.021 | 0.006 | 0.021 | 0.006 | 0.021 | 0.009 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.018 | 0.009 | 0.018 | 0.009 | 0.018 | 0.013 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.495 | 0.009 | 0.045 | 0.009 | 0.495 | 0.072 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.327 | 0.015 | 0.127 | 0.015 | 0.327 | 0.054 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 2.624 | 0.005 | 0.624 | 0.005 | 2.624 | 0.382 | 0.409 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.003 | 0.000 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.002 | 0.000 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 42330)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 201 | OC | 41.850 | 8.298 | 32.875 | 8.298 | 41.850 | 13.941 | 21.000 | 4.610 |
| | 202 | EC | 15.050 | 8.494 | 13.450 | 8.494 | 15.050 | 12.346 | 10.250 | 7.382 |
| | 203 | SO4 | 0.072 | 0.011 | 0.072 | 0.011 | 0.072 | 0.021 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 60.488 | | 47.263 | | 60.488 | | 31.659 | |

## 3.17 AGRICULTURAL FIELD BURNING

The amount of particulate emissions from agricultural field burning is dependent on the amount of refuse burned, the moisture content, and the relationship between wind direction and direction of fire advancement. A headfire is a fire which is started at the upwind side of a field and allowed to advance in the direction of the wind. A backfire is started at the downwind side and forced to advance in opposition to the wind. Particulate emissions are typically greater with headfire burns.

PM Profile Speciation Report

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Profile Name : Slash Burning
Profile Number : 42301
Data Quality : B/C

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Control Device : Not applicable
Reference(s) : 59
Data Source : Mean and standard deviation values of 8 fine particle slash burning samples obtained from plume at ground level. Analyzed by AAS, XRF, IC, and carbon oxidation. 3 smolder phase and 5 active burn phase samples.

SCC Assignments: 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.067 | 0.149 | 0.067 | 0.149 | 0.067 | 0.192 | 0.067 | 0.149 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.455 | 0.298 | 0.455 | 0.298 | 0.455 | 0.392 | 0.455 | 0.298 |
| 7440-21-3 | 14 | Si | 0.802 | 0.633 | 0.802 | 0.633 | 0.802 | 0.827 | 0.802 | 0.633 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | 0.281 | 0.220 | 0.281 | 0.220 | 0.281 | 0.287 | 0.281 | 0.220 |
| 7782-50-5 | 17 | Cl | 0.016 | 0.041 | 0.016 | 0.041 | 0.016 | 0.053 | 0.016 | 0.041 |
| 7440-09-7 | 19 | K | 0.442 | 0.202 | 0.442 | 0.202 | 0.442 | 0.272 | 0.442 | 0.202 |
| 7440-70-2 | 20 | Ca | 0.713 | 0.962 | 0.713 | 0.962 | 0.713 | 1.244 | 0.713 | 0.962 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.010 | 0.017 | 0.010 | 0.017 | 0.010 | 0.022 | 0.010 | 0.017 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.080 | 0.095 | 0.080 | 0.095 | 0.080 | 0.123 | 0.080 | 0.095 |
| 7439-89-6 | 26 | Fe | 0.342 | 0.255 | 0.342 | 0.255 | 0.342 | 0.334 | 0.342 | 0.255 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 | 0.004 | 0.001 | 0.003 |
| 7440-66-6 | 30 | Zn | 0.012 | 0.012 | 0.012 | 0.012 | 0.012 | 0.016 | 0.012 | 0.012 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.013 | 0.010 | 0.010 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 42301)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.006 | 0.009 | 0.006 | 0.009 | 0.006 | 0.012 | 0.006 | 0.009 |
| | 200 | TC | 80.604 | 6.215 | 80.604 | 6.215 | 80.604 | 16.692 | 80.604 | 6.215 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| | 203 | SO4 | 0.637 | 0.373 | 0.637 | 0.373 | 0.637 | 0.493 | 0.637 | 0.373 |
| | 204 | NO3 | 1.056 | 1.248 | 1.056 | 1.248 | 1.056 | 1.616 | 1.056 | 1.248 |
| | 205 | NH4 | 0.708 | 0.452 | 0.708 | 0.452 | 0.708 | 0.595 | 0.708 | 0.452 |
| TOTALS: | | | 86.242 | | 86.242 | | 86.242 | | 86.242 | |

PM Profile Speciation Report

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Profile Name : Slash Burning
Profile Number : 42302
Data Quality : B/D

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Control Device : Not applicable
Reference(s) : 45
Data Source : Analysis of 5 filters from 2 slash burns. Samples taken at ground level in plume.

SCC Assignments: 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.096 | 0.035 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.144 | 0.066 | 0.705 | 0.205 | 0.195 | 0.217 | 0.195 | 0.000 |
| 7440-21-3 | 14 | Si | 0.132 | 0.041 | 0.930 | 0.099 | 0.205 | 0.155 | 0.205 | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.132 | 0.050 | 0.990 | 0.438 | 0.210 | 0.421 | 0.210 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.258 | 0.118 | 0.850 | 1.200 | 0.312 | 1.102 | 0.312 | 0.000 |
| 7440-09-7 | 19 | K | 0.620 | 0.235 | 1.250 | 0.212 | 0.677 | 0.339 | 0.677 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.868 | 0.288 | 5.500 | 0.600 | 1.289 | 0.937 | 1.289 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | NA | 0.000 | 0.045 | 0.064 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | NA | 0.000 | 0.062 | 0.025 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.280 | 0.120 | 1.450 | 0.212 | 0.386 | 0.292 | 0.386 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.064 | 0.042 | 0.430 | 0.156 | 0.097 | 0.157 | 0.097 | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.022 | 0.016 | 0.052 | 0.025 | 0.025 | 0.028 | 0.025 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.021 | 0.000 | 0.112 | 0.067 | 0.029 | 0.000 | 0.029 | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 42302)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 59.250 | 10.560 | 59.000 | 10.000 | 59.227 | 0.000 | 59.227 | 0.000 |
| | 202 | EC | 9.750 | 3.590 | 10.000 | 3.000 | 9.773 | 4.617 | 9.773 | 0.000 |
| | 203 | SO4 | 0.328 | 0.089 | 0.130 | 0.184 | 0.310 | 0.191 | 0.310 | 0.000 |
| | 205 | NH4 | 0.220 | 0.080 | 1.000 | 0.560 | 0.291 | 0.531 | 0.291 | 0.000 |
| TOTALS: | | | 72.185 | | 82.506 | | 73.026 | | 73.026 | |

PM Profile Speciation Report

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Profile Name : Agricultural Field Burning
Profile Number : 42304
Data Quality : C/E

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Control Device : Not applicable
Reference(s) : 46
Data Source : Average of 10 aircraft plume samples taken with a 2-stage virtual impactor with a Method 5 heated probe. No dilution air. Analysis by XRF, INNA, IC, and carbon oxidation.

SCC Assignments: 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | 0.320 | 0.150 | 0.320 | 0.150 | 0.320 | 0.201 | 0.320 | 0.000 |
| 7440-23-5 | 11 | Na | 0.240 | 0.340 | 0.240 | 0.340 | 0.240 | 0.439 | 0.240 | 0.000 |
| 7439-95-4 | 12 | Mg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.340 | 0.300 | 0.340 | 0.300 | 0.340 | 0.391 | 0.340 | 0.000 |
| 7440-21-3 | 14 | Si | 0.300 | 0.200 | 0.300 | 0.200 | 0.300 | 0.263 | 0.300 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 1.500 | 0.700 | 1.500 | 0.700 | 1.500 | 0.940 | 1.500 | 0.000 |
| 7782-50-5 | 17 | Cl | 3.100 | 2.000 | 3.100 | 2.000 | 3.100 | 2.632 | 3.100 | 0.000 |
| 7440-09-7 | 19 | K | 5.900 | 2.500 | 5.900 | 2.500 | 5.900 | 3.388 | 5.900 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.400 | 0.300 | 0.400 | 0.300 | 0.400 | 0.392 | 0.400 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.005 | 0.005 | 0.005 | 0.005 | 0.005 | 0.006 | 0.005 | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | 0.005 | 0.007 | 0.005 | 0.007 | 0.005 | 0.009 | 0.005 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.004 | 0.005 | 0.004 | 0.005 | 0.004 | 0.006 | 0.004 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.200 | 0.600 | 0.200 | 0.600 | 0.200 | 0.772 | 0.200 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.110 | 0.400 | 0.110 | 0.400 | 0.110 | 0.515 | 0.110 | 0.000 |
| 7440-66-6 | 30 | Zn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.030 | 0.040 | 0.030 | 0.040 | 0.030 | 0.052 | 0.030 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 42304)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.030 | 0.040 | 0.030 | 0.040 | 0.030 | 0.052 | 0.030 | 0.000 |
| | 201 | OC | 35.600 | 10.750 | 35.600 | 10.750 | 35.600 | 0.000 | 35.600 | 0.000 |
| | 202 | EC | 5.800 | 1.740 | 5.800 | 1.740 | 5.800 | 2.473 | 5.800 | 0.000 |
| | 203 | SO4 | 5.000 | 4.300 | 5.000 | 4.300 | 5.000 | 5.603 | 5.000 | 0.000 |
| | 204 | NO3 | 0.890 | 0.900 | 0.890 | 0.900 | 0.890 | 1.168 | 0.890 | 0.000 |
| TOTALS: | | | 59.774 | | 59.774 | | 59.774 | | 59.774 | |

PM Profile Speciation Report

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Profile Name : Field Burning - Composite
Profile Number : 42320
Data Quality : D

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Control Device : Not applicable
Reference(s) : 46,45,59
Data Source : Developed from profiles 42301, 42302, and 42304.

SCC Assignments: 50300201

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.900 0.960 0.990

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %Wt | unc | %Wt | unc | %Wt | unc | %Wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.107 | 0.087 | 0.107 | 0.087 | 0.107 | 0.113 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.134 | 0.215 | 0.102 | 0.214 | 0.131 | 0.277 | 0.022 | 0.086 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.313 | 0.247 | 0.500 | 0.271 | 0.330 | 0.342 | 0.152 | 0.172 |
| 7440-21-3 | 14 | Si | 0.411 | 0.384 | 0.677 | 0.388 | 0.436 | 0.506 | 0.267 | 0.365 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.638 | 0.425 | 0.924 | 0.493 | 0.664 | 0.609 | 0.094 | 0.127 |
| 7782-50-5 | 17 | Cl | 1.125 | 1.157 | 1.322 | 1.347 | 1.143 | 1.629 | 0.005 | 0.024 |
| 7440-09-7 | 19 | K | 2.321 | 1.454 | 2.531 | 1.453 | 2.340 | 1.921 | 0.147 | 0.117 |
| 7440-70-2 | 20 | Ca | 0.660 | 0.605 | 2.204 | 0.677 | 0.801 | 0.877 | 0.238 | 0.555 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.005 | 0.010 | 0.020 | 0.038 | 0.006 | 0.036 | 0.003 | 0.010 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.002 | 0.004 | 0.022 | 0.015 | 0.004 | 0.014 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.121 | 0.088 | 0.511 | 0.134 | 0.157 | 0.161 | 0.027 | 0.055 |
| 7439-89-6 | 26 | Fe | 0.202 | 0.377 | 0.324 | 0.387 | 0.213 | 0.494 | 0.114 | 0.147 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.037 | 0.231 | 0.037 | 0.231 | 0.037 | 0.297 | 0.000 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.011 | 0.012 | 0.021 | 0.016 | 0.012 | 0.018 | 0.004 | 0.007 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.020 | 0.024 | 0.051 | 0.045 | 0.023 | 0.047 | 0.003 | 0.006 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 42320)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.012 | 0.024 | 0.012 | 0.024 | 0.012 | 0.031 | 0.002 | 0.005 |
| | 200 | TC | 26.868 | 3.588 | 26.868 | 3.588 | 26.868 | 6.719 | 26.868 | 3.588 |
| | 201 | OC | 31.617 | 8.700 | 31.533 | 8.477 | 31.609 | 12.446 | 0.000 | 0.000 |
| | 202 | EC | 5.183 | 2.303 | 5.267 | 2.002 | 5.191 | 2.933 | 0.000 | 0.000 |
| | 203 | SO4 | 1.988 | 2.492 | 1.922 | 2.494 | 1.982 | 3.225 | 0.212 | 0.215 |
| | 204 | NO3 | 0.649 | 0.888 | 0.649 | 0.888 | 0.649 | 1.148 | 0.352 | 0.721 |
| | 205 | NH4 | 0.309 | 0.265 | 0.569 | 0.415 | 0.333 | 0.456 | 0.236 | 0.261 |
| TOTALS: | | | 72.733 | | 76.173 | | 73.048 | | 28.746 | |

## 3.18 MOBILE SOURCES

Because of their widespread use, the internal combustion gasoline powered engine in mobile applications is a major source of PM emissions. Automotive PM emissions typically consist of exhaust emissions that occur from the tailpipe.

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles-Leaded
Profile Number : 31101
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 22
Data Source : Assumes 2g Pb/gal fuel and 30% of fuel Pb is emitted as particles <9um. SO4 based on .05% S in fuel and emission factor estimates. CASS profile No. 54.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.450 0.580 0.640

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.000 |
| 7440-21-3 | 14 | Si | 0.075 | 0.000 | 0.075 | 0.000 | 0.075 | 0.000 | 0.075 | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | 5.400 | 0.000 | 5.400 | 0.000 | 5.400 | 0.000 | 5.400 | 0.000 |
| 7440-09-7 | 19 | K | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-70-2 | 20 | Ca | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | 0.250 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 |
| 7440-48-4 | 27 | Co | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 | 0.021 | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 8.200 | 0.000 | 8.200 | 0.000 | 8.200 | 0.000 | 8.200 | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 31101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 21.100 | 0.000 | 21.100 | 0.000 | 21.100 | 0.000 | 21.100 | 0.000 |
| | 201 | OC | 50.100 | 0.000 | 50.100 | 0.000 | 50.100 | 0.000 | 50.100 | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 203 | SO4 | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 85.403 | | 85.403 | | 85.403 | | 85.403 | |

PM Profile Speciation Report

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Profile Name : Heavy Duty Vehicles - Leaded
Profile Number : 31102
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 25
Data Source : Mean of 4 samples tested on a chassis dynamometer with dilution tunnel. Analyzed by XRF and organic extraction.

SCC Assignments:

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.450 | 0.580 | 0.640 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.140 | 0.000 | 0.140 | 0.000 | 0.140 | 0.020 | 0.140 | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | 0.070 | 0.000 | 0.070 | 0.000 | 0.070 | 0.010 | 0.070 | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | 3.500 | 0.000 | 3.500 | 0.000 | 3.500 | 0.492 | 3.500 | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.017 | 0.120 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.004 | 0.030 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.100 | 0.000 | 3.100 | 0.000 | 3.100 | 0.436 | 3.100 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.017 | 0.120 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 13.840 | 0.000 | 13.840 | 0.000 | 13.840 | 1.946 | 13.840 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

PM Profile Speciation Report - continued (profile 31102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 30.350 | 0.000 | 30.350 | 0.000 | 30.350 | 4.268 | 30.350 | 0.000 |
| | 201 | OC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 202 | EC | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 51.270 | | 51.270 | | 51.270 | | 51.270 | |

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Leaded
Profile Number : 31103
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 035, 036, 037, 038

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.450 | 0.580 | 0.640 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.642 | 0.642 | 0.342 | 0.699 | 0.599 | 0.744 | 0.599 | 0.000 |
| 7440-21-3 | 14 | Si | 0.786 | 0.460 | 0.282 | 0.201 | 0.720 | 0.375 | 0.720 | 0.000 |
| 7723-14-0 | 15 | P | 0.167 | 0.180 | 0.122 | 0.122 | 0.168 | 0.165 | 0.168 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 1.208 | 0.000 | 2.164 | 0.000 | 2.004 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.262 | 0.262 | 0.000 | 0.336 | 0.238 | 0.338 | 0.238 | 0.000 |
| 7440-09-7 | 19 | K | 0.051 | 0.025 | 0.013 | 0.024 | 0.045 | 0.028 | 0.045 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.092 | 0.029 | 0.295 | 0.151 | 0.107 | 0.134 | 0.107 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.004 | 0.002 | 0.017 | 0.021 | 0.004 | 0.019 | 0.004 | 0.000 |
| 7440-62-2 | 23 | V | 0.002 | 0.002 | 0.004 | 0.008 | 0.002 | 0.008 | 0.002 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.002 | 0.033 | 0.011 | 0.006 | 0.014 | 0.006 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.987 | 0.612 | 1.205 | 0.304 | 0.956 | 0.520 | 0.956 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.111 | 0.045 | 0.849 | 0.230 | 0.198 | 0.211 | 0.198 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.012 | 0.005 | 0.026 | 0.007 | 0.013 | 0.012 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.026 | 0.006 | 0.039 | 0.008 | 0.028 | 0.014 | 0.028 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.148 | 0.040 | 0.392 | 0.085 | 0.181 | 0.090 | 0.181 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.031 | 0.041 | 0.005 | 0.075 | 0.024 | 0.069 | 0.024 | 0.000 |
| 7440-38-2 | 33 | As | 0.009 | 0.698 | 0.000 | 1.262 | 0.009 | 1.166 | 0.009 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.006 | 0.007 | 0.011 | 0.003 | 0.011 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 6.183 | 2.113 | 6.147 | 2.212 | 6.021 | 2.496 | 6.021 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.005 | 0.046 | 0.000 | 0.087 | 0.005 | 0.080 | 0.005 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.005 | 0.000 | 0.008 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.041 | 0.000 | 0.083 | 0.000 | 0.076 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.022 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.011 | 0.000 | 0.010 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.012 | 0.000 | 0.023 | 0.000 | 0.021 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.015 | 0.000 | 0.014 | 0.000 | 0.015 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.020 | 0.000 | 0.046 | 0.000 | 0.041 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.024 | 0.000 | 0.022 | 0.000 | 0.025 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.029 | 0.000 | 0.040 | 0.000 | 0.039 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.064 | 0.000 | 0.055 | 0.000 | 0.065 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.120 | 0.000 | 0.103 | 0.000 | 0.120 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.220 | 0.000 | 0.190 | 0.000 | 0.222 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.005 | 0.014 | 0.008 | 0.003 | 0.010 | 0.003 | 0.000 |
| 7439-92-1 | 82 | Pb | 21.649 | 7.650 | 30.631 | 6.884 | 23.122 | 8.463 | 23.122 | 0.000 |

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PM Profile Speciation Report - continued (profile 31103)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 31.374 | 19.838 | 3.768 | 3.309 | 28.900 | 14.563 | 28.900 | 0.000 |
| | 202 | EC | 15.053 | 2.434 | 7.220 | 5.538 | 12.736 | 5.198 | 12.736 | 0.000 |
| TOTALS: | | | 77.597 | | 51.411 | | 74.088 | | 74.088 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Leaded
Profile Number : 31104
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 035, 036, 037, 038

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.450 | 0.580 | 0.640 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.670 | 1.146 | 0.693 | 1.172 | 0.492 | 1.274 | 0.492 | 0.000 |
| 7440-21-3 | 14 | Si | 1.588 | 0.641 | 0.199 | 0.191 | 1.335 | 0.504 | 1.335 | 0.000 |
| 7723-14-0 | 15 | P | 0.435 | 0.135 | 0.070 | 0.165 | 0.374 | 0.174 | 0.374 | 0.000 |
| 7704-34-9 | 16 | S | 0.022 | 0.908 | 0.000 | 1.439 | 0.016 | 1.365 | 0.016 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.051 | 0.155 | 0.058 | 0.234 | 0.062 | 0.225 | 0.062 | 0.000 |
| 7440-09-7 | 19 | K | 0.133 | 0.057 | 0.028 | 0.023 | 0.112 | 0.047 | 0.112 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.102 | 0.058 | 0.149 | 0.175 | 0.103 | 0.154 | 0.103 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.003 | 0.009 | 0.008 | 0.061 | 0.003 | 0.052 | 0.003 | 0.000 |
| 7440-62-2 | 23 | V | 0.004 | 0.007 | 0.007 | 0.025 | 0.004 | 0.022 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.007 | 0.034 | 0.020 | 0.007 | 0.020 | 0.007 | 0.000 |
| 7439-96-5 | 25 | Mn | 1.345 | 0.878 | 0.303 | 0.189 | 1.169 | 0.653 | 1.169 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.020 | 0.025 | 0.065 | 0.064 | 0.023 | 0.059 | 0.023 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.014 | 0.007 | 0.020 | 0.018 | 0.014 | 0.018 | 0.014 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.031 | 0.009 | 0.011 | 0.011 | 0.027 | 0.013 | 0.027 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.109 | 0.015 | 0.084 | 0.078 | 0.098 | 0.070 | 0.098 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.038 | 0.032 | 0.005 | 0.050 | 0.031 | 0.048 | 0.031 | 0.000 |
| 7440-38-2 | 33 | As | 0.182 | 0.505 | 0.000 | 0.829 | 0.133 | 0.780 | 0.133 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.008 | 0.005 | 0.009 | 0.001 | 0.010 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 10.365 | 1.186 | 1.429 | 1.187 | 8.445 | 1.663 | 8.445 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.068 | 0.000 | 0.088 | 0.000 | 0.087 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.013 | 0.000 | 0.010 | 0.000 | 0.012 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.001 | 0.035 | 0.000 | 0.051 | 0.001 | 0.050 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.072 | 0.000 | 0.048 | 0.000 | 0.065 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.042 | 0.000 | 0.028 | 0.000 | 0.038 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.044 | 0.000 | 0.028 | 0.000 | 0.039 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.058 | 0.000 | 0.037 | 0.000 | 0.051 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.076 | 0.000 | 0.048 | 0.000 | 0.067 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.094 | 0.000 | 0.060 | 0.000 | 0.083 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.115 | 0.000 | 0.073 | 0.000 | 0.101 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.253 | 0.000 | 0.160 | 0.000 | 0.223 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.476 | 0.000 | 0.302 | 0.000 | 0.420 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.868 | 0.000 | 0.548 | 0.000 | 0.764 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.010 | 0.016 | 0.017 | 0.003 | 0.017 | 0.003 | 0.000 |
| 7439-92-1 | 82 | Pb | 17.992 | 1.886 | 3.706 | 2.979 | 15.056 | 3.358 | 15.056 | 0.000 |

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PM Profile Speciation Report - continued (profile 31104)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 51.847 | 4.424 | 13.791 | 12.363 | 48.988 | 12.029 | 48.988 | 0.000 |
| | 202 | EC | 1.322 | 1.030 | 1.429 | 2.259 | 1.297 | 2.036 | 1.297 | 0.000 |
| TOTALS: | | | 86.276 | | 22.110 | | 77.794 | | 77.794 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Leaded Composite
Profile Number : 31105
Data Quality : C

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Control Device : Not Applicable
Reference(s) :
Data Source : Profile represents a composite of Profiles 31103 and 31104.

SCC Assignments: 035, 036, 037, 038

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.450 0.580 0.640

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Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc(1) | 2.5-10 um %wt | 2.5-10 um unc(1) | 0-10 um %wt | 0-10 um unc(1) | Total Measured %wt | Total Measured unc(1) |
|---|---|---|---|---|---|---|---|---|---|---|
| 7429-90-5 | 13 | Al | 0.656 | 0.000 | 0.518 | 0.000 | 0.546 | 0.000 | 0.546 | 0.000 |
| 7440-21-3 | 14 | Si | 1.187 | 0.000 | 0.241 | 0.000 | 1.028 | 0.000 | 1.028 | 0.000 |
| 7723-14-0 | 15 | P | 0.301 | 0.000 | 0.096 | 0.000 | 0.271 | 0.000 | 0.271 | 0.000 |
| 7704-34-9 | 16 | S | 0.011 | 0.000 | 0.000 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.157 | 0.000 | 0.029 | 0.000 | 0.150 | 0.000 | 0.150 | 0.000 |
| 7440-09-7 | 19 | K | 0.092 | 0.000 | 0.021 | 0.000 | 0.079 | 0.000 | 0.079 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.097 | 0.000 | 0.222 | 0.000 | 0.105 | 0.000 | 0.105 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.004 | 0.000 | 0.013 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7440-62-2 | 23 | V | 0.003 | 0.000 | 0.006 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.000 | 0.034 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7439-96-5 | 25 | Mn | 1.166 | 0.000 | 0.754 | 0.000 | 1.063 | 0.000 | 1.063 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.066 | 0.000 | 0.457 | 0.000 | 0.111 | 0.000 | 0.111 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.013 | 0.000 | 0.023 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.029 | 0.000 | 0.025 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.129 | 0.000 | 0.238 | 0.000 | 0.140 | 0.000 | 0.140 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.035 | 0.000 | 0.005 | 0.000 | 0.028 | 0.000 | 0.028 | 0.000 |
| 7440-38-2 | 33 | As | 0.096 | 0.000 | 0.000 | 0.000 | 0.071 | 0.000 | 0.071 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.006 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 8.274 | 0.000 | 3.788 | 0.000 | 7.233 | 0.000 | 7.233 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.003 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.000 | 0.015 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7439-92-1 | 82 | Pb | 19.821 | 0.000 | 17.169 | 0.000 | 19.089 | 0.000 | 19.089 | 0.000 |
| | 201 | OC | 41.611 | 0.000 | 8.780 | 0.000 | 38.944 | 0.000 | 38.944 | 0.000 |
| | 202 | EC | 8.188 | 0.000 | 4.325 | 0.000 | 7.017 | 0.000 | 7.017 | 0.000 |
| TOTALS: | | | 81.943 | | 36.765 | | 75.948 | | 75.948 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Unleaded
Profile Number : 31201
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 22
Data Source : CASS Profile No. 53.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.890 0.930 0.970

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 |
| 7440-21-3 | 14 | Si | 0.510 | 0.000 | 0.510 | 0.000 | 0.510 | 0.000 | 0.510 | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-50-5 | 17 | Cl | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.000 | 0.044 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.170 | 0.000 | 0.170 | 0.000 | 0.170 | 0.000 | 0.170 | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 |
| 7440-48-4 | 27 | Co | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.080 | 0.000 | 0.080 | 0.000 | 0.080 | 0.000 | 0.080 | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 31201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| | 201 | OC | 21.100 | 0.000 | 21.100 | 0.000 | 21.100 | 0.000 | 21.100 | 0.000 |
| | 202 | EC | 17.800 | 0.000 | 17.800 | 0.000 | 17.800 | 0.000 | 17.800 | 0.000 |
| | 203 | SO4 | 50.000 | 0.000 | 50.000 | 0.000 | 50.000 | 0.000 | 50.000 | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 89.988 | | 89.988 | | 89.988 | | 89.988 | |

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Unleaded
Profile Number : 31202
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 027, 028, 029, 030

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.890 | 0.930 | 0.970 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.699 | 0.281 | 1.129 | 0.375 | 0.815 | 0.473 | 0.815 | 0.000 |
| 7440-21-3 | 14 | Si | 3.427 | 1.755 | 0.856 | 0.350 | 2.793 | 1.708 | 2.793 | 0.000 |
| 7723-14-0 | 15 | P | 0.441 | 0.164 | 0.305 | 0.088 | 0.373 | 0.191 | 0.373 | 0.000 |
| 7704-34-9 | 16 | S | 3.255 | 2.025 | 0.534 | 0.223 | 2.830 | 1.919 | 2.830 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.066 | 0.034 | 0.068 | 0.031 | 0.071 | 0.050 | 0.071 | 0.000 |
| 7440-09-7 | 19 | K | 0.011 | 0.008 | 0.037 | 0.011 | 0.020 | 0.022 | 0.020 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.526 | 0.141 | 0.448 | 0.137 | 0.479 | 0.210 | 0.479 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.004 | 0.002 | 0.019 | 0.006 | 0.007 | 0.014 | 0.007 | 0.000 |
| 7440-62-2 | 23 | V | 0.022 | 0.011 | 0.006 | 0.003 | 0.017 | 0.013 | 0.017 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.005 | 0.004 | 0.037 | 0.009 | 0.013 | 0.020 | 0.013 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.004 | 0.003 | 0.053 | 0.013 | 0.016 | 0.025 | 0.016 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.421 | 0.124 | 1.178 | 0.309 | 0.583 | 0.353 | 0.583 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.020 | 0.005 | 0.005 | 0.014 | 0.005 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.031 | 0.024 | 0.028 | 0.007 | 0.026 | 0.028 | 0.026 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.592 | 0.263 | 0.485 | 0.149 | 0.509 | 0.300 | 0.509 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.001 | 0.002 | 0.003 | 0.001 | 0.005 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.035 | 0.000 | 0.033 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.007 | 0.003 | 0.002 | 0.008 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.249 | 0.114 | 0.109 | 0.040 | 0.200 | 0.120 | 0.200 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.021 | 0.000 | 0.020 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.000 | 0.013 | 0.000 | 0.012 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.022 | 0.000 | 0.021 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.029 | 0.000 | 0.027 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.035 | 0.000 | 0.033 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.077 | 0.000 | 0.073 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.143 | 0.000 | 0.136 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.262 | 0.000 | 0.251 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.001 | 0.005 | 0.003 | 0.002 | 0.007 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.364 | 0.138 | 1.139 | 0.354 | 0.558 | 0.391 | 0.558 | 0.000 |

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PM Profile Speciation Report - continued (profile 31202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 49.202 | 9.893 | 22.208 | 8.891 | 41.331 | 14.143 | 41.331 | 0.000 |
| | 202 | EC | 38.630 | 8.106 | 4.993 | 3.133 | 30.076 | 9.471 | 30.076 | 0.000 |
| TOTALS: | | | 97.951 | | 33.666 | | 80.727 | | 80.727 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Unleaded
Profile Number : 31203
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 027, 028, 029, 030

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.890 0.930 0.970

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.154 | 0.131 | 0.129 | 0.071 | 0.158 | 0.144 | 0.158 | 0.000 |
| 7440-21-3 | 14 | Si | 6.237 | 3.971 | 1.555 | 0.804 | 4.618 | 3.815 | 4.618 | 0.000 |
| 7723-14-0 | 15 | P | 0.041 | 0.036 | 0.074 | 0.052 | 0.053 | 0.065 | 0.053 | 0.000 |
| 7704-34-9 | 16 | S | 5.393 | 2.732 | 0.694 | 0.554 | 4.346 | 2.658 | 4.346 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.050 | 0.105 | 0.068 | 0.041 | 0.057 | 0.107 | 0.057 | 0.000 |
| 7440-09-7 | 19 | K | 0.024 | 0.045 | 0.018 | 0.012 | 0.022 | 0.045 | 0.022 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.348 | 0.232 | 0.132 | 0.056 | 0.245 | 0.227 | 0.245 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.005 | 0.017 | 0.007 | 0.027 | 0.006 | 0.031 | 0.006 | 0.000 |
| 7440-62-2 | 23 | V | 0.003 | 0.013 | 0.007 | 0.011 | 0.004 | 0.018 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.013 | 0.017 | 0.008 | 0.006 | 0.018 | 0.006 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.017 | 0.014 | 0.007 | 0.005 | 0.020 | 0.005 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.000 | 0.037 | 0.057 | 0.024 | 0.017 | 0.046 | 0.017 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.014 | 0.004 | 0.003 | 0.001 | 0.015 | 0.001 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.006 | 0.016 | 0.003 | 0.004 | 0.005 | 0.016 | 0.005 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.115 | 0.049 | 0.125 | 0.059 | 0.113 | 0.082 | 0.113 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.007 | 0.013 | 0.001 | 0.002 | 0.004 | 0.012 | 0.004 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.036 | 0.000 | 0.009 | 0.000 | 0.034 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.013 | 0.007 | 0.004 | 0.002 | 0.015 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.409 | 0.313 | 0.032 | 0.014 | 0.285 | 0.293 | 0.285 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.021 | 0.000 | 0.005 | 0.000 | 0.020 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.026 | 0.000 | 0.006 | 0.000 | 0.024 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.032 | 0.000 | 0.007 | 0.000 | 0.030 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.143 | 0.000 | 0.034 | 0.000 | 0.135 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.087 | 0.000 | 0.020 | 0.000 | 0.082 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.089 | 0.000 | 0.021 | 0.000 | 0.084 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.117 | 0.000 | 0.027 | 0.000 | 0.110 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.153 | 0.000 | 0.036 | 0.000 | 0.144 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.192 | 0.000 | 0.045 | 0.000 | 0.182 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.233 | 0.000 | 0.054 | 0.000 | 0.220 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.517 | 0.000 | 0.134 | 0.000 | 0.492 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.968 | 0.000 | 0.225 | 0.000 | 0.914 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 1.763 | 0.000 | 0.408 | 0.000 | 1.664 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.016 | 0.004 | 0.005 | 0.002 | 0.017 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.056 | 0.130 | 0.049 | 0.041 | 0.077 | 0.041 | 0.000 |

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PM Profile Speciation Report - continued (profile 31203)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 92.907 | 51.738 | 29.259 | 25.589 | 66.193 | 54.837 | 66.193 | 0.000 |
| | 202 | EC | 4.833 | 6.801 | 0.000 | 6.483 | 2.762 | 8.826 | 2.762 | 0.000 |
| TOTALS: | | | 110.532 | | 32.337 | | 78.945 | | 78.945 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report.

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Profile Name : Light Duty Vehicles - Composite
Profile Number : 31230
Data Quality : D

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Control Device : Uncontrolled
Reference(s) : 22
Data Source : Developed from profiles 31101 and 31201.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.670 | 0.750 | 0.800 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.009 | 0.047 | 0.000 |
| 7440-21-3 | 14 | Si | 0.195 | 0.000 | 0.195 | 0.000 | 0.195 | 0.033 | 0.000 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.023 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.800 | 0.000 | 1.800 | 0.000 | 1.800 | 0.301 | 1.167 | 0.000 |
| 7440-09-7 | 19 | K | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.002 | 0.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.057 | 0.000 | 0.057 | 0.000 | 0.057 | 0.009 | 0.040 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 | 0.010 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.020 | 1.033 | 0.000 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.001 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.009 | 0.000 | 0.009 | 0.000 | 0.009 | 0.002 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.034 | 0.000 | 0.034 | 0.000 | 0.034 | 0.006 | 0.040 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 2.733 | 0.000 | 2.733 | 0.000 | 2.733 | 0.458 | 4.613 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 31230)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 7.033 | 0.000 | 7.033 | 0.000 | 7.033 | 1.178 | 10.117 | 0.000 |
| | 201 | OC | 23.733 | 0.000 | 23.733 | 0.000 | 23.733 | 3.975 | 0.000 | 0.000 |
| | 202 | EC | 5.933 | 0.000 | 5.933 | 0.000 | 5.933 | 0.994 | 0.000 | 0.000 |
| | 203 | SO4 | 16.737 | 0.000 | 16.737 | 0.000 | 16.737 | 2.803 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 58.463 | | 58.463 | | 58.463 | | 17.090 | |

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Diesel
Profile Number : 32101
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 20
Data Source : Based on 4-stroke engine burning No. 2 diesel fuel of 0.81% S content

SCC Assignments: 111

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.920 0.960 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7429-90-5 | 13 | Al | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 | 0.110 | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 |
| 7704-34-9 | 16 | S | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.000 | 0.700 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | 0.250 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 | 0.330 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 32101)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.420 | 0.000 | 0.420 | 0.000 | 0.420 | 0.000 | 0.420 | 0.000 |
| | 200 | TC | 73.000 | 5.700 | 73.000 | 5.700 | 73.000 | 15.343 | 73.000 | 5.700 |
| | 201 | OC | 21.900 | 0.000 | 21.900 | 0.000 | 21.900 | 0.000 | 21.900 | 0.000 |
| | 202 | EC | 51.100 | 0.000 | 51.000 | 0.000 | 51.092 | 0.000 | 51.000 | 0.000 |
| | 203 | SO4 | 2.100 | 0.000 | 2.100 | 0.000 | 2.100 | 0.000 | 2.100 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 150.129 | | 150.029 | | 150.121 | | 150.029 | |

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Diesel
Profile Number : 32102
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 111

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.920 0.960 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.007 | 0.004 | 0.224 | 0.101 | 0.023 | 0.109 | 0.023 | 0.000 |
| 7440-21-3 | 14 | Si | 0.202 | 0.177 | 0.444 | 0.106 | 0.217 | 0.207 | 0.217 | 0.000 |
| 7723-14-0 | 15 | P | 0.026 | 0.015 | 0.191 | 0.064 | 0.038 | 0.077 | 0.038 | 0.000 |
| 7704-34-9 | 16 | S | 0.589 | 0.168 | 1.002 | 0.270 | 0.617 | 0.337 | 0.617 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.025 | 0.014 | 0.176 | 0.018 | 0.034 | 0.047 | 0.034 | 0.000 |
| 7440-09-7 | 19 | K | 0.005 | 0.002 | 0.037 | 0.016 | 0.007 | 0.024 | 0.007 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.021 | 0.014 | 0.071 | 0.023 | 0.025 | 0.036 | 0.025 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.014 | 0.023 | 0.001 | 0.025 | 0.001 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.006 | 0.009 | 0.001 | 0.011 | 0.001 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.015 | 0.007 | 0.001 | 0.013 | 0.001 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.021 | 0.005 | 0.002 | 0.014 | 0.002 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.016 | 0.006 | 0.381 | 0.130 | 0.035 | 0.142 | 0.035 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.008 | 0.003 | 0.001 | 0.009 | 0.001 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.000 | 0.008 | 0.002 | 0.002 | 0.009 | 0.002 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.047 | 0.027 | 0.118 | 0.068 | 0.053 | 0.078 | 0.053 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.001 | 0.000 | 0.006 | 0.001 | 0.006 | 0.001 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.008 | 0.003 | 0.001 | 0.009 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.005 | 0.001 | 0.017 | 0.008 | 0.006 | 0.014 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.002 | 0.000 | 0.018 | 0.000 | 0.017 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.001 | 0.000 | 0.012 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.001 | 0.000 | 0.011 | 0.000 | 0.011 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.002 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.002 | 0.000 | 0.019 | 0.000 | 0.018 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.003 | 0.000 | 0.024 | 0.000 | 0.023 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.003 | 0.000 | 0.029 | 0.000 | 0.028 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.007 | 0.000 | 0.064 | 0.000 | 0.061 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.013 | 0.000 | 0.121 | 0.000 | 0.116 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.025 | 0.000 | 0.222 | 0.000 | 0.214 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.002 | 0.002 | 0.000 | 0.005 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.016 | 0.013 | 0.143 | 0.041 | 0.025 | 0.055 | 0.025 | 0.000 |

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PM Profile Speciation Report - continued (profile 32102)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 23.635 | 5.490 | 38.903 | 3.484 | 24.994 | 7.699 | 24.994 | 0.000 |
| | 202 | EC | 65.862 | 12.971 | 74.030 | 6.857 | 67.384 | 17.496 | 67.384 | 0.000 |
| TOTALS: | | | 90.459 | | 115.819 | | 93.468 | | 93.468 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Diesel
Profile Number : 32103
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 111

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.920 0.960 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.009 | 0.007 | 0.474 | 0.248 | 0.040 | 0.250 | 0.040 | 0.000 |
| 7440-21-3 | 14 | Si | 0.053 | 0.028 | 0.780 | 0.236 | 0.099 | 0.253 | 0.099 | 0.000 |
| 7723-14-0 | 15 | P | 0.026 | 0.008 | 0.229 | 0.122 | 0.040 | 0.127 | 0.040 | 0.000 |
| 7704-34-9 | 16 | S | 0.620 | 0.239 | 0.484 | 0.187 | 0.612 | 0.305 | 0.612 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.035 | 0.012 | 0.427 | 0.166 | 0.060 | 0.175 | 0.060 | 0.000 |
| 7440-09-7 | 19 | K | 0.013 | 0.008 | 0.099 | 0.040 | 0.018 | 0.049 | 0.018 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.023 | 0.014 | 0.103 | 0.037 | 0.028 | 0.049 | 0.028 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.001 | 0.034 | 0.069 | 0.003 | 0.068 | 0.003 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.001 | 0.015 | 0.028 | 0.001 | 0.029 | 0.001 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.001 | 0.037 | 0.009 | 0.002 | 0.020 | 0.002 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.001 | 0.051 | 0.019 | 0.003 | 0.028 | 0.003 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.002 | 0.002 | 0.181 | 0.079 | 0.011 | 0.087 | 0.011 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.001 | 0.016 | 0.008 | 0.001 | 0.014 | 0.001 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.002 | 0.001 | 0.028 | 0.012 | 0.004 | 0.019 | 0.004 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.037 | 0.011 | 0.061 | 0.019 | 0.039 | 0.031 | 0.039 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.005 | 0.006 | 0.001 | 0.008 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.002 | 0.000 | 0.019 | 0.002 | 0.019 | 0.002 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.026 | 0.008 | 0.002 | 0.017 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.002 | 0.001 | 0.059 | 0.019 | 0.005 | 0.029 | 0.005 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.001 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.016 | 0.000 | 0.015 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.008 | 0.000 | 0.071 | 0.000 | 0.069 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.005 | 0.000 | 0.045 | 0.000 | 0.044 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.005 | 0.000 | 0.045 | 0.000 | 0.043 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.006 | 0.000 | 0.058 | 0.000 | 0.056 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.008 | 0.000 | 0.078 | 0.000 | 0.075 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.010 | 0.000 | 0.097 | 0.000 | 0.093 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.012 | 0.000 | 0.116 | 0.000 | 0.112 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.027 | 0.000 | 0.260 | 0.000 | 0.250 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.051 | 0.000 | 0.489 | 0.000 | 0.471 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.094 | 0.000 | 0.906 | 0.000 | 0.873 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.010 | 0.008 | 0.001 | 0.012 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.025 | 0.017 | 0.311 | 0.092 | 0.042 | 0.107 | 0.042 | 0.000 |

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PM Profile Speciation Report - continued (profile 32103)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 43.358 | 2.103 | 102.175 | 36.083 | 47.468 | 36.367 | 47.468 | 0.000 |
| | 202 | EC | 62.746 | 7.051 | 26.851 | 8.747 | 60.160 | 13.617 | 60.160 | 0.000 |
| TOTALS: | | | 106.953 | | 132.456 | | 108.642 | | 108.642 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Light Duty Vehicles - Diesel Composite
Profile Number : 32104
Data Quality : C

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Control Device : Not Applicable
Reference(s) :
Data Source : Profile represents a composite of Profiles 32102 and 32103.

SCC Assignments: 111

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.920 0.960 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 0.008 | 0.000 | 0.349 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 |
| 7440-21-3 | 14 | Si | 0.128 | 0.000 | 0.612 | 0.000 | 0.158 | 0.000 | 0.158 | 0.000 |
| 7723-14-0 | 15 | P | 0.026 | 0.000 | 0.210 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 |
| 7704-34-9 | 16 | S | 0.605 | 0.000 | 0.743 | 0.000 | 0.615 | 0.000 | 0.615 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.030 | 0.000 | 0.302 | 0.000 | 0.047 | 0.000 | 0.047 | 0.000 |
| 7440-09-7 | 19 | K | 0.009 | 0.000 | 0.068 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.022 | 0.000 | 0.087 | 0.000 | 0.027 | 0.000 | 0.027 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.024 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.011 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.026 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.036 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.009 | 0.000 | 0.281 | 0.000 | 0.023 | 0.000 | 0.023 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.012 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.002 | 0.000 | 0.018 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.042 | 0.000 | 0.090 | 0.000 | 0.046 | 0.000 | 0.046 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-38-2 | 33 | As | 0.002 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.017 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.004 | 0.000 | 0.038 | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.006 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.021 | 0.000 | 0.227 | 0.000 | 0.034 | 0.000 | 0.034 | 0.000 |
| | 201 | OC | 33.497 | 0.000 | 70.539 | 0.000 | 36.231 | 0.000 | 36.231 | 0.000 |
| | 202 | EC | 64.304 | 0.000 | 50.441 | 0.000 | 63.772 | 0.000 | 63.772 | 0.000 |
| TOTALS: | | | 98.709 | | 124.140 | | 101.066 | | 101.066 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Heavy Duty Diesel
Profile Number : 32202
Data Quality : A/C

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Control Device : Uncontrolled
Reference(s) : 41,56
Data Source : All 3 size fractions assumed similar composition.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.920 0.960 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %Wt | unc | %Wt | unc | %Wt | unc | %Wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | 0.130 | 0.020 | 0.130 | 0.020 | 0.130 | 0.035 | 0.130 | 0.020 |
| 7782-41-4 | 9 | F | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-23-5 | 11 | Na | 0.800 | 0.100 | 0.800 | 0.100 | 0.800 | 0.196 | 0.800 | 0.100 |
| 7439-95-4 | 12 | Mg | 0.900 | 0.150 | 0.900 | 0.150 | 0.900 | 0.256 | 0.900 | 0.150 |
| 7429-90-5 | 13 | Al | 1.000 | 0.200 | 1.000 | 0.200 | 1.000 | 0.319 | 1.000 | 0.200 |
| 7440-21-3 | 14 | Si | 1.600 | 0.200 | 1.600 | 0.200 | 1.600 | 0.393 | 1.600 | 0.200 |
| 7723-14-0 | 15 | P | 0.150 | 0.020 | 0.150 | 0.020 | 0.150 | 0.038 | 0.150 | 0.020 |
| 7704-34-9 | 16 | S | 2.700 | 0.000 | 2.700 | 0.000 | 2.700 | 0.000 | 2.700 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | 0.170 | 0.030 | 0.170 | 0.030 | 0.170 | 0.050 | 0.170 | 0.030 |
| 7440-70-2 | 20 | Ca | 0.700 | 0.200 | 0.700 | 0.200 | 0.700 | 0.290 | 0.700 | 0.200 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.014 | 0.004 | 0.014 | 0.004 | 0.014 | 0.006 | 0.014 | 0.004 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.001 | 0.002 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.039 | 0.004 | 0.039 | 0.004 | 0.039 | 0.009 | 0.039 | 0.004 |
| 7439-89-6 | 26 | Fe | 0.600 | 0.100 | 0.600 | 0.100 | 0.600 | 0.171 | 0.600 | 0.100 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | 0.003 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.025 | 0.010 | 0.025 | 0.010 | 0.025 | 0.014 | 0.025 | 0.010 |
| 7440-66-6 | 30 | Zn | 0.160 | 0.010 | 0.160 | 0.010 | 0.160 | 0.032 | 0.160 | 0.010 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.014 | 0.003 | 0.014 | 0.003 | 0.014 | 0.005 | 0.014 | 0.003 |
| 7440-67-7 | 40 | Zr | 0.004 | 0.001 | 0.004 | 0.001 | 0.004 | 0.001 | 0.004 | 0.001 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.077 | 0.003 | 0.077 | 0.003 | 0.077 | 0.015 | 0.077 | 0.003 |

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PM Profile Speciation Report - continued (profile 32202)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 1.300 | 0.300 | 1.300 | 0.300 | 1.300 | 0.458 | 1.300 | 0.300 |
| | 201 | OC | 20.900 | 0.000 | 20.900 | 0.140 | 20.900 | 0.000 | 20.900 | 0.140 |
| | 202 | EC | 54.800 | 0.000 | 54.800 | 0.000 | 54.800 | 0.000 | 54.800 | 0.000 |
| | 203 | SO4 | 4.900 | 0.900 | 4.900 | 0.900 | 4.900 | 1.478 | 4.900 | 0.900 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 90.988 | | 90.988 | | 90.988 | | 90.988 | |

PM Profile Speciation Report

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Profile Name : Heavy Duty Vehicles - Diesel
Profile Number : 32203
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 040, 041, 042, 043

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.920 | 0.960 | 1.000 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.003 | 0.026 | 1.909 | 1.598 | 0.137 | 1.548 | 0.137 | 0.000 |
| 7440-21-3 | 14 | Si | 0.018 | 0.018 | 1.417 | 1.253 | 0.110 | 1.214 | 0.110 | 0.000 |
| 7723-14-0 | 15 | P | 0.042 | 0.009 | 0.464 | 0.394 | 0.071 | 0.386 | 0.071 | 0.000 |
| 7704-34-9 | 16 | S | 0.343 | 0.055 | 0.650 | 0.782 | 0.347 | 0.759 | 0.347 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.016 | 0.022 | 0.622 | 0.632 | 0.051 | 0.614 | 0.051 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.010 | 0.251 | 0.217 | 0.018 | 0.214 | 0.018 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.048 | 0.008 | 0.322 | 0.246 | 0.069 | 0.243 | 0.069 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.002 | 0.004 | 0.061 | 0.630 | 0.009 | 0.605 | 0.009 | 0.000 |
| 7440-62-2 | 23 | V | 0.002 | 0.003 | 0.017 | 0.248 | 0.004 | 0.238 | 0.004 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.003 | 0.152 | 0.129 | 0.011 | 0.130 | 0.011 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.003 | 0.112 | 0.086 | 0.011 | 0.089 | 0.011 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.000 | 0.008 | 0.274 | 0.282 | 0.015 | 0.276 | 0.015 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.002 | 0.003 | 0.030 | 0.032 | 0.004 | 0.035 | 0.004 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.001 | 0.003 | 0.059 | 0.065 | 0.004 | 0.067 | 0.004 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.053 | 0.017 | 0.112 | 0.109 | 0.055 | 0.111 | 0.055 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.002 | 0.000 | 0.017 | 0.000 | 0.016 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.008 | 0.000 | 0.066 | 0.000 | 0.064 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.003 | 0.066 | 0.051 | 0.006 | 0.055 | 0.006 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.003 | 0.135 | 0.100 | 0.012 | 0.103 | 0.012 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.004 | 0.000 | 0.037 | 0.000 | 0.035 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.005 | 0.000 | 0.048 | 0.000 | 0.046 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.007 | 0.000 | 0.136 | 0.000 | 0.131 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.030 | 0.000 | 0.254 | 0.000 | 0.245 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.018 | 0.000 | 0.166 | 0.000 | 0.160 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.018 | 0.000 | 0.157 | 0.000 | 0.151 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.009 | 0.025 | 0.000 | 0.209 | 0.008 | 0.201 | 0.008 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.032 | 0.000 | 0.278 | 0.000 | 0.269 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.040 | 0.000 | 0.342 | 0.000 | 0.330 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.048 | 0.000 | 0.416 | 0.000 | 0.401 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.109 | 0.000 | 0.933 | 0.000 | 0.900 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.202 | 0.000 | 1.760 | 0.000 | 1.698 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.368 | 0.000 | 3.205 | 0.000 | 3.093 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.003 | 0.023 | 0.033 | 0.002 | 0.035 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.011 | 0.883 | 0.632 | 0.081 | 0.617 | 0.081 | 0.000 |

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PM Profile Speciation Report - continued (profile 32203)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured(1) %wt | Total Measured(1) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 36.046 | 3.406 | 67.980 | 71.384 | 37.830 | 68.989 | 37.830 | 0.000 |
| | 202 | EC | 52.058 | 4.644 | 15.840 | 20.203 | 50.035 | 21.021 | 50.035 | 0.000 |
| TOTALS: | | | 88.643 | | 91.379 | | 88.890 | | 88.890 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Heavy Duty Vehicles - Diesel
Profile Number : 32204
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Vehicle exhaust gases sampled with a dilution sampler and constant volume sampling system. Analyzed using XRF and flame ionization.

SCC Assignments: 040, 041, 042, 043

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.920 0.960 1.000

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.065 | 0.033 | 1.653 | 0.897 | 0.117 | 0.882 | 0.117 | 0.000 |
| 7440-21-3 | 14 | Si | 0.191 | 0.031 | 1.840 | 1.013 | 0.245 | 0.995 | 0.245 | 0.000 |
| 7723-14-0 | 15 | P | 0.059 | 0.009 | 0.467 | 0.329 | 0.071 | 0.325 | 0.071 | 0.000 |
| 7704-34-9 | 16 | S | 0.349 | 0.027 | 0.167 | 0.365 | 0.342 | 0.356 | 0.342 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.022 | 0.009 | 0.585 | 0.429 | 0.039 | 0.421 | 0.039 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.003 | 0.243 | 0.178 | 0.007 | 0.178 | 0.007 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.033 | 0.006 | 0.307 | 0.155 | 0.042 | 0.160 | 0.042 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.001 | 0.106 | 0.061 | 0.004 | 0.066 | 0.004 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.001 | 0.060 | 0.039 | 0.002 | 0.044 | 0.002 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.001 | 0.052 | 0.044 | 0.002 | 0.047 | 0.002 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.001 | 0.094 | 0.051 | 0.003 | 0.057 | 0.003 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.001 | 0.002 | 0.378 | 0.254 | 0.012 | 0.253 | 0.012 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.001 | 0.026 | 0.023 | 0.001 | 0.027 | 0.001 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.005 | 0.002 | 0.049 | 0.041 | 0.006 | 0.045 | 0.006 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.045 | 0.002 | 0.151 | 0.088 | 0.048 | 0.093 | 0.048 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.002 | 0.012 | 0.000 | 0.012 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.002 | 0.000 | 0.053 | 0.000 | 0.051 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.060 | 0.038 | 0.002 | 0.043 | 0.002 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.001 | 0.146 | 0.093 | 0.005 | 0.097 | 0.005 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.001 | 0.000 | 0.027 | 0.000 | 0.026 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.002 | 0.000 | 0.032 | 0.000 | 0.031 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.002 | 0.000 | 0.041 | 0.000 | 0.039 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.009 | 0.000 | 0.183 | 0.000 | 0.176 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.006 | 0.000 | 0.119 | 0.000 | 0.114 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.006 | 0.000 | 0.115 | 0.000 | 0.110 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.007 | 0.000 | 0.152 | 0.000 | 0.146 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.010 | 0.000 | 0.193 | 0.000 | 0.185 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.012 | 0.000 | 0.256 | 0.000 | 0.246 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.015 | 0.000 | 0.297 | 0.000 | 0.285 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.032 | 0.000 | 0.659 | 0.000 | 0.633 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.060 | 0.000 | 1.237 | 0.000 | 1.188 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.111 | 0.000 | 2.313 | 0.000 | 2.221 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.053 | 0.032 | 0.002 | 0.038 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.004 | 0.861 | 0.474 | 0.028 | 0.469 | 0.028 | 0.000 |
| TOTALS: | | | 0.770 | | 7.300 | | 0.978 | | 0.978 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Diesel Vehicles - Las Vegas Valley (1987)
Profile Number : 32205
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 81
Data Source : Samples collected with two dichotomous samplers. Analyzed using Sequential thermal oxidation and XRF.

SCC Assignments: 040, 041, 042, 043

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.920 | 0.960 | 1.000 |

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.370 | 0.040 | 0.370 | 0.000 | 0.370 | 0.000 | 0.370 | 0.000 |
| 7440-21-3 | 14 | Si | 1.030 | 0.100 | 1.030 | 0.000 | 1.030 | 0.000 | 1.030 | 0.000 |
| 7704-34-9 | 16 | S | 0.620 | 0.060 | 0.620 | 0.000 | 0.620 | 0.000 | 0.620 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.160 | 0.030 | 0.160 | 0.000 | 0.160 | 0.000 | 0.160 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.210 | 0.020 | 0.210 | 0.000 | 0.210 | 0.000 | 0.210 | 0.000 |
| | 200 | TC | 44.000 | 4.400 | 44.000 | 0.000 | 44.000 | 0.000 | 44.000 | 0.000 |
| TOTALS: | | | 46.390 | | 46.390 | | 46.390 | | 46.390 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Heavy Duty Vehicles - Diesel Composite
Profile Number : 32206
Data Quality :

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Control Device : Not Applicable
Reference(s) :
Data Source : Profile represents a composite of Profiles 32203 and 32204.

SCC Assignments: 040, 041, 042, 043

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.920 | 0.960 | 1.000 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 0.034 | 0.000 | 1.781 | 0.000 | 0.127 | 0.000 | 0.127 | 0.000 |
| 7440-21-3 | 14 | Si | 0.105 | 0.000 | 1.629 | 0.000 | 0.178 | 0.000 | 0.178 | 0.000 |
| 7723-14-0 | 15 | P | 0.051 | 0.000 | 0.466 | 0.000 | 0.071 | 0.000 | 0.071 | 0.000 |
| 7704-34-9 | 16 | S | 0.346 | 0.000 | 0.409 | 0.000 | 0.345 | 0.000 | 0.345 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.019 | 0.000 | 0.604 | 0.000 | 0.045 | 0.000 | 0.045 | 0.000 |
| 7440-09-7 | 19 | K | 0.000 | 0.000 | 0.247 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.041 | 0.000 | 0.315 | 0.000 | 0.056 | 0.000 | 0.056 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.001 | 0.000 | 0.084 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-62-2 | 23 | V | 0.001 | 0.000 | 0.039 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.102 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.103 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.001 | 0.000 | 0.326 | 0.000 | 0.014 | 0.000 | 0.014 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.001 | 0.000 | 0.028 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.003 | 0.000 | 0.054 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.049 | 0.000 | 0.132 | 0.000 | 0.052 | 0.000 | 0.052 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.063 | 0.000 | 0.004 | 0.000 | 0.004 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.141 | 0.000 | 0.009 | 0.000 | 0.009 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.005 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.038 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.000 | 0.872 | 0.000 | 0.055 | 0.000 | 0.055 | 0.000 |
| | 201 | OC | 36.046 | 0.000 | 67.980 | 0.000 | 37.830 | 0.000 | 37.830 | 0.000 |
| | 202 | EC | 52.058 | 0.000 | 15.840 | 0.000 | 50.035 | 0.000 | 50.035 | 0.000 |
| TOTALS: | | | 88.761 | | 91.254 | | 88.868 | | 88.872 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Leaded/Unleaded Gasoline Composite - 1977
Profile Number : 33001
Data Quality : A/C

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Control Device : Uncontrolled
Reference(s) : 41
Data Source : Assumed a 39% unleaded and 53% leaded vehicle mix. Based on AAS, XRFICAP, INNA, IC, and carbon combustion of < 5.5 and < 40 um samples. All 3 size fractions assumed similar.

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.670 0.750 0.800

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | 0.059 | 0.110 | 0.059 | 0.110 | 0.059 | 0.131 | 0.059 | 0.110 |
| 7782-41-4 | 9 | F | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-23-5 | 11 | Na | 0.169 | 0.700 | 0.169 | 0.700 | 0.169 | 0.830 | 0.169 | 0.700 |
| 7439-95-4 | 12 | Mg | 1.099 | 0.600 | 1.099 | 0.600 | 1.099 | 0.734 | 1.099 | 0.600 |
| 7429-90-5 | 13 | Al | 0.254 | 0.900 | 0.254 | 0.900 | 0.254 | 1.067 | 0.254 | 0.900 |
| 7440-21-3 | 14 | Si | 0.845 | 1.300 | 0.845 | 1.300 | 0.845 | 1.546 | 0.845 | 1.300 |
| 7723-14-0 | 15 | P | 0.110 | 0.110 | 0.110 | 0.110 | 0.110 | 0.132 | 0.110 | 0.110 |
| 7704-34-9 | 16 | S | 0.761 | 0.000 | 0.761 | 0.000 | 0.761 | 0.000 | 0.761 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.352 | 0.800 | 1.352 | 0.800 | 1.352 | 0.974 | 1.352 | 0.800 |
| 7440-09-7 | 19 | K | 0.254 | 0.200 | 0.254 | 0.200 | 0.254 | 0.241 | 0.254 | 0.200 |
| 7440-70-2 | 20 | Ca | 2.113 | 0.700 | 2.113 | 0.700 | 2.113 | 0.901 | 2.113 | 0.700 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.008 | 0.020 | 0.008 | 0.020 | 0.008 | 0.024 | 0.008 | 0.020 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.006 | 0.001 | 0.006 | 0.001 | 0.007 | 0.001 | 0.006 |
| 7439-96-5 | 25 | Mn | 0.135 | 0.025 | 0.135 | 0.025 | 0.135 | 0.037 | 0.135 | 0.025 |
| 7439-89-6 | 26 | Fe | 0.507 | 0.600 | 0.507 | 0.600 | 0.507 | 0.716 | 0.507 | 0.600 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | .0 | 0.000 | .0 | 0.000 | NE | 0.000 | .0 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.059 | 0.030 | 0.059 | 0.030 | 0.059 | 0.037 | 0.059 | 0.030 |
| 7440-66-6 | 30 | Zn | 0.068 | 0.080 | 0.068 | 0.080 | 0.068 | 0.095 | 0.068 | 0.080 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | 9.464 | 0.900 | 9.464 | 0.900 | 9.464 | 1.910 | 9.464 | 0.900 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.010 | 0.016 | 0.010 | 0.016 | 0.010 | 0.019 | 0.010 | 0.016 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.002 | 0.009 | 0.002 | 0.009 | 0.002 | 0.011 | 0.002 | 0.009 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | 0.059 | 0.020 | 0.059 | 0.020 | 0.059 | 0.026 | 0.059 | 0.020 |

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PM Profile Speciation Report - continued (profile 33001)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 20.280 | 0.000 | 20.280 | 0.000 | 20.280 | 0.000 | 20.280 | 0.000 |
| | 200 | TC | 56.615 | 42.000 | 56.615 | 42.000 | 56.615 | 0.000 | 56.615 | 42.000 |
| | 202 | EC | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 203 | SO4 | 5.915 | 3.000 | 5.915 | 3.000 | 5.915 | 3.689 | 5.915 | 3.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NA | 0.000 |
| TOTALS: | | | 100.139 | | 100.139 | | 100.139 | | 100.139 | |

PM Profile Speciation Report

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Profile Name : Transportation Composite - Medford, OR (1980)
Profile Number : 33002
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 45
Data Source : Includes emissions from leaded and unleaded gasoline, diesel, and tire wear.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.750 | 0.820 | 0.870 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | 0.083 | 0.012 | 0.083 | 0.012 | 0.083 | 0.020 | 0.083 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.860 | 0.740 | 0.850 | 0.730 | 0.859 | 0.908 | 0.859 | 0.000 |
| 7429-90-5 | 13 | Al | 0.140 | 0.130 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-21-3 | 14 | Si | 0.590 | 0.220 | 0.280 | 0.110 | 0.547 | 0.226 | 0.547 | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 3.920 | 4.950 | 3.110 | 3.930 | 3.808 | 5.483 | 3.808 | 0.000 |
| 7782-50-5 | 17 | Cl | 2.350 | 0.780 | 1.690 | 0.560 | 2.259 | 0.900 | 2.259 | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-70-2 | 20 | Ca | 1.170 | 1.550 | 0.560 | 0.740 | 1.086 | 1.489 | 1.086 | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | 0.320 | 0.370 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | 1.850 | 1.790 | 1.130 | 1.100 | 1.751 | 1.830 | 1.751 | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.090 | 0.090 | 0.280 | 0.280 | 0.116 | 0.256 | 0.116 | 0.000 |
| 7440-55-3 | 31 | Ga | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 5.320 | 1.810 | 3.670 | 1.250 | 5.092 | 2.053 | 5.092 | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 33002)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 13.800 | 2.070 | 9.600 | 1.440 | 13.221 | 2.988 | 13.221 | 0.000 |
| | 201 | OC | 43.120 | 8.620 | 38.420 | 7.680 | 42.472 | 12.191 | 42.472 | 0.000 |
| | 202 | EC | 26.120 | 9.660 | 40.960 | 15.160 | 28.167 | 0.000 | 28.167 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| TOTALS: | | | 99.733 | | 100.633 | | 99.461 | | 99.461 | |

PM Profile Speciation Report

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Profile Name : Transportation Composite - Portland, OR. (1979)
Profile Number : 33003
Data Quality : C/D

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Control Device : Uncontrolled
Reference(s) : 46
Data Source : Composite leaded and unleaded exhaust based on tunnel studies and exhaust measurements. Sampled with a 2-stage virtual impactor with a Method 5 heated probe. No dilution air. Analysis by XRF, INNA, IC, and carbon oxidation.

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.670 | 0.750 | 0.800 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.010 | NA | 0.010 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.050 | NA | 0.050 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | NA | 0.500 | NA | 0.500 | NE | 0.000 | NE | 0.000 |
| 7429-90-5 | 13 | Al | 1.100 | 0.500 | 1.100 | 0.500 | 1.100 | 0.620 | 1.100 | 0.000 |
| 7440-21-3 | 14 | Si | 0.820 | 0.300 | 0.820 | 0.300 | 0.820 | 0.381 | 0.820 | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.400 | 0.130 | 0.400 | 0.130 | 0.400 | 0.168 | 0.400 | 0.000 |
| 7782-50-5 | 17 | Cl | 3.000 | 1.000 | 3.000 | 1.000 | 3.000 | 1.287 | 3.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.072 | 0.029 | 0.072 | 0.029 | 0.072 | 0.036 | 0.072 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.250 | 0.500 | 1.250 | 0.500 | 1.250 | 0.628 | 1.250 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.100 | < | 0.100 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.005 | < | 0.005 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.010 | < | 0.010 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.016 | < | 0.016 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | 2.100 | 0.800 | 2.100 | 0.800 | 2.100 | 1.011 | 2.100 | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | 0.018 | 0.008 | 0.018 | 0.008 | 0.018 | 0.010 | 0.018 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.073 | 0.030 | 0.073 | 0.030 | 0.073 | 0.038 | 0.073 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.350 | 0.130 | 0.350 | 0.130 | 0.350 | 0.165 | 0.350 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 5.000 | 1.700 | 5.000 | 1.700 | 5.000 | 2.181 | 5.000 | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 33003)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 20.000 | 3.000 | 20.000 | 3.000 | 20.000 | 4.883 | 20.000 | 0.000 |
| | 201 | OC | 43.400 | 6.900 | 43.400 | 6.900 | 43.400 | 0.000 | 43.400 | 0.000 |
| | 202 | EC | 18.970 | 6.410 | 18.970 | 6.410 | 18.970 | 8.230 | 18.970 | 0.000 |
| | 203 | SO4 | 1.300 | 0.400 | 1.300 | 0.400 | 1.300 | 0.521 | 1.300 | 0.000 |
| | 204 | NO3 | 0.910 | 0.300 | 0.910 | 0.300 | 0.910 | 0.387 | 0.910 | 0.000 |
| TOTALS: | | | 98.763 | | 98.763 | | 98.763 | | 98.763 | |

PM Profile Speciation Report

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Profile Name : Transportation Composite
Profile Number : 33004
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed using steady state vehicle exhaust profiles and AP-42 tire wear factors, relative to vehicle miles traveled in the Sepulveda Tunnel (Los Angeles).

SCC Assignments: 110

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.690 0.770 0.820

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.076 | 0.039 | 0.179 | 0.123 | 0.092 | 0.123 | 0.095 | 0.043 |
| 7440-21-3 | 14 | Si | 0.645 | 0.924 | 0.219 | 0.166 | 0.577 | 0.797 | 0.451 | 0.585 |
| 7723-14-0 | 15 | P | 0.124 | 0.103 | 0.255 | 0.315 | 0.145 | 0.305 | 0.159 | 0.153 |
| 7704-34-9 | 16 | S | 1.364 | 0.926 | 1.796 | 1.875 | 1.432 | 1.904 | 1.459 | 0.956 |
| 7782-50-5 | 17 | Cl | 0.535 | 0.473 | 1.367 | 1.601 | 0.667 | 1.530 | 0.765 | 0.724 |
| 7440-09-7 | 19 | K | 0.005 | 0.006 | 0.017 | 0.017 | 0.007 | 0.019 | 0.007 | 0.004 |
| 7440-70-2 | 20 | Ca | 0.056 | 0.053 | 0.046 | 0.030 | 0.054 | 0.055 | 0.047 | 0.032 |
| 7440-32-6 | 22 | Ti | 0.006 | 0.004 | 0.021 | 0.017 | 0.008 | 0.019 | 0.010 | 0.006 |
| 7440-62-2 | 23 | V | 0.001 | 0.001 | 0.004 | 0.004 | 0.001 | 0.006 | 0.001 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.001 | 0.005 | 0.004 | 0.001 | 0.007 | 0.001 | 0.001 |
| 7439-96-5 | 25 | Mn | 0.018 | 0.016 | 0.009 | 0.007 | 0.017 | 0.017 | 0.016 | 0.014 |
| 7439-89-6 | 26 | Fe | 0.001 | 0.003 | 0.027 | 0.025 | 0.005 | 0.026 | 0.007 | 0.004 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.001 | 0.002 | 0.002 | 0.000 | 0.004 | 0.001 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.003 | 0.002 | 0.004 | 0.004 | 0.003 | 0.006 | 0.003 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.385 | 0.221 | 0.913 | 0.908 | 0.469 | 0.861 | 0.532 | 0.360 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.002 | 0.000 | 0.001 | 0.001 | 0.002 | 0.001 | 0.001 |
| 7440-38-2 | 33 | As | 0.003 | 0.008 | 0.000 | 0.007 | 0.003 | 0.009 | 0.002 | 0.005 |
| 7782-49-2 | 34 | Se | 0.000 | 0.001 | 0.004 | 0.004 | 0.001 | 0.006 | 0.001 | 0.001 |
| 7726-95-6 | 35 | Br | 0.174 | 0.106 | 0.022 | 0.017 | 0.150 | 0.094 | 0.122 | 0.080 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.003 | 0.004 | 0.009 | 0.012 | 0.004 | 0.014 | 0.005 | 0.005 |
| 7440-65-5 | 39 | Y | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.004 | 0.000 | 0.002 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.013 | 0.000 | 0.011 | 0.000 | 0.015 | 0.000 | 0.007 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.008 | 0.000 | 0.007 | 0.000 | 0.009 | 0.000 | 0.004 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.008 | 0.000 | 0.007 | 0.000 | 0.009 | 0.000 | 0.004 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.010 | 0.000 | 0.009 | 0.000 | 0.012 | 0.000 | 0.005 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.013 | 0.000 | 0.011 | 0.000 | 0.015 | 0.000 | 0.007 |
| 7440-74-6 | 49 | In | 0.000 | 0.017 | 0.000 | 0.015 | 0.000 | 0.020 | 0.000 | 0.009 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.020 | 0.000 | 0.017 | 0.000 | 0.023 | 0.000 | 0.011 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.045 | 0.000 | 0.038 | 0.000 | 0.051 | 0.000 | 0.024 |
| 7440-39-3 | 56 | Ba | 0.001 | 0.085 | 0.002 | 0.072 | 0.001 | 0.097 | 0.001 | 0.045 |
| 7439-91-0 | 57 | La | 0.000 | 0.155 | 0.000 | 0.134 | 0.000 | 0.179 | 0.000 | 0.082 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.001 | 0.004 | 0.004 | 0.001 | 0.006 | 0.001 | 0.001 |
| 7439-92-1 | 82 | Pb | 0.245 | 0.149 | 0.088 | 0.065 | 0.220 | 0.144 | 0.195 | 0.128 |

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PM Profile Speciation Report - continued (profile 33004)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 52.728 | 21.578 | 60.260 | 53.967 | 53.922 | 53.346 | 54.147 | 25.247 |
| | 202 | EC | 45.404 | 16.481 | 27.351 | 27.084 | 42.542 | 29.056 | 39.907 | 17.021 |
| TOTALS: | | | 101.778 | | 92.604 | | 100.323 | | 97.936 | |

(1) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Transportation Composite
Profile Number : 33005
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed using steady state vehicle exhaust profiles and no tire wear factors included, relative to vehicle miles traveled in the Sepulveda Tunnel (Los Angeles).

SCC Assignments: 110

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.690 0.770 0.820

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.077 | 0.051 | 0.959 | 0.636 | 0.217 | 0.595 | 0.116 | 0.054 |
| 7440-21-3 | 14 | Si | 0.957 | 1.391 | 1.484 | 1.075 | 1.041 | 1.543 | 0.843 | 1.122 |
| 7723-14-0 | 15 | P | 0.057 | 0.020 | 0.288 | 0.211 | 0.094 | 0.200 | 0.069 | 0.024 |
| 7704-34-9 | 16 | S | 1.037 | 1.182 | 0.360 | 0.440 | 0.930 | 1.082 | 0.940 | 1.058 |
| 7782-50-5 | 17 | Cl | 0.029 | 0.020 | 0.374 | 0.272 | 0.084 | 0.256 | 0.046 | 0.022 |
| 7440-09-7 | 19 | K | 0.008 | 0.008 | 0.140 | 0.110 | 0.029 | 0.106 | 0.014 | 0.008 |
| 7440-70-2 | 20 | Ca | 0.072 | 0.079 | 0.213 | 0.132 | 0.094 | 0.144 | 0.069 | 0.058 |
| 7440-32-6 | 22 | Ti | 0.001 | 0.003 | 0.059 | 0.044 | 0.010 | 0.045 | 0.004 | 0.003 |
| 7440-62-2 | 23 | V | 0.001 | 0.002 | 0.034 | 0.026 | 0.006 | 0.028 | 0.002 | 0.002 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.002 | 0.038 | 0.028 | 0.006 | 0.030 | 0.002 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.028 | 0.024 | 0.078 | 0.041 | 0.036 | 0.048 | 0.031 | 0.024 |
| 7439-89-6 | 26 | Fe | 0.001 | 0.005 | 0.233 | 0.165 | 0.038 | 0.157 | 0.013 | 0.006 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.002 | 0.017 | 0.014 | 0.003 | 0.016 | 0.001 | 0.001 |
| 7440-50-8 | 29 | Cu | 0.005 | 0.003 | 0.030 | 0.024 | 0.009 | 0.026 | 0.006 | 0.003 |
| 7440-66-6 | 30 | Zn | 0.053 | 0.028 | 0.125 | 0.088 | 0.064 | 0.089 | 0.056 | 0.030 |
| 7440-55-3 | 31 | Ga | 0.002 | 0.002 | 0.002 | 0.007 | 0.002 | 0.007 | 0.001 | 0.002 |
| 7440-38-2 | 33 | As | 0.004 | 0.012 | 0.000 | 0.061 | 0.003 | 0.057 | 0.004 | 0.011 |
| 7782-49-2 | 34 | Se | 0.000 | 0.002 | 0.036 | 0.025 | 0.006 | 0.027 | 0.002 | 0.001 |
| 7726-95-6 | 35 | Br | 0.264 | 0.152 | 0.184 | 0.120 | 0.251 | 0.175 | 0.242 | 0.134 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.003 | 0.000 | 0.014 | 0.000 | 0.013 | 0.000 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.003 | 0.000 | 0.016 | 0.000 | 0.015 | 0.000 | 0.002 |
| 7440-65-5 | 39 | Y | 0.000 | 0.004 | 0.000 | 0.020 | 0.000 | 0.019 | 0.000 | 0.003 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.019 | 0.000 | 0.090 | 0.000 | 0.084 | 0.000 | 0.013 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.012 | 0.000 | 0.058 | 0.000 | 0.054 | 0.000 | 0.008 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.012 | 0.000 | 0.057 | 0.000 | 0.053 | 0.000 | 0.008 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.016 | 0.000 | 0.075 | 0.000 | 0.070 | 0.000 | 0.011 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.020 | 0.000 | 0.095 | 0.000 | 0.089 | 0.000 | 0.014 |
| 7440-74-6 | 49 | In | 0.000 | 0.026 | 0.000 | 0.126 | 0.000 | 0.118 | 0.000 | 0.018 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.031 | 0.000 | 0.146 | 0.000 | 0.136 | 0.000 | 0.021 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.069 | 0.000 | 0.325 | 0.000 | 0.304 | 0.000 | 0.048 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.129 | 0.000 | 0.609 | 0.000 | 0.569 | 0.000 | 0.089 |
| 7439-91-0 | 57 | La | 0.000 | 0.236 | 0.000 | 1.138 | 0.000 | 1.063 | 0.000 | 0.162 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.030 | 0.022 | 0.005 | 0.024 | 0.002 | 0.002 |
| 7439-92-1 | 82 | Pb | 0.373 | 0.207 | 0.749 | 0.425 | 0.433 | 0.439 | 0.385 | 0.206 |

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PM Profile Speciation Report - continued (profile 33005)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 49.809 | 24.151 | 74.890 | 39.591 | 53.785 | 42.511 | 50.081 | 20.949 |
| | 202 | EC | 54.153 | 19.783 | 17.275 | 9.531 | 48.306 | 19.932 | 50.878 | 18.906 |
| TOTALS: | | | 106.931 | | 97.598 | | 105.452 | | 103.807 | |

(1) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Transportation Composite
Profile Number : 33006
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed using Federal test procedure vehicle emission profiles and California Air Resources Board emission factors. Tire wear factors are not included.

SCC Assignments: 110

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.690 0.770 0.820

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.332 | 0.216 | 0.712 | 0.513 | 0.392 | 0.514 | 0.430 | 0.229 |
| 7440-21-3 | 14 | Si | 0.908 | 0.407 | 0.554 | 0.239 | 0.852 | 0.427 | 0.855 | 0.346 |
| 7723-14-0 | 15 | P | 0.155 | 0.069 | 0.207 | 0.101 | 0.163 | 0.117 | 0.163 | 0.054 |
| 7704-34-9 | 16 | S | 0.799 | 0.562 | 0.214 | 1.388 | 0.706 | 1.362 | 0.714 | 0.539 |
| 7782-50-5 | 17 | Cl | 0.102 | 0.085 | 0.096 | 0.230 | 0.101 | 0.224 | 0.122 | 0.091 |
| 7440-09-7 | 19 | K | 0.018 | 0.010 | 0.049 | 0.033 | 0.023 | 0.036 | 0.028 | 0.010 |
| 7440-70-2 | 20 | Ca | 0.150 | 0.040 | 0.329 | 0.126 | 0.178 | 0.132 | 0.160 | 0.040 |
| 7440-32-6 | 22 | Ti | 0.003 | 0.002 | 0.023 | 0.081 | 0.006 | 0.075 | 0.007 | 0.014 |
| 7440-62-2 | 23 | V | 0.005 | 0.003 | 0.006 | 0.032 | 0.005 | 0.030 | 0.005 | 0.006 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.002 | 0.048 | 0.020 | 0.008 | 0.025 | 0.009 | 0.002 |
| 7439-96-5 | 25 | Mn | 0.306 | 0.207 | 0.796 | 0.309 | 0.384 | 0.348 | 0.353 | 0.216 |
| 7439-89-6 | 26 | Fe | 0.115 | 0.036 | 0.842 | 0.251 | 0.230 | 0.253 | 0.192 | 0.051 |
| 7440-02-0 | 28 | Ni | 0.004 | 0.002 | 0.025 | 0.008 | 0.007 | 0.014 | 0.008 | 0.003 |
| 7440-50-8 | 29 | Cu | 0.014 | 0.006 | 0.038 | 0.013 | 0.018 | 0.020 | 0.017 | 0.005 |
| 7440-66-6 | 30 | Zn | 0.184 | 0.062 | 0.373 | 0.107 | 0.214 | 0.126 | 0.188 | 0.052 |
| 7440-55-3 | 31 | Ga | 0.010 | 0.013 | 0.004 | 0.048 | 0.009 | 0.046 | 0.009 | 0.013 |
| 7440-38-2 | 33 | As | 0.003 | 0.216 | 0.000 | 0.807 | 0.003 | 0.762 | 0.003 | 0.210 |
| 7782-49-2 | 34 | Se | 0.000 | 0.002 | 0.014 | 0.010 | 0.002 | 0.013 | 0.004 | 0.002 |
| 7726-95-6 | 35 | Br | 1.958 | 0.839 | 3.970 | 1.870 | 2.277 | 1.905 | 2.219 | 0.983 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.014 | 0.000 | 0.056 | 0.002 | 0.053 | 0.002 | 0.015 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.003 | 0.000 | 0.008 | 0.000 | 0.008 | 0.000 | 0.003 |
| 7440-65-5 | 39 | Y | 0.000 | 0.013 | 0.000 | 0.056 | 0.000 | 0.053 | 0.000 | 0.013 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.015 | 0.000 | 0.037 | 0.000 | 0.036 | 0.000 | 0.017 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.009 | 0.000 | 0.022 | 0.000 | 0.022 | 0.000 | 0.010 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.009 | 0.000 | 0.025 | 0.000 | 0.024 | 0.000 | 0.010 |
| 7440-22-4 | 47 | Ag | 0.004 | 0.012 | 0.000 | 0.028 | 0.003 | 0.028 | 0.003 | 0.013 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.016 | 0.000 | 0.046 | 0.000 | 0.044 | 0.000 | 0.019 |
| 7440-74-6 | 49 | In | 0.000 | 0.020 | 0.000 | 0.046 | 0.000 | 0.045 | 0.000 | 0.022 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.024 | 0.000 | 0.059 | 0.000 | 0.058 | 0.000 | 0.027 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.053 | 0.000 | 0.125 | 0.000 | 0.123 | 0.000 | 0.060 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.099 | 0.000 | 0.235 | 0.000 | 0.231 | 0.000 | 0.111 |
| 7439-91-0 | 57 | La | 0.000 | 0.180 | 0.000 | 0.428 | 0.000 | 0.421 | 0.000 | 0.203 |
| 7439-97-6 | 80 | Hg | 0.001 | 0.002 | 0.013 | 0.007 | 0.003 | 0.011 | 0.002 | 0.002 |
| 7439-92-1 | 82 | Pb | 6.760 | 2.998 | 19.942 | 7.523 | 8.850 | 7.587 | 8.495 | 3.765 |

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PM Profile Speciation Report - continued (profile 33006)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 36.474 | 8.684 | 16.456 | 9.962 | 33.300 | 12.560 | 34.722 | 9.320 |
| | 202 | EC | 38.767 | 7.216 | 8.743 | 4.710 | 34.007 | 8.798 | 33.449 | 6.554 |
| TOTALS: | | | 87.075 | | 53.454 | | 81.743 | | 82.159 | |

(1) Calculated based on methodology described in the Air Emission Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Transportation Composite
Profile Number : 33007
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed using Federal test procedure vehicle emission profiles with no tire wear factors included.

SCC Assignments: 110

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.690 | 0.770 | 0.820 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.032 | 0.045 | 1.431 | 1.945 | 0.254 | 1.791 | 0.155 | 0.161 |
| 7440-21-3 | 14 | Si | 0.093 | 0.067 | 1.090 | 1.467 | 0.251 | 1.352 | 0.175 | 0.142 |
| 7723-14-0 | 15 | P | 0.049 | 0.050 | 0.367 | 0.475 | 0.099 | 0.441 | 0.075 | 0.080 |
| 7704-34-9 | 16 | S | 0.379 | 0.400 | 0.536 | 0.894 | 0.404 | 0.891 | 0.381 | 0.400 |
| 7782-50-5 | 17 | Cl | 0.026 | 0.030 | 0.442 | 0.681 | 0.092 | 0.628 | 0.058 | 0.068 |
| 7440-09-7 | 19 | K | 0.002 | 0.009 | 0.179 | 0.257 | 0.030 | 0.239 | 0.013 | 0.022 |
| 7440-70-2 | 20 | Ca | 0.051 | 0.055 | 0.301 | 0.329 | 0.091 | 0.309 | 0.071 | 0.078 |
| 7440-32-6 | 22 | Ti | 0.002 | 0.004 | 0.047 | 0.435 | 0.009 | 0.399 | 0.008 | 0.032 |
| 7440-62-2 | 23 | V | 0.002 | 0.003 | 0.013 | 0.171 | 0.004 | 0.157 | 0.003 | 0.013 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.003 | 0.113 | 0.155 | 0.018 | 0.145 | 0.010 | 0.012 |
| 7439-96-5 | 25 | Mn | 0.035 | 0.052 | 0.333 | 0.342 | 0.082 | 0.321 | 0.054 | 0.066 |
| 7439-89-6 | 26 | Fe | 0.009 | 0.010 | 0.429 | 0.380 | 0.076 | 0.354 | 0.031 | 0.026 |
| 7440-02-0 | 28 | Ni | 0.002 | 0.003 | 0.027 | 0.034 | 0.006 | 0.034 | 0.004 | 0.005 |
| 7440-50-8 | 29 | Cu | 0.002 | 0.003 | 0.050 | 0.068 | 0.010 | 0.065 | 0.005 | 0.006 |
| 7440-66-6 | 30 | Zn | 0.060 | 0.062 | 0.182 | 0.160 | 0.079 | 0.160 | 0.066 | 0.066 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.003 | 0.001 | 0.019 | 0.001 | 0.018 | 0.001 | 0.003 |
| 7440-38-2 | 33 | As | 0.000 | 0.026 | 0.000 | 0.269 | 0.000 | 0.248 | 0.001 | 0.028 |
| 7782-49-2 | 34 | Se | 0.000 | 0.002 | 0.047 | 0.065 | 0.007 | 0.062 | 0.005 | 0.007 |
| 7726-95-6 | 35 | Br | 0.224 | 0.305 | 1.390 | 1.689 | 0.409 | 1.578 | 0.293 | 0.386 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.004 | 0.000 | 0.031 | 0.000 | 0.029 | 0.000 | 0.005 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.005 | 0.000 | 0.033 | 0.000 | 0.031 | 0.000 | 0.005 |
| 7440-65-5 | 39 | Y | 0.000 | 0.006 | 0.000 | 0.095 | 0.000 | 0.087 | 0.000 | 0.009 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.025 | 0.000 | 0.174 | 0.000 | 0.161 | 0.000 | 0.029 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.016 | 0.000 | 0.114 | 0.000 | 0.105 | 0.000 | 0.019 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.016 | 0.000 | 0.107 | 0.000 | 0.099 | 0.000 | 0.018 |
| 7440-22-4 | 47 | Ag | 0.008 | 0.024 | 0.000 | 0.143 | 0.007 | 0.133 | 0.007 | 0.026 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.028 | 0.000 | 0.191 | 0.000 | 0.177 | 0.000 | 0.032 |
| 7440-74-6 | 49 | In | 0.000 | 0.035 | 0.000 | 0.235 | 0.000 | 0.218 | 0.000 | 0.040 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.042 | 0.000 | 0.285 | 0.000 | 0.264 | 0.000 | 0.048 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.094 | 0.000 | 0.640 | 0.000 | 0.592 | 0.000 | 0.108 |
| 7440-39-3 | 56 | Ba | 0.000 | 0.174 | 0.000 | 1.208 | 0.000 | 1.118 | 0.000 | 0.200 |
| 7439-91-0 | 57 | La | 0.000 | 0.317 | 0.000 | 2.200 | 0.000 | 2.036 | 0.000 | 0.367 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.003 | 0.019 | 0.030 | 0.003 | 0.030 | 0.002 | 0.004 |
| 7439-92-1 | 82 | Pb | 0.779 | 1.069 | 7.092 | 8.239 | 1.780 | 7.638 | 1.154 | 1.484 |
| | 201 | OC | 34.831 | 40.857 | 50.978 | 75.139 | 37.391 | 77.257 | 36.262 | 42.168 |

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PM Profile Speciation Report - continued (profile 33007)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 202 | EC | 51.911 | 59.353 | 18.052 | 20.450 | 46.543 | 53.729 | 49.703 | 56.151 |
| TOTALS: | | | 88.498 | | 83.119 | | 87.646 | | 88.542 | |

(1) Calculated based on methodology described in the Air Emission Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Transportation Composite
Profile Number : 33008
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Developed using Federal test procedure vehicle emission profiles, AP-42 tire wear factors, and asbestos brake wear data.

SCC Assignments: 110

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.690 0.770 0.820

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.035 | 0.043 | 0.949 | 1.165 | 0.180 | 1.075 | 0.152 | 0.147 |
| 7440-21-3 | 14 | Si | 0.192 | 0.114 | 1.927 | 1.217 | 0.467 | 1.137 | 0.370 | 0.225 |
| 7723-14-0 | 15 | P | 0.053 | 0.048 | 0.296 | 0.295 | 0.092 | 0.278 | 0.082 | 0.075 |
| 7704-34-9 | 16 | S | 0.417 | 0.384 | 0.844 | 0.669 | 0.485 | 0.702 | 0.448 | 0.375 |
| 7782-50-5 | 17 | Cl | 0.065 | 0.053 | 0.677 | 0.547 | 0.162 | 0.511 | 0.127 | 0.100 |
| 7440-09-7 | 19 | K | 0.002 | 0.008 | 0.113 | 0.154 | 0.020 | 0.144 | 0.017 | 0.020 |
| 7440-70-2 | 20 | Ca | 0.068 | 0.057 | 0.411 | 0.309 | 0.122 | 0.294 | 0.103 | 0.084 |
| 7440-32-6 | 22 | Ti | 0.002 | 0.004 | 0.034 | 0.275 | 0.007 | 0.253 | 0.009 | 0.030 |
| 7440-62-2 | 23 | V | 0.002 | 0.003 | 0.008 | 0.108 | 0.003 | 0.099 | 0.003 | 0.012 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.003 | 0.083 | 0.093 | 0.014 | 0.088 | 0.011 | 0.011 |
| 7439-96-5 | 25 | Mn | 0.035 | 0.050 | 0.216 | 0.201 | 0.064 | 0.193 | 0.052 | 0.060 |
| 7439-89-6 | 26 | Fe | 0.046 | 0.037 | 0.725 | 0.394 | 0.154 | 0.374 | 0.105 | 0.074 |
| 7440-02-0 | 28 | Ni | 0.002 | 0.003 | 0.017 | 0.020 | 0.004 | 0.021 | 0.004 | 0.005 |
| 7440-50-8 | 29 | Cu | 0.002 | 0.003 | 0.032 | 0.041 | 0.007 | 0.040 | 0.005 | 0.005 |
| 7440-66-6 | 30 | Zn | 0.087 | 0.064 | 0.409 | 0.200 | 0.138 | 0.201 | 0.114 | 0.074 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.003 | 0.001 | 0.012 | 0.001 | 0.012 | 0.001 | 0.003 |
| 7440-38-2 | 33 | As | 0.000 | 0.025 | 0.000 | 0.170 | 0.000 | 0.157 | 0.001 | 0.026 |
| 7782-49-2 | 34 | Se | 0.000 | 0.002 | 0.030 | 0.039 | 0.005 | 0.038 | 0.005 | 0.007 |
| 7726-95-6 | 35 | Br | 0.216 | 0.290 | 0.880 | 0.994 | 0.321 | 0.950 | 0.274 | 0.352 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.004 | 0.000 | 0.020 | 0.000 | 0.019 | 0.000 | 0.004 |
| 7440-24-6 | 38 | Sr | 0.001 | 0.004 | 0.007 | 0.021 | 0.002 | 0.021 | 0.001 | 0.005 |
| 7440-65-5 | 39 | Y | 0.000 | 0.006 | 0.000 | 0.060 | 0.000 | 0.055 | 0.000 | 0.008 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.025 | 0.000 | 0.110 | 0.000 | 0.103 | 0.000 | 0.028 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.015 | 0.000 | 0.072 | 0.000 | 0.067 | 0.000 | 0.018 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.015 | 0.000 | 0.068 | 0.000 | 0.064 | 0.000 | 0.017 |
| 7440-22-4 | 47 | Ag | 0.008 | 0.023 | 0.000 | 0.091 | 0.007 | 0.086 | 0.006 | 0.024 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.027 | 0.000 | 0.121 | 0.000 | 0.113 | 0.000 | 0.030 |
| 7440-74-6 | 49 | In | 0.000 | 0.033 | 0.000 | 0.149 | 0.000 | 0.139 | 0.000 | 0.037 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.040 | 0.000 | 0.180 | 0.000 | 0.169 | 0.000 | 0.045 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.090 | 0.000 | 0.405 | 0.000 | 0.379 | 0.000 | 0.101 |
| 7440-39-3 | 56 | Ba | 0.009 | 0.168 | 0.105 | 0.769 | 0.024 | 0.720 | 0.017 | 0.188 |
| 7439-91-0 | 57 | La | 0.000 | 0.306 | 0.000 | 1.392 | 0.000 | 1.303 | 0.000 | 0.343 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.003 | 0.012 | 0.018 | 0.002 | 0.019 | 0.002 | 0.004 |
| 7439-92-1 | 82 | Pb | 0.752 | 1.018 | 4.488 | 4.831 | 1.344 | 4.533 | 1.078 | 1.354 |

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PM Profile Speciation Report - continued (profile 33008)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| | 201 | OC | 35.106 | 38.883 | 47.056 | 46.624 | 37.001 | 54.158 | 36.601 | 38.463 |
| | 202 | EC | 50.831 | 56.450 | 18.707 | 13.564 | 45.738 | 49.500 | 47.788 | 51.121 |
| TOTALS: | | | 87.933 | | 78.027 | | 86.364 | | 87.376 | |

(1) Calculated based on methodology described in the Air Emission Species Manual, Volume II.

PM Profile Speciation Report

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Profile Name : Transportation Composite
Profile Number : 33009
Data Quality : C

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Control Device : Not Applicable
Reference(s) : 62
Data Source : Samples collected through a vent eight feet above roadway in Sepulveda Tunnel (Los Angeles) using Sierra Model 244 manual dichotomous samplers. Analyzed using XRF and flame ionization.

SCC Assignments: 110

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.690 0.770 0.820

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um(1) | | Total Measured(2) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.338 | 0.131 | 0.816 | 2.154 | 0.414 | 1.982 | 0.338 | 0.131 |
| 7440-21-3 | 14 | Si | 0.383 | 0.225 | 6.053 | 14.086 | 1.282 | 12.934 | 0.383 | 0.225 |
| 7723-14-0 | 15 | P | 0.293 | 0.054 | 0.241 | 0.522 | 0.285 | 0.484 | 0.293 | 0.054 |
| 7704-34-9 | 16 | S | 0.731 | 0.304 | 0.092 | 1.643 | 0.630 | 1.531 | 0.731 | 0.304 |
| 7782-50-5 | 17 | Cl | 0.363 | 0.324 | 0.000 | 20.748 | 0.306 | 19.035 | 0.363 | 0.324 |
| 7440-09-7 | 19 | K | 0.019 | 0.021 | 0.000 | 0.784 | 0.016 | 0.720 | 0.019 | 0.021 |
| 7440-70-2 | 20 | Ca | 0.125 | 0.048 | 1.327 | 2.719 | 0.316 | 2.498 | 0.125 | 0.048 |
| 7440-32-6 | 22 | Ti | 0.004 | 0.011 | 0.008 | 0.132 | 0.005 | 0.122 | 0.004 | 0.011 |
| 7440-62-2 | 23 | V | 0.000 | 0.004 | 0.000 | 0.069 | 0.000 | 0.063 | 0.000 | 0.004 |
| 7440-47-3 | 24 | Cr | 0.004 | 0.004 | 0.018 | 0.047 | 0.007 | 0.045 | 0.004 | 0.004 |
| 7439-96-5 | 25 | Mn | 0.134 | 0.017 | 0.201 | 0.426 | 0.145 | 0.393 | 0.134 | 0.017 |
| 7439-89-6 | 26 | Fe | 2.218 | 0.277 | 11.338 | 23.081 | 3.664 | 21.198 | 2.218 | 0.277 |
| 7440-02-0 | 28 | Ni | 0.010 | 0.003 | 0.056 | 0.111 | 0.017 | 0.103 | 0.010 | 0.003 |
| 7440-50-8 | 29 | Cu | 0.112 | 0.014 | 0.291 | 0.611 | 0.140 | 0.563 | 0.112 | 0.014 |
| 7440-66-6 | 30 | Zn | 0.247 | 0.031 | 0.606 | 1.150 | 0.304 | 1.058 | 0.247 | 0.031 |
| 7440-55-3 | 31 | Ga | 0.003 | 0.005 | 0.003 | 0.012 | 0.003 | 0.012 | 0.003 | 0.005 |
| 7440-38-2 | 33 | As | 0.039 | 0.082 | 0.000 | 0.108 | 0.033 | 0.121 | 0.039 | 0.082 |
| 7782-49-2 | 34 | Se | 0.000 | 0.002 | 0.002 | 0.007 | 0.000 | 0.008 | 0.000 | 0.002 |
| 7726-95-6 | 35 | Br | 1.355 | 0.164 | 0.269 | 0.634 | 1.183 | 0.620 | 1.355 | 0.164 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.011 | 0.018 | 0.050 | 0.003 | 0.048 | 0.000 | 0.011 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.005 | 0.000 | 0.480 | 0.000 | 0.441 | 0.000 | 0.005 |
| 7440-65-5 | 39 | Y | 0.000 | 0.008 | 0.000 | 0.015 | 0.000 | 0.015 | 0.000 | 0.008 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.026 | 0.000 | 0.065 | 0.000 | 0.064 | 0.000 | 0.026 |
| 7439-98-7 | 42 | Mo | 0.020 | 0.018 | 0.039 | 0.062 | 0.023 | 0.061 | 0.020 | 0.018 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.016 | 0.000 | 0.037 | 0.000 | 0.036 | 0.000 | 0.016 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.021 | 0.000 | 0.048 | 0.000 | 0.047 | 0.000 | 0.021 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.028 | 0.000 | 0.064 | 0.000 | 0.063 | 0.000 | 0.028 |
| 7440-74-6 | 49 | In | 0.000 | 0.035 | 0.000 | 0.080 | 0.000 | 0.079 | 0.000 | 0.035 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.042 | 0.000 | 0.096 | 0.000 | 0.095 | 0.000 | 0.042 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.092 | 0.000 | 0.216 | 0.000 | 0.212 | 0.000 | 0.092 |
| 7440-39-3 | 56 | Ba | 0.328 | 0.056 | 1.077 | 1.905 | 0.447 | 1.753 | 0.328 | 0.056 |
| 7439-91-0 | 57 | La | 0.000 | 0.318 | 0.000 | 0.722 | 0.000 | 0.714 | 0.000 | 0.318 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.003 | 0.002 | 0.007 | 0.000 | 0.008 | 0.000 | 0.003 |

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PM Profile Speciation Report - continued (profile 33009)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um(1) %wt | 0-10 um(1) unc | Total Measured(2) %wt | Total Measured(2) unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7439-92-1 | 82 | Pb | 2.437 | 0.298 | 2.049 | 3.952 | 2.375 | 3.651 | 2.437 | 0.298 |
| | 201 | OC | 38.586 | 5.550 | 39.164 | 61.704 | 38.677 | 57.077 | 38.586 | 5.550 |
| | 202 | EC | 38.119 | 4.909 | 12.656 | 24.275 | 34.082 | 23.124 | 38.119 | 4.909 |
| TOTALS: | | | 85.868 | | 76.326 | | 84.357 | | 85.868 | |

(1) Calculated based on methodology described in the Air Emissions Species Manual, Volume II.

(2) Estimated / extrapolated.

PM Profile Speciation Report

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Profile Name : Gasoline Vehicles - Las Vegas Valley (1987)
Profile Number : 33010
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 81
Data Source : Samples collected with two dichotomous samplers. Analyzed using Sequential thermal oxidation and XRF.

SCC Assignments: 110

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.670 | 0.750 | 0.800 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured(1) | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7429-90-5 | 13 | Al | 0.046 | 0.005 | 0.046 | 0.000 | 0.046 | 0.000 | 0.046 | 0.000 |
| 7440-21-3 | 14 | Si | 0.092 | 0.009 | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.000 |
| 7704-34-9 | 16 | S | 0.092 | 0.009 | 0.092 | 0.000 | 0.092 | 0.000 | 0.092 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.830 | 0.083 | 0.830 | 0.000 | 0.830 | 0.000 | 0.830 | 0.000 |
| 7440-09-7 | 19 | K | 0.320 | 0.032 | 0.320 | 0.000 | 0.320 | 0.000 | 0.320 | 0.000 |
| 7439-92-1 | 82 | Pb | 2.500 | 0.250 | 2.500 | 0.000 | 2.500 | 0.000 | 2.500 | 0.000 |
| | 200 | TC | 57.600 | 10.000 | 57.600 | 0.000 | 57.600 | 0.000 | 57.600 | 0.000 |
| TOTALS: | | | 61.480 | | 61.480 | | 61.480 | | 61.480 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Highway Vehicles Composite
Profile Number : 33011
Data Quality : C

---

Control Device : Not Applicable
Reference(s) :
Data Source : Profile represents a composite of Profiles 33004, 33005, 33006, 33007, 33008, and 33009.

SCC Assignments: 110

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.690 | 0.770 | 0.820 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) | %wt | unc(1) |
| 7429-90-5 | 13 | Al | 0.148 | 0.000 | 0.841 | 0.000 | 0.258 | 0.000 | 0.214 | 0.000 |
| 7440-21-3 | 14 | Si | 0.530 | 0.000 | 1.888 | 0.000 | 0.745 | 0.000 | 0.513 | 0.000 |
| 7723-14-0 | 15 | P | 0.122 | 0.000 | 0.276 | 0.000 | 0.146 | 0.000 | 0.140 | 0.000 |
| 7704-34-9 | 16 | S | 0.789 | 0.000 | 0.507 | 0.000 | 0.765 | 0.000 | 0.779 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.187 | 0.000 | 0.493 | 0.000 | 0.235 | 0.000 | 0.247 | 0.000 |
| 7440-09-7 | 19 | K | 0.009 | 0.000 | 0.083 | 0.000 | 0.021 | 0.000 | 0.017 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.087 | 0.000 | 0.438 | 0.000 | 0.143 | 0.000 | 0.096 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.003 | 0.000 | 0.032 | 0.000 | 0.008 | 0.000 | 0.007 | 0.000 |
| 7440-62-2 | 23 | V | 0.002 | 0.000 | 0.011 | 0.000 | 0.003 | 0.000 | 0.002 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.001 | 0.000 | 0.051 | 0.000 | 0.009 | 0.000 | 0.006 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.093 | 0.000 | 0.272 | 0.000 | 0.121 | 0.000 | 0.107 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.398 | 0.000 | 0.266 | 0.000 | 0.695 | 0.000 | 0.428 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.003 | 0.000 | 0.024 | 0.000 | 0.006 | 0.000 | 0.005 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.023 | 0.000 | 0.074 | 0.000 | 0.031 | 0.000 | 0.025 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.169 | 0.000 | 0.435 | 0.000 | 0.211 | 0.000 | 0.201 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.003 | 0.000 | 0.002 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.000 | 0.000 | 0.000 | 0.007 | 0.000 | 0.008 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.022 | 0.000 | 0.004 | 0.000 | 0.003 | 0.000 |
| 7726-95-6 | 35 | Br | 0.700 | 0.000 | 1.119 | 0.000 | 0.765 | 0.000 | 0.751 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.003 | 0.000 | 0.008 | 0.000 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.001 | 0.000 | 0.003 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.003 | 0.000 | 0.007 | 0.000 | 0.004 | 0.000 | 0.003 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.003 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-74-6 | 49 | In | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.056 | 0.000 | 0.197 | 0.000 | 0.079 | 0.000 | 0.058 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.000 | 0.013 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 |
| 7439-92-1 | 82 | Pb | 1.891 | 0.000 | 5.721 | 0.000 | 2.500 | 0.000 | 2.291 | 0.000 |
| | 201 | OC | 41.256 | 0.000 | 48.134 | 0.000 | 42.346 | 0.000 | 41.733 | 0.000 |

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PM Profile Speciation Report - continued (profile 33011)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc(1) | 2.5-10 um %wt | 2.5-10 um unc(1) | 0-10 um %wt | 0-10 um unc(1) | Total Measured %wt | Total Measured unc(1) |
|---|---|---|---|---|---|---|---|---|---|---|
| | 202 | EC | 46.531 | 0.000 | 17.131 | 0.000 | 41.870 | 0.000 | 43.307 | 0.000 |
| TOTALS: | | | 93.018 | | 78.043 | | 90.989 | | 90.951 | |

(1) Uncertainty not evaluated.

PM Profile Speciation Report

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Profile Name : Transportation Composite
Profile Number : 33020
Data Quality : D

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Control Device : Uncontrolled
Reference(s) : 41,45,46
Data Source : Developed from Profiles 33001, 33002, and 33003.

SCC Assignments: 110

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.690 0.770 0.820

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Total Particulate Matter -

| | | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Species | | | | | | | | | |
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.020 | 0.064 | 0.020 | 0.064 | 0.020 | 0.076 | 0.020 | 0.064 |
| 7782-41-4 | 9 | F | 0.000 | 0.006 | 0.000 | 0.006 | 0.000 | 0.007 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.084 | 0.405 | 0.084 | 0.405 | 0.084 | 0.482 | 0.056 | 0.404 |
| 7439-95-4 | 12 | Mg | 0.653 | 0.621 | 0.650 | 0.617 | 0.652 | 0.745 | 0.366 | 0.346 |
| 7429-90-5 | 13 | Al | 0.498 | 0.599 | 0.451 | 0.594 | 0.491 | 0.715 | 0.085 | 0.520 |
| 7440-21-3 | 14 | Si | 0.752 | 0.781 | 0.648 | 0.773 | 0.735 | 0.932 | 0.282 | 0.751 |
| 7723-14-0 | 15 | P | 0.037 | 0.064 | 0.037 | 0.064 | 0.037 | 0.076 | 0.037 | 0.064 |
| 7704-34-9 | 16 | S | 1.694 | 2.859 | 1.424 | 2.270 | 1.651 | 3.083 | 0.254 | 0.000 |
| 7782-50-5 | 17 | Cl | 2.234 | 0.866 | 2.014 | 0.807 | 2.199 | 1.058 | 0.451 | 0.462 |
| 7440-09-7 | 19 | K | 0.109 | 0.117 | 0.109 | 0.117 | 0.109 | 0.140 | 0.085 | 0.115 |
| 7440-70-2 | 20 | Ca | 1.511 | 1.023 | 1.308 | 0.655 | 1.479 | 1.050 | 0.704 | 0.404 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.109 | 0.222 | 0.003 | 0.059 | 0.092 | 0.193 | 0.003 | 0.012 |
| 7440-62-2 | 23 | V | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.008 | 0.000 | 0.003 |
| 7439-96-5 | 25 | Mn | 0.045 | 0.017 | 0.045 | 0.017 | 0.045 | 0.022 | 0.045 | 0.014 |
| 7439-89-6 | 26 | Fe | 1.486 | 1.184 | 1.246 | 0.858 | 1.448 | 1.252 | 0.169 | 0.346 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.006 | 0.005 | 0.006 | 0.005 | 0.006 | 0.006 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.044 | 0.024 | 0.044 | 0.024 | 0.044 | 0.030 | 0.020 | 0.017 |
| 7440-66-6 | 30 | Zn | 0.169 | 0.102 | 0.233 | 0.184 | 0.179 | 0.181 | 0.023 | 0.046 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 6.595 | 1.525 | 6.045 | 1.324 | 6.507 | 2.005 | 3.155 | 0.520 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.003 | 0.009 | 0.003 | 0.009 | 0.003 | 0.011 | 0.003 | 0.009 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.005 | 0.001 | 0.005 | 0.001 | 0.006 | 0.001 | 0.005 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.020 | 0.012 | 0.020 | 0.012 | 0.020 | 0.014 | 0.020 | 0.012 |

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PM Profile Speciation Report - continued (profile 33020)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 18.027 | 2.104 | 16.627 | 1.921 | 17.805 | 3.777 | 6.760 | 0.000 |
| | 200 | TC | 18.872 | 24.249 | 18.872 | 24.249 | 18.872 | 29.030 | 18.872 | 24.249 |
| | 201 | OC | 28.840 | 6.375 | 27.273 | 5.961 | 28.592 | 8.732 | 0.000 | 0.000 |
| | 202 | EC | 15.030 | 6.693 | 19.977 | 9.503 | 15.814 | 10.223 | 0.000 | 0.000 |
| | 203 | SO4 | 2.405 | 1.747 | 2.405 | 1.747 | 2.405 | 2.118 | 1.972 | 1.732 |
| | 204 | NO3 | 0.303 | 0.173 | 0.303 | 0.173 | 0.303 | 0.212 | 0.000 | 0.000 |
| TOTALS: | | | 99.547 | | 99.848 | | 99.593 | | 33.383 | |

PM Profile Speciation Report

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Profile Name : Tire Wear
Profile Number : 34002
Data Quality : D/E

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Control Device : Uncontrolled
Reference(s) : 41,46,53
Data Source : Composite profile developed from References 41, 46, and 53.

SCC Assignments: 112

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.485 0.390 0.553

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-21-3 | 14 | Si | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7723-14-0 | 15 | P | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7704-34-9 | 16 | S | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-48-4 | 27 | Co | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-66-6 | 30 | Zn | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |

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PM Profile Speciation Report - continued (profile 34002)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | < | 0.000 | < | 0.000 | NE | 0.000 | < | 0.000 |
| | 201 | OC | 21.750 | 0.000 | 21.750 | 0.000 | 21.750 | 0.000 | 21.750 | 0.000 |
| | 202 | EC | 60.900 | 0.000 | 60.900 | 0.000 | 60.900 | 0.000 | 60.900 | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NE | 0.000 | NR | 0.000 |
| TOTALS: | | | 83.650 | | 83.650 | | 83.650 | | 83.650 | |

PM Profile Speciation Report

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Profile Name : Tire Wear
Profile Number : 34003
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 62,82,83
Data Source : Data taken from Reference 62. For details, consult References 82 and 83.

SCC Assignments: 112

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.390 0.480 0.550

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Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.000 | 0.054 | 0.013 |
| 7439-95-4 | 12 | Mg | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.000 | 0.039 | 0.008 |
| 7429-90-5 | 13 | Al | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.000 | 0.074 | 0.022 |
| 7440-21-3 | 14 | Si | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.050 |
| 7723-14-0 | 15 | P | 0.250 | 0.000 | 0.250 | 0.000 | 0.250 | 0.000 | 0.250 | 0.250 |
| 7704-34-9 | 16 | S | 1.989 | 0.000 | 1.989 | 0.000 | 1.989 | 0.000 | 1.989 | 0.694 |
| 7782-50-5 | 17 | Cl | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 0.000 | 1.500 | 1.000 |
| 7440-70-2 | 20 | Ca | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.000 | 0.024 | 0.008 |
| 7440-32-6 | 22 | Ti | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.000 | 0.016 | 0.005 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.018 | 0.000 | 1.018 | 0.000 | 1.018 | 0.000 | 1.018 | 0.047 |
| 7726-95-6 | 35 | Br | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.008 |
| 7440-39-3 | 56 | Ba | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.002 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 201 | OC | 58.300 | 0.000 | 58.300 | 0.000 | 58.300 | 0.000 | 58.300 | 15.000 |
| | 202 | EC | 28.700 | 0.000 | 28.700 | 0.000 | 28.700 | 0.000 | 28.700 | 10.000 |
| TOTALS: | | | 92.027 | | 92.027 | | 92.027 | | 92.027 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Brake Lining, Asbestos
Profile Number : 34004
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 62,82
Data Source : Composition of asbestos brake pads analyzed using neutron activation.

SCC Assignments: 112

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.390 0.480 0.550

---

Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-23-5 | 11 | Na | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.000 | 0.032 | 0.008 |
| 7439-95-4 | 12 | Mg | 13.800 | 0.000 | 13.800 | 0.000 | 13.800 | 0.000 | 13.800 | 0.200 |
| 7429-90-5 | 13 | Al | 0.215 | 0.000 | 0.215 | 0.000 | 0.215 | 0.000 | 0.215 | 0.055 |
| 7440-21-3 | 14 | Si | 10.800 | 0.000 | 10.800 | 0.000 | 10.800 | 0.000 | 10.800 | 2.160 |
| 7782-50-5 | 17 | Cl | 0.145 | 0.000 | 0.145 | 0.000 | 0.145 | 0.000 | 0.145 | 0.015 |
| 7440-70-2 | 20 | Ca | 1.895 | 0.000 | 1.895 | 0.000 | 1.895 | 0.000 | 1.895 | 1.705 |
| 7440-22-2 | 21 | Sc | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-62-2 | 23 | V | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.098 | 0.000 | 0.098 | 0.000 | 0.098 | 0.000 | 0.098 | 0.022 |
| 7439-96-5 | 25 | Mn | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.000 | 0.043 | 0.003 |
| 7439-89-6 | 26 | Fe | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 0.000 | 4.000 | 1.095 |
| 7440-48-4 | 27 | Co | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.310 | 0.000 | 0.310 | 0.000 | 0.310 | 0.000 | 0.310 | 0.074 |
| 7440-38-2 | 33 | As | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.041 | 0.000 | 0.041 | 0.000 | 0.041 | 0.000 | 0.041 | 0.004 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.922 | 0.000 | 0.922 | 0.000 | 0.922 | 0.000 | 0.922 | 0.474 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| TOTALS: | | | 32.312 | | 32.312 | | 32.312 | | 32.312 | |

(1) Estimated / extrapolated.

PM Profile Speciation Report

---

Profile Name : Motor Oil
Profile Number : 34005
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 62,84
Data Source : Data taken from Reference 62. For details, consult Reference 84.

SCC Assignments: 112

Mass Fraction Data - Size Interval (um) : (0-2.5)(2) (0-6)(2) (0-10)(2)
Mass Fraction : 0.000 0.000 0.000

---

Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7439-95-4 | 12 | Mg | 0.023 | 0.000 | 0.023 | 0.000 | 0.023 | 0.000 | 0.023 | 0.040 |
| 7704-34-9 | 16 | S | 0.430 | 0.000 | 0.430 | 0.000 | 0.430 | 0.000 | 0.430 | 0.230 |
| 7782-50-5 | 17 | Cl | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.024 |
| 7440-70-2 | 20 | Ca | 0.103 | 0.000 | 0.103 | 0.000 | 0.103 | 0.000 | 0.103 | 0.109 |
| 7439-89-6 | 26 | Fe | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.082 | 0.000 | 0.003 | 0.000 | 0.082 | 0.000 | 0.082 | 0.073 |
| 7782-49-2 | 34 | Se | 0.003 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.021 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.021 | 0.000 | 0.099 | 0.000 | 0.021 | 0.000 | 0.021 | 0.021 |
| 7440-39-3 | 56 | Ba | 0.099 | 0.000 | 0.099 | 0.000 | 0.099 | 0.000 | 0.099 | 0.156 |
| TOTALS: | | | 0.778 | | 0.795 | | 0.778 | | 0.778 | |

(1) Estimated / extrapolated.
(2) 0.000 indicates the unavailability of mass fraction data for this profile.

PM Profile Speciation Report

---

Profile Name : Semimetal Disk Brake Pads
Profile Number : 34006
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 62
Data Source : Sample collected from deposition on wheel of 1986 Acura.
Analyzed using XRF.

SCC Assignments: 112

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.390 0.480 0.550

---

Total Particulate Matter -

| | Species | | 0-2.5 um(1) | | 2.5-10 um(1) | | 0-10 um(1) | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7439-89-6 | 26 | Fe | 45.900 | 0.000 | 45.900 | 0.000 | 45.900 | 0.000 | 45.900 | 3.900 |
| 7440-50-8 | 29 | Cu | 2.260 | 0.000 | 0.370 | 0.000 | 2.260 | 0.000 | 2.260 | 0.180 |
| 7439-98-7 | 42 | Mo | 0.370 | 0.000 | 0.660 | 0.000 | 0.370 | 0.000 | 0.370 | 0.050 |
| 7440-31-5 | 50 | Sn | 0.660 | 0.000 | 0.660 | 0.000 | 0.660 | 0.000 | 0.660 | 0.050 |
| 7440-39-3 | 56 | Ba | 3.450 | 0.000 | 3.450 | 0.000 | 3.450 | 0.000 | 3.450 | 0.190 |
| TOTALS: | | | 52.640 | | 51.040 | | 52.640 | | 52.640 | |

(1) Estimated / extrapolated.

## 3.19 AIRCRAFT

Aircraft engines are primarily reciprocating piston and gas turbine. Aircraft emissions of concern typically occur during landing/takeoff (LTO) cycles. Each class of aircraft has its own typical LTO cycle which includes all of the normal flight and ground operation modes. These operations are divided into five modes: approach, taxi/idle in, taxi/idle out, takeoff, and climbout.

PM Profile Speciation Report

---

Profile Name : Jet Aircraft
Profile Number : 34001
Data Quality : D/E

---

Control Device : Uncontrolled
Reference(s) : 20
Data Source : CASS Profile No. 55.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.485 | 0.390 | 0.553 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-42-8 | 5 | B | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-41-4 | 9 | F | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-23-5 | 11 | Na | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-95-4 | 12 | Mg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7429-90-5 | 13 | Al | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-21-3 | 14 | Si | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7723-14-0 | 15 | P | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7704-34-9 | 16 | S | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-50-5 | 17 | Cl | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-09-7 | 19 | K | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-70-2 | 20 | Ca | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-22-2 | 21 | Sc | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-32-6 | 22 | Ti | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-62-2 | 23 | V | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-47-3 | 24 | Cr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-96-5 | 25 | Mn | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-89-6 | 26 | Fe | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-48-4 | 27 | Co | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-02-0 | 28 | Ni | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-50-8 | 29 | Cu | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-66-6 | 30 | Zn | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-55-3 | 31 | Ga | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-56-4 | 32 | Ge | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-38-2 | 33 | As | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-49-2 | 34 | Se | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7726-95-6 | 35 | Br | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-17-7 | 37 | Rb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-24-6 | 38 | Sr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-67-7 | 40 | Zr | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-22-4 | 47 | Ag | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-43-9 | 48 | Cd | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-31-5 | 50 | Sn | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-36-0 | 51 | Sb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-46-2 | 55 | Cs | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7440-39-3 | 56 | Ba | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |

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PM Profile Speciation Report - continued (profile 34001)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-45-1 | 58 | Ce | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-97-6 | 80 | Hg | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7439-92-1 | 82 | Pb | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 201 | OC | 25.900 | 0.000 | 25.900 | 0.000 | 25.900 | 4.543 | 25.900 | 0.000 |
| | 202 | EC | 70.100 | 0.000 | 70.100 | 0.000 | 70.100 | 12.296 | 70.100 | 0.000 |
| | 203 | SO4 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| | 204 | NO3 | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| TOTALS: | | | 96.000 | | 96.000 | | 96.000 | | 96.000 | |

## 3.20 OTHER SOURCES

This subsection includes all the miscellaneous profiles which do not readily fit into the other source categories.

PM Profile Speciation Report

---

Profile Name : Residential Space Heating - Coal
Profile Number : 43201
Data Quality : D/E

---

Control Device : Uncontrolled
Reference(s) : 51
Data Source : Average of 2 tests. ICAP and AAS analysis of Method 5 samples. Carbon data approximated.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.070 0.140 0.200

---

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| 7440-42-8 | 5 | B | 0.120 | 0.000 | 0.120 | 0.000 | 0.120 | 0.008 | 0.120 | 0.000 |
| 7782-41-4 | 9 | F | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-23-5 | 11 | Na | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.540 | 0.000 | 0.540 | 0.000 | 0.540 | 0.038 | 0.540 | 0.000 |
| 7429-90-5 | 13 | Al | 1.275 | 0.000 | 1.275 | 0.000 | 1.275 | 0.089 | 1.275 | 0.000 |
| 7440-21-3 | 14 | Si | 1.275 | 0.000 | 1.275 | 0.000 | 1.275 | 0.089 | 1.275 | 0.000 |
| 7723-14-0 | 15 | P | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.007 | 0.105 | 0.000 |
| 7704-34-9 | 16 | S | NR | 0.000 | NR | 0.000 | NR | 0.000 | NR | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-70-2 | 20 | Ca | 2.100 | 0.000 | 2.100 | 0.000 | 2.100 | 0.147 | 2.100 | 0.000 |
| 7440-22-2 | 21 | Sc | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-32-6 | 22 | Ti | 0.075 | 0.000 | 0.075 | 0.000 | 0.075 | 0.005 | 0.075 | 0.000 |
| 7440-62-2 | 23 | V | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.002 | 0.030 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.650 | 0.000 | 1.650 | 0.000 | 1.650 | 0.115 | 1.650 | 0.000 |
| 7440-48-4 | 27 | Co | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.090 | 0.000 | 0.090 | 0.000 | 0.090 | 0.006 | 0.090 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.060 | 0.000 | 0.060 | 0.000 | 0.060 | 0.004 | 0.060 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.300 | 0.000 | 0.300 | 0.000 | 0.300 | 0.021 | 0.300 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-38-2 | 33 | As | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.002 | 0.030 | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7726-95-6 | 35 | Br | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-17-7 | 37 | Rb | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-24-6 | 38 | Sr | 0.030 | 0.000 | 0.030 | 0.000 | 0.030 | 0.002 | 0.030 | 0.000 |
| 7440-67-7 | 40 | Zr | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-22-4 | 47 | Ag | 0.900 | 0.000 | 0.900 | 0.000 | 0.900 | 0.063 | 0.900 | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7440-31-5 | 50 | Sn | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.007 | 0.105 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.405 | 0.000 | 0.405 | 0.000 | 0.405 | 0.028 | 0.405 | 0.000 |
| 7440-46-2 | 55 | Cs | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |

---

PM Profile Speciation Report - continued (profile 43201)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.105 | 0.000 | 0.105 | 0.000 | 0.105 | 0.007 | 0.105 | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-97-6 | 80 | Hg | < | 0.000 | < | 0.000 | < | 0.000 | < | 0.000 |
| 7439-92-1 | 82 | Pb | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.001 | 0.015 | 0.000 |
| | 201 | OC | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 2.800 | 40.000 | 0.000 |
| | 202 | EC | 40.000 | 0.000 | 40.000 | 0.000 | 40.000 | 2.800 | 40.000 | 0.000 |
| | 203 | SO4 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NA | 0.000 | NA | 0.000 |
| TOTALS: | | | 89.238 | | 89.238 | | 89.238 | | 89.238 | |

PM Profile Speciation Report

---

Profile Name : Orchard Heating - Smudge Pots
Profile Number : 43302
Data Quality : B/D

---

Control Device : Not applicable
Reference(s) : 45
Data Source : Average of 2 samples collected with a 2-stage virtual impactor.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.230 0.440 0.620

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-42-8 | 5 | B | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-41-4 | 9 | F | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-23-5 | 11 | Na | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-95-4 | 12 | Mg | 0.120 | 0.071 | 0.120 | 0.071 | 0.120 | 0.038 | 0.120 | 0.000 |
| 7429-90-5 | 13 | Al | 0.035 | 0.020 | 0.035 | 0.020 | 0.035 | 0.011 | 0.035 | 0.000 |
| 7440-21-3 | 14 | Si | 0.060 | 0.085 | 0.060 | 0.085 | 0.060 | 0.045 | 0.060 | 0.000 |
| 7723-14-0 | 15 | P | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7704-34-9 | 16 | S | 0.890 | 0.100 | 0.890 | 0.100 | 0.890 | 0.084 | 0.890 | 0.000 |
| 7782-50-5 | 17 | Cl | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-09-7 | 19 | K | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-70-2 | 20 | Ca | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-2 | 21 | Sc | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-32-6 | 22 | Ti | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-62-2 | 23 | V | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-47-3 | 24 | Cr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-96-5 | 25 | Mn | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-89-6 | 26 | Fe | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-48-4 | 27 | Co | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-02-0 | 28 | Ni | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-50-8 | 29 | Cu | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-66-6 | 30 | Zn | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.000 |
| 7440-55-3 | 31 | Ga | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-56-4 | 32 | Ge | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-38-2 | 33 | As | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7782-49-2 | 34 | Se | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7726-95-6 | 35 | Br | 0.006 | 0.006 | 0.006 | 0.006 | 0.006 | 0.003 | 0.006 | 0.000 |
| 7440-17-7 | 37 | Rb | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-24-6 | 38 | Sr | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-67-7 | 40 | Zr | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-22-4 | 47 | Ag | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-43-9 | 48 | Cd | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-31-5 | 50 | Sn | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-36-0 | 51 | Sb | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-46-2 | 55 | Cs | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |

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PM Profile Speciation Report - continued (profile 43302)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7440-45-1 | 58 | Ce | < | 0.000 | < | 0.000 | NE | 0.000 | NE | 0.000 |
| 7439-92-1 | 82 | Pb | 0.059 | 0.044 | 0.059 | 0.044 | 0.059 | 0.023 | 0.059 | 0.000 |
| | 201 | OC | 7.200 | 3.960 | 7.200 | 3.960 | 7.200 | 2.145 | 7.200 | 0.000 |
| | 202 | EC | 83.500 | 9.000 | 83.500 | 9.000 | 83.500 | 7.789 | 83.500 | 0.000 |
| | 203 | SO4 | 1.800 | 1.131 | 1.800 | 1.131 | 1.800 | 0.608 | 1.800 | 0.000 |
| | 204 | NO3 | NA | 0.000 | NA | 0.000 | NE | 0.000 | NE | 0.000 |
| | 205 | NH4 | 1.730 | 0.665 | 1.730 | 0.665 | 1.730 | 0.372 | 1.730 | 0.000 |
| TOTALS: | | | 95.413 | | 95.413 | | 95.413 | | 95.413 | |

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# APPENDIX A

# PM PROFILE LISTING

TABLE A-1. PROFILE LISTING


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 11201 | Coal-Fired Power Plant | 30 |
| 11202 | Coal-Fired Power Plant | 32 |
| 11203 | Coal-Fired Power Plant | 34 |
| 11204 | Coal-Fired Power Plant | 35 |
| 11205 | Coal-Fired Power Plant | 37 |
| 11206 | Coal-Fired Power Plant | 38 |
| 11207 | Coal-Fired Power Plant | 39 |
| 11208 | Coal-Fired Power Plant | 40 |
| 11209 | Coal-Fired Power Plant | 41 |
| 11210 | Coal-Fired Power Plant | 42 |
| 11211 | Coal-Fired Power Plant | 43 |
| 11212 | Coal-Fired Power Plant | 44 |
| 11213 | External Combustion - Coal-Fired Composite | 45 |
| 11214 | Uncontrolled Coal-Fired Power Plant Composite | 46 |
| 11215 | Coal-Fired Power Plant/ESP Composite | 47 |
| 11301 | Coal and RDF-Fired Power Plant | 48 |
| 11501 | Oil-Fired Power Plant | 50 |
| 11502 | Oil-Fired Power Plant | 52 |
| 11503 | Oil-Fired Power Plant | 54 |
| 11504 | Oil-Fired Power Plant | 56 |
| 11505 | Oil-Fired Power Plant | 58 |
| 11506 | Oil-Fired Power Plant | 60 |
| 11507 | Oil-Fired Power Plant | 62 |
| 11508 | Oil-Fired Power Plant | 64 |
| 11509 | Oil-Fired Power Plant | 65 |
| 11510 | Oil-Fired Power Plant Composite | 67 |
| 11801 | Wood-Fired Boiler | 68 |
| 12201 | Coal-Slurry Fired Boiler | 70 |

TABLE A-1. PROFILE LISTING (Continued)


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 12301 | Kerosene-Fired Boiler Composite | 72 |
| 12704 | Wood-Fired Boiler | 73 |
| 12705 | Wood-Fired Boiler Composite | 75 |
| 13501 | Residual Oil Combustion | 76 |
| 13502 | Heavy Oil-Fired Boiler Composite | 78 |
| 13503 | Indonesian Oil-Fired Boiler Composite | 79 |
| 13504 | Oil-Fired Boiler | 80 |
| 14101 | External Combustion - Waste Oil-Fired Boiler | 81 |
| 14102 | External Combustion - Liquid Waste-Fired Boiler | 82 |
| 15101 | External Combustion - Solid Waste-Fired Boiler | 83 |
| 17105 | Municipal Incinerator (Philadelphia) | 295 |
| 17106 | Municipal Incinerator Composite | 297 |
| 17107 | Municipal Incinerator (East Chicago, IN) | 299 |
| 17108 | Municipal Incinerator (Philadelphia) | 300 |
| 17109 | Car Shredder | 302 |
| 17120 | Sewage Sludge Incineration - Composite | 303 |
| 17121 | Sewage Sludge Incineration | 305 |
| 17122 | Sewage Sludge Incineration | 307 |
| 17123 | Sewage Sludge Incineration | 309 |
| 17124 | Sewage Sludge Incineration | 311 |
| 19101 | Scrap Copper Incinerator | 191 |
| 20101 | Aluminum Foundry - Reverberatory Furnace | 193 |
| 20102 | Secondary Aluminum Plant - Dross Recovery Furnace | 195 |
| 20103 | Secondary Aluminum - Dross Recovery Furnace | 197 |
| 20401 | Secondary Lead Smelter - Blast Furnace | 198 |
| 20402 | Secondary Lead - Sanitary Baghouse | 200 |
| 20403 | Secondary Lead - Reverberatory Furnace | 201 |
| 20404 | Secondary Lead - Melting Pot Fugitives | 202 |

TABLE A-1. PROFILE LISTING (Continued)

| Profile Number | Profile Name | Page Number |
|---|---|---|
| 20405 | Secondary Lead - Melting Pot Stack | 203 |
| 20406 | Secondary Lead - Yard Dust | 204 |
| 20501 | Zinc Oxide Kiln | 205 |
| 20502 | Antimony Oxide Plant - Antimony Roasting | 207 |
| 20503 | Antimony Oxide Plant - Antimony Roasting | 209 |
| 21101 | Limestone Dust | 225 |
| 21102 | Primary Lead Smelting - Ore Concentrate | 117 |
| 21103 | Primary Lead Smelting - Ore Concentrate Composite | 119 |
| 21150 | Primary Lead Smelting - Materials Handling Composite | 121 |
| 21203 | Coke Dust | 227 |
| 21204 | Coal Dust | 229 |
| 21205 | Primary Lead Smelting - Speiss Fugitive Dust | 123 |
| 21206 | Primary Lead Smelting - Soda Flux Fugitive Dust | 125 |
| 21301 | Copper Ore Crushing | 127 |
| 21302 | Copper Ore Mill Wastepile | 129 |
| 21303 | Copper Ore Concentrate | 131 |
| 21304 | Copper Mining Waste | 133 |
| 21320 | Copper Ore Processing Composite | 135 |
| 21340 | Composite of Copper Ore Concentrate and Mining Waste | 137 |
| 21401 | Feed and Grain Handling Dust | 113 |
| 21501 | Primary Lead Smelting - Slag Dust | 139 |
| 22101 | Particleboard Dryer | 273 |
| 22102 | Particleboard Dryer | 275 |
| 22201 | Wood Products - Sanderdust | 277 |
| 22202 | Sawdust | 279 |
| 22301 | Veneer Dryer | 281 |
| 23103 | Kraft Recovery Furnace | 283 |
| 23202 | Lime Kiln | 285 |
| 24101 | Sulfite Recovery Boiler | 287 |

TABLE A-1. PROFILE LISTING (Continued)


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 25201 | Calcium Carbide Furnace | 231 |
| 25302 | Charcoal Manufacturing | 89 |
| 25401 | Silica Manufacturing | 233 |
| 25402 | Asphalt Roofing Manufacturing | 235 |
| 25403 | Paint Spray Booth | 291 |
| 25404 | Urea Fertilizer Production | 91 |
| 25405 | Boric Acid Manufacturing | 93 |
| 25406 | Carborundum Manufacturing | 237 |
| 25407 | Phosphorous Plant Plume | 95 |
| 25408 | Fertilizer Production - Phosphate Rock Dust | 97 |
| 25409 | Ammonium Nitrate - Prill Tower | 99 |
| 25410 | Ammonium Sulfate Production | 100 |
| 25411 | Diammonium Phosphate Plant | 101 |
| 25412 | Superphosphate Plant | 103 |
| 25413 | Superphosphate Granulation | 105 |
| 25414 | Sodium Tripolyphosphate - Cyclone Dust | 107 |
| 25415 | NPK Fertilizer | 109 |
| 25701 | Metal Fabrication - Galvanizing (ZnO) | 315 |
| 25702 | Metal Fabrication - Sandblasting | 316 |
| 25703 | Metal Fabrication - Welding | 317 |
| 26101 | Refinery Process Heaters (Gas) | 255 |
| 26202 | Petroleum Refinery Catalytic Cracker | 257 |
| 26203 | Petroleum Refinery Catalytic Cracker | 259 |
| 26204 | Petroleum Refinery Catalytic Cracker | 261 |
| 26205 | Petroleum Refinery Catalytic Cracker | 262 |
| 26206 | Coke Calciner | 264 |
| 26207 | Green Coke Dust | 265 |
| 26208 | Coke Cooler | 267 |
| 26209 | Catalytic Cracker Composite | 269 |

TABLE A-1. PROFILE LISTING (Continued)

| Profile Number | Profile Name | Page Number |
|---|---|---|
| 27102 | Glass Furnace | 239 |
| 27201 | Cement Kiln (Gas-Fired) | 241 |
| 27203 | Cement Kiln (Coal-Fired) | 243 |
| 27204 | Portland Cement Dust | 245 |
| 27205 | Cement Ball Mill | 246 |
| 27501 | Gypsum Calciner | 247 |
| 27502 | Gypsum Handling | 249 |
| 27503 | Gypsum Kiln | 250 |
| 27601 | Lime Handling | 251 |
| 27602 | Lime Kiln | 252 |
| 28201 | Cast Iron Induction Furnace | 210 |
| 28202 | Cast Iron Cupola | 212 |
| 28301 | Steel Production - Steel Sinter Plant | 141 |
| 28302 | Steel Production - Open Hearth Furnace | 143 |
| 28303 | Steel Production - Basic Oxygen Furnace | 145 |
| 28304 | Iron Ore Dust - Sinter | 147 |
| 28305 | Steel Electric Arc Furnace | 214 |
| 28306 | Steel Desulfurization Baghouse Dust | 148 |
| 28307 | Steel Production - Basic Oxygen Furnace | 149 |
| 28401 | Ferromanganese Furnace | 151 |
| 28601 | Steel Foundry - Steel Heat Treating (Salt Quench) | 216 |
| 29101 | Aluminum Processing | 153 |
| 29102 | Aluminum Reduction Potline | 155 |
| 29201 | Copper Oxide Kiln | 218 |
| 29202 | Primary Copper Smelter | 157 |
| 29203 | Primary Copper Reverberatory Furnace - Slag Tap | 159 |
| 29204 | Primary Copper Reverberatory Furnace - Slag Skim & Pour | 160 |

TABLE A-1. PROFILE LISTING (Continued)


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 29205 | Primary Copper Converter - Secondary Hood | 161 |
| 29206 | Primary Copper converter - Secondary Hood | 162 |
| 29207 | Primary Copper Flash furnace - Matte and Slag Tap | 163 |
| 29208 | Primary Copper - Process Stack | 164 |
| 29209 | Primary Copper - Roaster | 165 |
| 29210 | Primary Copper Reverberatory Furnace Fugitives Composite | 166 |
| 29211 | Primary Copper Converter - Secondary Hood Composite | 167 |
| 29301 | Primary Lead Smelting - Slag Pouring | 168 |
| 29302 | Primary Lead Smelting - Blast Furnace | 170 |
| 29303 | Primary Lead Smelting - Zinc Fuming | 172 |
| 29304 | Primary Lead Smelting - Sintering | 174 |
| 29305 | Primary Lead Smelting - Blast Furnace Upset | 176 |
| 29306 | Primary Lead Smelting - Zinc Baghouse | 178 |
| 29307 | Primary Lead Smelting - Dross Reverberatory Furnace | 180 |
| 29309 | Primary Lead Smelting - Sinter Production | 182 |
| 29310 | Primary Lead - Dross Building | 184 |
| 29311 | Primary Lead - Slag Pour | 185 |
| 29330 | Primary Lead Smelting - Composite | 186 |
| 29501 | Secondary Copper Pyrometal - Cathode Charge | 220 |
| 29502 | Secondary Copper Pyrometal - Regular Charge | 221 |
| 31101 | Light-Duty Vehicles - Leaded | 489 |
| 31102 | Heavy-Duty Vehicles - Leaded | 491 |
| 31103 | Light-Duty Vehicles - Leaded | 493 |
| 31104 | Light-Duty Vehicles - Leaded | 495 |
| 31105 | Light-Duty Vehicles - Leaded Composite | 497 |

TABLE A-1. PROFILE LISTING (Continued)


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 31201 | Light-Duty Vehicles - Unleaded | 498 |
| 31202 | Light-Duty Vehicles - Unleaded | 500 |
| 31203 | Light-Duty Vehicles - Unleaded | 502 |
| 31230 | Light-Duty Vehicles - Composite | 504 |
| 32101 | Light-Duty Vehicles - Diesel | 506 |
| 32102 | Light-Duty Vehicles - Diesel | 508 |
| 32103 | Light-Duty Vehicles - Diesel | 510 |
| 32104 | Light-Duty Vehicles - Diesel Composite | 512 |
| 32202 | Heavy-Duty Diesel | 513 |
| 32203 | Heavy-Duty Vehicles - Diesel | 515 |
| 32204 | Heavy-Duty Vehicles - Diesel | 517 |
| 32205 | Diesel Vehicles - Las Vegas Valley (1987) | 518 |
| 32206 | Heavy-Duty Vehicles - Diesel Composite | 519 |
| 33001 | Leaded/Unleaded Gasoline Composite - 1977 | 520 |
| 33002 | Transportation Composite - Medford, Oregon (1980) | 522 |
| 33003 | Transportation Composite - Portland, Oregon (1979) | 524 |
| 33004 | Transportation Composite | 526 |
| 33005 | Transportation Composite | 528 |
| 33006 | Transportation Composite | 530 |
| 33007 | Transportation Composite | 532 |
| 33008 | Transportation Composite | 534 |
| 33009 | Transportation Composite | 536 |
| 33010 | Gasoline Vehicles - Las Vegas Valley (1987) | 538 |
| 33011 | Highway Vehicles Composite | 539 |
| 33020 | Transportation Composite | 541 |
| 34001 | Jet Aircraft | 551 |
| 34002 | Tire Wear | 543 |
| 34003 | Tire Wear | 545 |
| 34004 | Brake Lining, Asbestos | 546 |

TABLE A-1. PROFILE LISTING (Continued)


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 34005 | Motor Oil | 547 |
| 34006 | Semi-metal Disk Brake Pads | 548 |
| 41101 | Paved Road Dust - Missoula, Montana | 337 |
| 41102 | Paved Road Dust - Juneau, Alaska | 339 |
| 41103 | Paved Road Dust - Lewiston, Idaho | 341 |
| 41104 | Paved Road Dust - Butte, Montana | 343 |
| 41105 | Paved Road Dust - East Helena, Montana | 345 |
| 41106 | Paved Road Dust - Medford, Oregon | 346 |
| 41107 | Paved Road Dust - Portland, Oregon | 348 |
| 41109 | Paved Road Dust - Alabama | 350 |
| 41110 | Paved Road Dust - Spokane, Washington | 352 |
| 41111 | Paved Road Dust - Pasadena Freeway (CA) | 354 |
| 41112 | Paved Road Dust - Artesia Freeway (CA) | 356 |
| 41113 | Paved Road Dust - Long Beach Boulevard (CA) | 357 |
| 41114 | Paved Road Dust - Long Beach, CA | 358 |
| 41115 | Paved Road Dust - La Cienega Boulevard (CA) | 360 |
| 41116 | Paved Road Dust - Hawthorne, CA | 361 |
| 41117 | Paved Road Dust - Victory Boulevard (CA) | 362 |
| 41118 | Paved Road Dust - Burbank, CA | 363 |
| 41119 | Paved Road Dust - North Main Street (Los Angeles, CA) | 365 |
| 41120 | Paved Road Dust - Los Angeles, CA | 367 |
| 41121 | Paved Road Dust - South Harbor Blvd (Anaheim, CA) | 368 |
| 41122 | Paved Road Dust - Anaheim, CA | 369 |
| 41123 | Paved Road Dust - Riverside, CA | 370 |
| 41124 | Paved Road Dust - Sepulveda Tunnel (Los Angeles, CA) | 372 |
| 41130 | Paved Road Dust - Composite | 374 |
| 41131 | Paved Road Dust - Composite | 376 |
| 41132 | Paved Road Dust - Long Beach Composite | 377 |
| 41133 | Paved Road Dust - Hawthorne Composite | 378 |

TABLE A-1. PROFILE LISTING (Continued)


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 41134 | Paved Road Dust - Burbank Composite | 379 |
| 41135 | Paved Road Dust - Los Angeles Composite | 380 |
| 41136 | Paved Road Dust - Anaheim Composite | 381 |
| 41137 | Paved Road Dust - SCAB Composite | 382 |
| 41201 | Unpaved Road Dust (Copper Mine) | 327 |
| 41203 | Unpaved Road Dust - Haul Road | 329 |
| 41204 | Unpaved Road Dust - East Helena, Montana | 331 |
| 41205 | Unpaved Road Dust-Riverside, CA | 332 |
| 41220 | Unpaved Road Dust Composite | 333 |
| 41301 | Soil Dust - Des Moines, Iowa | 389 |
| 41302 | Soil Dust - Seattle, Washington | 391 |
| 41303 | Soil Dust - Visalia, California | 393 |
| 41304 | Soil Dust - South Bend, Indiana | 395 |
| 41305 | Soil Dust - Houston, Texas | 397 |
| 41306 | Soil Dust - East Helena, Montana | 399 |
| 41307 | Soil Dust - Idaho | 401 |
| 41308 | Soil Dust - Creston, Iowa | 403 |
| 41309 | Soil Dust - Council Bluffs, Iowa | 405 |
| 41310 | Soil Dust - Sioux City, Iowa | 407 |
| 41311 | Soil Dust - Cedar Rapids, Iowa | 409 |
| 41312 | Soil Dust - Davenport, Iowa | 411 |
| 41313 | Soil Dust - Spokane, Washington | 413 |
| 41314 | Soil Dust - Boise, Idaho | 415 |
| 41315 | Soil Dust - Bakersfield, California | 417 |
| 41316 | Soil Dust - Pasedena, California | 419 |
| 41318 | Soil Dust - Medford, Oregon | 421 |
| 41319 | Soil Dust - Portland, Oregon | 423 |
| 41320 | Soil Dust - Alabama | 425 |
| 41321 | Soil Dust - Laurel, MD | 427 |

TABLE A-1. PROFILE LISTING (Continued)


| Profile Number | Profile Name | Page Number |
|---|---|---|
| 41322 | Soil Dust - Washington, DC Area | 428 |
| 41323 | Soil Dust - Riverside, CA | 429 |
| 41324 | Soil Dust - Hawthorne, CA | 430 |
| 41350 | Soil Dust - Composite | 431 |
| 41351 | Soil Dust - SCAB Composite | 433 |
| 41401 | Road Sand and Salt Mix | 384 |
| 42101 | Woodstoves - Pine Fuel | 447 |
| 42102 | Woodstoves - Average, All Fuels | 449 |
| 42103 | Woodstoves - Oak Fuel | 451 |
| 42201 | Fireplaces - Softwoods | 453 |
| 42202 | Fireplaces - Hardwoods | 455 |
| 42301 | Slash Burning | 478 |
| 42302 | Slash Burning | 480 |
| 42303 | Residential Wood Combustion - Composite | 457 |
| 42304 | Agricultural Field Burning | 482 |
| 42305 | Slash Burning (Conifer - Flaming Phase) | 459 |
| 42306 | Slash Burning (Conifer - Smoldering Phase) | 460 |
| 42307 | Slash Burning (Hardwood - Flaming Phase) | 461 |
| 42308 | Slash Burning (Hardwood - Smoldering Phase) | 462 |
| 42309 | Slash Burning (Ponderosa Pine - Flaming Phase) | 463 |
| 42310 | Slash Burning (Ponderosa Pine - Smoldering Phase) | 464 |
| 42311 | Slash Burning (Tractor Piled - Flaming Phase) | 465 |
| 42312 | Slash Burning (Tractor Piled - Smoldering Phase) | 466 |
| 42313 | Slash Burning (Crane Piled - Flaming Phase) | 467 |
| 42314 | Slash Burning (Crane Piled - Smoldering Phase) | 468 |
| 42315 | Slash Burning (Chaparral - Flaming Phase) | 469 |
| 42316 | Slash Burning (Chaparral - Smoldering Phase) | 470 |
| 42317 | Wood Combustion - Las Vegas Valley (1987) | 471 |
| 42318 | Residential Wood Combustion | 472 |

TABLE A-1. PROFILE LISTING (Continued)

| Profile Number | Profile Name | Page Number |
|---|---|---|
| 42319 | Residential Wood Combustion Composite | 473 |
| 42320 | Agricultural Field Burning Composite | 484 |
| 42330 | Composite of Residential Wood Burning Sources | 474 |
| 43101 | Marine Aerosol | 434 |
| 43201 | Residential Space Heating - Coal | 554 |
| 43301 | Volcanic Ash | 436 |
| 43302 | Orchard Heating - Smudge Pots | 556 |
| 43303 | Coal-Fired Power Plant Flyash | 84 |
| 43304 | Limestone, Crustal | 438 |
| 43305 | Shale, Crustal | 439 |
| 43306 | Sandstone, Crustal | 440 |
| 43307 | Sediment, Crustal | 441 |
| 43308 | Igneous, Rock | 442 |
| 43309 | Earth's Crust | 443 |
| 44101 | Excavation - El Segundo, CA | 321 |
| 44102 | Excavation - Haul Road | 322 |
| 44103 | Rock Crushing | 323 |
| 44104 | Sandblasting and Plastering | 324 |

# APPENDIX B

# PM PROFILE CALCULATIONS

# APPENDIX B
# PM PROFILE CALCULATIONS

This appendix provides details of the procedures used for calculating composition data for the 0-10 um size interval and uncertainty associated with composition data for the 0-10 um size range. The calculational procedures are based on the methodologies outlined in the Receptor Model Source Composition Library and the first edition of the Air Emissions Species Manual. This appendix also discusses the assumptions used in filling profile data gaps. In the following calculations, values for the following entries in the profiles were set to zero: NA (not analyzed), NR (not reported), and < (less than detection limit). The calculations discussed in this appendix involve combining composition data reported in the Source Composition Library with size distribution data compiled primarily from AP-42. An additional uncertainty is introduced into the calculations since the composition data and size distribution data were developed for different sources.

In addition to procedures for calculating composition data for the 0-10 um, a methodology that can be used to estimate composition data for the 2.5-6 um and 6-10 um size intervals is also presented in this appendix. However, as discussed below, the application of this methodology is limited.

## B.1 CALCULATION OF COMPOSITION DATA FOR $PM_{10}$ (0-10 um)

According to the Source Composition Library, page II-34, $PM_{10}$ composition is calculated as:

$$A_{iJ,0\text{-}10} = (F_{2.5J}/F_{10J})\, A_{iJ,0\text{-}2.5} + [1 - (F_{2.5J}/F_{10J})]\, A_{iJ,2.5\text{-}10} \quad (1)$$

Where:

$A_{iJ,0\text{-}10}$ = $PM_{10}$ composition data (weight percent) for species i in emissions from source J

$F_{2.5J}$ = fraction of mass in the 0-2.5 um size interval in source J emissions

$F_{10J}$ = fraction of mass in the 0-10 um size interval in source J emissions

$A_{iJ,0-2.5}$ = composition data (weight percent) for fine fraction (<2.5 um) for species i in emissions from source J

$A_{iJ,2.5-10}$ = composition data (weight percent) for coarse fraction (2.5-10 um) for species i in source J

This equation is derived from the following basic relationship:

$$NEM_{iJ,0-10} = NEM_{iJ,0-2.5} + NEM_{iJ,2.5-10} \quad (2)$$

where NEM is defined as the normalized elemental mass (mass fraction x weight percent). For example,

$$NEM_{iJ,0-10} = F_{10J} \times A_{iJ,0-10} \quad (3)$$

As shown schematically in Figure 1, a plot of NEM versus particle size would lead to a curve increasing with particle size. Equation (1) is illustrated below for Profile 17105:

Let:

J = Municipal Incinerator (MI) - Profile 17105

i = Al (aluminum)

$F_{2.5,MI}$ = 0.26 (see Profile 17105)

$F_{10,MI}$ = 0.38 (see Profile 17105)

$A_{Al,MI,0-2.5}$ = 0.819 (see Profile 17105)

$A_{Al,MI,2.5-10}$ = 5.827 (see Profile 17105)

Then:

$$A_{Al,MI,0-10} = (0.26/0.38)\ (0.819) + [1 - (0.26/0.38)]\ 5.827$$

$$A_{Al,MI,0-10} = 0.560 + 1.840 = 2.400 \text{ percent}$$

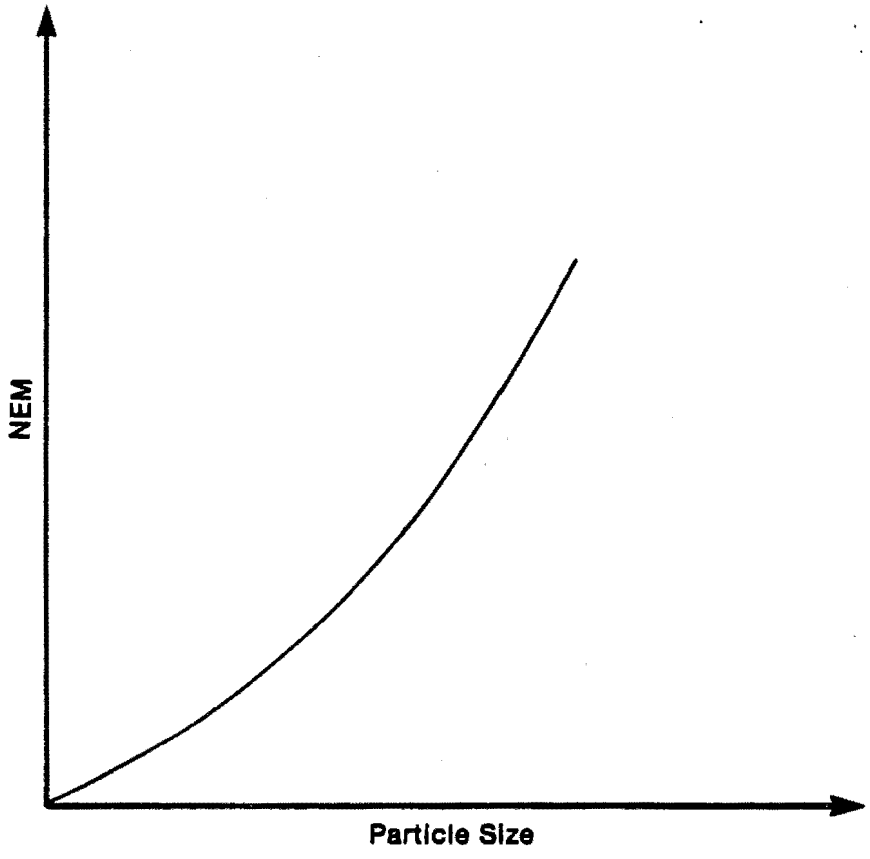


Figure 1. Normalized Elemental Size versus Particle Size

## B.2 CALCULATION OF COMPOSITION DATA FOR THE 2.5-6 um AND 6-10 um INTERVALS

As indicated above, the application of the following methodology for estimating composition data for the 2.5-6 um and 6-10 um size intervals from data for the 2.5-10 um size interval is limited. This limitation is largely due to the fact that the mass fraction data and composition data used in these calculations are from different sets of data and represent different emission sources.

Having estimated the $PM_{10}$ composition and $NEM_{iJ,0-10}$, a simple linear relationship can be assumed to exist between $NEM_{iJ,0-2.5}$ and $NEM_{iJ,0-10}$ over the size interval 2.5-10 um. The equation for this relationship can be represented by the following:

$$NEM_{iJ,0-X} = \frac{(NEM_{iJ,0-10} - NEM_{iJ,0-2.5})}{(10 - 2.5)} (X - 2.5) + NEM_{iJ,0-2.5} \quad (4)$$

Where X is the particle size of interest.

Substituting X = 6 um will yield $NEM_{iJ,0-6}$ which can be used in the following equation to solve for $A_{iJ,2.5-6}$.

$$NEM_{iJ,0-6} = NEM_{iJ,0-2.5} + NEM_{iJ,2.5-6} \quad (5)$$

Similarly, the value for $A_{iJ,6-10}$ can be estimated from Equation (6):

$$NEM_{iJ,0-10} = NEM_{iJ,0-6} + NEM_{iJ,6-10} \quad (6)$$

Using the same example data set,

$$NEM_{Al,MI,0-6} = \frac{(NEM_{Al,MI,0-10} - NEM_{Al,MI,0-2.5})}{(10 - 2.5)} (6 - 2.5) + NEM_{Al,MI,0-2.5}$$

$$= \frac{[(0.38 \times 2.400) - (0.26 \times 0.819)]}{7.5} (3.5) + (0.26 \times 0.819)$$

$$NEM_{Al,MI,0-6} = 0.326 + 0.213 = 0.539$$

From Equation (5),

$$NEM_{Al,MI,0-6} = NEM_{Al,MI,0-2.5} + NEM_{Al,Mi,2.5-6}$$

$$0.539 = (0.26 \times 0.819) + (F_{2.5-6,MI} \times A_{Al,MI,2.5-6})$$

$$F_{2.5-6,MI} = F_{6,MI} - F_{2.5,MI}$$

$$F_{6,MI} = 0.31 \text{ (see Profile 17105)}$$

$$F_{2.5,MI} = 0.26 \text{ (see Profile 17105)}$$

$$F_{2.5-6,MI} = 0.05$$

Therefore,

$$A_{Al,MI,2.5-6} = (0.539 - 0.213) / 0.05 = 6.521 \text{ percent}$$

Using Equation (6),

$$NEM_{Al,MI,0-10} = NEM_{Al,MI,0-6} + NEM_{Al,MI,6-10}$$

$$(0.38 \times 2.400) = 0.539 + F_{6-10,MI} \times A_{Al,MI,6-10}$$

$$F_{6-10,MI} = F_{10,MI} - F_{6,MI}$$

$$F_{6-10,MI} = 0.38 - 0.31 = 0.07$$

$$A_{Al,MI,6-10} = (0.912 - 0.539) / 0.07 = 5.329 \text{ percent}$$

## B.3 CALCULATION OF UNCERTAINTY ASSOCIATED WITH COMPOSITION DATA FOR $PM_{10}$

According to the Receptor Model Source Composition Library, page II-35, the uncertainty of the $PM_{10}$ composition data can be calculated by propagation of errors in quadrature as follows:

$$\begin{aligned}\sigma_{iJ,10} = [&(A_{iJ,0-2.5} / F_{10J})^2 \sigma^2_{F2.5J} + (F_{2.5J} / F^2_{10J})^2 A^2_{iJ,0-2.5} \sigma^2_{F10J} \\ &+ (F_{2.5J} / F_{10J})^2 \sigma^2_{AiJ,0-2.5} + (A_{iJ,2.5-10} / F_{10J}) \sigma^2_{F2.5J} \\ &+ (F_{2.5J} / F^2_{10J})^2 A^2_{iJ,2.5-10} \sigma^2_{F10J} \\ &+ (F_{2.5J} / F_{10J}) \sigma^2_{AiJ,2.5-10}]^{1/2} \end{aligned} \quad (7)$$

Where $\sigma^2_{F2.5J}$ and $\sigma^2_{F10J}$ denote the variances associated with mass fraction data for the 0-2.5 um and 0-10 um size intervals and $\sigma^2_{AiJ,0-2.5}$ and $\sigma^2_{AiJ,2.5-10}$ represent the variances associated with the composition data for the fine and coarse size fractions. This equation is illustrated below for Profile 42302:

Let:

J = Slash burning (SB) - Profile 42302

i = K (potassium)

$F_{2.5,SB}$ = 0.90 (see Profile 42302)

$F_{10,SB}$ = 0.99 (see Profile 42302)

$A_{K,SB,0-2.5}$ = 0.620 (see Profile 42302)

$A_{K,SB,2.5-10}$ = 1.250 (see Profile 42302)

K,SB,0-2.5 = 0.235 (see Profile 42302)

K,SB,2.5-10 = 0.212 (see Profile 42302)

Since $\sigma$ F2.5,SB and $\sigma$ F10,SB are not available, assume the following:

$\sigma$F2.5,SB = 0.1 F2.5,SB = 0.090

$\sigma$F10,SB = 0.1 F10,SB = 0.099

Then:

$$\sigma K,SB,10 = [(0.62/0.99)^2 (0.09)^2 + (0.90/0.992)^2 (0.62)^2 (0.099)^2 + (0.90/0.99)^2 (0.235)^2 + (1.250/0.99) (0.009)^2 + (0.90/0.992)^2 (1.250)^2 (0.099)^2 + (0.90/0.99) (0.212)^2]^{1/2}$$

$$= [0.0032 + 0.0032 + 0.0456 + 0.0102 + 0.0129 + 0.0409]1/2$$

$$= (0.11599)^{1/2} = 0.341$$

## B.4 ASSUMPTIONS USED IN FILLING DATA GAPS

In several profiles from the Source Composition Library, composition data information for one or two size intervals were not reported. To increase the usefulness of the profiles, certain assumptions were employed to fill these data gaps.

- If data are reported for a single size interval, assume data for the other two intervals are the same. Values for the 0-10 um size interval are also assumed to be the same.
- If data for the 0-2.5 um size interval are missing, assume the data for the 2.5-10 um size interval can be substituted and vice versa. Values for the 0-10 um size interval are also assumed to be the same.
- If data for the total particulate measured are not reported, assume the estimated data for the 0-10 um size fraction can be substituted.

These assumptions are indicated on each profile with appropriate footnotes.

## B.5 DEVELOPMENT OF COMPOSITE AND INDUSTRY-SPECIFIC AVERAGE PROFILES

In developing composite profiles, the average composition and uncertainty data were calculated from the individual profiles for the following intervals: 0-2.5 um, 2.5-10 um, and total particulate measured. The uncertainty values were averaged for a given size interval and a given species using the following equation:

$$\sigma \text{ average} = \left[ \sum_{k=1}^{n} \sigma k2 \; / \; n \right] 1/2 \qquad (8)$$

Where:

$\sigma_{average}$ = average uncertainty associated with a particular species in a particular size range in the composite profile

$\sigma_k$ = uncertainty associated with a particular species in a particular size range in profile k

n = number of profiles composited.

Calculations involving composition data for the 0-10 um fraction and uncertainty information for the 0-10 um fraction were then completed for the composite profile.

In developing the industry-specific average profiles, the procedure described above for the composite profiles was employed.

# APPENDIX C

# PARTICLE SIZE DISTRIBUTION DATA

# APPENDIX C
# PARTICLE SIZE DISTRIBUTION DATA

This appendix discusses how the particle size distribution data (i.e., fraction of mass in a given size interval) presented in the PM profiles in Section 3.0 are compiled. The mass fraction data can be coupled with the size-specific composition data in a given profile to estimate size-specific and speciated particulate emissions.

A large proportion of the particle size distribution data are obtained from Supplement A of AP-42. For about 45 percent of the PM profiles in the Source Composition Library, mass fraction data were extracted from this document. For several profiles, only generic particle size distribution data were identified in Supplement A of AP-42.

Data from other sources were used to characterize those profiles for which mass fraction data did not exist in Supplement A of AP-42. Table C-1 presents a listing of profiles where the information source for the mass fraction data is specified and a data quality indicator is included. The quality indicators are primarily based on the ratings used in Supplement A of AP-42 for cumulative size-specific emission factors. The ratings designated for the size-specific emission factors are assumed to represent the quality associated with the particle size distribution data.

Data based on generic size distributions in AP-42 are assigned a rating of "D" whereas the default value is assigned a rating of "E." The default value represents the overall average of the size distribution data based on all the profiles. It is used for profiles where no size distribution data were identified. In cases where engineering judgement was employed in applying size distribution data for a specific profile to a profile representing a similar source category, the rating scheme is modified to reflect this assumption.

Calculation of mass fraction data from the information contained in AP-42 is illustrated below for Profile 28301 - Steel Production - Steel Sinter Plant (control device: baghouse). On page 7.5-11 from AP-42,

TABLE C-1.

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 00000 | E | Default value |
| 11201 | D | AP-42 (Reference 1) |
| 11202 | C | AP-42 (Reference 1) |
| 11203 | E | AP-42 (Reference 1) |
| 11204 | D | AP-42 (Reference 1) |
| 11205 | D | AP-42 (Reference 1) |
| 11206 | D | AP-42 (Reference 1) |
| 11207 | D | AP-42 (Reference 1) |
| 11208 | D | AP-42 (Reference 1) |
| 11209 | D | AP-42 (Reference 1) |
| 11210 | D | AP-42 (Reference 1) |
| 11211 | C | AP-42 (Reference 1) |
| 11212 | E | AP-42 (Reference 1) |
| 11213 | D | AP-42 (Reference 1) |
| 11214 | C | Based on data from Profiles 11202 and 11211 |
| 11215 | D | Based on data from Profiles 11204-11208, 11210, and 11212 |
| 11301 | D | AP-42 (Reference 1) |
| 11501 | C | AP-42 (Reference 1) |
| 11502 | C | AP-42 (Reference 1) |
| 11503 | C | AP-42 (Reference 1) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 11504 | C | AP-42 (Reference 1) |
| 11505 | C | AP-42 (Reference 1) |
| 11506 | C | AP-42 (Reference 1) |
| 11507 | C | AP-42 (Reference 1) |
| 11508 | C | AP-42 (Reference 1) |
| 11509 | C | AP-42 (Reference 1) |
| 11510 | C | Based on data from Profiles 11502-11509 |
| 11801 | E | AP-42 (Reference 1) |
| 12201 | C | Based on data from Reference 7 |
| 12301 | E | Based on AP-42 (Reference 1) data for distillate oil firing |
| 12704 | E | AP-42 (Reference 1) |
| 12705 | E | AP-42 (Reference 1) |
| 13501 | D | AP-42 (Reference 1) |
| 13502 | E | Based on AP-42 (Reference 1) data for residual oil firing |
| 13503 | E | AP-42 (Reference 1) |
| 13504 | D | AP-42 (Reference 1) |
| 14101 | E | Based on AP-42 (Reference 1) data for residual oil firing |
| 14102 | E | Based on AP-42 (Reference 1) data for residual oil firing |
| 15101 | E | AP-42 (Reference 1) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 17105 | D | AP-42 (Reference 1) |
| 17106 | E | Based on data from Profile 17105 |
| 17107 | D | AP-42 (Reference 1) |
| 17108 | D | AP-42 (Reference 1) |
| 17109 | E | Default value |
| 17120 | C | Average of data from Profiles 17121 and 17124 |
| 17121 | C | Based on data from Reference 5 |
| 17122 | C | Average of data from Profiles 17121 and 17124 |
| 17123 | C | Average of data from Profiles 17121 and 17124 |
| 17124 | C | Based on data from Reference 5 |
| 19101 | E | Based on data from Profile 17105 |
| 20101 | D | AP-42 (Reference 1) |
| 20102 | D | AP-42 - generic size distribution (Reference 1) |
| 20103 | D | AP-42 (Reference 1) - generic size distribution |
| 20401 | D | AP-42 (Reference 1) |
| 20402 | D | AP-42 (Reference 1) |
| 20403 | D | AP-42 (Reference 1) |
| 20404 | D | AP-42 (Reference 1) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 20405 | D | AP-42 (Reference 1) |
| 20406 | E | Based on data from Profile 20403 |
| 20501 | D | AP-42 - generic size distribution (Reference 1) |
| 20502 | D | AP-42 - generic size distribution (Reference 1) |
| 20503 | D | AP-42 (Reference 1) - generic size distribution |
| 2110 | D | AP-42 - generic size distribution (Reference 1) |
| 21102 | D | AP-42 - generic size distribution (Reference 1) |
| 21103 | D | AP-42 (Reference 1) |
| 21150 | D | Average data based on Profiles 21102, 21103, and 21206 |
| 21203 | D | AP-42 - generic size distribution (Reference 1) |
| 21204 | D | AP-42 - generic size distribution (Reference 1) |
| 21205 | E | Based on data from Profile 21103 |
| 21206 | E | Based on data from Profile 21103 |
| 21301 | D | AP-42 - generic size distribution (Reference 1) |
| 21302 | D | AP-42 - generic size distribution (Reference 1) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 21303 | D | AP-42 - generic size distribution (Reference 1) |
| 21304 | D | AP-42 - generic size distribution (Reference 1) |
| 21320 | D | Average data for Profiles 21301 and 21302 |
| 21340 | D | Average data for Profiles 21303 and 21304 |
| 21401 | D | AP-42 (Reference 1) |
| 21501 | D | AP-42 - generic size distribution (Reference 1) |
| 22101 | E | Default value |
| 22102 | E | Default value |
| 22201 | E | AP-42 (Reference 1) |
| 22202 | E | Default value |
| 22301 | D | AP-42 - generic size distribution (Reference 1) |
| 23103 | C | AP-42 (Reference 1) |
| 23202 | C | AP-42 (Reference 1) |
| 24101 | C | AP-42 (Reference 1) |
| 25201 | D | AP-42 - generic size distribution (Reference 1) |
| 25302 | D | AP-42 - generic size distribution (Reference 1) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 25401 | E | Default value |
| 25402 | D | AP-42 (Reference 1) |
| 25403 | D | AP-42 (Reference 1) |
| 25404 | D | AP-42 - generic size distribution (Reference 1) |
| 25405 | E | AP-42 (Reference 1) |
| 25406 | E | Default value |
| 25407 | D | AP-42 - generic size distribution (Reference 1) |
| 25408 | D | AP-42 (Reference 1) - generic size distribution |
| 25409 | E | AP-42 (Reference 1) |
| 25410 | C | AP-42 (Reference 1) |
| 25411 | D | AP-42 (Reference 1) - generic size distribution |
| 25412 | D | AP-42 (Reference 1) - generic size distribution |
| 25413 | D | AP-42 (Reference 1) - generic size distribution |
| 25414 | D | AP-42 (Reference 1) - generic size distribution |
| 25415 | D | AP-42 (Reference 1) - generic size distribution |
| 25701 | D | AP-42 (Reference 1) - generic size distribution |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 25702 | D | AP-42 (Reference 1) - generic size distribution |
| 25703 | D | AP-42 (Reference 1) - generic size distribution |
| 26101 | D | AP-42 - generic size distribution (Reference 1) |
| 26202 | E | Default value |
| 26203 | D | AP-42 (Reference 1) - generic size distribution |
| 26204 | D | AP-42 (Reference 1) - generic size distribution |
| 26205 | D | AP-42 (Reference 1) - generic size distribution |
| 26206 | D | AP-42 (Reference 1) - generic size distribution |
| 26207 | D | AP-42 (Reference 1) - generic size distribution |
| 26208 | D | AP-42 (Reference 1) - generic size distribution |
| 26209 | D | Based on data from Profiles 26203-26205 |
| 27102 | E | AP-42 (Reference 1) |
| 27201 | D | AP-42 (Reference 1) |
| 27203 | D | AP-42 (Reference 1) |
| 27204 | D | AP-42 (Reference 1) - generic size distribution |
| 27205 | D | AP-42 (Reference 1) - generic size distribution |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 27501 | D | AP-42 - generic size distribution (Reference 1) |
| 27502 | D | AP-42 (Reference 1) - generic size distribution |
| 27503 | D | AP-42 (Reference 1) - generic size distribution |
| 27601 | D | AP-42 (Reference 1) - generic size distribution |
| 27602 | D | AP-42 (Reference 1) - generic size distribution |
| 28201 | D | AP-42 - generic size distribution (Reference 1) |
| 28202 | C | AP-42 (Reference 1) |
| 28301 | C | AP-42 (Reference 1) |
| 28302 | E | AP-42 (Reference 1) |
| 28303 | D | AP-42 (Reference 1) |
| 28304 | C | AP-42 (Reference 1) |
| 28305 | E | AP-42 (Reference 1) |
| 28306 | D | AP-42 (Reference 1) |
| 28307 | C | AP-42 (Reference 1) |
| 28401 | B | AP-42 (Reference 1) |
| 28601 | D | AP-42 - generic size distribution (Reference 1) |
| 29101 | E | AP-42 (Reference 1) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 29102 | D | AP-42 (Reference 1) |
| 29202 | D | AP-42 (Reference 1) |
| 29203 | D | AP-42 - generic size distribution (Reference 1) |
| 29203 | D | AP-42 (Reference 1) |
| 29204 | E | AP-42 (Reference 1) |
| 29205 | E | AP-42 (Reference 1) |
| 29206 | E | AP-42 (Reference 1) |
| 29207 | D | AP-42 (Reference 1) - generic size distribution |
| 29208 | D | AP-42 (Reference 1) |
| 29209 | D | AP-42 (Reference 1) |
| 29210 | D | Based on data from Profiles 29203 and 29204 |
| 29211 | E | Based on data from Profiles 29205 and 29206 |
| 29301 | E | Average data from Profiles 29304, 29306, 29307, and 29309 |
| 29302 | C | AP-42 (Reference 1) |
| 29303 | D | Based on data for Profile 29302 |
| 29304 | D | AP-42 - generic size distribution (Reference 1) |
| 29305 | D | Based on data from Profile 29302 |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 29306 | D | AP-42 - generic size distribution (Reference 1) |
| 29307 | D | AP-42 (Reference 1) |
| 29309 | D | AP-42 (Reference 1) |
| 29310 | D | AP-42 (Reference 1) |
| 29311 | D | AP-42 (Reference 1) |
| 29330 | E | Average data for Profiles 29303 and 29306 |
| 29501 | D | AP-42 (Reference 1) - generic size distribution |
| 29502 | D | AP-42 (Reference 1) - generic size distribution |
| 31101 | C | AP-42 (Reference 6) |
| 31102 | C | AP-42 (Reference 6) |
| 31103 | C | AP-42 (Reference 6) |
| 31104 | C | AP-42 (Reference 6) |
| 31105 | C | Based on data from Profiles 31103 and 31104 |
| 31201 | C | AP-42 (Reference 6) |
| 31202 | C | AP-42 (Reference 6) |
| 31203 | C | AP-42 (Reference 6) |
| 31230 | D | Average data from Profiles 31101 and 31201 |
| 32101 | C | AP-42 (Reference 6) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 32102 | C | AP-42 (Reference 6) |
| 32103 | C | AP-42 (Reference 6) |
| 32104 | C | Based on data from Profiles 32102 and 32103 |
| 32202 | C | AP-42 (Reference 6) |
| 32203 | C | AP-42 (Reference 6) |
| 32204 | C | AP-42 (Reference 6) |
| 32205 | C | AP-42 (Reference 6) |
| 32206 | C | Based on data from Profiles 32204 and 32205 |
| 33001 | C | AP-42 (Reference 6) |
| 33002 | D | Average data from Profiles 31102, 31201, and 32101 |
| 33003 | D | Based on data for Profile 33001 |
| 33004 | D | Based on data from Reference 8 |
| 33005 | D | Based on data from Reference 8 |
| 33006 | D | Based on data from Reference 8 |
| 33007 | D | Based on data from Reference 8 |
| 33008 | D | Based on data from Reference 8 |
| 33009 | D | Based on data from Reference 8 |
| 33010 | D | Based on data from Reference 8 |
| 33011 | D | Based on data from Profiles 33004-33009 |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 33020 | D | Average data from Profiles 33001, 33002, and 33003 |
| 34001 | E | Default value |
| 34002 | E | Default value |
| 34003 | E | Default value |
| 34004 | E | Default value |
| 34005 | E | Default value |
| 34006 | E | Default value |
| 41101 | D | Extrapolated from data (page 41 of Reference 2) |
| 41102 | D | Extrapolated from data (page 41 of Reference 2) |
| 41103 | D | Extrapolated from data (page 41 of Reference 2) |
| 41104 | D | Extrapolated from data (page 41 of Reference 2) |
| 41105 | D | Extrapolated from data (page 41 of Reference 2) |
| 41106 | D | Extrapolated from data (page 41 of Reference 2) |
| 41107 | D | Extrapolated from data (page 41 of Reference 2) |
| 41109 | D | Extrapolated from data (page 41 of Reference 2) |
| 41110 | D | Extrapolated from data (page 41 of Reference 2) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 41111 | D | Extrapolated from data in Reference 2 |
| 41112 | D | Extrapolated from data in Reference 2 |
| 41113 | D | Extrapolated from data in Reference 2 |
| 41114 | D | Extrapolated from data in Reference 2 |
| 41115 | D | Extrapolated from data in Reference 2 |
| 41116 | D | Extrapolated from data in Reference 2 |
| 41117 | D | Extrapolated from data in Reference 2 |
| 41118 | D | Extrapolated from data in Reference 2 |
| 41119 | D | Extrapolated from data in Reference 2 |
| 41120 | D | Extrapolated from data in Reference 2 |
| 41121 | D | Extrapolated from data in Reference 2 |
| 41122 | D | Extrapolated from data in Reference 2 |
| 41123 | D | Extrapolated from data in Reference 2 |
| 41124 | D | Extrapolated from data in Reference 2 |
| 41130 | D | Extrapolated from data (page 41 of Reference 2) |
| 41131 | D | Extrapolated from data in Reference 2 |
| 41132 | D | Extrapolated from data in Reference 2 |
| 41133 | D | Extrapolated from data in Reference 2 |
| 41134 | D | Extrapolated from data in Reference 2 |
| 41135 | D | Extrapolated from data in Reference 2 |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 41136 | D | Extrapolated from data in Reference 2 |
| 41137 | D | Extrapolated from data in Reference 2 |
| 41201 | D | Extrapolated from data (page 41 of Reference 2) |
| 41203 | D | Extrapolated from data (page 41 of Reference 2) |
| 41204 | D | Extrapolated from data (page 41 of Reference 2) |
| 41205 | D | Extrapolated from data in Reference 2 |
| 41220 | D | Extrapolated from data (page 41 of Reference 2) |
| 41301 | D | Extrapolated from data (page 28 of Reference 3) |
| 41302 | D | Extrapolated from data (page 28 of Reference 3) |
| 41303 | D | Extrapolated from data (page 28 of Reference 3) |
| 41304 | D | Extrapolated from data (page 28 of Reference 3) |
| 41305 | D | Extrapolated from data (page 28 of Reference 3) |
| 41306 | D | Extrapolated from data (page 28 of Reference 3) |
| 41307 | D | Extrapolated from data (page 28 of Reference 3) |
| 41308 | D | Extrapolated from data (page 28 of Reference 3) |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 41309 | D | Extrapolated from data (page 28 of Reference 3) |
| 41310 | D | Extrapolated from data (page 28 of Reference 3) |
| 41311 | D | Extrapolated from data (page 28 of Reference 3) |
| 41312 | D | Extrapolated from data (page 28 of Reference 3) |
| 41313 | D | Extrapolated from data (page 28 of Reference 3) |
| 41314 | D | Extrapolated from data (page 28 of Reference 3) |
| 41315 | D | Extrapolated from data (page 28 of Reference 3) |
| 41316 | D | Extrapolated from data (page 28 of Reference 3) |
| 41318 | D | Extrapolated from data (page 28 of Reference 3) |
| 41319 | D | Extrapolated from data (page 28 of Reference 3) |
| 41320 | D | Extrapolated from data (page 28 of Reference 3) |
| 41321 | D | Extrapolated from data in Reference 3 |
| 41322 | D | Extrapolated from data in Reference 3 |
| 41323 | D | Extrapolated from data in Reference 3 |
| 41324 | D | Extrapolated from data in Reference 3 |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 41350 | D | Extrapolated from data (page 28 of Reference 3) |
| 41351 | D | Extrapolated from data in Reference 3 |
| 41401 | D | Extrapolated from data (page 41 of Reference 2) |
| 42101 | E | Based on data from Profile 12704 |
| 42102 | E | Based on data from Profile 12704 |
| 42103 | E | Based on data from Profile 12704 |
| 42201 | E | Based on data from Profile 12704 |
| 42202 | E | Based on data from Profile 12704 |
| 42301 | D | Extrapolated from data (page 28 of Reference 3) |
| 42302 | D | Extrapolated from data (page 28 of Reference 3) |
| 42303 | E | Based on data from Profile 12704 |
| 42304 | D | Extrapolated from data (page 28 of Reference 3) |
| 42305 | D | Extrapolated from data in Reference 3 |
| 42306 | D | Extrapolated from data in Reference 3 |
| 42307 | D | Extrapolated from data in Reference 3 |
| 42308 | D | Extrapolated from data in Reference 3 |
| 42309 | D | Extrapolated from data in Reference 3 |
| 42310 | D | Extrapolated from data in Reference 3 |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 42311 | D | Extrapolated from data in Reference 3 |
| 42312 | D | Extrapolated from data in Reference 3 |
| 42313 | D | Extrapolated from data in Reference 3 |
| 42314 | D | Extrapolated from data in Reference 3 |
| 42315 | D | Extrapolated from data in Reference 3 |
| 42316 | D | Extrapolated from data in Reference 3 |
| 42317 | C | Based on data from Reference 9 |
| 42318 | C | Based on data from Reference 9 |
| 42319 | C | Based on data from Profiles 42317 and 42318 |
| 42320 | D | Average data from Profiles 42301, 42302, and 42304 |
| 42330 | E | Average data from Profiles 42102, 42201, 42202, and 42303 |
| 43101 | D | Extrapolated from data (page 48 of Reference 3) |
| 43201 | D | Based on AP-42, page 1.1-11 |
| 43301 | E | Default value |
| 43302 | E | Based on data from Profile 13501 |
| 43303 | C | Based on data from Reference 4 |
| 43304 | E | Based on data from Profile 41351 |
| 43305 | E | Based on data from Profile 41351 |
| 43306 | E | Based on data from Profile 41351 |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 43307 | E | Based on data from Profile 41351 |
| 43308 | E | Based on data from Profile 41351 |
| 43309 | E | Based on data from Profile 41351 |
| 44101 | E | Based on data from Profile 41351 |
| 44102 | E | Based on data from Profile 41351 |
| 44103 | D | AP-42 (Reference 1) - generic size distribution |
| 44104 | D | AP-42 (Reference 1) - generic size distribution |
| 90001 | E | Default value |
| 90002 | E | Default value |
| 90003 | E | Default value |
| 90004 | E | Default value |
| 90005 | E | Default value |
| 90006 | E | Default value |
| 90007 | E | Default value |
| 90008 | E | Default value |
| 90009 | E | Default value |
| 90010 | E | Default value |
| 90011 | E | Default value |
| 90012 | E | Default value |
| 90013 | E | Default value |

TABLE C-1. (Continued)

| Profile Number | Mass Fraction Data Quality | Information Source |
|---|---|---|
| 90014 | E | Default value |
| 90015 | E | Default value |
| 90016 | E | Default value |

particle size distribution data are reported for sintering operations controlled by baghouse as shown in Table 7.5-2 of AP-42.

Figure 7.5-2 of AP-42 presents the same information graphically. Since the 0-6 um size range is not shown in the table, the value for this range can be obtained from the figure as 0.60. Thus, the mass fraction data required for calculations in this document data can be summarized as follows:

| Particle Size | Cumulative Mass Fraction |
|---|---|
| 0-2.5 um | 0.27 |
| 0-6 um | 0.60 |
| 0-10 um | 0.69 |

## Table 7.5-2. SIZE SPECIFIC EMISSION FACTORS

| Source | Emission Factor Rating | Particle Size μm[a] | Cumulative Mass % ≤ Stated size | Cumulative mass emission factor kg/Mg (lb/ton) |
|---|---|---|---|---|
| Sintering | | | | |
| Windbox | | | | |
| Uncontrolled | | | | |
| Leaving grate | D | 0.5 | 4[b] | 0.22 (0.44) |
| | | 1.0 | 4 | 0.22 (0.44) |
| | | 2.5 | 5 | 0.28 (0.56) |
| | | 5.0 | 9 | 0.50 (1.00) |
| | | 10 | 15 | 0.83 (1.67) |
| | | 15 | 20[c] | 1.11 (2.22) |
| | | d | 100 | 5.56 (11.1) |
| Controlled by wet ESP | C | 0.5 | 18[b] | 0.015 (0.03) |
| | | 1.0 | 25 | 0.021 (0.04) |
| | | 2.5 | 33 | 0.028 (0.06) |
| | | 5.0 | 48 | 0.041 (0.08) |
| | | 10 | 59[b] | 0.050 (0.10) |
| | | 15 | 69 | 0.059 (0.12) |
| | | d | 100 | 0.085 (0.17) |
| Controlled by venturi scrubber | C | 0.5 | 55 | 0.129 (0.26) |
| | | 1.0 | 75 | 0.176 (0.35) |
| | | 2.5 | 89 | 0.209 (0.42) |
| | | 5.0 | 93 | 0.219 (0.44) |
| | | 10 | 96 | 0.226 (0.45) |
| | | 15 | 98 | 0.230 (0.46) |
| | | d | 100 | 0.235 (0.47) |
| Controlled by cyclone[e] | C | 0.5 | 25[c] | 0.13 (0.25) |
| | | 1.0 | 37[b] | 0.19 (0.37) |
| | | 2.5 | 52 | 0.26 (0.52) |
| | | 5.0 | 64 | 0.32 (0.64) |
| | | 10 | 74 | 0.37 (0.74) |
| | | 15 | 80 | 0.40 (0.80) |
| | | d | 100 | 0.5 (1.0) |
| Controlled by baghouse | C | 0.5 | 3.0 | 0.005 (0.009) |
| | | 1.0 | 9.0 | 0.014 (0.027) |
| | | 2.5 | 27.0 | 0.041 (0.081) |
| | | 5.0 | 47.0 | 0.071 (0.141) |
| | | 10.0 | 69.0 | 0.104 (0.207) |
| | | 15.0 | 79.0 | 0.119 (0.237) |
| | | d | 100.0 | 0.15 (0.3) |

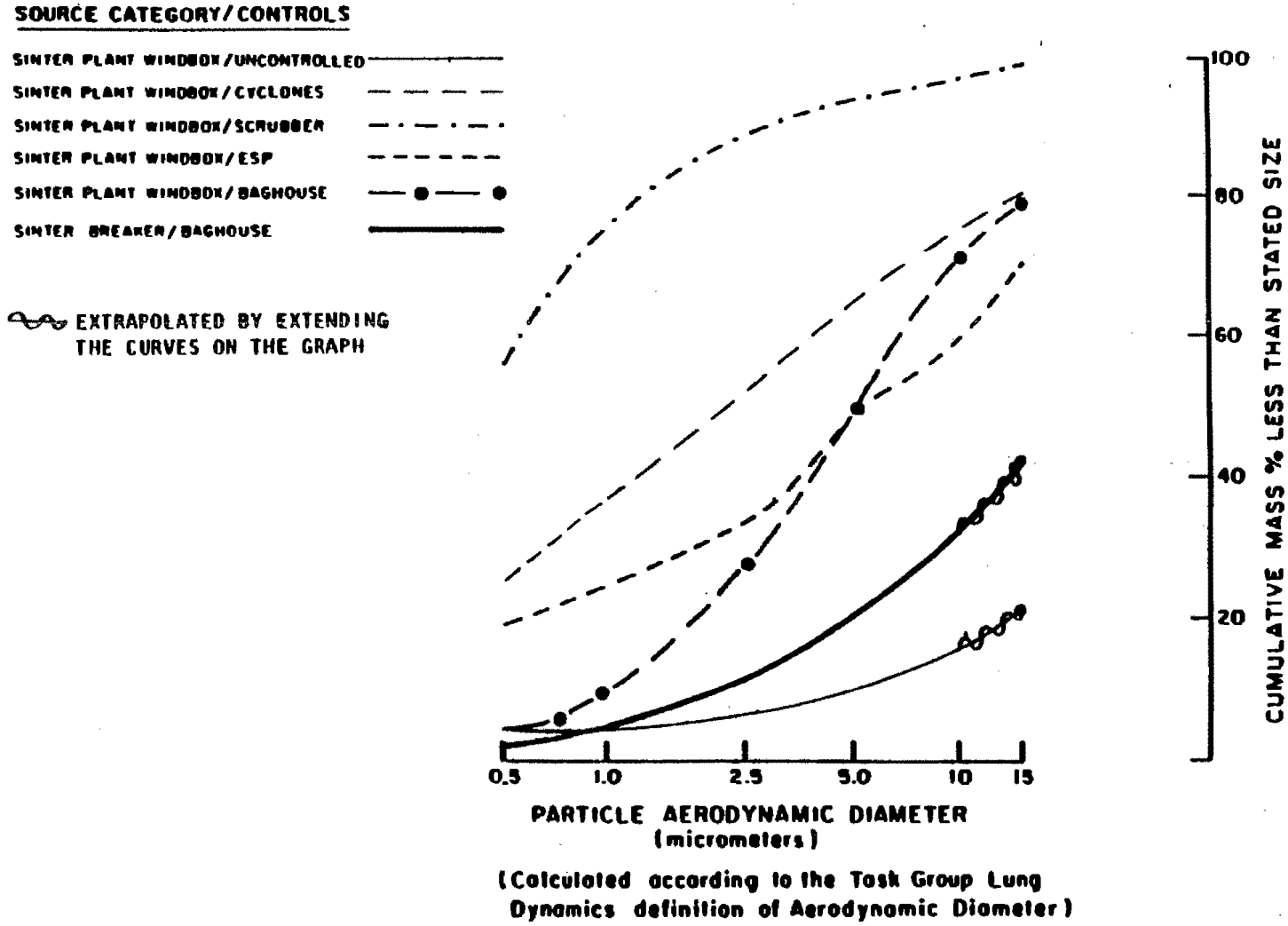


Figure 7.5-2. Particle size distribution of sinter plant emissions.

## APPENDIX C REFERENCES


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# APPENDIX D

## INDUSTRY-SPECIFIC AVERAGE PROFILES AND "ZERO" PROFILE

# APPENDIX D
## INDUSTRY-SPECIFIC AVERAGE PROFILES AND "ZERO" PROFILE

For several source categories, it was not possible to make profile assignments based on engineering judgement using the available profiles. In these cases, industry-specific average profiles were developed from original profiles representing SCC's within the general industry group. Sixteen such profiles with profile numbers beginning with 9 were developed as listed below:

| Profile Number | Profile Name |
|---|---|
| 90001 | Solid Waste - Average |
| 90002 | Chemical Manufacturing - Average |
| 90003 | Food and Agriculture - Average |
| 90004 | Steel Production - Average |
| 90005 | Lead Smelters - Average |
| 90006 | Metal Mining - General Processes - Average |
| 90007 | Primary Metal Production - Average |
| 90008 | Secondary Metal Production - Average |
| 90009 | Secondary Aluminum - Average |
| 90010 | Gray Iron Foundries - Average |
| 90011 | Steel Foundry - General |
| 90012 | Clay and Fly Ash Sintering - Average |
| 90013 | Mineral Products - Average |
| 90014 | Petroleum Industry - Average |
| 90015 | Pulp and Paper Industry |
| 90016 | Industrial Manufacturing - Average |

These profiles are presented in this appendix. All of these profiles are assigned a data quality level of "E" and are recommended for use only if there is no other information available.

Another profile developed in this study using engineering judgement is Profile 00000; it is an overall average of the profiles in the PM data base. Its main function is to provide a default value for categories where no emissions are expected. If particulate emissions are reported for such categories, then Profile 00000 can be used to speciate these emissions if no other information exists.

PM Profile Speciation Report

---

Profile Name : Solid Waste - Average
Profile Number : 90001
Data Quality : E

---

Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 5xxxxxxx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.130 | 0.155 | 0.190 |

---

Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 4.775 | 0.000 | 4.775 | 0.000 | 4.775 | 0.924 | 4.775 | 1.273 |
| 7439-95-4 | 12 | Mg | 0.710 | 0.000 | 0.710 | 0.000 | 0.710 | 0.137 | 0.710 | 0.813 |
| 7429-90-5 | 13 | Al | 0.585 | 0.000 | 0.585 | 0.000 | 0.585 | 0.113 | 0.585 | 0.417 |
| 7440-21-3 | 14 | Si | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 2.150 | 0.000 | 2.150 | 0.000 | 2.150 | 0.416 | 2.150 | 5.303 |
| 7782-50-5 | 17 | Cl | 11.150 | 0.000 | 11.150 | 0.000 | 11.150 | 2.158 | 11.150 | 3.041 |
| 7440-09-7 | 19 | K | 2.500 | 0.000 | 2.500 | 0.000 | 2.500 | 0.484 | 2.500 | 7.071 |
| 7440-70-2 | 20 | Ca | 0.384 | 0.000 | 0.384 | 0.000 | 0.384 | 0.074 | 0.384 | 0.940 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.097 | 0.000 | 0.097 | 0.000 | 0.097 | 0.019 | 0.097 | 0.090 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.018 | 0.000 | 0.018 | 0.000 | 0.018 | 0.003 | 0.018 | 0.016 |
| 7439-96-5 | 25 | Mn | 0.042 | 0.000 | 0.042 | 0.000 | 0.042 | 0.008 | 0.042 | 0.044 |
| 7439-89-6 | 26 | Fe | 0.314 | 0.000 | 0.314 | 0.000 | 0.314 | 0.061 | 0.314 | 0.202 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 | 0.007 | 0.004 |
| 7440-50-8 | 29 | Cu | 0.090 | 0.000 | 0.090 | 0.000 | 0.090 | 0.017 | 0.090 | 0.012 |
| 7440-66-6 | 30 | Zn | 5.900 | 0.000 | 5.900 | 0.000 | 5.900 | 1.142 | 5.900 | 0.247 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.010 | 0.000 | 0.010 | 0.000 | 0.010 | 0.002 | 0.010 | 0.003 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.083 | 0.000 | 0.083 | 0.000 | 0.083 | 0.016 | 0.083 | 0.069 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.002 | 0.013 | 0.016 |
| 7440-43-9 | 48 | Cd | 0.058 | 0.000 | 0.058 | 0.000 | 0.058 | 0.011 | 0.058 | 0.033 |
| 7440-31-5 | 50 | Sn | 0.443 | 0.000 | 0.443 | 0.000 | 0.443 | 0.086 | 0.443 | 0.408 |
| 7440-36-0 | 51 | Sb | 0.084 | 0.000 | 0.084 | 0.000 | 0.084 | 0.016 | 0.084 | 0.055 |
| 7440-46-2 | 55 | Cs | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.000 | 0.002 | 0.003 |

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PM Profile Speciation Report - continued (profile 90001)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.004 | 0.000 | 0.004 | 0.000 | 0.004 | 0.001 | 0.004 | 0.007 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 2.665 | 0.000 | 2.665 | 0.000 | 2.665 | 0.516 | 2.665 | 6.527 |
| 7439-92-1 | 82 | Pb | 4.115 | 0.000 | 4.115 | 0.000 | 4.115 | 0.796 | 4.115 | 0.990 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 36.199 | | 36.199 | | 36.199 | | 36.199 | |

PM Profile Speciation Report

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Profile Name : Chemical Manufacturing - Average
Profile Number : 90002
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 301xxxxx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.279 | 0.411 | 0.505 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 19.410 | 0.000 | 19.410 | 0.000 | 19.410 | 2.117 | 19.410 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.475 | 0.150 | 0.600 | 0.150 | 0.558 | 0.103 | 0.600 | 0.000 |
| 7429-90-5 | 13 | Al | 2.062 | 0.500 | 2.862 | 0.400 | 2.591 | 0.383 | 2.862 | 0.125 |
| 7440-21-3 | 14 | Si | 4.447 | 0.500 | 5.947 | 5.000 | 5.438 | 1.830 | 5.947 | 0.770 |
| 7723-14-0 | 15 | P | 0.850 | 0.000 | 0.850 | 0.000 | 0.850 | 0.282 | 0.850 | 0.150 |
| 7704-34-9 | 16 | S | 1.340 | 0.150 | 0.940 | 0.050 | 1.076 | 0.114 | 1.090 | 0.045 |
| 7782-50-5 | 17 | Cl | 4.147 | 0.300 | 2.123 | 0.300 | 2.810 | 0.366 | 1.623 | 0.015 |
| 7440-09-7 | 19 | K | 2.073 | 0.250 | 1.123 | 0.300 | 1.445 | 0.240 | 1.123 | 0.030 |
| 7440-70-2 | 20 | Ca | 2.760 | 0.300 | 3.610 | 0.400 | 3.321 | 0.428 | 3.610 | 0.140 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.095 | 0.045 | 0.175 | 0.000 | 0.147 | 0.024 | 0.175 | 0.000 |
| 7440-62-2 | 23 | V | 0.007 | 0.000 | 0.010 | 0.010 | 0.009 | 0.004 | 0.010 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.015 | 0.000 | 0.016 | 0.010 | 0.016 | 0.004 | 0.016 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.122 | 0.025 | 0.117 | 0.015 | 0.119 | 0.018 | 0.117 | 0.000 |
| 7439-89-6 | 26 | Fe | 1.815 | 0.200 | 1.865 | 0.200 | 1.848 | 0.242 | 1.865 | 0.030 |
| 7440-48-4 | 27 | Co | 0.013 | 0.000 | 0.000 | 0.000 | 0.004 | 0.001 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.002 | 0.025 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.039 | 0.000 | 0.031 | 0.000 | 0.033 | 0.003 | 0.031 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.170 | 0.000 | 0.115 | 0.000 | 0.134 | 0.021 | 0.115 | 0.015 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.002 | 0.015 | 0.000 |
| 7726-95-6 | 35 | Br | 0.035 | 0.015 | 0.015 | 0.000 | 0.022 | 0.006 | 0.015 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 | 0.016 | 0.007 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.002 | 0.005 | 0.020 |
| 7440-22-4 | 47 | Ag | 0.020 | 0.000 | 0.020 | 0.000 | 0.020 | 0.003 | 0.020 | 0.030 |
| 7440-43-9 | 48 | Cd | 0.035 | 0.000 | 0.035 | 0.000 | 0.035 | 0.004 | 0.035 | 0.042 |
| 7440-74-6 | 49 | In | 0.022 | 0.000 | 0.022 | 0.000 | 0.022 | 0.007 | 0.022 | 0.046 |
| 7440-31-5 | 50 | Sn | 0.033 | 0.000 | 0.033 | 0.000 | 0.033 | 0.011 | 0.033 | 0.055 |

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PM Profile Speciation Report - continued (profile 90002)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.008 | 0.025 | 0.105 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.175 | 0.000 | 0.175 | 0.000 | 0.175 | 0.058 | 0.175 | 0.300 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.033 | 0.015 | 0.010 | 0.000 | 0.018 | 0.006 | 0.010 | 0.015 |
| | 201 | OC | 9.175 | 0.450 | 9.175 | 0.450 | 9.175 | 1.082 | 9.175 | 0.000 |
| | 202 | EC | 1.825 | 0.200 | 1.825 | 0.200 | 1.825 | 0.212 | 1.825 | 0.000 |
| | 203 | SO4 | 3.125 | 0.250 | 2.150 | 0.050 | 2.481 | 0.255 | 2.650 | 0.000 |
| | 204 | NO3 | 0.350 | 0.100 | 0.275 | 0.000 | 0.300 | 0.042 | 0.275 | 0.000 |
| TOTALS: | | | 54.741 | | 53.602 | | 53.988 | | 53.765 | |

PM Profile Speciation Report

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Profile Name : Food and Agriculture - Average
Profile Number : 90003
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 302xxxx.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.140 0.310 0.490

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 15.000 | 0.000 | 15.000 | 0.000 | 15.000 | 0.857 | 15.000 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.031 | 0.550 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.031 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.003 | 0.050 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 90003)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 200 | TC | 30.000 | 0.000 | 30.000 | 0.000 | 30.000 | 1.714 | 30.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.031 | 0.550 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 46.750 | | 46.750 | | 46.750 | | 46.750 | |

PM Profile Speciation Report

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Profile Name : Steel Production - Average
Profile Number : 90004
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 303009xx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.520 | 0.580 | 0.600 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-21-3 | 14 | Si | 4.950 | 0.000 | 4.950 | 0.000 | 4.950 | 1.358 | 4.950 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 13.315 | 0.000 | 8.165 | 0.000 | 11.955 | 2.086 | 13.315 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 5.000 | 0.000 | 5.000 | 0.000 | 5.000 | 0.861 | 5.000 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.095 | 0.550 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-62-2 | 23 | V | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.095 | 0.550 | 0.000 |
| 7440-47-3 | 24 | Cr | 2.000 | 0.000 | 1.275 | 0.000 | 1.808 | 0.314 | 2.000 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.095 | 0.550 | 0.000 |
| 7439-89-6 | 26 | Fe | 11.000 | 0.000 | 13.500 | 0.000 | 11.660 | 2.078 | 11.000 | 0.000 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.095 | 0.550 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.095 | 0.550 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.009 | 0.050 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.009 | 0.050 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.009 | 0.050 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.009 | 0.050 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.009 | 0.050 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.009 | 0.050 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.050 | 0.000 | 0.050 | 0.000 | 0.050 | 0.009 | 0.050 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 90004)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.095 | 0.550 | 0.000 |
| | 201 | OC | 10.000 | 0.000 | 10.000 | 0.000 | 10.000 | 2.744 | 10.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 40.000 | 0.000 | 37.500 | 0.000 | 39.340 | 6.739 | 40.000 | 0.000 |
| | 204 | NO3 | 0.550 | 0.000 | 0.550 | 0.000 | 0.550 | 0.095 | 0.550 | 0.000 |
| TOTALS: | | | 90.465 | | 84.590 | | 88.913 | | 90.465 | |

PM Profile Speciation Report

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Profile Name : Lead Smelters - Average
Profile Number : 90005
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 303010xx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.677 | 0.773 | 0.837 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.531 | 0.566 | 0.613 | 0.420 | 0.548 | 0.598 | 0.428 | 0.411 |
| 7440-21-3 | 14 | Si | 1.719 | 1.232 | 2.079 | 0.948 | 1.781 | 1.350 | 1.452 | 0.949 |
| 7723-14-0 | 15 | P | 0.481 | 0.065 | 0.422 | 0.063 | 0.464 | 0.107 | 0.393 | 0.055 |
| 7704-34-9 | 16 | S | 8.664 | 1.533 | 7.794 | 1.514 | 8.347 | 2.299 | 7.263 | 1.367 |
| 7782-50-5 | 17 | Cl | 1.477 | 0.549 | 1.019 | 0.269 | 1.363 | 0.537 | 1.267 | 0.425 |
| 7440-09-7 | 19 | K | 1.237 | 0.147 | 1.127 | 0.144 | 1.203 | 0.324 | 1.088 | 0.195 |
| 7440-70-2 | 20 | Ca | 1.204 | 0.274 | 1.841 | 0.453 | 1.290 | 0.557 | 1.361 | 0.353 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.074 | 0.022 | 0.085 | 0.062 | 0.076 | 0.057 | 0.072 | 0.022 |
| 7440-62-2 | 23 | V | 0.003 | 0.003 | 0.002 | 0.002 | 0.003 | 0.003 | 0.003 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.023 | 0.004 | 0.032 | 0.006 | 0.025 | 0.008 | 0.030 | 0.005 |
| 7439-96-5 | 25 | Mn | 0.094 | 0.094 | 0.147 | 0.078 | 0.100 | 0.107 | 0.117 | 0.068 |
| 7439-89-6 | 26 | Fe | 2.002 | 1.008 | 3.066 | 1.165 | 2.162 | 1.407 | 2.790 | 1.292 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.141 | 0.027 | 0.148 | 0.029 | 0.142 | 0.053 | 0.150 | 0.029 |
| 7440-50-8 | 29 | Cu | 4.887 | 1.632 | 5.391 | 1.681 | 4.967 | 2.793 | 5.444 | 1.745 |
| 7440-66-6 | 30 | Zn | 11.351 | 1.633 | 12.578 | 1.733 | 11.662 | 3.358 | 11.657 | 2.065 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 10.468 | 2.051 | 5.382 | 0.921 | 9.590 | 3.107 | 6.113 | 1.295 |
| 7782-49-2 | 34 | Se | 0.092 | 0.009 | 0.066 | 0.008 | 0.087 | 0.020 | 0.083 | 0.041 |
| 7726-95-6 | 35 | Br | 0.141 | 0.056 | 0.117 | 0.050 | 0.135 | 0.071 | 0.128 | 0.064 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.048 | 0.022 | 0.079 | 0.034 | 0.052 | 0.038 | 0.066 | 0.032 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.630 | 0.121 | 0.156 | 0.032 | 0.553 | 0.186 | 0.248 | 0.044 |
| 7440-22-4 | 47 | Ag | 0.348 | 0.119 | 0.239 | 0.082 | 0.329 | 0.134 | 0.268 | 0.129 |
| 7440-43-9 | 48 | Cd | 5.847 | 1.003 | 3.919 | 0.770 | 5.362 | 1.484 | 4.553 | 0.855 |
| 7440-74-6 | 49 | In | 0.012 | 0.000 | 0.033 | 0.006 | 0.017 | 0.009 | 0.035 | 0.008 |
| 7440-31-5 | 50 | Sn | 1.039 | 0.110 | 0.930 | 0.126 | 1.027 | 0.299 | 0.929 | 0.151 |

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PM Profile Speciation Report - continued (profile 90005)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | 1.986 | 0.899 | 1.499 | 0.859 | 1.904 | 1.093 | 1.666 | 1.093 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.140 | 0.168 | 0.123 | 0.232 | 0.136 | 0.236 | 0.129 | 0.124 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.105 | 0.017 | 0.083 | 0.018 | 0.100 | 0.028 | 0.076 | 0.015 |
| 7439-92-1 | 82 | Pb | 22.465 | 3.937 | 20.101 | 4.201 | 21.905 | 6.061 | 22.148 | 4.049 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 77.209 | | 69.071 | | 75.330 | | 69.957 | |

PM Profile Speciation Report

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Profile Name : Metal Mining - General Processes - Average
Profile Number : 90006
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 303024xx.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.150 0.340 0.510

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Total Particulate Matter -

| | | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Species | | | | | | | | | |
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 14.859 | 1.581 | 10.243 | 1.129 | 11.601 | 0.982 | 10.243 | 0.000 |
| 7440-21-3 | 14 | Si | 30.907 | 3.278 | 23.183 | 2.537 | 25.454 | 2.089 | 23.183 | 0.000 |
| 7723-14-0 | 15 | P | 0.510 | 0.052 | 0.274 | 0.028 | 0.344 | 0.030 | 0.274 | 0.000 |
| 7704-34-9 | 16 | S | 5.206 | 0.701 | 3.824 | 0.533 | 4.230 | 0.419 | 3.824 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.087 | 0.035 | 0.075 | 0.019 | 0.079 | 0.013 | 0.075 | 0.000 |
| 7440-09-7 | 19 | K | 3.086 | 0.327 | 2.635 | 0.291 | 2.768 | 0.222 | 2.635 | 0.000 |
| 7440-70-2 | 20 | Ca | 0.762 | 0.080 | 0.967 | 0.113 | 0.906 | 0.066 | 0.967 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.311 | 0.032 | 0.388 | 0.040 | 0.365 | 0.026 | 0.388 | 0.000 |
| 7440-62-2 | 23 | V | 0.038 | 0.000 | 0.033 | 0.000 | 0.034 | 0.002 | 0.033 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.040 | 0.000 | 0.029 | 0.000 | 0.032 | 0.002 | 0.029 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.093 | 0.005 | 0.098 | 0.009 | 0.096 | 0.006 | 0.098 | 0.000 |
| 7439-89-6 | 26 | Fe | 8.043 | 0.925 | 7.135 | 0.801 | 7.402 | 0.619 | 7.135 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.032 | 0.005 | 0.027 | 0.005 | 0.029 | 0.003 | 0.027 | 0.000 |
| 7440-50-8 | 29 | Cu | 6.080 | 1.090 | 6.171 | 1.109 | 6.144 | 0.652 | 6.171 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.495 | 0.239 | 1.968 | 0.324 | 1.829 | 0.177 | 1.968 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.013 | 0.035 | 0.009 | 0.010 | 0.013 | 0.000 |
| 7440-38-2 | 33 | As | 0.283 | 0.054 | 0.282 | 0.050 | 0.283 | 0.031 | 0.282 | 0.000 |
| 7782-49-2 | 34 | Se | 0.006 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.025 | 0.000 | 0.020 | 0.000 | 0.022 | 0.002 | 0.020 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.014 | 0.000 | 0.010 | 0.001 | 0.014 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.021 | 0.000 | 0.026 | 0.000 | 0.024 | 0.002 | 0.026 | 0.000 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.013 | 0.000 | 0.009 | 0.001 | 0.013 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.000 | 0.167 | 0.026 | 0.118 | 0.011 | 0.167 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.019 | 0.005 | 0.000 | 0.004 | 0.006 | 0.005 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.032 | 0.028 | 0.016 | 0.000 | 0.021 | 0.008 | 0.016 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.030 | 0.041 | 0.013 | 0.000 | 0.018 | 0.012 | 0.013 | 0.000 |
| 7440-74-6 | 49 | In | 0.011 | 0.043 | 0.010 | 0.000 | 0.010 | 0.013 | 0.010 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.009 | 0.050 | 0.013 | 0.000 | 0.012 | 0.015 | 0.013 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.079 | 0.092 | 0.033 | 0.015 | 0.046 | 0.028 | 0.033 | 0.000 |

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PM Profile Speciation Report - continued (profile 90006)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.191 | 0.250 | 0.026 | 0.039 | 0.074 | 0.075 | 0.026 | 0.000 |
| 7439-91-0 | 57 | La | 0.000 | 0.000 | 0.000 | 0.060 | NE | 0.018 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.695 | 0.083 | 0.491 | 0.061 | 0.551 | 0.052 | 0.491 | 0.000 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 72.936 | | 58.197 | | 62.531 | | 58.197 | |

PM Profile Speciation Report

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Profile Name : Primary Metal Production - Average
Profile Number : 90007
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 303xxxxx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.464 | 0.575 | 0.644 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.010 | 0.005 | 0.010 | 0.000 | 0.007 | 0.007 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 1.302 | 1.453 | 1.207 | 0.436 | 1.052 | 1.158 | 1.405 | 0.777 |
| 7440-23-5 | 11 | Na | 1.163 | 0.556 | 1.074 | 0.154 | 0.892 | 0.631 | 0.379 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.150 | 1.006 | 0.145 | 0.926 | 0.148 | 0.827 | 0.147 | 0.000 |
| 7429-90-5 | 13 | Al | 4.268 | 1.986 | 3.963 | 1.219 | 3.695 | 1.907 | 3.697 | 0.477 |
| 7440-21-3 | 14 | Si | 5.635 | 1.427 | 4.617 | 1.084 | 4.825 | 1.260 | 4.398 | 0.714 |
| 7723-14-0 | 15 | P | 0.302 | 0.049 | 0.241 | 0.045 | 0.270 | 0.075 | 0.227 | 0.038 |
| 7704-34-9 | 16 | S | 7.093 | 1.394 | 5.603 | 1.063 | 6.389 | 1.841 | 6.092 | 1.054 |
| 7782-50-5 | 17 | Cl | 1.750 | 0.428 | 1.361 | 0.192 | 1.580 | 0.487 | 2.224 | 0.302 |
| 7440-09-7 | 19 | K | 3.122 | 0.913 | 2.421 | 0.905 | 2.701 | 0.925 | 2.936 | 0.147 |
| 7440-70-2 | 20 | Ca | 1.318 | 0.290 | 1.596 | 0.368 | 1.328 | 0.417 | 1.427 | 0.323 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.092 | 0.021 | 0.103 | 0.046 | 0.096 | 0.041 | 0.094 | 0.017 |
| 7440-62-2 | 23 | V | 0.102 | 0.010 | 0.069 | 0.005 | 0.082 | 0.032 | 0.073 | 0.003 |
| 7440-47-3 | 24 | Cr | 0.391 | 0.003 | 0.189 | 0.006 | 0.292 | 0.109 | 0.394 | 0.004 |
| 7439-96-5 | 25 | Mn | 1.114 | 0.238 | 1.130 | 0.235 | 1.111 | 0.512 | 1.131 | 0.056 |
| 7439-89-6 | 26 | Fe | 4.635 | 0.905 | 5.618 | 0.968 | 4.897 | 1.293 | 5.266 | 1.017 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.174 | 0.027 | 0.148 | 0.024 | 0.156 | 0.051 | 0.162 | 0.027 |
| 7440-50-8 | 29 | Cu | 3.251 | 1.179 | 3.466 | 1.212 | 3.270 | 1.934 | 3.497 | 1.202 |
| 7440-66-6 | 30 | Zn | 6.192 | 1.158 | 6.612 | 1.210 | 6.225 | 2.318 | 6.276 | 1.437 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.004 | 0.003 | 0.011 | 0.002 | 0.004 | 0.004 | 0.003 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 9.923 | 1.412 | 7.499 | 0.634 | 9.496 | 4.187 | 7.843 | 0.891 |
| 7782-49-2 | 34 | Se | 0.081 | 0.006 | 0.068 | 0.006 | 0.078 | 0.028 | 0.076 | 0.028 |
| 7726-95-6 | 35 | Br | 0.119 | 0.065 | 0.109 | 0.076 | 0.115 | 0.073 | 0.110 | 0.044 |
| 7440-17-7 | 37 | Rb | 0.034 | 0.000 | 0.036 | 0.000 | 0.035 | 0.010 | 0.036 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.037 | 0.016 | 0.048 | 0.024 | 0.036 | 0.026 | 0.047 | 0.022 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.003 | 0.000 | 0.001 | 0.000 | 0.002 | 0.001 | 0.004 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.000 | 0.001 | 0.018 | 0.008 | 0.013 | 0.004 | 0.018 | 0.001 |
| 7440-05-3 | 46 | Pd | 0.298 | 0.084 | 0.074 | 0.022 | 0.262 | 0.128 | 0.119 | 0.031 |
| 7440-22-4 | 47 | Ag | 0.178 | 0.083 | 0.123 | 0.056 | 0.167 | 0.093 | 0.137 | 0.089 |
| 7440-43-9 | 48 | Cd | 2.810 | 0.690 | 1.895 | 0.530 | 2.579 | 1.021 | 2.196 | 0.589 |

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PM Profile Speciation Report - continued (profile 90007)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-74-6 | 49 | In | 0.010 | 0.018 | 0.017 | 0.006 | 0.010 | 0.008 | 0.018 | 0.005 |
| 7440-31-5 | 50 | Sn | 0.501 | 0.079 | 0.452 | 0.087 | 0.498 | 0.206 | 0.450 | 0.104 |
| 7440-36-0 | 51 | Sb | 0.981 | 0.620 | 0.734 | 0.591 | 0.931 | 0.752 | 0.820 | 0.752 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.091 | 0.154 | 0.071 | 0.162 | 0.081 | 0.165 | 0.083 | 0.086 |
| 7439-91-0 | 57 | La | 0.000 | 0.001 | 0.000 | 0.020 | 0.000 | 0.006 | 0.000 | 0.001 |
| 7440-45-1 | 58 | Ce | 0.029 | 0.000 | 0.029 | 0.000 | 0.029 | 0.010 | 0.029 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.051 | 0.012 | 0.041 | 0.012 | 0.049 | 0.019 | 0.037 | 0.010 |
| 7439-92-1 | 82 | Pb | 11.682 | 2.713 | 10.490 | 2.892 | 11.355 | 4.178 | 11.320 | 2.788 |
| 7440-69-9 | 83 | Bi | 0.002 | 0.007 | 0.002 | 0.000 | 0.001 | 0.005 | 0.000 | 0.000 |
| | 200 | TC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 201 | OC | 3.216 | 1.455 | 3.011 | 0.459 | 2.691 | 1.662 | 2.899 | 0.696 |
| | 202 | EC | 0.341 | 0.243 | 0.304 | 0.346 | 0.286 | 0.312 | 1.002 | 0.634 |
| | 203 | SO4 | 6.632 | 2.315 | 5.595 | 0.269 | 5.850 | 2.787 | 6.335 | 1.157 |
| | 204 | NO3 | 0.416 | 0.644 | 0.394 | 0.789 | 0.398 | 0.644 | 0.411 | 0.020 |
| TOTALS: | | | 79.500 | | 70.587 | | 73.980 | | 73.819 | |

PM Profile Speciation Report

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Profile Name : Secondary Metal Production - Average
Profile Number : 90008
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles representing the source category group 304xxxxx.

SCC Assignments:

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.474 | 0.567 | 0.633 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.144 | 0.000 | 0.144 | NE | 0.196 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.630 | 0.139 | 0.630 | 0.139 | 0.630 | 0.271 | 0.630 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.542 | 0.205 | 0.542 | 0.205 | 0.542 | 0.456 | 0.542 | 0.000 |
| 7429-90-5 | 13 | Al | 0.439 | 0.067 | 0.723 | 0.159 | 0.470 | 0.249 | 0.439 | 0.016 |
| 7440-21-3 | 14 | Si | 3.229 | 0.117 | 3.653 | 0.321 | 3.275 | 1.418 | 3.229 | 0.019 |
| 7723-14-0 | 15 | P | 0.067 | 0.022 | 0.067 | 0.038 | 0.067 | 0.040 | 0.067 | 0.008 |
| 7704-34-9 | 16 | S | 1.364 | 0.053 | 1.300 | 0.089 | 1.365 | 0.250 | 1.377 | 0.197 |
| 7782-50-5 | 17 | Cl | 7.671 | 0.399 | 7.218 | 0.587 | 7.623 | 2.159 | 7.673 | 0.063 |
| 7440-09-7 | 19 | K | 1.961 | 0.211 | 1.983 | 0.399 | 1.963 | 0.681 | 1.961 | 0.019 |
| 7440-70-2 | 20 | Ca | 1.112 | 2.660 | 1.169 | 4.651 | 1.118 | 1.872 | 1.112 | 0.030 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.072 | 0.133 | 0.079 | 0.232 | 0.073 | 0.096 | 0.072 | 0.000 |
| 7440-62-2 | 23 | V | 0.008 | 0.003 | 0.008 | 0.004 | 0.008 | 0.005 | 0.008 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.237 | 0.404 | 0.246 | 0.404 | 0.241 | 0.562 | 0.243 | 0.000 |
| 7439-96-5 | 25 | Mn | 1.291 | 0.260 | 1.293 | 0.260 | 1.291 | 0.650 | 1.291 | 0.000 |
| 7439-89-6 | 26 | Fe | 5.704 | 0.866 | 5.794 | 0.867 | 5.715 | 2.351 | 5.705 | 0.029 |
| 7440-48-4 | 27 | Co | 0.005 | 0.000 | 0.005 | 0.000 | 0.005 | 0.002 | 0.005 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.312 | 0.020 | 0.313 | 0.020 | 0.312 | 0.110 | 0.311 | 0.007 |
| 7440-50-8 | 29 | Cu | 4.610 | 0.009 | 4.615 | 0.010 | 4.610 | 1.062 | 4.609 | 1.563 |
| 7440-66-6 | 30 | Zn | 5.732 | 0.035 | 5.738 | 0.035 | 5.730 | 1.251 | 5.728 | 1.824 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.001 | 0.000 | 0.000 | NE | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.133 | 0.002 | 0.134 | 0.006 | 0.134 | 0.027 | 0.134 | 0.034 |
| 7782-49-2 | 34 | Se | 0.034 | 0.001 | 0.033 | 0.002 | 0.034 | 0.008 | 0.034 | 0.011 |
| 7726-95-6 | 35 | Br | 0.024 | 0.003 | 0.021 | 0.006 | 0.023 | 0.005 | 0.024 | 0.003 |
| 7440-17-7 | 37 | Rb | 0.003 | 0.001 | 0.003 | 0.002 | 0.003 | 0.002 | 0.003 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.001 | 0.001 | 0.001 | 0.003 | 0.001 | 0.003 | 0.001 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.005 | 0.003 | 0.015 | 0.001 | 0.012 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.001 | 0.006 | 0.003 |
| 7440-22-4 | 47 | Ag | 0.005 | 0.005 | 0.008 | 0.015 | 0.005 | 0.012 | 0.005 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.077 | 0.006 | 0.084 | 0.020 | 0.078 | 0.035 | 0.077 | 0.007 |
| 7440-74-6 | 49 | In | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 | 0.003 | 0.005 |
| 7440-31-5 | 50 | Sn | 0.210 | 0.011 | 0.206 | 0.105 | 0.210 | 0.099 | 0.210 | 0.013 |

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PM Profile Speciation Report - continued (profile 90008)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-36-0 | 51 | Sb | 6.517 | 1.048 | 7.420 | 2.061 | 7.125 | 1.797 | 7.440 | 0.015 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.050 | 0.035 | 0.047 | 0.117 | 0.050 | 0.100 | 0.050 | 0.033 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.005 | 0.001 | 0.008 | 0.004 | 0.007 | 0.003 | 0.008 | 0.000 |
| 7439-92-1 | 82 | Pb | 5.311 | 0.020 | 5.310 | 0.022 | 5.310 | 2.246 | 5.309 | 0.337 |
| | 201 | OC | 1.583 | 0.000 | 1.583 | 0.000 | 1.583 | 0.688 | 1.583 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 4.836 | 0.375 | 4.836 | 0.375 | 4.836 | 1.826 | 4.836 | 0.000 |
| | 204 | NO3 | 0.092 | 0.404 | 0.092 | 0.404 | 0.092 | 0.551 | 0.092 | 0.000 |
| TOTALS: | | | 53.876 | | 55.174 | | 54.539 | | 54.817 | |

PM Profile Speciation Report

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Profile Name : Secondary Aluminum - Average
Profile Number : 90009
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 304001xx.

SCC Assignments:

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.660 | 0.710 | 0.760 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 0.724 | 0.058 | 2.429 | 0.316 | 0.909 | 0.535 | 0.724 | 0.000 |
| 7440-21-3 | 14 | Si | 3.206 | 0.223 | 5.750 | 0.746 | 3.483 | 1.363 | 3.206 | 0.000 |
| 7723-14-0 | 15 | P | 0.186 | 0.048 | 0.187 | 0.081 | 0.187 | 0.096 | 0.186 | 0.000 |
| 7704-34-9 | 16 | S | 1.442 | 0.110 | 0.980 | 0.185 | 1.391 | 0.365 | 1.442 | 0.000 |
| 7782-50-5 | 17 | Cl | 17.106 | 0.805 | 14.373 | 1.326 | 16.809 | 3.221 | 17.106 | 0.000 |
| 7440-09-7 | 19 | K | 5.293 | 0.346 | 5.423 | 0.719 | 5.307 | 1.467 | 5.293 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.540 | 0.021 | 1.882 | 0.064 | 1.577 | 0.365 | 1.540 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.038 | 0.002 | 0.081 | 0.011 | 0.042 | 0.015 | 0.038 | 0.000 |
| 7440-62-2 | 23 | V | 0.003 | 0.001 | 0.005 | 0.004 | 0.003 | 0.003 | 0.003 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.039 | 0.002 | 0.057 | 0.006 | 0.041 | 0.010 | 0.039 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.280 | 0.001 | 0.294 | 0.005 | 0.281 | 0.065 | 0.280 | 0.000 |
| 7439-89-6 | 26 | Fe | 3.126 | 0.011 | 3.659 | 0.085 | 3.184 | 0.721 | 3.126 | 0.000 |
| 7440-48-4 | 27 | Co | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.006 | 0.025 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.292 | 0.002 | 0.301 | 0.007 | 0.293 | 0.065 | 0.292 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.046 | 0.003 | 0.077 | 0.010 | 0.049 | 0.015 | 0.046 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.065 | 0.004 | 0.126 | 0.016 | 0.071 | 0.025 | 0.065 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.001 | 0.000 | 0.003 | NE | 0.003 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.004 | 0.000 | 0.000 | NE | 0.003 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.005 | 0.004 | 0.003 | 0.010 | 0.005 | 0.009 | 0.005 | 0.000 |
| 7782-49-2 | 34 | Se | 0.008 | 0.001 | 0.006 | 0.004 | 0.008 | 0.004 | 0.008 | 0.000 |
| 7726-95-6 | 35 | Br | 0.033 | 0.003 | 0.019 | 0.006 | 0.031 | 0.009 | 0.033 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.002 | 0.000 | 0.005 | 0.002 | 0.005 | 0.002 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.003 | 0.002 | 0.002 | 0.006 | 0.002 | 0.006 | 0.003 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.001 | 0.011 | 0.019 | 0.031 | 0.003 | 0.030 | 0.001 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.010 | 0.010 | 0.030 | 0.030 | 0.012 | 0.029 | 0.010 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.013 | 0.042 | 0.040 | 0.005 | 0.039 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.049 | 0.018 | 0.025 | 0.056 | 0.046 | 0.053 | 0.049 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.298 | 0.048 | 0.176 | 0.115 | 0.285 | 0.127 | 0.298 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

PM Profile Speciation Report - continued (profile 90009)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.018 | 0.080 | 0.000 | 0.245 | 0.016 | 0.230 | 0.018 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.000 | 0.007 | NE | 0.007 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.065 | 0.006 | 0.072 | 0.016 | 0.065 | 0.020 | 0.065 | 0.000 |
| | 201 | OC | 6.500 | 0.000 | 6.500 | 0.000 | 6.500 | 1.532 | 6.500 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 8.000 | 0.000 | 8.000 | 0.000 | 8.000 | 1.886 | 8.000 | 0.000 |
| | 204 | NO3 | 0.275 | 0.000 | 0.275 | 0.000 | 0.275 | 0.065 | 0.275 | 0.000 |
| TOTALS: | | | 48.678 | | 50.818 | | 48.907 | | 48.678 | |

PM Profile Speciation Report

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Profile Name : Gray Iron Foundries - Average
Profile Number : 90010
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles representing the source category group 304003xx.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.835 0.905 0.925

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 1.650 | 0.000 | 1.650 | 0.000 | 1.650 | 0.303 | 1.650 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 1.200 | 0.000 | 1.200 | 0.000 | 1.200 | 0.217 | 1.200 | 0.000 |
| 7440-21-3 | 14 | Si | 13.050 | 0.000 | 13.050 | 0.000 | 13.050 | 3.113 | 13.050 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 1.150 | 0.000 | 1.150 | 0.000 | 1.150 | 0.297 | 1.150 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.695 | 0.000 | 1.695 | 0.000 | 1.695 | 0.335 | 1.695 | 0.000 |
| 7440-09-7 | 19 | K | 3.100 | 0.000 | 3.100 | 0.000 | 3.100 | 0.560 | 3.100 | 0.000 |
| 7440-70-2 | 20 | Ca | 1.250 | 0.000 | 1.250 | 0.000 | 1.250 | 0.229 | 1.250 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.270 | 0.000 | 0.270 | 0.000 | 0.270 | 0.061 | 0.270 | 0.000 |
| 7440-62-2 | 23 | V | 0.007 | 0.000 | 0.007 | 0.000 | 0.007 | 0.001 | 0.007 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.038 | 0.000 | 0.038 | 0.000 | 0.038 | 0.007 | 0.038 | 0.000 |
| 7439-96-5 | 25 | Mn | 3.100 | 0.000 | 3.100 | 0.000 | 3.100 | 0.620 | 3.100 | 0.000 |
| 7439-89-6 | 26 | Fe | 10.350 | 0.000 | 10.350 | 0.000 | 10.350 | 2.068 | 10.350 | 0.000 |
| 7440-48-4 | 27 | Co | 0.003 | 0.000 | 0.003 | 0.000 | 0.003 | 0.001 | 0.003 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.067 | 0.000 | 0.067 | 0.000 | 0.067 | 0.013 | 0.067 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.190 | 0.000 | 0.190 | 0.000 | 0.190 | 0.037 | 0.190 | 0.000 |
| 7440-66-6 | 30 | Zn | 1.865 | 0.000 | 1.865 | 0.000 | 1.865 | 0.381 | 1.865 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.013 | 0.000 | 0.013 | 0.000 | 0.013 | 0.002 | 0.013 | 0.000 |
| 7782-49-2 | 34 | Se | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 | 0.001 | 0.000 |
| 7726-95-6 | 35 | Br | 0.015 | 0.000 | 0.015 | 0.000 | 0.015 | 0.003 | 0.015 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.017 | 0.000 | 0.017 | 0.000 | 0.017 | 0.003 | 0.017 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.006 | 0.000 | 0.006 | 0.000 | 0.006 | 0.002 | 0.006 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.185 | 0.000 | 0.185 | 0.000 | 0.185 | 0.048 | 0.185 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 90010)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.385 | 0.000 | 0.385 | 0.000 | 0.385 | 0.074 | 0.385 | 0.000 |
| | 201 | OC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 204 | NO3 | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| TOTALS: | | | 39.607 | | 39.607 | | 39.607 | | 39.607 | |

PM Profile Speciation Report

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Profile Name : Steel Foundry - General
Profile Number : 90011
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 304007xx.

SCC Assignments:

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.765 | 0.835 | 0.860 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.354 | 0.000 | 0.354 | NE | 0.481 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.630 | 0.339 | 0.630 | 0.339 | 0.630 | 0.492 | 0.630 | 0.000 |
| 7439-95-4 | 12 | Mg | 3.250 | 0.502 | 3.250 | 0.502 | 3.250 | 1.117 | 3.250 | 0.000 |
| 7429-90-5 | 13 | Al | 0.325 | 0.113 | 0.325 | 0.113 | 0.325 | 0.177 | 0.325 | 0.000 |
| 7440-21-3 | 14 | Si | 2.500 | 0.148 | 2.500 | 0.148 | 2.500 | 0.709 | 2.500 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 0.980 | 0.049 | 0.975 | 0.049 | 0.980 | 0.274 | 0.980 | 0.000 |
| 7782-50-5 | 17 | Cl | 15.925 | 0.552 | 15.925 | 0.552 | 15.925 | 3.608 | 15.925 | 0.000 |
| 7440-09-7 | 19 | K | 2.460 | 0.049 | 2.460 | 0.049 | 2.460 | 0.490 | 2.460 | 0.000 |
| 7440-70-2 | 20 | Ca | 3.375 | 0.403 | 3.375 | 0.403 | 3.375 | 1.008 | 3.375 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.100 | 0.014 | 0.100 | 0.014 | 0.100 | 0.033 | 0.100 | 0.000 |
| 7440-62-2 | 23 | V | 0.030 | 0.007 | 0.030 | 0.007 | 0.030 | 0.013 | 0.030 | 0.000 |
| 7440-47-3 | 24 | Cr | 1.325 | 0.990 | 1.325 | 0.990 | 1.325 | 1.378 | 1.325 | 0.000 |
| 7439-96-5 | 25 | Mn | 4.350 | 0.636 | 4.350 | 0.636 | 4.350 | 1.466 | 4.350 | 0.000 |
| 7439-89-6 | 26 | Fe | 20.500 | 2.121 | 20.500 | 2.121 | 20.500 | 5.326 | 20.500 | 0.000 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 1.350 | 0.049 | 1.350 | 0.049 | 1.350 | 0.262 | 1.350 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.165 | 0.021 | 0.165 | 0.021 | 0.165 | 0.048 | 0.165 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.625 | 0.085 | 0.625 | 0.085 | 0.625 | 0.200 | 0.625 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.006 | 0.025 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.025 | 0.000 | 0.025 | 0.000 | 0.025 | 0.006 | 0.025 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 90011)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.275 | 0.000 | 0.275 | 0.000 | 0.275 | 0.065 | 0.275 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.405 | 0.049 | 0.405 | 0.049 | 0.405 | 0.123 | 0.405 | 0.000 |
| | 201 | OC | 3.000 | 0.000 | 3.000 | 0.000 | 3.000 | 0.704 | 3.000 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 17.250 | 0.919 | 17.250 | 0.919 | 17.250 | 3.972 | 17.250 | 0.000 |
| | 204 | NO3 | 0.275 | 0.990 | 0.275 | 0.990 | 0.275 | 1.348 | 0.275 | 0.000 |
| TOTALS: | | | 79.145 | | 79.140 | | 79.145 | | 79.145 | |

PM Profile Speciation Report

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Profile Name : Clay and Fly Ash Sintering - Average
Profile Number : 90012
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles representing the source category group 305009xx.

SCC Assignments:

| Mass Fraction Data - Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|
| Mass Fraction : | 0.333 | 0.380 | 0.542 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.025 | 0.074 | 0.000 | 0.316 | NE | 0.255 | 0.025 | 0.000 |
| 7440-23-5 | 11 | Na | 0.520 | 0.100 | 0.345 | 0.125 | 0.298 | 0.132 | 0.275 | 0.000 |
| 7439-95-4 | 12 | Mg | 1.590 | 0.884 | 0.625 | 0.376 | 0.820 | 0.802 | 1.015 | 0.000 |
| 7429-90-5 | 13 | Al | 0.465 | 0.293 | 1.830 | 3.042 | 0.382 | 2.690 | 0.605 | 0.000 |
| 7440-21-3 | 14 | Si | 3.000 | 3.041 | 7.450 | 10.646 | 1.382 | 9.745 | 3.200 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 3.200 | 4.676 | 0.475 | 0.459 | 0.450 | 4.123 | 2.670 | 0.000 |
| 7782-50-5 | 17 | Cl | 1.375 | 1.062 | 0.975 | 0.539 | 0.495 | 0.996 | 1.330 | 0.000 |
| 7440-09-7 | 19 | K | 1.020 | 0.816 | 0.600 | 0.806 | 0.371 | 0.977 | 0.635 | 0.000 |
| 7440-70-2 | 20 | Ca | 15.070 | 2.830 | 13.185 | 6.162 | 13.613 | 2.682 | 12.970 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.007 | 0.020 | 0.017 | 0.347 | NE | 0.304 | 0.007 | 0.000 |
| 7440-62-2 | 23 | V | 0.004 | 0.006 | 0.010 | 0.007 | 0.003 | 0.008 | 0.008 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.004 | 0.011 | 0.002 | 0.009 | NE | 0.009 | 0.004 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.039 | 0.029 | 0.033 | 0.019 | 0.019 | 0.030 | 0.036 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.435 | 0.435 | 0.300 | 0.175 | 0.201 | 0.404 | 0.330 | 0.000 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.013 | 0.008 | 0.019 | 0.163 | 0.011 | 0.143 | 0.013 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.019 | 0.018 | 0.048 | 0.013 | 0.017 | 0.019 | 0.029 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.009 | 0.006 | 0.000 | 0.010 | 0.003 | 0.007 | 0.002 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7726-95-6 | 35 | Br | 0.009 | 0.010 | 0.005 | 0.010 | NE | 0.009 | 0.009 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 90012)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.004 | 0.008 | 0.000 | 0.007 | 0.001 | 0.009 | 0.000 | 0.000 |
| | 201 | OC | 14.350 | 5.313 | 4.550 | 1.717 | 2.725 | 5.196 | 12.950 | 0.000 |
| | 202 | EC | 7.435 | 9.195 | 13.800 | 10.683 | 1.392 | 12.554 | 8.635 | 0.000 |
| | 203 | SO4 | 9.600 | 17.680 | 1.265 | 1.510 | 0.850 | 15.612 | 8.465 | 0.000 |
| | 204 | NO3 | 1.085 | 1.495 | 0.415 | 0.490 | 0.097 | 1.352 | 0.800 | 0.000 |
| TOTALS: | | | 59.278 | | 45.949 | | 23.130 | | 54.013 | |

PM Profile Speciation Report

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Profile Name : Mineral Products - Average
Profile Number : 90013
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 305xxxx.

SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.330 0.444 0.545

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.002 | 0.006 | 0.002 | 0.000 | 0.002 | 0.005 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.005 | 0.015 | 0.005 | 0.000 | 0.004 | 0.012 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.025 | 0.033 | 0.021 | 0.135 | 0.016 | 0.109 | 0.025 | 0.033 |
| 7440-23-5 | 11 | Na | 1.466 | 0.412 | 1.435 | 0.053 | 1.326 | 0.842 | 0.050 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.328 | 0.377 | 0.152 | 0.160 | 0.182 | 0.342 | 0.185 | 0.000 |
| 7429-90-5 | 13 | Al | 2.111 | 0.415 | 1.486 | 1.307 | 1.362 | 1.187 | 1.426 | 0.223 |
| 7440-21-3 | 14 | Si | 8.834 | 3.146 | 8.274 | 5.346 | 3.212 | 5.945 | 7.672 | 0.618 |
| 7723-14-0 | 15 | P | 0.045 | 0.030 | 0.022 | 0.009 | 0.029 | 0.020 | 0.027 | 0.019 |
| 7704-34-9 | 16 | S | 5.143 | 2.985 | 4.636 | 2.120 | 4.569 | 3.297 | 5.245 | 2.206 |
| 7782-50-5 | 17 | Cl | 2.173 | 1.163 | 2.025 | 0.933 | 1.787 | 1.401 | 1.834 | 0.934 |
| 7440-09-7 | 19 | K | 1.306 | 0.587 | 1.026 | 0.356 | 0.931 | 0.613 | 0.952 | 0.216 |
| 7440-70-2 | 20 | Ca | 9.860 | 1.812 | 8.957 | 2.930 | 8.893 | 1.786 | 10.813 | 1.353 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.134 | 0.019 | 0.064 | 0.148 | 0.088 | 0.131 | 0.066 | 0.012 |
| 7440-62-2 | 23 | V | 0.004 | 0.002 | 0.003 | 0.003 | 0.002 | 0.004 | 0.003 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.126 | 0.011 | 0.077 | 0.004 | 0.091 | 0.032 | 0.172 | 0.007 |
| 7439-96-5 | 25 | Mn | 0.071 | 0.014 | 0.067 | 0.008 | 0.065 | 0.031 | 0.067 | 0.002 |
| 7439-89-6 | 26 | Fe | 0.779 | 0.225 | 0.599 | 0.127 | 0.567 | 0.240 | 0.757 | 0.111 |
| 7440-48-4 | 27 | Co | 0.175 | 0.096 | 0.260 | 0.090 | 0.233 | 0.141 | 0.164 | 0.090 |
| 7440-02-0 | 28 | Ni | 0.061 | 0.029 | 0.017 | 0.069 | 0.029 | 0.065 | 0.057 | 0.011 |
| 7440-50-8 | 29 | Cu | 0.062 | 0.022 | 0.082 | 0.023 | 0.071 | 0.017 | 0.116 | 0.033 |
| 7440-66-6 | 30 | Zn | 0.127 | 0.018 | 0.107 | 0.010 | 0.108 | 0.031 | 0.122 | 0.015 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.008 | 0.009 | 0.009 | 0.000 | 0.008 | 0.004 | 0.009 | 0.002 |
| 7782-49-2 | 34 | Se | 0.057 | 0.001 | 0.057 | 0.000 | 0.056 | 0.027 | 0.057 | 0.001 |
| 7726-95-6 | 35 | Br | 0.012 | 0.005 | 0.003 | 0.004 | 0.005 | 0.004 | 0.003 | 0.001 |
| 7440-17-7 | 37 | Rb | 0.008 | 0.006 | 0.008 | 0.000 | 0.006 | 0.006 | 0.006 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.012 | 0.004 | 0.011 | 0.000 | 0.011 | 0.002 | 0.012 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.001 | 0.004 | 0.001 | 0.000 | 0.000 | 0.002 | 0.000 | 0.001 |
| 7439-98-7 | 42 | Mo | 0.005 | 0.005 | 0.005 | 0.000 | 0.005 | 0.004 | 0.006 | 0.004 |
| 7440-05-3 | 46 | Pd | 0.000 | 0.007 | 0.000 | 0.000 | 0.000 | 0.003 | 0.000 | 0.001 |
| 7440-22-4 | 47 | Ag | 0.001 | 0.021 | 0.001 | 0.000 | 0.000 | 0.006 | 0.000 | 0.001 |
| 7440-43-9 | 48 | Cd | 0.015 | 0.031 | 0.004 | 0.000 | 0.008 | 0.010 | 0.008 | 0.002 |
| 7440-74-6 | 49 | In | 0.003 | 0.016 | 0.001 | 0.003 | 0.001 | 0.006 | 0.000 | 0.004 |

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PM Profile Speciation Report - continued (profile 90013)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-31-5 | 50 | Sn | 0.004 | 0.040 | 0.002 | 0.005 | 0.002 | 0.012 | 0.002 | 0.004 |
| 7440-36-0 | 51 | Sb | 0.021 | 0.070 | 0.008 | 0.011 | 0.012 | 0.022 | 0.000 | 0.009 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.061 | 0.204 | 0.008 | 0.029 | 0.023 | 0.063 | 0.024 | 0.024 |
| 7439-91-0 | 57 | La | 0.002 | 0.007 | 0.002 | 0.000 | 0.002 | 0.006 | 0.002 | 0.005 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.002 | 0.005 | 0.000 | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.242 | 0.086 | 0.201 | 0.005 | 0.173 | 0.105 | 0.171 | 0.042 |
| 7440-69-9 | 83 | Bi | 0.091 | 0.302 | 0.091 | 0.000 | 0.068 | 0.232 | 0.000 | 0.000 |
| | 200 | TC | 0.091 | 0.000 | 0.050 | 0.000 | 0.064 | 0.017 | 0.182 | 0.000 |
| | 201 | OC | 5.255 | 2.273 | 3.715 | 0.732 | 3.130 | 2.510 | 5.439 | 0.203 |
| | 202 | EC | 1.467 | 3.922 | 2.624 | 4.555 | 0.363 | 5.354 | 1.692 | 0.092 |
| | 203 | SO4 | 14.061 | 8.087 | 13.765 | 0.644 | 12.723 | 7.867 | 14.641 | 3.040 |
| | 204 | NO3 | 0.271 | 0.637 | 0.150 | 0.209 | 0.087 | 0.577 | 0.269 | 0.199 |
| | 206 | CO3 | 0.000 | 0.000 | 0.786 | 0.000 | 0.375 | 0.185 | 0.849 | 0.000 |
| TOTALS: | | | 54.527 | | 50.819 | | 40.690 | | 53.125 | |

PM Profile Speciation Report

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Profile Name : Petroleum Industry - Average
Profile Number : 90014
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 306xxxxx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.677 | 0.645 | 0.739 |

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Total Particulate Matter -

| | | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Species | | | | | | | | | |
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-23-5 | 11 | Na | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-95-4 | 12 | Mg | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-90-5 | 13 | Al | 2.484 | 0.161 | 11.735 | 1.353 | NE | 2.420 | 2.484 | 0.000 |
| 7440-21-3 | 14 | Si | 5.898 | 0.380 | 25.285 | 2.989 | NE | 5.265 | 5.898 | 0.000 |
| 7723-14-0 | 15 | P | 0.000 | 0.052 | 0.000 | 0.223 | NE | 0.201 | 0.000 | 0.000 |
| 7704-34-9 | 16 | S | 10.056 | 0.148 | 8.918 | 0.530 | 7.800 | 2.169 | 10.056 | 0.000 |
| 7782-50-5 | 17 | Cl | 0.000 | 0.037 | 0.000 | 0.129 | NE | 0.118 | 0.000 | 0.000 |
| 7440-09-7 | 19 | K | 0.019 | 0.001 | 0.059 | 0.013 | NE | 0.016 | 0.019 | 0.000 |
| 7440-70-2 | 20 | Ca | 2.518 | 0.001 | 2.578 | 0.013 | 2.500 | 0.663 | 2.518 | 0.000 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.059 | 0.037 | 0.059 | 0.194 | NE | 0.174 | 0.059 | 0.000 |
| 7440-62-2 | 23 | V | 0.000 | 0.016 | 0.000 | 0.086 | NE | 0.076 | 0.000 | 0.000 |
| 7440-47-3 | 24 | Cr | 0.275 | 0.008 | 0.275 | 0.039 | 0.275 | 0.081 | 0.275 | 0.000 |
| 7439-96-5 | 25 | Mn | 0.025 | 0.002 | 0.025 | 0.013 | 0.025 | 0.013 | 0.025 | 0.000 |
| 7439-89-6 | 26 | Fe | 0.399 | 0.008 | 0.558 | 0.047 | 0.275 | 0.100 | 0.399 | 0.000 |
| 7440-48-4 | 27 | Co | 1.000 | 0.000 | 1.000 | 0.000 | 1.000 | 0.265 | 1.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.289 | 0.001 | 0.304 | 0.007 | 0.275 | 0.073 | 0.289 | 0.000 |
| 7440-50-8 | 29 | Cu | 0.027 | 0.000 | 0.028 | 0.003 | 0.025 | 0.007 | 0.027 | 0.000 |
| 7440-66-6 | 30 | Zn | 0.278 | 0.000 | 0.281 | 0.002 | 0.275 | 0.073 | 0.278 | 0.000 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.000 | 0.003 | 0.001 | NE | 0.001 | 0.001 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.000 | 0.001 | 0.000 | 0.005 | NE | 0.004 | 0.000 | 0.000 |
| 7782-49-2 | 34 | Se | 0.276 | 0.000 | 0.279 | 0.002 | 0.275 | 0.073 | 0.276 | 0.000 |
| 7726-95-6 | 35 | Br | 0.025 | 0.000 | 0.027 | 0.003 | 0.025 | 0.007 | 0.025 | 0.000 |
| 7440-17-7 | 37 | Rb | 0.001 | 0.000 | 0.002 | 0.003 | NE | 0.002 | 0.001 | 0.000 |
| 7440-24-6 | 38 | Sr | 0.028 | 0.000 | 0.028 | 0.004 | 0.025 | 0.007 | 0.028 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.025 | 0.001 | 0.038 | 0.018 | 0.025 | 0.017 | 0.025 | 0.000 |
| 7440-22-4 | 47 | Ag | 0.000 | 0.001 | 0.022 | 0.016 | NE | 0.014 | 0.000 | 0.000 |
| 7440-43-9 | 48 | Cd | 0.000 | 0.001 | 0.009 | 0.021 | NE | 0.019 | 0.000 | 0.000 |
| 7440-31-5 | 50 | Sn | 0.001 | 0.002 | 0.000 | 0.030 | NE | 0.026 | 0.001 | 0.000 |
| 7440-36-0 | 51 | Sb | 0.001 | 0.004 | 0.000 | 0.057 | NE | 0.050 | 0.001 | 0.000 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |

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PM Profile Speciation Report - continued (profile 90014)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-39-3 | 56 | Ba | 0.000 | 0.008 | 0.154 | 0.139 | NE | 0.125 | 0.000 | 0.000 |
| 7439-91-0 | 57 | La | 0.123 | 0.018 | 0.323 | 0.236 | NE | 0.216 | 0.123 | 0.000 |
| 7440-45-1 | 58 | Ce | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.000 | 0.003 | 0.004 | NE | 0.004 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 0.029 | 0.001 | 0.037 | 0.008 | 0.025 | 0.010 | 0.029 | 0.000 |
| | 201 | OC | 3.500 | 0.000 | 3.500 | 0.000 | 3.500 | 0.928 | 3.500 | 0.000 |
| | 202 | EC | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| | 203 | SO4 | 23.500 | 0.000 | 23.500 | 0.000 | 23.500 | 6.231 | 23.500 | 0.000 |
| | 204 | NO3 | 0.275 | 0.000 | 0.275 | 0.000 | 0.275 | 0.073 | 0.275 | 0.000 |
| TOTALS: | | | 51.112 | | 79.305 | | 40.100 | | 51.112 | |

PM Profile Speciation Report

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Profile Name : Pulp and Paper Industry
Profile Number : 90015
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles representing the source category group 307xxxxx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.486 | 0.505 | 0.608 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7782-41-4 | 9 | F | 0.237 | 1.096 | 0.237 | 0.000 | 0.212 | 0.986 | 0.358 | 0.871 |
| 7440-23-5 | 11 | Na | 10.775 | 5.139 | 10.200 | 1.443 | 7.577 | 5.743 | 10.758 | 4.014 |
| 7439-95-4 | 12 | Mg | 0.091 | 0.184 | 0.146 | 0.281 | 0.091 | 0.282 | 0.091 | 0.000 |
| 7429-90-5 | 13 | Al | 0.090 | 0.161 | 0.078 | 0.032 | 0.061 | 0.150 | 0.122 | 0.134 |
| 7440-21-3 | 14 | Si | 0.182 | 0.167 | 0.233 | 0.092 | 0.079 | 0.176 | 0.214 | 0.069 |
| 7723-14-0 | 15 | P | 0.026 | 0.100 | 0.026 | 0.000 | 0.024 | 0.096 | 0.039 | 0.085 |
| 7704-34-9 | 16 | S | 5.670 | 1.152 | 5.611 | 0.729 | 5.135 | 1.998 | 5.609 | 0.845 |
| 7782-50-5 | 17 | Cl | 4.104 | 0.749 | 3.756 | 2.122 | 0.584 | 2.497 | 4.105 | 0.165 |
| 7440-09-7 | 19 | K | 4.799 | 3.548 | 4.359 | 3.537 | 4.134 | 4.339 | 4.790 | 0.095 |
| 7440-70-2 | 20 | Ca | 0.424 | 0.100 | 0.519 | 0.212 | 0.305 | 0.240 | 0.433 | 0.031 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.003 | 0.002 | 0.003 | 0.000 | 0.003 | 0.002 | 0.003 | 0.002 |
| 7440-62-2 | 23 | V | 0.009 | 0.003 | 0.009 | 0.000 | 0.009 | 0.005 | 0.008 | 0.003 |
| 7440-47-3 | 24 | Cr | 0.002 | 0.004 | 0.002 | 0.000 | 0.002 | 0.004 | 0.004 | 0.004 |
| 7439-96-5 | 25 | Mn | 0.034 | 0.025 | 0.017 | 0.025 | 0.016 | 0.029 | 0.035 | 0.004 |
| 7439-89-6 | 26 | Fe | 0.075 | 0.100 | 0.048 | 0.041 | 0.029 | 0.097 | 0.079 | 0.060 |
| 7440-48-4 | 27 | Co | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-02-0 | 28 | Ni | 0.007 | 0.018 | 0.007 | 0.000 | 0.007 | 0.017 | 0.009 | 0.015 |
| 7440-50-8 | 29 | Cu | 0.003 | 0.006 | 0.003 | 0.006 | 0.003 | 0.007 | 0.003 | 0.002 |
| 7440-66-6 | 30 | Zn | 0.017 | 0.007 | 0.005 | 0.001 | 0.004 | 0.007 | 0.018 | 0.005 |
| 7440-55-3 | 31 | Ga | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 0.001 | 0.003 | 0.001 | 0.000 | 0.001 | 0.003 | 0.001 | 0.003 |
| 7782-49-2 | 34 | Se | 0.001 | 0.001 | 0.001 | 0.000 | 0.001 | 0.001 | 0.001 | 0.002 |
| 7726-95-6 | 35 | Br | 0.010 | 0.004 | 0.010 | 0.000 | 0.009 | 0.006 | 0.009 | 0.004 |
| 7440-17-7 | 37 | Rb | 0.002 | 0.002 | 0.002 | 0.000 | 0.002 | 0.002 | 0.004 | 0.003 |
| 7440-24-6 | 38 | Sr | 0.007 | 0.003 | 0.007 | 0.000 | 0.007 | 0.004 | 0.008 | 0.003 |
| 7440-65-5 | 39 | Y | 0.000 | 0.001 | 0.000 | 0.000 | 0.000 | 0.001 | 0.001 | 0.001 |
| 7440-67-7 | 40 | Zr | 0.003 | 0.006 | 0.003 | 0.000 | 0.002 | 0.006 | 0.005 | 0.010 |
| 7439-98-7 | 42 | Mo | 0.002 | 0.005 | 0.002 | 0.000 | 0.001 | 0.004 | 0.005 | 0.008 |
| 7440-05-3 | 46 | Pd | 0.003 | 0.007 | 0.003 | 0.000 | 0.002 | 0.006 | 0.005 | 0.007 |
| 7440-22-4 | 47 | Ag | 0.006 | 0.010 | 0.006 | 0.000 | 0.005 | 0.009 | 0.011 | 0.012 |
| 7440-43-9 | 48 | Cd | 0.003 | 0.007 | 0.003 | 0.000 | 0.003 | 0.007 | 0.005 | 0.008 |

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PM Profile Speciation Report - continued (profile 90015)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-74-6 | 49 | In | 0.002 | 0.011 | 0.002 | 0.000 | 0.001 | 0.010 | 0.005 | 0.022 |
| 7440-31-5 | 50 | Sn | 0.008 | 0.013 | 0.008 | 0.000 | 0.008 | 0.013 | 0.012 | 0.015 |
| 7440-36-0 | 51 | Sb | 0.004 | 0.022 | 0.004 | 0.000 | 0.003 | 0.020 | 0.007 | 0.022 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.016 | 0.042 | 0.016 | 0.000 | 0.014 | 0.038 | 0.021 | 0.038 |
| 7439-91-0 | 57 | La | 0.027 | 0.061 | 0.027 | 0.000 | 0.025 | 0.057 | 0.048 | 0.089 |
| 7440-45-1 | 58 | Ce | 0.015 | 0.045 | 0.015 | 0.000 | 0.014 | 0.045 | 0.025 | 0.053 |
| 7439-97-6 | 80 | Hg | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.002 | 0.001 | 0.002 |
| 7439-92-1 | 82 | Pb | 0.004 | 0.013 | 0.004 | 0.011 | 0.004 | 0.014 | 0.006 | 0.008 |
| | 200 | TC | 0.000 | 0.000 | 7.250 | 6.258 | NE | 6.049 | 0.000 | 0.000 |
| | 201 | OC | 29.735 | 7.373 | 23.235 | 4.438 | 15.935 | 7.750 | 29.917 | 0.620 |
| | 202 | EC | 2.634 | 1.824 | 1.647 | 0.571 | 0.907 | 1.744 | 2.661 | 0.176 |
| | 203 | SO4 | 20.396 | 5.818 | 19.771 | 3.964 | 18.678 | 8.217 | 19.914 | 3.567 |
| | 204 | NO3 | 0.374 | 0.190 | 0.187 | 0.102 | 0.060 | 0.208 | 0.384 | 0.065 |
| TOTALS: | | | 79.801 | | 77.463 | | 53.957 | | 79.734 | |

PM Profile Speciation Report

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Profile Name : Industrial Manufacturing - Average
Profile Number : 90016
Data Quality : E

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Control Device : Not Applicable
Reference(s) : 58
Data Source : Average profile developed from original profiles
representing the source category group 3xxxxxx.

SCC Assignments:

| Mass Fraction Data - | Size Interval (um) : | (0-2.5) | (0-6) | (0-10) |
|---|---|---|---|---|
| | Mass Fraction : | 0.407 | 0.495 | 0.574 |

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7440-41-7 | 4 | Be | 0.001 | 0.003 | 0.001 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 1.366 | 0.007 | 1.366 | 0.000 | 1.365 | 0.561 | 1.362 | 0.000 |
| 7782-41-4 | 9 | F | 0.472 | 0.936 | 0.440 | 0.267 | 0.384 | 0.771 | 0.523 | 0.555 |
| 7440-23-5 | 11 | Na | 2.316 | 1.961 | 2.199 | 0.552 | 1.749 | 2.217 | 1.778 | 1.504 |
| 7439-95-4 | 12 | Mg | 0.273 | 0.617 | 0.254 | 0.559 | 0.250 | 0.553 | 0.254 | 0.000 |
| 7429-90-5 | 13 | Al | 2.167 | 1.171 | 2.384 | 0.952 | 1.784 | 1.310 | 1.905 | 0.298 |
| 7440-21-3 | 14 | Si | 5.071 | 1.618 | 5.505 | 2.828 | 3.574 | 3.000 | 4.544 | 0.535 |
| 7723-14-0 | 15 | P | 0.187 | 0.051 | 0.162 | 0.052 | 0.173 | 0.103 | 0.160 | 0.056 |
| 7704-34-9 | 16 | S | 4.887 | 1.599 | 4.202 | 1.153 | 4.369 | 1.992 | 4.549 | 1.191 |
| 7782-50-5 | 17 | Cl | 3.485 | 0.664 | 3.040 | 0.944 | 2.755 | 1.525 | 3.401 | 0.451 |
| 7440-09-7 | 19 | K | 2.535 | 1.458 | 2.125 | 1.447 | 2.184 | 1.761 | 2.337 | 0.133 |
| 7440-70-2 | 20 | Ca | 2.928 | 1.469 | 2.933 | 2.505 | 2.767 | 1.203 | 3.209 | 0.624 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.081 | 0.065 | 0.078 | 0.133 | 0.075 | 0.083 | 0.074 | 0.011 |
| 7440-62-2 | 23 | V | 0.038 | 0.007 | 0.027 | 0.017 | 0.031 | 0.024 | 0.029 | 0.002 |
| 7440-47-3 | 24 | Cr | 0.216 | 0.186 | 0.141 | 0.186 | 0.177 | 0.266 | 0.227 | 0.004 |
| 7439-96-5 | 25 | Mn | 0.671 | 0.182 | 0.673 | 0.181 | 0.666 | 0.420 | 0.676 | 0.032 |
| 7439-89-6 | 26 | Fe | 3.049 | 0.667 | 3.366 | 0.691 | 3.089 | 1.318 | 3.259 | 0.590 |
| 7440-48-4 | 27 | Co | 0.071 | 0.042 | 0.086 | 0.040 | 0.081 | 0.079 | 0.068 | 0.040 |
| 7440-02-0 | 28 | Ni | 0.148 | 0.023 | 0.132 | 0.035 | 0.135 | 0.067 | 0.144 | 0.018 |
| 7440-50-8 | 29 | Cu | 2.071 | 0.681 | 2.147 | 0.700 | 2.079 | 1.219 | 2.163 | 0.998 |
| 7440-66-6 | 30 | Zn | 3.319 | 0.669 | 3.451 | 0.699 | 3.322 | 1.456 | 3.342 | 1.178 |
| 7440-55-3 | 31 | Ga | 0.001 | 0.002 | 0.001 | 0.007 | 0.001 | 0.003 | 0.001 | 0.002 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.001 | 0.000 | 0.000 | NE | 0.001 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 3.337 | 0.815 | 2.530 | 0.366 | 3.195 | 2.417 | 2.645 | 0.515 |
| 7782-49-2 | 34 | Se | 0.056 | 0.004 | 0.052 | 0.003 | 0.055 | 0.025 | 0.054 | 0.017 |
| 7726-95-6 | 35 | Br | 0.052 | 0.038 | 0.045 | 0.044 | 0.048 | 0.043 | 0.045 | 0.026 |
| 7440-17-7 | 37 | Rb | 0.014 | 0.003 | 0.014 | 0.001 | 0.014 | 0.007 | 0.014 | 0.002 |
| 7440-24-6 | 38 | Sr | 0.017 | 0.009 | 0.020 | 0.014 | 0.017 | 0.015 | 0.021 | 0.013 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.002 | 0.004 | 0.003 | 0.008 | 0.002 | 0.007 | 0.003 | 0.004 |
| 7439-98-7 | 42 | Mo | 0.001 | 0.003 | 0.007 | 0.005 | 0.005 | 0.003 | 0.008 | 0.003 |
| 7440-05-3 | 46 | Pd | 0.101 | 0.048 | 0.027 | 0.013 | 0.089 | 0.074 | 0.042 | 0.019 |
| 7440-22-4 | 47 | Ag | 0.063 | 0.049 | 0.046 | 0.033 | 0.059 | 0.054 | 0.050 | 0.052 |
| 7440-43-9 | 48 | Cd | 0.959 | 0.399 | 0.653 | 0.306 | 0.880 | 0.590 | 0.753 | 0.340 |

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PM Profile Speciation Report - continued (profile 90016)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-74-6 | 49 | In | 0.006 | 0.013 | 0.008 | 0.004 | 0.006 | 0.007 | 0.009 | 0.015 |
| 7440-31-5 | 50 | Sn | 0.216 | 0.049 | 0.198 | 0.070 | 0.214 | 0.127 | 0.198 | 0.062 |
| 7440-36-0 | 51 | Sb | 1.705 | 0.600 | 1.811 | 1.005 | 1.815 | 0.932 | 1.843 | 0.435 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.067 | 0.128 | 0.055 | 0.112 | 0.056 | 0.114 | 0.058 | 0.097 |
| 7439-91-0 | 57 | La | 0.009 | 0.023 | 0.016 | 0.046 | 0.004 | 0.046 | 0.012 | 0.033 |
| 7440-45-1 | 58 | Ce | 0.012 | 0.017 | 0.012 | 0.000 | 0.012 | 0.018 | 0.013 | 0.020 |
| 7439-97-6 | 80 | Hg | 0.019 | 0.007 | 0.015 | 0.007 | 0.018 | 0.011 | 0.014 | 0.006 |
| 7439-92-1 | 82 | Pb | 5.063 | 1.567 | 4.656 | 1.670 | 4.939 | 2.624 | 4.927 | 1.617 |
| 7440-69-9 | 83 | Bi | 0.018 | 0.133 | 0.018 | 0.000 | 0.014 | 0.102 | 0.000 | 0.000 |
| | 200 | TC | 0.544 | 0.000 | 1.554 | 2.344 | 0.539 | 2.278 | 0.561 | 0.000 |
| | 201 | OC | 7.359 | 3.057 | 6.082 | 1.718 | 4.838 | 3.283 | 7.315 | 0.472 |
| | 202 | EC | 0.894 | 1.860 | 0.967 | 2.023 | 0.421 | 2.448 | 1.162 | 0.374 |
| | 203 | SO4 | 9.858 | 4.381 | 9.299 | 1.529 | 9.053 | 5.107 | 9.770 | 2.004 |
| | 204 | NO3 | 0.297 | 0.507 | 0.235 | 0.502 | 0.208 | 0.522 | 0.291 | 0.091 |
| | 206 | CO3 | 0.000 | 0.000 | 0.152 | 0.000 | 0.072 | 0.081 | 0.164 | 0.000 |
| TOTALS: | | | 66.022 | | 63.188 | | 57.583 | | 63.977 | |

PM Profile Speciation Report

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Profile Name :
Profile Number : 00000
Data Quality :

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Control Device :
Reference(s) :
Data Source :
SCC Assignments:

Mass Fraction Data - Size Interval (um) : (0-2.5) (0-6) (0-10)
Mass Fraction : 0.222 0.267 0.002

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Total Particulate Matter -

| | Species | | 0-2.5 um | | 2.5-10 um | | 0-10 um | | Total Measured | |
|---|---|---|---|---|---|---|---|---|---|---|
| CAS Number | Num | Sym | %wt | unc | %wt | unc | %wt | unc | %wt | unc |
| 7439-93-2 | 3 | Li | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-41-7 | 4 | Be | 0.000 | 0.002 | 0.000 | 0.000 | 0.000 | 0.002 | 0.000 | 0.000 |
| 7440-42-8 | 5 | B | 0.586 | 0.016 | 0.585 | 0.010 | 0.586 | 0.366 | 0.582 | 0.010 |
| 7782-41-4 | 9 | F | 0.219 | 0.612 | 0.204 | 0.881 | 0.181 | 0.655 | 0.244 | 0.363 |
| 7440-23-5 | 11 | Na | 1.652 | 1.613 | 1.577 | 0.537 | 1.377 | 1.535 | 1.407 | 1.318 |
| 7439-95-4 | 12 | Mg | 0.389 | 0.520 | 0.367 | 0.983 | 0.362 | 0.587 | 0.393 | 0.114 |
| 7429-90-5 | 13 | Al | 4.443 | 1.325 | 4.079 | 0.782 | 3.819 | 1.391 | 4.024 | 0.949 |
| 7440-21-3 | 14 | Si | 9.491 | 1.752 | 8.933 | 2.137 | 7.736 | 2.490 | 8.673 | 0.824 |
| 7723-14-0 | 15 | P | 0.152 | 0.050 | 0.140 | 0.108 | 0.141 | 0.110 | 0.247 | 0.043 |
| 7704-34-9 | 16 | S | 2.972 | 1.232 | 2.457 | 0.915 | 2.632 | 1.464 | 2.876 | 1.052 |
| 7782-50-5 | 17 | Cl | 2.631 | 1.105 | 2.316 | 1.115 | 2.263 | 1.235 | 2.624 | 0.521 |
| 7440-09-7 | 19 | K | 2.108 | 1.470 | 1.760 | 0.984 | 1.843 | 1.385 | 2.036 | 0.907 |
| 7440-70-2 | 20 | Ca | 2.614 | 1.072 | 2.804 | 1.662 | 2.399 | 0.915 | 2.945 | 0.487 |
| 7440-22-2 | 21 | Sc | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-32-6 | 22 | Ti | 0.194 | 0.066 | 0.207 | 0.098 | 0.186 | 0.082 | 0.206 | 0.018 |
| 7440-62-2 | 23 | V | 0.061 | 0.065 | 0.059 | 0.073 | 0.058 | 0.054 | 0.062 | 0.001 |
| 7440-47-3 | 24 | Cr | 0.103 | 0.872 | 0.071 | 0.872 | 0.086 | 0.616 | 0.130 | 0.864 |
| 7439-96-5 | 25 | Mn | 0.337 | 0.130 | 0.345 | 0.122 | 0.330 | 0.279 | 0.344 | 0.035 |
| 7439-89-6 | 26 | Fe | 2.758 | 0.677 | 2.848 | 0.652 | 2.648 | 1.020 | 3.046 | 0.608 |
| 7440-48-4 | 27 | Co | 0.031 | 0.028 | 0.037 | 0.026 | 0.035 | 0.052 | 0.029 | 0.026 |
| 7440-02-0 | 28 | Ni | 0.126 | 0.870 | 0.113 | 0.871 | 0.119 | 0.597 | 0.128 | 0.864 |
| 7440-50-8 | 29 | Cu | 1.056 | 0.600 | 1.089 | 0.625 | 1.057 | 0.919 | 1.134 | 0.785 |
| 7440-66-6 | 30 | Zn | 2.233 | 1.119 | 2.235 | 0.733 | 2.218 | 1.481 | 2.392 | 1.307 |
| 7440-55-3 | 31 | Ga | 0.002 | 0.864 | 0.002 | 0.006 | 0.002 | 0.418 | 0.002 | 0.864 |
| 7440-56-4 | 32 | Ge | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-38-2 | 33 | As | 1.476 | 1.034 | 1.118 | 0.307 | 1.410 | 1.646 | 1.175 | 0.964 |
| 7782-49-2 | 34 | Se | 0.025 | 0.864 | 0.023 | 0.003 | 0.025 | 0.418 | 0.029 | 0.864 |
| 7726-95-6 | 35 | Br | 0.353 | 0.894 | 0.332 | 0.201 | 0.346 | 0.555 | 0.356 | 0.868 |
| 7440-17-7 | 37 | Rb | 0.007 | 0.002 | 0.008 | 0.001 | 0.007 | 0.004 | 0.008 | 0.001 |
| 7440-24-6 | 38 | Sr | 0.014 | 0.010 | 0.017 | 0.014 | 0.014 | 0.015 | 0.017 | 0.014 |
| 7440-65-5 | 39 | Y | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-67-7 | 40 | Zr | 0.002 | 0.003 | 0.004 | 0.008 | 0.002 | 0.006 | 0.003 | 0.003 |
| 74400-30-1 | 41 | Nb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-98-7 | 42 | Mo | 0.002 | 0.002 | 0.007 | 0.007 | 0.006 | 0.005 | 0.008 | 0.003 |
| 7440-18-8 | 44 | Ru | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-16-6 | 45 | Rh | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-05-3 | 46 | Pd | 0.045 | 0.032 | 0.013 | 0.008 | 0.040 | 0.048 | 0.020 | 0.012 |

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PM Profile Speciation Report - continued (profile 00000)

Total Particulate Matter -

| CAS Number | Species Num | Species Sym | 0-2.5 um %wt | 0-2.5 um unc | 2.5-10 um %wt | 2.5-10 um unc | 0-10 um %wt | 0-10 um unc | Total Measured %wt | Total Measured unc |
|---|---|---|---|---|---|---|---|---|---|---|
| 7440-22-4 | 47 | Ag | 0.039 | 0.052 | 0.031 | 0.034 | 0.037 | 0.053 | 0.033 | 0.057 |
| 7440-43-9 | 48 | Cd | 0.421 | 0.261 | 0.285 | 0.200 | 0.385 | 0.385 | 0.377 | 0.222 |
| 7440-74-6 | 49 | In | 0.004 | 0.014 | 0.004 | 0.003 | 0.003 | 0.007 | 0.004 | 0.010 |
| 7440-31-5 | 50 | Sn | 0.117 | 0.041 | 0.103 | 0.049 | 0.114 | 0.089 | 0.162 | 0.067 |
| 7440-36-0 | 51 | Sb | 0.765 | 0.995 | 0.806 | 0.723 | 0.809 | 0.813 | 0.828 | 0.991 |
| 13494-80-9 | 52 | Te | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7553-56-2 | 53 | I | 0.000 | 0.864 | 0.001 | 0.000 | 0.001 | 0.418 | 0.002 | 0.864 |
| 7440-46-2 | 55 | Cs | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-39-3 | 56 | Ba | 0.052 | 0.116 | 0.039 | 0.081 | 0.042 | 0.095 | 0.054 | 0.064 |
| 7439-91-0 | 57 | La | 0.004 | 0.016 | 0.007 | 0.032 | 0.002 | 0.031 | 0.006 | 0.023 |
| 7440-45-1 | 58 | Ce | 0.009 | 0.011 | 0.009 | 0.000 | 0.009 | 0.012 | 0.009 | 0.013 |
| 7440-10-0 | 59 | Pr | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-00-8 | 60 | Nd | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-19-9 | 62 | Sm | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-53-1 | 63 | Eu | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-54-2 | 64 | Gd | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-27-9 | 65 | Tb | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7429-91-6 | 66 | Dy | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-60-0 | 67 | Ho | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-52-0 | 68 | Er | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-30-4 | 69 | Tm | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-64-4 | 70 | Yb | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-94-3 | 71 | Lu | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-58-6 | 72 | Hf | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-25-7 | 73 | Ta | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-33-7 | 74 | W | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-15-5 | 75 | Re | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-04-2 | 76 | Os | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-88-5 | 77 | Ir | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-06-4 | 78 | Pt | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7440-57-5 | 79 | Au | 0.000 | 0.000 | 0.000 | 0.000 | NE | 0.000 | 0.000 | 0.000 |
| 7439-97-6 | 80 | Hg | 0.054 | 0.864 | 0.052 | 0.005 | 0.054 | 0.422 | 0.052 | 1.176 |
| 7440-28-0 | 81 | Tl | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7439-92-1 | 82 | Pb | 3.382 | 1.739 | 3.137 | 1.632 | 3.303 | 2.315 | 3.495 | 1.811 |
| 7440-69-9 | 83 | Bi | 0.008 | 0.086 | 0.008 | 0.000 | 0.006 | 0.066 | 0.000 | 0.000 |
| 7440-29-1 | 90 | Th | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 7440-61-1 | 92 | U | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 200 | TC | 2.117 | 3.714 | 2.546 | 4.016 | 2.085 | 5.052 | 2.124 | 3.714 |
| | 201 | OC | 8.768 | 3.137 | 8.187 | 2.634 | 7.337 | 4.481 | 8.321 | 0.857 |
| | 202 | EC | 4.406 | 2.335 | 4.582 | 2.592 | 3.259 | 3.761 | 3.957 | 1.299 |
| | 203 | SO4 | 5.514 | 3.198 | 5.030 | 1.563 | 5.046 | 3.574 | 6.169 | 1.338 |
| | 204 | NO3 | 0.164 | 0.378 | 0.134 | 0.365 | 0.124 | 0.397 | 0.162 | 0.138 |
| | 205 | NH4 | 0.022 | 0.073 | 0.030 | 0.092 | 0.023 | 0.086 | 0.022 | 0.045 |
| | 206 | CO3 | 1.171 | 0.000 | 1.235 | 0.000 | 0.909 | 0.297 | 1.240 | 0.000 |
| TOTALS: | | | 63.099 | | 59.976 | | 55.476 | | 62.157 | |

# APPENDIX E

# PM PROFILE ASSIGNMENTS

# APPENDIX E
# PM PROFILE ASSIGNMENTS

The activities where PM profiles are applied typically employ Source Classification Codes (SCC's) for point sources and area source codes from the National Emissions Data System (NEDS) to represent emission source categories. Ideally, each SCC or area source code would be characterized by an appropriate PM profile. However, there are a limited number of PM profiles that represent a relatively small number of source categories. To increase the usefulness of a given PM profile and to characterize those source categories for which there are no profiles, PM profile assignments are made using engineering judgement.

Table E-1 is a listing of all the SCC's with appropriate profile assignments. (Refer to "Criteria Pollutant Emission Factors for the 1985 NAPAP Emissions Inventory" [EPA-600/7-87-015] for descriptions of SCC's used in Table E-1.) Table E-2 is a listing of assignments for area sources. Area source codes in Table E-2 include a number of sources that were developed by the National Acid Precipitation Assessment Program (NAPAP). The additional source codes are those from 65 through 115 (see Table E-3 for descriptions of area source codes used in this document).

Tables E-1 and E-2 use the same format to present the profile assignments. The first column consists of the point or area source code; the second column contains the profile assigned to the code. In cases where the profile assignment is based on engineering judgement, the profile number is followed by an asterisk (*) to indicate that the profile was originally developed for another source category. In cases where several profiles and a composite profile are available for characterizing an SCC, the composite profile is used in the assignment. The user/reader may wish to evaluate the individual profiles that make up the composite to determine the most appropriate profile for his/her particular application.

TABLE E-1. POINT SOURCE PROFILE ASSIGNMENTS[a]

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 10100101 | 11201* | E |
| 10100101 | 43303 | E |
| 10100102 | 11201* | E |
| 10100201 | 11201 | D |
| 10100201 | 11202 | D |
| 10100201 | 11203 | D |
| 10100201 | 11204 | D |
| 10100201 | 11205 | D |
| 10100201 | 11206 | D |
| 10100201 | 11207 | D |
| 10100201 | 11208 | D |
| 10100201 | 11209 | D |
| 10100201 | 11210 | D |
| 10100201 | 11211 | D |
| 10100201 | 11213 | D |
| 10100201 | 11301 | D |
| 10100201 | 11214 | C |
| 10100201 | 11215 | C |
| 10100202 | 11201* | C |
| 10100203 | 11201* | E |
| 10100203 | 11212 | E |
| 10100204 | 11201* | D |
| 10100205 | 11201* | D |
| 10100212 | 11201* | D |
| 10100217 | 11201* | D |
| 10100221 | 11201* | E |
| 10100222 | 11201* | D |
| 10100223 | 11201* | E |
| 10100224 | 11201* | D |
| 10100225 | 11201* | D |
| 10100226 | 11201* | D |
| 10100301 | 11201* | E |
| 10100302 | 11201* | D |
| 10100303 | 11201* | E |
| 10100304 | 11201* | D |
| 10100306 | 11201* | D |
| 10100401 | 11501 | D |
| 10100401 | 11502 | D |
| 10100401 | 11503 | D |
| 10100401 | 11504 | D |
| 10100401 | 11505 | D |
| 10100401 | 11506 | D |

[a]PRO_ASSI denotes the profile assignments.

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 10100401 | 11507 | D |
| 10100401 | 11508 | D |
| 10100401 | 11509 | D |
| 10100401 | 11510 | C |
| 10100404 | 11501* | E |
| 10100405 | 11501* | E |
| 10100406 | 11501* | E |
| 10100501 | 11501* | E |
| 10100504 | 11501* | E |
| 10100505 | 11501* | E |
| 10100601 | 26101* | E |
| 10100602 | 26101* | E |
| 10100604 | 26101* | E |
| 10100701 | 26101* | E |
| 10100702 | 26101* | E |
| 10100801 | 11201* | E |
| 10100901 | 11801* | E |
| 10100902 | 11801 | D |
| 10100903 | 11801* | E |
| 10101001 | 26101* | E |
| 10101002 | 26101* | E |
| 10101101 | 11801* | E |
| 10101201 | 17106* | E |
| 10101201 | 11301 | E |
| 10101301 | 17120* | E |
| 10101302 | 13501* | D |
| 10200101 | 11201* | E |
| 10200104 | 11201* | E |
| 10200107 | 11201* | E |
| 10200201 | 11201* | E |
| 10200202 | 11201* | D |
| 10200203 | 11201* | E |
| 10200204 | 11201* | D |
| 10200205 | 11201* | D |
| 10200206 | 11201* | D |
| 10200210 | 11201* | D |
| 10200212 | 11201* | D |
| 10200213 | 12201 | D |
| 10200217 | 11201* | D |
| 10200219 | 11201* | D |
| 10200221 | 11201* | E |
| 10200222 | 11201* | D |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 10200223 | 11201* | E |
| 10200224 | 11201* | D |
| 10200225 | 11201* | D |
| 10200226 | 11201* | D |
| 10200229 | 11201* | D |
| 10200301 | 11201* | E |
| 10200302 | 11201* | D |
| 10200303 | 11201* | E |
| 10200304 | 11201* | D |
| 10200306 | 11201* | D |
| 10200307 | 11201* | D |
| 10200401 | 13501* | D |
| 10200401 | 13502 | D |
| 10200401 | 13503 | D |
| 10200401 | 13504 | D |
| 10200402 | 13501* | D |
| 10200403 | 13501* | D |
| 10200404 | 13501* | D |
| 10200405 | 13501* | D |
| 10200500 | 12301 | |
| 10200501 | 13501* | D |
| 10200502 | 13501* | D |
| 10200503 | 13501* | D |
| 10200504 | 13501* | D |
| 10200505 | 13501* | D |
| 10200601 | 26101* | E |
| 10200602 | 26101* | E |
| 10200603 | 26101* | E |
| 10200604 | 26101* | E |
| 10200701 | 26101* | E |
| 10200704 | 26101* | E |
| 10200707 | 26101* | E |
| 10200710 | 26101* | E |
| 10200799 | 26101* | E |
| 10200802 | 11201* | E |
| 10200804 | 11201* | E |
| 10200901 | 12704* | E |
| 10200902 | 12704 | D |
| 10200903 | 12704* | E |
| 10200903 | 12705 | E |
| 10200904 | 12704* | E |
| 10200905 | 12704* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 10200906 | 12704* | E |
| 10200907 | 12704* | E |
| 10201001 | 26101* | E |
| 10201002 | 26101* | E |
| 10201101 | 11801* | E |
| 10201201 | 17106* | E |
| 10201201 | 15101 | E |
| 10201301 | 17120* | E |
| 10201301 | 14102 | E |
| 10201302 | 13501* | D |
| 10201302 | 17120* | D |
| 10201302 | 14101 | D |
| 10201401 | 26101* | E |
| 10201402 | 26101* | E |
| 10201403 | 13501* | D |
| 10201404 | 13501* | D |
| 10300101 | 11201* | E |
| 10300102 | 11201* | E |
| 10300103 | 11201* | E |
| 10300205 | 11201* | E |
| 10300206 | 11201* | D |
| 10300207 | 11201* | D |
| 10300208 | 11201* | D |
| 10300209 | 11201* | D |
| 10300211 | 11201* | D |
| 10300214 | 11201* | D |
| 10300216 | 11201* | D |
| 10300217 | 11201* | D |
| 10300221 | 11201* | E |
| 10300222 | 11201* | D |
| 10300223 | 11201* | D |
| 10300224 | 11201* | D |
| 10300225 | 11201* | D |
| 10300226 | 11201* | D |
| 10300305 | 11201* | E |
| 10300306 | 11201* | D |
| 10300307 | 11201* | D |
| 10300309 | 11201* | D |
| 10300401 | 13501 | C |
| 10300402 | 13501* | D |
| 10300403 | 13501* | D |
| 10300404 | 13501* | D |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 10300501 | 13501* | D |
| 10300502 | 13501* | D |
| 10300503 | 43201* | E |
| 10300504 | 13501* | D |
| 10300601 | 26101* | E |
| 10300602 | 26101* | E |
| 10300603 | 26101* | E |
| 10300701 | 26101* | E |
| 10300799 | 26101* | E |
| 10300901 | 12704* | E |
| 10300902 | 12704* | E |
| 10300903 | 12704* | E |
| 10301001 | 26101* | E |
| 10301002 | 26101* | E |
| 10301201 | 17106* | E |
| 10301301 | 17120* | E |
| 10301302 | 13501* | D |
| 10301303 | 17120* | E |
| 10500102 | 11201* | D |
| 10500105 | 13501* | D |
| 10500106 | 26101* | E |
| 10500110 | 26101* | E |
| 10500202 | 11201* | D |
| 10500205 | 13501* | D |
| 10500206 | 26101* | E |
| 10500209 | 12704* | E |
| 10500210 | 26101* | E |
| 20100101 | 34001* | E |
| 20100102 | 34001* | E |
| 20100201 | 34001* | E |
| 20100202 | 34001* | E |
| 20100702 | 34001* | E |
| 20100901 | 34001* | E |
| 20100902 | 34001* | E |
| 20101001 | 34001* | E |
| 20200101 | 34001* | E |
| 20200102 | 34001* | E |
| 20200103 | 34001* | E |
| 20200104 | 34001* | E |
| 20200201 | 34001* | E |
| 20200202 | 34001* | E |
| 20200203 | 34001* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 20200204 | 34001* | E |
| 20200301 | 34001* | E |
| 20200401 | 34001* | E |
| 20200402 | 34001* | E |
| 20200403 | 34001* | E |
| 20200501 | 34001* | E |
| 20200901 | 34001* | E |
| 20200902 | 34001* | E |
| 20201001 | 34001* | E |
| 20201002 | 34001* | E |
| 20300101 | 34001* | E |
| 20300102 | 34001* | E |
| 20300201 | 34001* | E |
| 20300202 | 34001* | E |
| 20300301 | 34001* | E |
| 20301001 | 34001* | E |
| 20301002 | 34001* | E |
| 20400101 | 34001* | E |
| 20400102 | 34001* | E |
| 20400201 | 34001* | E |
| 20400301 | 34001* | E |
| 20400302 | 34001* | E |
| 20400401 | 34001* | E |
| 20400402 | 34001* | E |
| 28888801 | 34001* | E |
| 28888802 | 34001* | E |
| 28888803 | 34001* | E |
| 30100101 | 90002* | E |
| 30100102 | 00000* | E |
| 30100103 | 00000* | E |
| 30100103 | 44102 | E |
| 30100104 | 00000* | E |
| 30100105 | 90002* | E |
| 30100106 | 90002* | E |
| 30100107 | 90002* | E |
| 30100108 | 90002* | E |
| 30100109 | 90002* | E |
| 30100180 | 90002* | E |
| 30100199 | 90002* | E |
| 30100305 | 90002* | E |
| 30100306 | 90002* | E |
| 30100307 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30100308 | 00000* | E |
| 30100309 | 00000* | E |
| 30100399 | 90002* | E |
| 30100410 | 90002* | E |
| 30100501 | 90002* | E |
| 30100502 | 00000* | E |
| 30100503 | 90002* | E |
| 30100504 | 90002* | E |
| 30100506 | 90002* | E |
| 30100507 | 90002* | E |
| 30100508 | 90002* | E |
| 30100509 | 90002* | E |
| 30100599 | 90002* | E |
| 30100601 | 25302 | E |
| 30100603 | 25302* | E |
| 30100604 | 25302* | E |
| 30100605 | 90002* | E |
| 30100699 | 90002* | E |
| 30100799 | 00000* | E |
| 30100801 | 90002* | E |
| 30100802 | 90002* | E |
| 30100803 | 00000* | E |
| 30100804 | 00000* | E |
| 30100805 | 00000* | E |
| 30100899 | 90002* | E |
| 30100901 | 90002* | E |
| 30100902 | 90002* | E |
| 30100999 | 90002* | E |
| 30101011 | 90002* | E |
| 30101012 | 90002* | E |
| 30101013 | 90002* | E |
| 30101014 | 90002* | E |
| 30101015 | 90002* | E |
| 30101021 | 90002* | E |
| 30101022 | 90002* | E |
| 30101023 | 90002* | E |
| 30101030 | 90002* | E |
| 30101099 | 90002* | E |
| 30101101 | 90002* | E |
| 30101198 | 90002* | E |
| 30101199 | 90002* | E |
| 30101202 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30101203 | 90002* | E |
| 30101204 | 90002* | E |
| 30101205 | 90002* | E |
| 30101206 | 90002* | E |
| 30101299 | 90002* | E |
| 30101301 | 90002* | E |
| 30101302 | 90002* | E |
| 30101303 | 90002* | E |
| 30101304 | 90002* | E |
| 30101399 | 90002* | E |
| 30101401 | 90002* | E |
| 30101402 | 90002* | E |
| 30101499 | 90002* | E |
| 30101501 | 90002* | E |
| 30101502 | 90002* | E |
| 30101503 | 90002* | E |
| 30101505 | 90002* | E |
| 30101599 | 90002* | E |
| 30101601 | 00000* | E |
| 30101602 | 00000* | E |
| 30101603 | 00000* | E |
| 30101699 | 00000* | E |
| 30101702 | 90002* | E |
| 30101703 | 90002* | E |
| 30101704 | 90002* | E |
| 30101705 | 90002* | E |
| 30101706 | 90002* | E |
| 30101707 | 90002* | E |
| 30101708 | 90002* | E |
| 30101799 | 90002* | E |
| 30101801 | 90002* | E |
| 30101802 | 90002* | E |
| 30101803 | 90002* | E |
| 30101805 | 90002* | E |
| 30101807 | 90002* | E |
| 30101808 | 90002* | E |
| 30101809 | 90002* | E |
| 30101810 | 90002* | E |
| 30101811 | 90002* | E |
| 30101812 | 90002* | E |
| 30101813 | 90002* | E |
| 30101814 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30101815 | 90002* | E |
| 30101816 | 90002* | E |
| 30101817 | 90002* | E |
| 30101818 | 90002* | E |
| 30101819 | 90002* | E |
| 30101820 | 90002* | E |
| 30101821 | 90002* | E |
| 30101822 | 90002* | E |
| 30101827 | 90002* | E |
| 30101832 | 90002* | E |
| 30101837 | 90002* | E |
| 30101838 | 90002* | E |
| 30101839 | 00000* | E |
| 30101840 | 00000* | E |
| 30101842 | 90002* | E |
| 30101847 | 90002* | E |
| 30101849 | 90002* | E |
| 30101852 | 90002* | E |
| 30101860 | 90002* | E |
| 30101861 | 90002* | E |
| 30101863 | 90002* | E |
| 30101864 | 90002* | E |
| 30101865 | 90002* | E |
| 30101866 | 90002* | E |
| 30101870 | 90002* | E |
| 30101871 | 90002* | E |
| 30101872 | 90002* | E |
| 30101880 | 90002* | E |
| 30101881 | 90002* | E |
| 30101882 | 90002* | E |
| 30101883 | 90002* | E |
| 30101884 | 90002* | E |
| 30101885 | 90002* | E |
| 30101890 | 90002* | E |
| 30101891 | 90002* | E |
| 30101892 | 90002* | E |
| 30101893 | 90002* | E |
| 30101894 | 90002* | E |
| 30101899 | 90002* | E |
| 30101901 | 90002* | E |
| 30101902 | 90002* | E |
| 30101904 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30101905 | 90002* | E |
| 30101906 | 90002* | E |
| 30101907 | 90002* | E |
| 30102001 | 00000* | E |
| 30102002 | 00000* | E |
| 30102003 | 00000* | E |
| 30102004 | 00000* | E |
| 30102005 | 90002* | E |
| 30102099 | 90002* | E |
| 30102101 | 00000* | E |
| 30102102 | 90002* | E |
| 30102103 | 90002* | E |
| 30102104 | 90002* | E |
| 30102105 | 90002* | E |
| 30102106 | 90002* | E |
| 30102107 | 90002* | E |
| 30102108 | 90002* | E |
| 30102110 | 27501* | E |
| 30102111 | 90002* | E |
| 30102112 | 90002* | E |
| 30102113 | 90002* | E |
| 30102120 | 90002* | E |
| 30102199 | 90002* | E |
| 30102201 | 90002* | E |
| 30102301 | 90002* | E |
| 30102304 | 90002* | E |
| 30102306 | 90002* | E |
| 30102308 | 90002* | E |
| 30102310 | 90002* | E |
| 30102312 | 90002* | E |
| 30102314 | 90002* | E |
| 30102316 | 90002* | E |
| 30102318 | 90002* | E |
| 30102319 | 90002* | E |
| 30102320 | 90002* | E |
| 30102321 | 90002* | E |
| 30102322 | 90002* | E |
| 30102399 | 90002* | E |
| 30102401 | 90002* | E |
| 30102402 | 90002* | E |
| 30102405 | 90002* | E |
| 30102410 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30102414 | 90002* | E |
| 30102415 | 90002* | E |
| 30102416 | 90002* | E |
| 30102421 | 90002* | E |
| 30102422 | 90002* | E |
| 30102423 | 90002* | E |
| 30102424 | 90002* | E |
| 30102425 | 90002* | E |
| 30102426 | 90002* | E |
| 30102427 | 90002* | E |
| 30102499 | 90002* | E |
| 30102501 | 90002* | E |
| 30102505 | 90002* | E |
| 30102599 | 90002* | E |
| 30102601 | 90002* | E |
| 30102602 | 90002* | E |
| 30102608 | 90002* | E |
| 30102609 | 90002* | E |
| 30102610 | 90002* | E |
| 30102611 | 90002* | E |
| 30102612 | 90002* | E |
| 30102613 | 90002* | E |
| 30102614 | 90002* | E |
| 30102615 | 90002* | E |
| 30102616 | 90002* | E |
| 30102617 | 90002* | E |
| 30102625 | 90002* | E |
| 30102630 | 90002* | E |
| 30102699 | 90002* | E |
| 30102701 | 90002* | E |
| 30102704 | 90002* | E |
| 30102705 | 90002* | E |
| 30102706 | 90002* | E |
| 30102707 | 90002* | E |
| 30102708 | 90002* | E |
| 30102709 | 90002* | E |
| 30102710 | 90002* | E |
| 30102711 | 90002* | E |
| 30102712 | 90002* | E |
| 30102712 | 25409 | E |
| 30102713 | 90002* | E |
| 30102714 | 90002* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30102717 | 90002* | E |
| 30102718 | 90002* | E |
| 30102720 | 90002* | E |
| 30102721 | 90002* | E |
| 30102722 | 90002* | E |
| 30102723 | 90002* | E |
| 30102724 | 90002* | E |
| 30102725 | 90002* | E |
| 30102727 | 90002* | E |
| 30102728 | 90002* | E |
| 30102729 | 90002* | E |
| 30102730 | 90002* | E |
| 30102801 | 90002* | E |
| 30102803 | 90002* | E |
| 30102803 | 25408* | D |
| 30102804 | 90002* | E |
| 30102804 | 25408* | D |
| 30102805 | 90002* | E |
| 30102806 | 90002* | E |
| 30102807 | 90002* | E |
| 30102820 | 90002* | E |
| 30102821 | 90002* | E |
| 30102822 | 90002* | E |
| 30102823 | 90002* | E |
| 30102823 | 25413 | E |
| 30102823 | 25412 | C |
| 30102824 | 90002* | E |
| 30102824 | 25412 | C |
| 30102825 | 90002* | E |
| 30102825 | 25412 | C |
| 30102903 | 90002* | E |
| 30102904 | 90002* | E |
| 30102905 | 90002* | E |
| 30102906 | 90002* | E |
| 30102907 | 90002* | E |
| 30102908 | 90002* | E |
| 30102920 | 90002* | E |
| 30102921 | 90002* | E |
| 30102922 | 90002* | E |
| 30102923 | 90002* | E |
| 30102923 | 25408* | D |
| 30102924 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30102924 | 25408* | D |
| 30102925 | 90002* | E |
| 30103001 | 90002* | E |
| 30103001 | 25411 | C |
| 30103002 | 90002* | E |
| 30103002 | 25411 | C |
| 30103003 | 90002* | E |
| 30103003 | 25411 | C |
| 30103004 | 90002* | E |
| 30103004 | 25411 | C |
| 30103020 | 90002* | E |
| 30103021 | 90002* | E |
| 30103022 | 90002* | E |
| 30103023 | 90002* | E |
| 30103024 | 90002* | E |
| 30103025 | 90002* | E |
| 30103099 | 90002* | E |
| 30103101 | 90002* | E |
| 30103102 | 90002* | E |
| 30103103 | 90002* | E |
| 30103104 | 90002* | E |
| 30103105 | 90002* | E |
| 30103199 | 90002* | E |
| 30103201 | 90002* | E |
| 30103202 | 90002* | E |
| 30103203 | 90002* | E |
| 30103204 | 90002* | E |
| 30103299 | 90002* | E |
| 30103301 | 90002* | E |
| 30103311 | 90002* | E |
| 30103312 | 90002* | E |
| 30103399 | 90002* | E |
| 30103402 | 90002* | E |
| 30103403 | 90002* | E |
| 30103404 | 90002* | E |
| 30103405 | 90002* | E |
| 30103406 | 90002* | E |
| 30103410 | 90002* | E |
| 30103411 | 90002* | E |
| 30103412 | 90002* | E |
| 30103414 | 90002* | E |
| 30103415 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30103420 | 90002* | E |
| 30103425 | 90002* | E |
| 30103430 | 90002* | E |
| 30103435 | 90002* | E |
| 30103499 | 90002* | E |
| 30103501 | 90002* | E |
| 30103502 | 90002* | E |
| 30103503 | 90002* | E |
| 30103506 | 90002* | E |
| 30103507 | 90002* | E |
| 30103510 | 90002* | E |
| 30103515 | 90002* | E |
| 30103520 | 90002* | E |
| 30103550 | 90002* | E |
| 30103551 | 90002* | E |
| 30103552 | 90002* | E |
| 30103553 | 90002* | E |
| 30103554 | 90002* | E |
| 30103599 | 90002* | E |
| 30103801 | 90002* | E |
| 30103901 | 90002* | E |
| 30103902 | 90002* | E |
| 30103903 | 90002* | E |
| 30104001 | 25404 | E |
| 30104002 | 25404* | E |
| 30104003 | 25404* | E |
| 30104004 | 25404* | E |
| 30104005 | 25404* | E |
| 30104006 | 25404* | E |
| 30104007 | 25404* | E |
| 30104008 | 25404* | E |
| 30104009 | 25404* | E |
| 30104010 | 25404* | E |
| 30104011 | 25404* | E |
| 30104012 | 25404* | E |
| 30104013 | 25404* | E |
| 30104101 | 00000* | E |
| 30104102 | 00000* | E |
| 30104103 | 00000* | E |
| 30104104 | 00000* | E |
| 30104199 | 00000* | E |
| 30104201 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30104202 | 90002* | E |
| 30104203 | 90002* | E |
| 30104204 | 90002* | E |
| 30104301 | 90002* | E |
| 30104501 | 90002* | E |
| 30104501 | 25415 | C |
| 30104501 | 25414 | C |
| 30105001 | 25403* | E |
| 30106001 | 90002* | E |
| 30106002 | 90002* | E |
| 30106003 | 90002* | E |
| 30106004 | 90002* | E |
| 30106005 | 90002* | E |
| 30106006 | 90002* | E |
| 30106007 | 90002* | E |
| 30106008 | 90002* | E |
| 30106009 | 90002* | E |
| 30106010 | 90002* | E |
| 30106011 | 90002* | E |
| 30106012 | 90002* | E |
| 30106099 | 90002* | E |
| 30107001 | 90002* | E |
| 30107002 | 90002* | E |
| 30109101 | 90002* | E |
| 30109105 | 90002* | E |
| 30109110 | 90002* | E |
| 30109151 | 90002* | E |
| 30109152 | 90002* | E |
| 30109153 | 90002* | E |
| 30109154 | 90002* | E |
| 30109180 | 90002* | E |
| 30109199 | 90002* | E |
| 30110002 | 90002* | E |
| 30110003 | 90002* | E |
| 30110004 | 90002* | E |
| 30110005 | 90002* | E |
| 30110099 | 90002* | E |
| 30111103 | 90002* | E |
| 30111199 | 90002* | E |
| 30111201 | 00000* | E |
| 30111202 | 00000* | E |
| 30111299 | 25407 | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30112001 | 90002* | E |
| 30112002 | 90002* | E |
| 30112005 | 90002* | E |
| 30112006 | 90002* | E |
| 30112007 | 90002* | E |
| 30112011 | 90002* | E |
| 30112012 | 90002* | E |
| 30112013 | 90002* | E |
| 30112014 | 90002* | E |
| 30112017 | 90002* | E |
| 30112021 | 90002* | E |
| 30112031 | 90002* | E |
| 30112032 | 90002* | E |
| 30112033 | 90002* | E |
| 30112034 | 90002* | E |
| 30112037 | 90002* | E |
| 30112099 | 90002* | E |
| 30112199 | 90002* | E |
| 30112401 | 90002* | E |
| 30112402 | 90002* | E |
| 30112403 | 90002* | E |
| 30112404 | 90002* | E |
| 30112405 | 90002* | E |
| 30112406 | 90002* | E |
| 30112407 | 90002* | E |
| 30112480 | 90002* | E |
| 30112501 | 90002* | E |
| 30112502 | 90002* | E |
| 30112504 | 90002* | E |
| 30112505 | 90002* | E |
| 30112506 | 90002* | E |
| 30112509 | 90002* | E |
| 30112510 | 90002* | E |
| 30112511 | 90002* | E |
| 30112512 | 90002* | E |
| 30112514 | 90002* | E |
| 30112515 | 90002* | E |
| 30112520 | 90002* | E |
| 30112521 | 90002* | E |
| 30112522 | 90002* | E |
| 30112524 | 90002* | E |
| 30112525 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30112526 | 90002* | E |
| 30112527 | 90002* | E |
| 30112528 | 90002* | E |
| 30112529 | 90002* | E |
| 30112530 | 90002* | E |
| 30112531 | 90002* | E |
| 30112532 | 90002* | E |
| 30112533 | 90002* | E |
| 30112534 | 90002* | E |
| 30112535 | 90002* | E |
| 30112540 | 90002* | E |
| 30112541 | 90002* | E |
| 30112542 | 90002* | E |
| 30112543 | 90002* | E |
| 30112544 | 90002* | E |
| 30112545 | 90002* | E |
| 30112546 | 90002* | E |
| 30112547 | 90002* | E |
| 30112550 | 90002* | E |
| 30112551 | 90002* | E |
| 30112552 | 90002* | E |
| 30112553 | 90002* | E |
| 30112555 | 90002* | E |
| 30112599 | 90002* | E |
| 30112699 | 90002* | E |
| 30112701 | 90002* | E |
| 30112702 | 90002* | E |
| 30112703 | 90002* | E |
| 30112720 | 90002* | E |
| 30112730 | 90002* | E |
| 30112740 | 90002* | E |
| 30112780 | 90002* | E |
| 30113004 | 90002* | E |
| 30113004 | 25410 | C |
| 30113005 | 90002* | E |
| 30113005 | 25410 | C |
| 30113201 | 90002* | E |
| 30113205 | 90002* | E |
| 30113210 | 90002* | E |
| 30113221 | 90002* | E |
| 30113222 | 90002* | E |
| 30113223 | 90002* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30113224 | 90002* | E |
| 30113227 | 90002* | E |
| 30113299 | 90002* | E |
| 30113301 | 90002* | E |
| 30113302 | 90002* | E |
| 30113303 | 90002* | E |
| 30113380 | 90002* | E |
| 30113701 | 90002* | E |
| 30113710 | 90002* | E |
| 30113799 | 90002* | E |
| 30114001 | 90002* | E |
| 30114002 | 90002* | E |
| 30114003 | 90002* | E |
| 30114004 | 90002* | E |
| 30114005 | 90002* | E |
| 30115201 | 90002* | E |
| 30115301 | 90002* | E |
| 30115310 | 90002* | E |
| 30115311 | 90002* | E |
| 30115312 | 90002* | E |
| 30115320 | 90002* | E |
| 30115321 | 90002* | E |
| 30115322 | 90002* | E |
| 30115380 | 90002* | E |
| 30115601 | 90002* | E |
| 30115602 | 90002* | E |
| 30115603 | 90002* | E |
| 30115604 | 90002* | E |
| 30115605 | 90002* | E |
| 30115606 | 90002* | E |
| 30115607 | 90002* | E |
| 30115680 | 90002* | E |
| 30115701 | 90002* | E |
| 30115702 | 90002* | E |
| 30115704 | 90002* | E |
| 30115780 | 90002* | E |
| 30115801 | 90002* | E |
| 30115802 | 90002* | E |
| 30115803 | 90002* | E |
| 30115821 | 90002* | E |
| 30115822 | 90002* | E |
| 30115880 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30116701 | 90002* | E |
| 30116702 | 90002* | E |
| 30116703 | 90002* | E |
| 30116704 | 90002* | E |
| 30116780 | 90002* | E |
| 30116799 | 90002* | E |
| 30116901 | 90002* | E |
| 30116902 | 90002* | E |
| 30116903 | 90002* | E |
| 30116904 | 90002* | E |
| 30116905 | 90002* | E |
| 30116906 | 90002* | E |
| 30116980 | 90002* | E |
| 30117401 | 90002* | E |
| 30117402 | 90002* | E |
| 30117410 | 90002* | E |
| 30117411 | 90002* | E |
| 30117421 | 90002* | E |
| 30117480 | 90002* | E |
| 30117601 | 90002* | E |
| 30117610 | 90002* | E |
| 30117611 | 90002* | E |
| 30117612 | 90002* | E |
| 30117613 | 90002* | E |
| 30117614 | 90002* | E |
| 30117615 | 90002* | E |
| 30117616 | 90002* | E |
| 30117617 | 90002* | E |
| 30117618 | 90002* | E |
| 30117630 | 90002* | E |
| 30117631 | 90002* | E |
| 30117632 | 90002* | E |
| 30117633 | 90002* | E |
| 30117634 | 90002* | E |
| 30117680 | 90002* | E |
| 30118101 | 90002* | E |
| 30118102 | 90002* | E |
| 30118103 | 90002* | E |
| 30118104 | 90002* | E |
| 30118105 | 90002* | E |
| 30118106 | 90002* | E |
| 30118107 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30118108 | 90002* | E |
| 30118109 | 90002* | E |
| 30118110 | 90002* | E |
| 30118180 | 90002* | E |
| 30119001 | 90002* | E |
| 30119002 | 90002* | E |
| 30119003 | 90002* | E |
| 30119004 | 90002* | E |
| 30119010 | 90002* | E |
| 30119011 | 90002* | E |
| 30119012 | 90002* | E |
| 30119013 | 90002* | E |
| 30119014 | 90002* | E |
| 30119080 | 90002* | E |
| 30119501 | 90002* | E |
| 30119502 | 90002* | E |
| 30119503 | 90002* | E |
| 30119504 | 90002* | E |
| 30119505 | 90002* | E |
| 30119506 | 90002* | E |
| 30119580 | 90002* | E |
| 30119701 | 90002* | E |
| 30119705 | 90002* | E |
| 30119706 | 90002* | E |
| 30119707 | 90002* | E |
| 30119708 | 90002* | E |
| 30119709 | 90002* | E |
| 30119710 | 90002* | E |
| 30119741 | 90002* | E |
| 30119742 | 90002* | E |
| 30119743 | 90002* | E |
| 30119744 | 90002* | E |
| 30119745 | 90002* | E |
| 30119749 | 90002* | E |
| 30119799 | 90002* | E |
| 30120201 | 90002* | E |
| 30120202 | 90002* | E |
| 30120203 | 90002* | E |
| 30120204 | 90002* | E |
| 30120205 | 90002* | E |
| 30120206 | 90002* | E |
| 30120210 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30120211 | 90002* | E |
| 30120280 | 90002* | E |
| 30120501 | 90002* | E |
| 30120502 | 90002* | E |
| 30120503 | 90002* | E |
| 30120504 | 90002* | E |
| 30120505 | 90002* | E |
| 30120506 | 90002* | E |
| 30120507 | 90002* | E |
| 30120508 | 90002* | E |
| 30120509 | 90002* | E |
| 30120520 | 90002* | E |
| 30120521 | 90002* | E |
| 30120522 | 90002* | E |
| 30120523 | 90002* | E |
| 30120524 | 90002* | E |
| 30120525 | 90002* | E |
| 30120526 | 90002* | E |
| 30120527 | 90002* | E |
| 30120528 | 90002* | E |
| 30120529 | 90002* | E |
| 30120530 | 90002* | E |
| 30120531 | 90002* | E |
| 30120532 | 90002* | E |
| 30120540 | 90002* | E |
| 30120541 | 90002* | E |
| 30120542 | 90002* | E |
| 30120543 | 90002* | E |
| 30120544 | 90002* | E |
| 30120545 | 90002* | E |
| 30120546 | 90002* | E |
| 30120547 | 90002* | E |
| 30120548 | 90002* | E |
| 30120549 | 90002* | E |
| 30120550 | 90002* | E |
| 30120551 | 90002* | E |
| 30120552 | 90002* | E |
| 30120553 | 90002* | E |
| 30120554 | 90002* | E |
| 30120555 | 90002* | E |
| 30120580 | 90002* | E |
| 30120601 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30120602 | 90002* | E |
| 30120603 | 90002* | E |
| 30120680 | 90002* | E |
| 30121001 | 90002* | E |
| 30121002 | 90002* | E |
| 30121003 | 90002* | E |
| 30121004 | 90002* | E |
| 30121005 | 90002* | E |
| 30121006 | 90002* | E |
| 30121007 | 90002* | E |
| 30121008 | 90002* | E |
| 30121009 | 90002* | E |
| 30121010 | 90002* | E |
| 30121080 | 90002* | E |
| 30121101 | 90002* | E |
| 30121102 | 90002* | E |
| 30121103 | 90002* | E |
| 30121104 | 90002* | E |
| 30121121 | 90002* | E |
| 30121122 | 90002* | E |
| 30121123 | 90002* | E |
| 30121124 | 90002* | E |
| 30121125 | 90002* | E |
| 30121180 | 90002* | E |
| 30125001 | 90002* | E |
| 30125002 | 90002* | E |
| 30125003 | 90002* | E |
| 30125004 | 90002* | E |
| 30125005 | 90002* | E |
| 30125010 | 90002* | E |
| 30125015 | 90002* | E |
| 30125020 | 90002* | E |
| 30125021 | 90002* | E |
| 30125025 | 90002* | E |
| 30125099 | 90002* | E |
| 30125101 | 90002* | E |
| 30125102 | 90002* | E |
| 30125103 | 90002* | E |
| 30125104 | 90002* | E |
| 30125180 | 90002* | E |
| 30125201 | 90002* | E |
| 30125301 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30125302 | 90002* | E |
| 30125305 | 90002* | E |
| 30125306 | 90002* | E |
| 30125315 | 90002* | E |
| 30125316 | 90002* | E |
| 30125325 | 90002* | E |
| 30125326 | 90002* | E |
| 30125380 | 90002* | E |
| 30125401 | 90002* | E |
| 30125405 | 90002* | E |
| 30125406 | 90002* | E |
| 30125407 | 90002* | E |
| 30125408 | 90002* | E |
| 30125409 | 90002* | E |
| 30125410 | 90002* | E |
| 30125411 | 90002* | E |
| 30125412 | 90002* | E |
| 30125413 | 90002* | E |
| 30125415 | 90002* | E |
| 30125416 | 90002* | E |
| 30125417 | 90002* | E |
| 30125418 | 90002* | E |
| 30125420 | 90002* | E |
| 30125499 | 90002* | E |
| 30125801 | 90002* | E |
| 30125802 | 90002* | E |
| 30125803 | 90002* | E |
| 30125805 | 90002* | E |
| 30125806 | 90002* | E |
| 30125807 | 90002* | E |
| 30125810 | 90002* | E |
| 30125815 | 90002* | E |
| 30125816 | 90002* | E |
| 30125817 | 90002* | E |
| 30125880 | 90002* | E |
| 30125899 | 90002* | E |
| 30130101 | 90002* | E |
| 30130102 | 90002* | E |
| 30130103 | 90002* | E |
| 30130104 | 90002* | E |
| 30130105 | 90002* | E |
| 30130106 | 90002* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30130107 | 90002* | E |
| 30130108 | 90002* | E |
| 30130110 | 90002* | E |
| 30130135 | 90002* | E |
| 30130180 | 90002* | E |
| 30130201 | 90002* | E |
| 30130202 | 90002* | E |
| 30130203 | 90002* | E |
| 30130280 | 90002* | E |
| 30130301 | 90002* | E |
| 30130302 | 90002* | E |
| 30130303 | 90002* | E |
| 30130304 | 90002* | E |
| 30130305 | 90002* | E |
| 30130380 | 90002* | E |
| 30130401 | 90002* | E |
| 30130402 | 90002* | E |
| 30130403 | 90002* | E |
| 30130404 | 90002* | E |
| 30130405 | 90002* | E |
| 30130480 | 90002* | E |
| 30130501 | 90002* | E |
| 30130502 | 90002* | E |
| 30130503 | 90002* | E |
| 30130504 | 90002* | E |
| 30130505 | 90002* | E |
| 30130580 | 90002* | E |
| 30180001 | 90002* | E |
| 30181001 | 90002* | E |
| 30182001 | 90002* | E |
| 30183001 | 90002* | E |
| 30184001 | 90002* | E |
| 30187001 | 90002* | E |
| 30187002 | 90002* | E |
| 30187003 | 90002* | E |
| 30187004 | 90002* | E |
| 30187005 | 90002* | E |
| 30187006 | 90002* | E |
| 30187007 | 90002* | E |
| 30187008 | 90002* | E |
| 30187009 | 90002* | E |
| 30187010 | 90002* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30187097 | 90002* | E |
| 30187098 | 90002* | E |
| 30187501 | 90002* | E |
| 30187502 | 90002* | E |
| 30187597 | 90002* | E |
| 30187598 | 90002* | E |
| 30188501 | 90002* | E |
| 30188502 | 90002* | E |
| 30188503 | 90002* | E |
| 30188504 | 90002* | E |
| 30188505 | 90002* | E |
| 30188599 | 90002* | E |
| 30188801 | 90002* | E |
| 30188802 | 90002* | E |
| 30188803 | 90002* | E |
| 30188804 | 90002* | E |
| 30188805 | 90002* | E |
| 30190001 | 90002* | E |
| 30190002 | 13501* | D |
| 30190003 | 90002* | E |
| 30190004 | 90002* | E |
| 30190012 | 13501* | D |
| 30190013 | 90002* | E |
| 30190014 | 90002* | E |
| 30190099 | 90002* | E |
| 30199998 | 25405 | E |
| 30199999 | 25405 | E |
| 30200101 | 90003* | E |
| 30200102 | 90003* | E |
| 30200103 | 90003* | E |
| 30200104 | 90003* | E |
| 30200199 | 90003* | E |
| 30200201 | 90003* | E |
| 30200202 | 90003* | E |
| 30200203 | 90003* | E |
| 30200299 | 90003* | E |
| 30200301 | 90003* | E |
| 30200401 | 90003* | E |
| 30200402 | 90003* | E |
| 30200403 | 90003* | E |
| 30200404 | 90003* | E |
| 30200410 | 90003* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30200501 | 21401* | E |
| 30200502 | 21401* | E |
| 30200503 | 21401* | E |
| 30200504 | 21401* | E |
| 30200505 | 21401 | E |
| 30200506 | 21401 | E |
| 30200507 | 21401* | E |
| 30200508 | 21401* | E |
| 30200509 | 21401* | E |
| 30200510 | 21401* | E |
| 30200511 | 21401* | E |
| 30200512 | 21401* | E |
| 30200601 | 21401* | E |
| 30200602 | 21401* | E |
| 30200603 | 21401* | E |
| 30200604 | 21401* | E |
| 30200605 | 21401* | E |
| 30200606 | 21401* | E |
| 30200607 | 21401* | E |
| 30200608 | 21401* | E |
| 30200609 | 21401* | E |
| 30200610 | 21401* | E |
| 30200611 | 21401* | E |
| 30200699 | 21401* | E |
| 30200701 | 90003* | E |
| 30200702 | 90003* | E |
| 30200703 | 90003* | E |
| 30200704 | 90003* | E |
| 30200705 | 90003* | E |
| 30200711 | 90003* | E |
| 30200712 | 90003* | E |
| 30200713 | 90003* | E |
| 30200714 | 90003* | E |
| 30200721 | 90003* | E |
| 30200722 | 90003* | E |
| 30200723 | 90003* | E |
| 30200724 | 90003* | E |
| 30200731 | 90003* | E |
| 30200732 | 90003* | E |
| 30200733 | 90003* | E |
| 30200734 | 90003* | E |
| 30200741 | 90003* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30200742 | 90003* | E |
| 30200743 | 90003* | E |
| 30200744 | 90003* | E |
| 30200745 | 90003* | E |
| 30200751 | 90003* | E |
| 30200752 | 90003* | E |
| 30200753 | 90003* | E |
| 30200754 | 90003* | E |
| 30200755 | 90003* | E |
| 30200756 | 90003* | E |
| 30200760 | 90003* | E |
| 30200771 | 90003* | E |
| 30200772 | 90003* | E |
| 30200773 | 90003* | E |
| 30200774 | 90003* | E |
| 30200781 | 90003* | E |
| 30200782 | 90003* | E |
| 30200783 | 90003* | E |
| 30200784 | 90003* | E |
| 30200785 | 90003* | E |
| 30200786 | 90003* | E |
| 30200787 | 90003* | E |
| 30200788 | 90003* | E |
| 30200789 | 90003* | E |
| 30200790 | 90003* | E |
| 30200791 | 90003* | E |
| 30200799 | 90003* | E |
| 30200801 | 90003* | E |
| 30200802 | 90003* | E |
| 30200803 | 90003* | E |
| 30200804 | 90003* | E |
| 30200805 | 90003* | E |
| 30200806 | 90003* | E |
| 30200899 | 90003* | E |
| 30200901 | 90003* | E |
| 30200902 | 90003* | E |
| 30200903 | 90003* | E |
| 30200904 | 00000* | E |
| 30200905 | 90003* | E |
| 30200998 | 90003* | E |
| 30200999 | 90003* | E |
| 30201001 | 90003* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30201002 | 90003* | E |
| 30201003 | 00000* | E |
| 30201004 | 90003* | E |
| 30201103 | 00000* | E |
| 30201104 | 90003* | E |
| 30201105 | 90003* | E |
| 30201106 | 90003* | E |
| 30201199 | 00000* | E |
| 30201201 | 00000* | E |
| 30201202 | 00000* | E |
| 30201203 | 90003* | E |
| 30201204 | 00000* | E |
| 30201205 | 90003* | E |
| 30201206 | 90003* | E |
| 30201301 | 90003* | E |
| 30201401 | 90003* | E |
| 30201501 | 90003* | E |
| 30201599 | 90003* | E |
| 30201601 | 90003* | E |
| 30201699 | 90003* | E |
| 30201799 | 90003* | E |
| 30201899 | 90003* | E |
| 30201901 | 90003* | E |
| 30201902 | 90003* | E |
| 30201903 | 90003* | E |
| 30201904 | 90003* | E |
| 30201906 | 90003* | E |
| 30201907 | 90003* | E |
| 30201908 | 90003* | E |
| 30201909 | 90003* | E |
| 30201911 | 90003* | E |
| 30201912 | 90003* | E |
| 30201913 | 90003* | E |
| 30201914 | 90003* | E |
| 30201915 | 00000* | E |
| 30201916 | 90003* | E |
| 30201917 | 90003* | E |
| 30201918 | 90003* | E |
| 30201919 | 90003* | E |
| 30201920 | 00000* | E |
| 30201999 | 90003* | E |
| 30202001 | 41350* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30202002 | 41350* | E |
| 30202101 | 90003* | E |
| 30202102 | 90003* | E |
| 30202105 | 90003* | E |
| 30202106 | 90003* | E |
| 30202201 | 90003* | E |
| 30202601 | 90003* | E |
| 30202801 | 90003* | E |
| 30203001 | 90003* | E |
| 30203099 | 90003* | E |
| 30203103 | 90003* | E |
| 30203104 | 90003* | E |
| 30203105 | 90003* | E |
| 30203106 | 90003* | E |
| 30203107 | 90003* | E |
| 30203108 | 90003* | E |
| 30203109 | 90003* | E |
| 30203110 | 90003* | E |
| 30203111 | 90003* | E |
| 30203201 | 00000* | E |
| 30203202 | 00000* | E |
| 30203299 | 00000* | E |
| 30203399 | 90003* | E |
| 30203601 | 90003* | E |
| 30203801 | 90003* | E |
| 30288801 | 90003* | E |
| 30288802 | 90003* | E |
| 30288803 | 90003* | E |
| 30288804 | 90003* | E |
| 30288805 | 90003* | E |
| 30290001 | 13501* | D |
| 30290002 | 13501* | D |
| 30290003 | 26101* | E |
| 30299998 | 90003* | E |
| 30299999 | 90003* | E |
| 30300001 | 90007* | E |
| 30300002 | 90007* | E |
| 30300101 | 29101* | E |
| 30300101 | 29102* | E |
| 30300102 | 29101* | E |
| 30300102 | 29102* | E |
| 30300103 | 29101* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30300103 | 29102* | E |
| 30300104 | 29101* | E |
| 30300104 | 29102* | E |
| 30300105 | 29101* | E |
| 30300105 | 29102* | E |
| 30300106 | 29101* | E |
| 30300106 | 29102* | E |
| 30300107 | 29101 | D |
| 30300107 | 29102 | D |
| 30300108 | 29101* | E |
| 30300108 | 29102* | E |
| 30300109 | 29101* | E |
| 30300109 | 29102* | E |
| 30300110 | 29101* | E |
| 30300110 | 29102* | E |
| 30300111 | 29101* | E |
| 30300111 | 29102* | E |
| 30300199 | 29101* | E |
| 30300199 | 29102* | E |
| 30300201 | 90007* | E |
| 30300302 | 21204* | D |
| 30300303 | 21203* | E |
| 30300304 | 21203* | E |
| 30300305 | 21204* | D |
| 30300306 | 11201* | D |
| 30300307 | 21204* | E |
| 30300308 | 21203* | E |
| 30300309 | 21204* | D |
| 30300310 | 21204* | D |
| 30300311 | 21204* | D |
| 30300312 | 21203* | E |
| 30300313 | 11202* | E |
| 30300314 | 21203* | E |
| 30300315 | 90007* | E |
| 30300316 | 21204* | D |
| 30300399 | 21204* | E |
| 30300401 | 21203* | E |
| 30300502 | 29202* | E |
| 30300502 | 29209 | E |
| 30300503 | 29202 | E |
| 30300504 | 29202* | E |
| 30300505 | 29202* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30300506 | 29202* | E |
| 30300507 | 29202* | E |
| 30300508 | 29202* | E |
| 30300509 | 29202* | E |
| 30300509 | 29209 | E |
| 30300510 | 29202* | E |
| 30300511 | 29202* | E |
| 30300512 | 29202* | E |
| 30300512 | 29207 | E |
| 30300513 | 29202* | E |
| 30300514 | 29202* | E |
| 30300514 | 29203 | E |
| 30300514 | 29204 | E |
| 30300514 | 29210 | C |
| 30300515 | 29202* | E |
| 30300515 | 29205 | E |
| 30300515 | 29206 | E |
| 30300515 | 29211 | C |
| 30300516 | 29202* | E |
| 30300517 | 29202* | E |
| 30300518 | 29202* | E |
| 30300521 | 29202* | E |
| 30300522 | 29202* | E |
| 30300523 | 29202* | E |
| 30300524 | 29202* | E |
| 30300524 | 29208* | D |
| 30300525 | 29202* | E |
| 30300526 | 29202* | E |
| 30300527 | 29202* | E |
| 30300528 | 29202* | E |
| 30300599 | 29202* | E |
| 30300601 | 28401* | D |
| 30300602 | 28401* | D |
| 30300603 | 28401* | D |
| 30300604 | 28401* | D |
| 30300605 | 28401* | D |
| 30300610 | 28401* | D |
| 30300611 | 28401* | D |
| 30300613 | 28401* | D |
| 30300614 | 28401* | D |
| 30300615 | 28401* | D |
| 30300616 | 28401* | D |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30300617 | 28401* | D |
| 30300699 | 28401* | D |
| 30300701 | 28401 | C |
| 30300702 | 28401* | D |
| 30300703 | 28401* | D |
| 30300704 | 28401* | E |
| 30300801 | 28301* | E |
| 30300802 | 28301* | E |
| 30300804 | 28301* | E |
| 30300805 | 28301* | E |
| 30300808 | 28301* | E |
| 30300809 | 28301* | E |
| 30300811 | 28301* | E |
| 30300812 | 28301* | E |
| 30300813 | 28301 | D |
| 30300813 | 28304 | D |
| 30300814 | 28301* | E |
| 30300815 | 28301* | E |
| 30300816 | 28301* | E |
| 30300817 | 28301* | E |
| 30300818 | 28301* | E |
| 30300819 | 28301* | E |
| 30300820 | 28301* | E |
| 30300821 | 28301* | E |
| 30300822 | 28301* | E |
| 30300823 | 28301* | E |
| 30300824 | 28301* | E |
| 30300825 | 28301* | E |
| 30300826 | 28301* | E |
| 30300827 | 28301* | E |
| 30300831 | 41220* | E |
| 30300832 | 41220* | E |
| 30300833 | 41220* | E |
| 30300834 | 41130* | E |
| 30300899 | 90007* | E |
| 30300901 | 28302 | E |
| 30300904 | 90004* | E |
| 30300906 | 90004* | E |
| 30300907 | 90004* | E |
| 30300908 | 90004* | E |
| 30300910 | 90004* | E |
| 30300911 | 90004* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30300912 | 90004* | E |
| 30300913 | 28303 | E |
| 30300913 | 28307 | E |
| 30300914 | 28303* | E |
| 30300915 | 90004* | E |
| 30300916 | 28303* | E |
| 30300917 | 28303* | E |
| 30300918 | 28302* | E |
| 30300919 | 28302* | E |
| 30300921 | 90004* | E |
| 30300922 | 90004* | E |
| 30300923 | 90004* | E |
| 30300924 | 90004* | E |
| 30300925 | 90004* | E |
| 30300931 | 90004* | E |
| 30300932 | 90004* | E |
| 30300933 | 90004* | E |
| 30300934 | 90004* | E |
| 30300935 | 90004* | E |
| 30300936 | 90004* | E |
| 30300998 | 90004* | E |
| 30300999 | 90004* | E |
| 30300999 | 28306 | E |
| 30301001 | 29304 | C |
| 30301002 | 29302 | C |
| 30301002 | 29305 | C |
| 30301003 | 29307 | C |
| 30301004 | 21102 | D |
| 30301004 | 21103 | D |
| 30301004 | 21150 | D |
| 30301004 | 21206 | D |
| 30301005 | 21101 | D |
| 30301005 | 21102 | D |
| 30301005 | 21103 | D |
| 30301005 | 21150* | D |
| 30301005 | 21206 | D |
| 30301006 | 90005* | E |
| 30301007 | 90005* | E |
| 30301008 | 29303 | C |
| 30301008 | 29306 | C |
| 30301008 | 29330 | C |
| 30301009 | 21205 | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30301009 | 29310 | E |
| 30301010 | 90005* | E |
| 30301011 | 21102 | D |
| 30301011 | 21103 | D |
| 30301011 | 21150 | D |
| 30301011 | 21206 | D |
| 30301012 | 21102 | D |
| 30301012 | 21103 | D |
| 30301012 | 21150 | D |
| 30301012 | 21206 | D |
| 30301013 | 21102 | D |
| 30301013 | 21103 | D |
| 30301013 | 21150 | D |
| 30301013 | 21206 | D |
| 30301014 | 21102 | D |
| 30301014 | 21103 | D |
| 30301014 | 21150 | D |
| 30301014 | 21206 | D |
| 30301015 | 90005* | E |
| 30301016 | 90005* | E |
| 30301017 | 90005* | E |
| 30301018 | 90005* | E |
| 30301019 | 90005* | E |
| 30301020 | 90005* | E |
| 30301021 | 29301 | E |
| 30301021 | 29311 | E |
| 30301022 | 90005* | E |
| 30301023 | 90005* | E |
| 30301024 | 90005* | E |
| 30301025 | 29309 | C |
| 30301026 | 90005* | E |
| 30301099 | 90005* | E |
| 30301101 | 90016* | E |
| 30301102 | 90016* | E |
| 30301199 | 90016* | E |
| 30301201 | 90016* | E |
| 30301202 | 90016* | E |
| 30301299 | 90016* | E |
| 30301301 | 90016* | E |
| 30301401 | 90016* | E |
| 30301402 | 90016* | E |
| 30301403 | 90016* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30301499 | 90016* | E |
| 30302301 | 90016* | E |
| 30302302 | 90016* | E |
| 30302303 | 90016* | E |
| 30302304 | 90016* | E |
| 30302305 | 90016* | E |
| 30302306 | 90016* | E |
| 30302307 | 90016* | E |
| 30302308 | 90016* | E |
| 30302309 | 90016* | E |
| 30302310 | 90016* | E |
| 30302311 | 90016* | E |
| 30302312 | 90016* | E |
| 30302313 | 90016* | E |
| 30302314 | 90016* | E |
| 30302315 | 90016* | E |
| 30302316 | 90016* | E |
| 30302321 | 90016* | E |
| 30302322 | 90016* | E |
| 30302401 | 21301 | E |
| 30302401 | 21302 | E |
| 30302401 | 21320 | E |
| 30302402 | 90006* | E |
| 30302403 | 90006* | E |
| 30302404 | 21303 | E |
| 30302404 | 21304 | E |
| 30302404 | 21340 | E |
| 30302405 | 90006* | E |
| 30302406 | 90006* | E |
| 30302407 | 90006* | E |
| 30302408 | 90006* | E |
| 30302409 | 90006* | E |
| 30302410 | 90006* | E |
| 30302411 | 90006* | E |
| 30303002 | 90007* | E |
| 30303003 | 90007* | E |
| 30303005 | 90007* | E |
| 30303006 | 90007* | E |
| 30303007 | 90007* | E |
| 30303008 | 90007* | E |
| 30303009 | 90007* | E |
| 30303010 | 90007* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30303011 | 90007* | E |
| 30303012 | 90007* | E |
| 30303014 | 90007* | E |
| 30303015 | 90007* | E |
| 30303016 | 90007* | E |
| 30303099 | 90007* | E |
| 30330111 | 21150 | |
| 30388801 | 90007* | E |
| 30388802 | 90007* | E |
| 30388803 | 90007* | E |
| 30388804 | 90007* | E |
| 30388805 | 90007* | E |
| 30390001 | 13501* | D |
| 30390002 | 13501* | D |
| 30390003 | 26101* | E |
| 30390004 | 26101* | E |
| 30390011 | 13501* | D |
| 30390012 | 13501* | D |
| 30390013 | 26101* | E |
| 30390014 | 26101* | E |
| 30390023 | 26101* | E |
| 30390024 | 26101* | E |
| 30399999 | 21501 | D |
| 30400101 | 90009* | E |
| 30400102 | 90009* | E |
| 30400103 | 20101 | E |
| 30400104 | 90009* | E |
| 30400105 | 90009* | E |
| 30400106 | 90009* | E |
| 30400107 | 20102 | D |
| 30400107 | 20103 | D |
| 30400108 | 90009* | E |
| 30400109 | 90009* | E |
| 30400110 | 90009* | E |
| 30400111 | 90009* | E |
| 30400112 | 90009* | E |
| 30400113 | 90009* | E |
| 30400114 | 90009* | E |
| 30400120 | 90009* | E |
| 30400150 | 90009* | E |
| 30400199 | 90009* | E |
| 30400204 | 28201* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30400207 | 19101* | E |
| 30400208 | 19101 | E |
| 30400209 | 19101* | E |
| 30400210 | 19101* | E |
| 30400211 | 19101* | E |
| 30400212 | 19101* | E |
| 30400214 | 19101* | E |
| 30400214 | 29502* | E |
| 30400215 | 19101* | E |
| 30400215 | 29501* | E |
| 30400217 | 19101* | E |
| 30400219 | 19101* | E |
| 30400220 | 19101* | E |
| 30400221 | 19101* | E |
| 30400223 | 19101* | E |
| 30400224 | 19101* | E |
| 30400230 | 19101* | E |
| 30400231 | 19101* | E |
| 30400232 | 19101* | E |
| 30400233 | 19101* | E |
| 30400234 | 19101* | E |
| 30400235 | 19101* | E |
| 30400236 | 19101* | E |
| 30400237 | 19101* | E |
| 30400238 | 19101* | E |
| 30400239 | 19101* | E |
| 30400299 | 20502 | D |
| 30400299 | 20503 | D |
| 30400301 | 28202 | D |
| 30400302 | 90010* | E |
| 30400303 | 28201 | E |
| 30400304 | 90010* | E |
| 30400305 | 90010* | E |
| 30400310 | 90010* | E |
| 30400315 | 90010* | E |
| 30400320 | 90010* | E |
| 30400325 | 90010* | E |
| 30400330 | 90010* | E |
| 30400331 | 90010* | E |
| 30400332 | 90010* | E |
| 30400333 | 90010* | E |
| 30400340 | 90010* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30400341 | 90010* | E |
| 30400342 | 90010* | E |
| 30400350 | 90010* | E |
| 30400351 | 90010* | E |
| 30400352 | 90010* | E |
| 30400353 | 90010* | E |
| 30400354 | 90010* | E |
| 30400355 | 90010* | E |
| 30400356 | 90010* | E |
| 30400357 | 90010* | E |
| 30400358 | 90010* | E |
| 30400360 | 90010* | E |
| 30400370 | 90010* | E |
| 30400371 | 90010* | E |
| 30400398 | 90010* | E |
| 30400399 | 90010* | E |
| 30400401 | 20401* | E |
| 30400401 | 20405 | E |
| 30400402 | 20401* | E |
| 30400402 | 20403 | E |
| 30400403 | 20401 | E |
| 30400404 | 20401* | E |
| 30400405 | 20401* | E |
| 30400406 | 20401* | E |
| 30400407 | 20401* | E |
| 30400408 | 20401* | E |
| 30400409 | 20401* | E |
| 30400410 | 20401* | E |
| 30400411 | 20401* | E |
| 30400412 | 20401* | E |
| 30400413 | 20401* | E |
| 30400413 | 20404 | E |
| 30400414 | 20401* | E |
| 30400499 | 20401* | E |
| 30400499 | 20402 | E |
| 30400499 | 20406 | E |
| 30400501 | 90008* | E |
| 30400505 | 90008* | E |
| 30400506 | 90008* | E |
| 30400507 | 90008* | E |
| 30400508 | 90008* | E |
| 30400509 | 90008* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30400510 | 90008* | E |
| 30400511 | 90008* | E |
| 30400512 | 90008* | E |
| 30400513 | 90008* | E |
| 30400521 | 90008* | E |
| 30400522 | 90008* | E |
| 30400523 | 90008* | E |
| 30400524 | 90008* | E |
| 30400525 | 90008* | E |
| 30400526 | 90008* | E |
| 30400527 | 90008* | E |
| 30400528 | 90008* | E |
| 30400599 | 90008* | E |
| 30400601 | 90008* | E |
| 30400699 | 90008* | E |
| 30400701 | 28304 | D |
| 30400701 | 28305* | D |
| 30400702 | 90011* | E |
| 30400703 | 90011* | E |
| 30400704 | 28601 | E |
| 30400705 | 90011* | E |
| 30400706 | 90011* | E |
| 30400707 | 90011* | E |
| 30400708 | 90011* | E |
| 30400709 | 90011* | E |
| 30400710 | 90011* | E |
| 30400711 | 90011* | E |
| 30400712 | 90011* | E |
| 30400713 | 90011* | E |
| 30400714 | 90011* | E |
| 30400715 | 90011* | E |
| 30400716 | 90011* | E |
| 30400717 | 90011* | E |
| 30400718 | 90011* | E |
| 30400720 | 90011* | E |
| 30400721 | 90011* | E |
| 30400722 | 90011* | E |
| 30400723 | 90011* | E |
| 30400724 | 90011* | E |
| 30400725 | 90011* | E |
| 30400726 | 90011* | E |
| 30400730 | 90011* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30400731 | 90011* | E |
| 30400799 | 90011* | E |
| 30400801 | 90008* | E |
| 30400802 | 90008* | E |
| 30400803 | 90008* | E |
| 30400805 | 90008* | E |
| 30400806 | 90008* | E |
| 30400807 | 90008* | E |
| 30400809 | 90008* | E |
| 30400810 | 90008* | E |
| 30400811 | 90008* | E |
| 30400812 | 90008* | E |
| 30400814 | 00000* | E |
| 30400818 | 00000* | E |
| 30400824 | 90008* | E |
| 30400828 | 90008* | E |
| 30400834 | 90008* | E |
| 30400838 | 90008* | E |
| 30400840 | 90008* | E |
| 30400841 | 90008* | E |
| 30400842 | 90008* | E |
| 30400843 | 90008* | E |
| 30400851 | 90008* | E |
| 30400852 | 90008* | E |
| 30400853 | 90008* | E |
| 30400854 | 90008* | E |
| 30400855 | 90008* | E |
| 30400861 | 90008* | E |
| 30400862 | 90008* | E |
| 30400863 | 90008* | E |
| 30400864 | 90008* | E |
| 30400865 | 90008* | E |
| 30400866 | 90008* | E |
| 30400867 | 90008* | E |
| 30400868 | 90008* | E |
| 30400869 | 90008* | E |
| 30400870 | 90008* | E |
| 30400871 | 90008* | E |
| 30400872 | 90008* | E |
| 30400873 | 90008* | E |
| 30400874 | 90008* | E |
| 30400875 | 90008* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30400876 | 90008* | E |
| 30400877 | 90008* | E |
| 30400899 | 20501 | E |
| 30400901 | 90008* | E |
| 30400999 | 90008* | E |
| 30401001 | 90008* | E |
| 30401002 | 90008* | E |
| 30401004 | 90008* | E |
| 30401005 | 90008* | E |
| 30401006 | 90008* | E |
| 30401007 | 90008* | E |
| 30401008 | 90008* | E |
| 30401010 | 90008* | E |
| 30401011 | 90008* | E |
| 30401099 | 90008* | E |
| 30402001 | 90008* | E |
| 30402002 | 90008* | E |
| 30402003 | 90008* | E |
| 30402004 | 90008* | E |
| 30402099 | 90008* | E |
| 30402201 | 90008* | E |
| 30402210 | 90008* | E |
| 30404001 | 90008* | E |
| 30404901 | 90008* | E |
| 30405001 | 90008* | E |
| 30405099 | 90008* | E |
| 30488801 | 90008* | E |
| 30488802 | 90008* | E |
| 30488803 | 90008* | E |
| 30488804 | 90008* | E |
| 30488805 | 90008* | E |
| 30490001 | 13501* | D |
| 30490002 | 13501* | D |
| 30490003 | 26101* | E |
| 30490004 | 26101* | E |
| 30490011 | 13501* | D |
| 30490012 | 13501* | D |
| 30490013 | 26101* | E |
| 30490014 | 26101* | E |
| 30490023 | 26101* | E |
| 30490024 | 26101* | E |
| 30499999 | 29203 | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30499999 | 29201* | E |
| 30500101 | 25402* | E |
| 30500102 | 25402 | D |
| 30500103 | 25402* | E |
| 30500104 | 25402* | E |
| 30500105 | 25402* | E |
| 30500110 | 25402* | E |
| 30500111 | 25402* | E |
| 30500112 | 25402* | E |
| 30500113 | 25402* | E |
| 30500198 | 25402* | E |
| 30500199 | 25402* | E |
| 30500201 | 90013* | E |
| 30500202 | 90013* | E |
| 30500203 | 90013* | E |
| 30500204 | 90013* | E |
| 30500205 | 90013* | E |
| 30500206 | 26101* | E |
| 30500207 | 13501* | D |
| 30500208 | 13501* | D |
| 30500299 | 90013* | E |
| 30500301 | 90013* | E |
| 30500302 | 90013* | E |
| 30500303 | 90013* | E |
| 30500304 | 26101* | E |
| 30500307 | 90013* | E |
| 30500308 | 90013* | E |
| 30500309 | 90013* | E |
| 30500311 | 90013* | E |
| 30500312 | 90013* | E |
| 30500313 | 90013* | E |
| 30500314 | 90013* | E |
| 30500315 | 90013* | E |
| 30500316 | 90013* | E |
| 30500398 | 90013* | E |
| 30500399 | 90013* | E |
| 30500401 | 90013* | E |
| 30500402 | 90013* | E |
| 30500403 | 90013* | E |
| 30500404 | 90013* | E |
| 30500405 | 90013* | E |
| 30500406 | 90013* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30500499 | 90013* | E |
| 30500501 | 90013* | E |
| 30500502 | 90013* | E |
| 30500503 | 90013* | E |
| 30500504 | 90013* | E |
| 30500505 | 90013* | E |
| 30500598 | 90013* | E |
| 30500599 | 90013* | E |
| 30500606 | 27201 | E |
| 30500607 | 27201* | E |
| 30500608 | 27201* | E |
| 30500609 | 27201* | E |
| 30500609 | 27205* | D |
| 30500610 | 27201* | E |
| 30500610 | 27205* | D |
| 30500611 | 27201* | E |
| 30500612 | 27201* | E |
| 30500613 | 27201* | E |
| 30500614 | 27201* | E |
| 30500615 | 27201* | E |
| 30500616 | 27201* | E |
| 30500617 | 27201* | E |
| 30500618 | 27201* | E |
| 30500618 | 27204* | E |
| 30500619 | 27201* | E |
| 30500619 | 27204* | E |
| 30500699 | 27201* | E |
| 30500706 | 27203 | D |
| 30500707 | 27203* | E |
| 30500708 | 27203* | E |
| 30500709 | 27203* | E |
| 30500710 | 27203* | E |
| 30500711 | 27203* | E |
| 30500712 | 27203* | E |
| 30500714 | 27203* | E |
| 30500715 | 27203* | E |
| 30500716 | 27203* | E |
| 30500717 | 27203* | E |
| 30500718 | 27203* | E |
| 30500719 | 27203* | E |
| 30500799 | 27203* | E |
| 30500801 | 90013* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30500802 | 90013* | E |
| 30500803 | 90013* | E |
| 30500899 | 90013* | E |
| 30500901 | 90012* | E |
| 30500902 | 90012* | E |
| 30500903 | 90012* | E |
| 30500904 | 90012* | E |
| 30500905 | 90012* | E |
| 30500906 | 90012* | E |
| 30500907 | 90012* | E |
| 30500908 | 90012* | E |
| 30500909 | 90012* | E |
| 30500910 | 90012* | E |
| 30500999 | 25201 | E |
| 30500999 | 25406 | E |
| 30501001 | 90013* | E |
| 30501002 | 90013* | E |
| 30501003 | 90013* | E |
| 30501004 | 90013* | E |
| 30501005 | 90013* | E |
| 30501006 | 90013* | E |
| 30501007 | 90013* | E |
| 30501008 | 90013* | E |
| 30501009 | 90013* | E |
| 30501010 | 90013* | E |
| 30501011 | 90013* | E |
| 30501012 | 90013* | E |
| 30501013 | 90013* | E |
| 30501014 | 90013* | E |
| 30501015 | 90013* | E |
| 30501016 | 90013* | E |
| 30501017 | 90013* | E |
| 30501021 | 90013* | E |
| 30501022 | 90013* | E |
| 30501023 | 90013* | E |
| 30501024 | 90013* | E |
| 30501030 | 90013* | E |
| 30501031 | 90013* | E |
| 30501032 | 90013* | E |
| 30501033 | 90013* | E |
| 30501034 | 90013* | E |
| 30501035 | 90013* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30501036 | 90013* | E |
| 30501037 | 90013* | E |
| 30501038 | 90013* | E |
| 30501039 | 90013* | E |
| 30501040 | 90013* | E |
| 30501041 | 90013* | E |
| 30501042 | 90013* | E |
| 30501043 | 90013* | E |
| 30501044 | 90013* | E |
| 30501045 | 90013* | E |
| 30501046 | 90013* | E |
| 30501047 | 90013* | E |
| 30501048 | 90013* | E |
| 30501049 | 90013* | E |
| 30501050 | 90013* | E |
| 30501090 | 90013* | E |
| 30501099 | 90013* | E |
| 30501101 | 90013* | E |
| 30501106 | 90013* | E |
| 30501107 | 90013* | E |
| 30501108 | 90013* | E |
| 30501109 | 90013* | E |
| 30501110 | 90013* | E |
| 30501111 | 90013* | E |
| 30501112 | 90013* | E |
| 30501113 | 90013* | E |
| 30501114 | 90013* | E |
| 30501115 | 90013* | E |
| 30501120 | 90013* | E |
| 30501199 | 90013* | E |
| 30501201 | 90013* | E |
| 30501202 | 90013* | E |
| 30501203 | 90013* | E |
| 30501204 | 90013* | E |
| 30501205 | 90013* | E |
| 30501206 | 90013* | E |
| 30501207 | 90013* | E |
| 30501208 | 90013* | E |
| 30501209 | 90013* | E |
| 30501211 | 90013* | E |
| 30501212 | 90013* | E |
| 30501213 | 90013* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30501214 | 90013* | E |
| 30501215 | 90013* | E |
| 30501221 | 90013* | E |
| 30501222 | 90013* | E |
| 30501223 | 90013* | E |
| 30501224 | 90013* | E |
| 30501299 | 90013* | E |
| 30501301 | 90013* | E |
| 30501399 | 90013* | E |
| 30501401 | 27102* | E |
| 30501402 | 27102 | D |
| 30501403 | 27102* | E |
| 30501404 | 27102* | E |
| 30501406 | 00000* | E |
| 30501407 | 00000* | E |
| 30501408 | 00000* | E |
| 30501410 | 00000* | E |
| 30501411 | 27102* | E |
| 30501412 | 00000* | E |
| 30501413 | 27102* | E |
| 30501414 | 27102* | E |
| 30501415 | 27102* | E |
| 30501499 | 27102* | E |
| 30501501 | 27501 | E |
| 30501502 | 27501* | E |
| 30501503 | 27501* | E |
| 30501504 | 27501* | E |
| 30501504 | 27502* | E |
| 30501505 | 27501* | E |
| 30501506 | 27501* | E |
| 30501507 | 27501* | E |
| 30501508 | 27501* | E |
| 30501508 | 27502* | E |
| 30501509 | 27501* | E |
| 30501510 | 27501* | E |
| 30501511 | 27501* | E |
| 30501512 | 27501* | E |
| 30501513 | 27501* | E |
| 30501514 | 27501* | E |
| 30501515 | 27501* | E |
| 30501516 | 27501* | E |
| 30501517 | 27501* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30501518 | 27501* | E |
| 30501519 | 27501* | E |
| 30501520 | 27501 | E |
| 30501520 | 27503 | E |
| 30501521 | 27501* | E |
| 30501522 | 27501* | E |
| 30501599 | 27501* | E |
| 30501601 | 90013* | E |
| 30501602 | 90013* | E |
| 30501603 | 90013* | E |
| 30501604 | 90013* | E |
| 30501605 | 90013* | E |
| 30501606 | 90013* | E |
| 30501607 | 90013* | E |
| 30501607 | 27601* | E |
| 30501608 | 90013* | E |
| 30501608 | 27601* | E |
| 30501609 | 90013* | E |
| 30501610 | 90013* | E |
| 30501611 | 90013* | E |
| 30501612 | 90013* | E |
| 30501613 | 90013* | E |
| 30501614 | 90013* | E |
| 30501615 | 90013* | E |
| 30501615 | 27601* | E |
| 30501616 | 90013* | E |
| 30501617 | 90013* | E |
| 30501699 | 90013* | E |
| 30501701 | 90013* | E |
| 30501702 | 90013* | E |
| 30501703 | 90013* | E |
| 30501704 | 90013* | E |
| 30501705 | 90013* | E |
| 30501799 | 90013* | E |
| 30501801 | 90013* | E |
| 30501899 | 90013* | E |
| 30501901 | 90013* | E |
| 30501902 | 90013* | E |
| 30501903 | 90013* | E |
| 30501904 | 90013* | E |
| 30501905 | 90013* | E |
| 30501999 | 90013* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30502001 | 21101* | D |
| 30502001 | 44103 | D |
| 30502002 | 21101* | D |
| 30502003 | 21101* | D |
| 30502004 | 21101* | D |
| 30502005 | 21101* | C |
| 30502006 | 21101* | D |
| 30502007 | 21101* | D |
| 30502008 | 21101* | D |
| 30502009 | 21101* | D |
| 30502010 | 21101* | D |
| 30502011 | 21101* | D |
| 30502012 | 21101* | D |
| 30502013 | 21101* | D |
| 30502014 | 21101* | D |
| 30502015 | 21101* | D |
| 30502016 | 21101* | D |
| 30502020 | 21101* | D |
| 30502099 | 21101* | D |
| 30502101 | 90013* | E |
| 30502102 | 90013* | E |
| 30502103 | 90013* | E |
| 30502104 | 90013* | E |
| 30502105 | 90013* | E |
| 30502106 | 90013* | E |
| 30502201 | 90013* | E |
| 30502299 | 90013* | E |
| 30502401 | 90013* | E |
| 30502499 | 90013* | E |
| 30502501 | 21101* | D |
| 30502502 | 21101* | D |
| 30502503 | 21101* | D |
| 30502504 | 21101* | D |
| 30502505 | 21101* | D |
| 30502506 | 21101* | D |
| 30502507 | 21101* | D |
| 30502508 | 21101* | D |
| 30502509 | 21101* | D |
| 30502510 | 21101* | D |
| 30502511 | 21101* | D |
| 30502601 | 90013* | E |
| 30502699 | 90013* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30503099 | 90013* | E |
| 30503101 | 90013* | E |
| 30503102 | 90013* | E |
| 30503103 | 90013* | E |
| 30503104 | 90013* | E |
| 30503105 | 90013* | E |
| 30503106 | 90013* | E |
| 30503107 | 90013* | E |
| 30503108 | 90013* | E |
| 30503109 | 90013* | E |
| 30503110 | 90013* | E |
| 30503111 | 90013* | E |
| 30503199 | 90013* | E |
| 30503201 | 90013* | E |
| 30503202 | 90013* | E |
| 30503203 | 90013* | E |
| 30503204 | 90013* | E |
| 30503205 | 90013* | E |
| 30503206 | 90013* | E |
| 30503299 | 90013* | E |
| 30503301 | 90013* | E |
| 30504001 | 90013* | E |
| 30504002 | 90013* | E |
| 30504003 | 90013* | E |
| 30504010 | 90013* | E |
| 30504020 | 90013* | E |
| 30504021 | 90013* | E |
| 30504022 | 90013* | E |
| 30504023 | 90013* | E |
| 30504024 | 90013* | E |
| 30504025 | 90013* | E |
| 30504030 | 90013* | E |
| 30504031 | 90013* | E |
| 30504032 | 90013* | E |
| 30504033 | 90013* | E |
| 30504034 | 90013* | E |
| 30504036 | 90013* | E |
| 30504099 | 90013* | E |
| 30510001 | 90013* | E |
| 30510002 | 90013* | E |
| 30510003 | 90013* | E |
| 30510004 | 90013* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30510005 | 90013* | E |
| 30510006 | 90013* | E |
| 30510007 | 90013* | E |
| 30510101 | 90013* | E |
| 30510102 | 90013* | E |
| 30510103 | 21204 | C |
| 30510104 | 21203 | D |
| 30510105 | 90013* | E |
| 30510106 | 90013* | E |
| 30510107 | 90013* | E |
| 30510108 | 90013* | E |
| 30510196 | 90013* | E |
| 30510197 | 90013* | E |
| 30510198 | 90013* | E |
| 30510199 | 90013* | E |
| 30510201 | 90013* | E |
| 30510202 | 90013* | E |
| 30510203 | 21204 | C |
| 30510204 | 21203 | D |
| 30510205 | 90013* | E |
| 30510206 | 90013* | E |
| 30510207 | 90013* | E |
| 30510208 | 90013* | E |
| 30510296 | 90013* | E |
| 30510297 | 90013* | E |
| 30510298 | 90013* | E |
| 30510299 | 90013* | E |
| 30510301 | 90013* | E |
| 30510302 | 90013* | E |
| 30510303 | 21204 | C |
| 30510304 | 21203 | D |
| 30510305 | 90013* | E |
| 30510306 | 90013* | E |
| 30510307 | 90013* | E |
| 30510308 | 90013* | E |
| 30510396 | 90013* | E |
| 30510397 | 90013* | E |
| 30510398 | 90013* | E |
| 30510399 | 90013* | E |
| 30510401 | 90013* | E |
| 30510402 | 90013* | E |
| 30510403 | 21204 | C |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30510404 | 21203 | D |
| 30510405 | 90013* | E |
| 30510406 | 90013* | E |
| 30510407 | 90013* | E |
| 30510408 | 90013* | E |
| 30510496 | 90013* | E |
| 30510497 | 90013* | E |
| 30510498 | 90013* | E |
| 30510499 | 90013* | E |
| 30510501 | 90013* | E |
| 30510502 | 90013* | E |
| 30510503 | 21204 | C |
| 30510504 | 21203 | D |
| 30510505 | 90013* | E |
| 30510506 | 90013* | E |
| 30510507 | 90013* | E |
| 30510508 | 90013* | E |
| 30510596 | 90013* | E |
| 30510597 | 90013* | E |
| 30510598 | 90013* | E |
| 30510599 | 90013* | E |
| 30515001 | 90013* | E |
| 30515002 | 90013* | E |
| 30515003 | 90013* | E |
| 30515004 | 90013* | E |
| 30515005 | 90013* | E |
| 30588801 | 90013* | E |
| 30588802 | 90013* | E |
| 30588803 | 90013* | E |
| 30588804 | 90013* | E |
| 30588805 | 90013* | E |
| 30590001 | 13501* | D |
| 30590002 | 13501* | D |
| 30590003 | 26101* | E |
| 30590011 | 13501* | D |
| 30590012 | 13501* | D |
| 30590013 | 26101* | E |
| 30590023 | 26101* | E |
| 30599999 | 25401 | D |
| 30600101 | 13501* | D |
| 30600102 | 26101* | E |
| 30600103 | 13501* | D |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30600104 | 26101* | E |
| 30600105 | 26101 | E |
| 30600106 | 26101* | E |
| 30600107 | 26101* | E |
| 30600108 | 26101* | E |
| 30600199 | 26101* | E |
| 30600201 | 26202 | D |
| 30600201 | 26203 | D |
| 30600201 | 26204 | D |
| 30600201 | 26205 | D |
| 30600201 | 26209 | C |
| 30600202 | 26202* | E |
| 30600301 | 26202* | E |
| 30600401 | 00000* | E |
| 30600402 | 00000* | E |
| 30600503 | 00000* | E |
| 30600504 | 00000* | E |
| 30600505 | 00000* | E |
| 30600506 | 00000* | E |
| 30600602 | 00000* | E |
| 30600603 | 00000* | E |
| 30600701 | 00000* | E |
| 30600702 | 00000* | E |
| 30600801 | 00000* | E |
| 30600802 | 00000* | E |
| 30600803 | 00000* | E |
| 30600804 | 00000* | E |
| 30600805 | 00000* | E |
| 30600806 | 00000* | E |
| 30600807 | 00000* | E |
| 30600811 | 00000* | E |
| 30600812 | 00000* | E |
| 30600813 | 00000* | E |
| 30600814 | 00000* | E |
| 30600815 | 00000* | E |
| 30600816 | 00000* | E |
| 30600817 | 00000* | E |
| 30600818 | 00000* | E |
| 30600819 | 00000* | E |
| 30600820 | 00000* | E |
| 30600821 | 00000* | E |
| 30600822 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30600901 | 26101* | E |
| 30600902 | 26101* | E |
| 30600903 | 26101* | E |
| 30600904 | 26101* | E |
| 30600999 | 26101* | E |
| 30601001 | 90014* | E |
| 30601101 | 90014* | E |
| 30601201 | 90014* | E |
| 30601201 | 26208 | D |
| 30601401 | 90014* | E |
| 30601401 | 26206 | E |
| 30601401 | 26207 | D |
| 30601599 | 90014* | E |
| 30609902 | 13501* | D |
| 30609903 | 26101* | E |
| 30609904 | 26101* | E |
| 30609911 | 13501* | D |
| 30609912 | 13501* | D |
| 30609913 | 26101* | E |
| 30609914 | 26101* | E |
| 30610001 | 90014* | E |
| 30688801 | 90014* | E |
| 30688802 | 90014* | E |
| 30688803 | 90014* | E |
| 30688804 | 90014* | E |
| 30688805 | 90014* | E |
| 30699998 | 90014* | E |
| 30699999 | 90014* | E |
| 30700101 | 00000* | E |
| 30700102 | 00000* | E |
| 30700103 | 00000* | E |
| 30700104 | 90015* | E |
| 30700105 | 90015* | E |
| 30700106 | 23202 | C |
| 30700106 | 27602 | C |
| 30700107 | 00000* | E |
| 30700108 | 90015* | E |
| 30700109 | 90014* | E |
| 30700110 | 23103 | C |
| 30700199 | 90015* | E |
| 30700203 | 00000* | E |
| 30700211 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30700212 | 00000* | E |
| 30700213 | 00000* | E |
| 30700214 | 00000* | E |
| 30700215 | 00000* | E |
| 30700221 | 90015* | E |
| 30700222 | 90015* | E |
| 30700223 | 90015* | E |
| 30700231 | 90015* | E |
| 30700232 | 90015* | E |
| 30700233 | 90015* | E |
| 30700234 | 24101 | C |
| 30700299 | 90015* | E |
| 30700301 | 90015* | E |
| 30700302 | 90015* | E |
| 30700303 | 90015* | E |
| 30700304 | 90015* | E |
| 30700401 | 00000* | E |
| 30700402 | 90015* | E |
| 30700499 | 90015* | E |
| 30700501 | 90015* | E |
| 30700597 | 90015* | E |
| 30700598 | 90015* | E |
| 30700599 | 90015* | E |
| 30700701 | 22301 | D |
| 30700702 | 22201 | D |
| 30700703 | 22101 | D |
| 30700703 | 22102 | D |
| 30700704 | 90015* | E |
| 30700705 | 90015* | E |
| 30700706 | 90015* | E |
| 30700707 | 90015* | E |
| 30700708 | 90015* | E |
| 30700709 | 90015* | E |
| 30700711 | 90015* | E |
| 30700712 | 90015* | E |
| 30700713 | 90015* | E |
| 30700714 | 90015* | E |
| 30700715 | 90015* | E |
| 30700798 | 90015* | E |
| 30700799 | 90015* | E |
| 30700801 | 90015* | E |
| 30700802 | 90015* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30700803 | 90015* | E |
| 30700804 | 22202 | D |
| 30700805 | 90015* | E |
| 30700806 | 90015* | E |
| 30700807 | 90015* | E |
| 30700808 | 90015* | E |
| 30700896 | 90015* | E |
| 30700897 | 90015* | E |
| 30700898 | 90015* | E |
| 30700899 | 90015* | E |
| 30701199 | 90015* | E |
| 30701301 | 90015* | E |
| 30701399 | 90015* | E |
| 30702098 | 90015* | E |
| 30702099 | 90015* | E |
| 30703001 | 90015* | E |
| 30703002 | 90015* | E |
| 30703096 | 90015* | E |
| 30703097 | 90015* | E |
| 30703098 | 90015* | E |
| 30703099 | 90015* | E |
| 30788801 | 90015* | E |
| 30788802 | 90015* | E |
| 30788803 | 90015* | E |
| 30788804 | 90015* | E |
| 30788805 | 90015* | E |
| 30788898 | 90015* | E |
| 30790001 | 13501* | D |
| 30790002 | 13501* | D |
| 30790003 | 26101* | E |
| 30790011 | 13501* | D |
| 30790012 | 13501* | D |
| 30790013 | 26101* | E |
| 30790023 | 26101* | E |
| 30799998 | 90015* | E |
| 30799999 | 90015* | E |
| 30800101 | 90016* | E |
| 30800102 | 90016* | E |
| 30800103 | 90016* | E |
| 30800104 | 90016* | E |
| 30800105 | 90016* | E |
| 30800106 | 90016* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30800107 | 90016* | E |
| 30800108 | 90016* | E |
| 30800109 | 90016* | E |
| 30800110 | 90016* | E |
| 30800120 | 90016* | E |
| 30800121 | 90016* | E |
| 30800122 | 90016* | E |
| 30800123 | 90016* | E |
| 30800197 | 90016* | E |
| 30800198 | 90016* | E |
| 30800199 | 90016* | E |
| 30800501 | 90016* | E |
| 30800699 | 90016* | E |
| 30800701 | 90016* | E |
| 30800702 | 90016* | E |
| 30800703 | 90016* | E |
| 30800704 | 90016* | E |
| 30800705 | 90016* | E |
| 30800720 | 90016* | E |
| 30800721 | 90016* | E |
| 30800722 | 90016* | E |
| 30800723 | 90016* | E |
| 30800724 | 90016* | E |
| 30800799 | 90016* | E |
| 30890001 | 13501* | D |
| 30890002 | 13501* | D |
| 30890003 | 26101* | E |
| 30890011 | 13501* | D |
| 30890012 | 13501* | D |
| 30890013 | 26101* | E |
| 30890023 | 26101* | E |
| 30899999 | 90016* | E |
| 30900198 | 90016* | E |
| 30900199 | 90016* | E |
| 30900201 | 90016* | E |
| 30900202 | 90016* | E |
| 30900202 | 25702 | E |
| 30900203 | 90016* | E |
| 30900204 | 90016* | E |
| 30900205 | 90016* | E |
| 30900206 | 90016* | E |
| 30900207 | 90016* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30900208 | 90016* | E |
| 30900298 | 90016* | E |
| 30900299 | 90016* | E |
| 30900301 | 90016* | E |
| 30900302 | 90016* | E |
| 30900303 | 90016* | E |
| 30900304 | 90016* | E |
| 30901001 | 90001* | E |
| 30901097 | 90016* | E |
| 30901098 | 90016* | E |
| 30901099 | 90016* | E |
| 30901101 | 90016* | E |
| 30901102 | 90016* | E |
| 30901103 | 90016* | E |
| 30901104 | 90016* | E |
| 30901199 | 90016* | E |
| 30901501 | 90016* | E |
| 30901601 | 25402* | E |
| 30901604 | 90016* | E |
| 30901605 | 90016* | E |
| 30901606 | 90016* | E |
| 30901607 | 90016* | E |
| 30902099 | 90016* | E |
| 30902501 | 90016* | E |
| 30903004 | 90016* | E |
| 30903005 | 90016* | E |
| 30903006 | 90016* | E |
| 30903099 | 90016* | E |
| 30904001 | 90016* | E |
| 30904010 | 90016* | E |
| 30904020 | 90016* | E |
| 30906001 | 90016* | E |
| 30906099 | 90016* | E |
| 30988801 | 90016* | E |
| 30988802 | 90016* | E |
| 30988803 | 90016* | E |
| 30988804 | 90016* | E |
| 30988805 | 90016* | E |
| 30990001 | 13501* | D |
| 30990002 | 13501* | D |
| 30990003 | 26101* | E |
| 30990011 | 13501* | D |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 30990012 | 13501* | D |
| 30990013 | 26101* | E |
| 30990023 | 26101* | E |
| 30999997 | 90016* | E |
| 30999998 | 90016* | E |
| 30999999 | 90016* | E |
| 31000101 | 90016* | E |
| 31000102 | 90016* | E |
| 31000103 | 90016* | E |
| 31000104 | 90016* | E |
| 31000105 | 90016* | E |
| 31000199 | 90016* | E |
| 31000201 | 00000* | E |
| 31000202 | 90016* | E |
| 31000203 | 90016* | E |
| 31000204 | 90016* | E |
| 31000205 | 90016* | E |
| 31000206 | 90016* | E |
| 31000207 | 90016* | E |
| 31000299 | 90016* | E |
| 31000401 | 13501* | D |
| 31000402 | 13501* | D |
| 31000403 | 13501* | D |
| 31000404 | 26101* | E |
| 31000405 | 26101* | E |
| 31000411 | 13501* | D |
| 31000412 | 13501* | D |
| 31000413 | 13501* | D |
| 31000414 | 26101* | E |
| 31000415 | 26101* | E |
| 31088801 | 90016* | E |
| 31088802 | 90016* | E |
| 31088803 | 90016* | E |
| 31088805 | 90016* | E |
| 31088904 | 90016* | E |
| 31100199 | 41350* | E |
| 31100299 | 41350* | E |
| 31299999 | 90016* | E |
| 31307001 | 90016* | E |
| 31307002 | 90016* | E |
| 31390001 | 13501* | D |
| 31390002 | 13501* | D |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 31390003 | 26101* | E |
| 31399999 | 90016* | E |
| 31400901 | 90016* | E |
| 31401001 | 90016* | E |
| 31401002 | 90016* | E |
| 31401101 | 90016* | E |
| 31401101 | 17109 | E |
| 31401102 | 90016* | E |
| 31401102 | 17109 | E |
| 31499999 | 90016* | E |
| 31501001 | 90016* | E |
| 31501002 | 90016* | E |
| 31501003 | 90016* | E |
| 31502001 | 90016* | E |
| 32099997 | 90016* | E |
| 32099998 | 90016* | E |
| 32099999 | 90016* | E |
| 33000101 | 90016* | E |
| 33000102 | 90016* | E |
| 33000103 | 90016* | E |
| 33000104 | 90016* | E |
| 33000105 | 90016* | E |
| 33000198 | 90016* | E |
| 33000199 | 90016* | E |
| 33000201 | 90016* | E |
| 33000202 | 90016* | E |
| 33000211 | 90016* | E |
| 33000212 | 90016* | E |
| 33000213 | 90016* | E |
| 33000214 | 90016* | E |
| 33000298 | 90016* | E |
| 33000299 | 90016* | E |
| 33000399 | 90016* | E |
| 33000499 | 90016* | E |
| 33000599 | 90016* | E |
| 33088801 | 90016* | E |
| 33088802 | 90016* | E |
| 33088803 | 90016* | E |
| 33088804 | 90016* | E |
| 33088805 | 90016* | E |
| 36000101 | 90016* | E |
| 39000199 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 39000201 | 00000* | E |
| 39000203 | 00000* | E |
| 39000289 | 00000* | E |
| 39000299 | 00000* | E |
| 39000389 | 00000* | E |
| 39000399 | 00000* | E |
| 39000402 | 00000* | E |
| 39000403 | 00000* | E |
| 39000489 | 00000* | E |
| 39000499 | 00000* | E |
| 39000501 | 00000* | E |
| 39000502 | 00000* | E |
| 39000503 | 00000* | E |
| 39000589 | 00000* | E |
| 39000598 | 00000* | E |
| 39000599 | 00000* | E |
| 39000602 | 00000* | E |
| 39000603 | 00000* | E |
| 39000605 | 00000* | E |
| 39000689 | 00000* | E |
| 39000699 | 00000* | E |
| 39000701 | 00000* | E |
| 39000702 | 00000* | E |
| 39000788 | 00000* | E |
| 39000789 | 00000* | E |
| 39000797 | 00000* | E |
| 39000798 | 00000* | E |
| 39000799 | 00000* | E |
| 39000801 | 00000* | E |
| 39000889 | 00000* | E |
| 39000899 | 00000* | E |
| 39000989 | 00000* | E |
| 39000999 | 00000* | E |
| 39001089 | 00000* | E |
| 39001099 | 00000* | E |
| 39001299 | 00000* | E |
| 39001389 | 00000* | E |
| 39001399 | 00000* | E |
| 39990001 | 13501* | D |
| 39990002 | 13501* | D |
| 39990003 | 26101* | E |
| 39990004 | 26101* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 39990011 | 13501* | D |
| 39990012 | 13501* | D |
| 39990013 | 26101* | E |
| 39990014 | 26101* | E |
| 39990022 | 13501* | D |
| 39990023 | 26101* | E |
| 39990024 | 26101* | E |
| 39999993 | 90016* | E |
| 39999994 | 90016* | E |
| 39999995 | 90016* | E |
| 39999996 | 90016* | E |
| 39999998 | 90016* | E |
| 39999999 | 90016* | E |
| 40100101 | 00000* | E |
| 40100102 | 00000* | E |
| 40100103 | 00000* | E |
| 40100104 | 00000* | E |
| 40100105 | 00000* | E |
| 40100106 | 00000* | E |
| 40100198 | 00000* | E |
| 40100199 | 00000* | E |
| 40100201 | 00000* | E |
| 40100202 | 00000* | E |
| 40100203 | 00000* | E |
| 40100204 | 00000* | E |
| 40100205 | 00000* | E |
| 40100206 | 00000* | E |
| 40100207 | 00000* | E |
| 40100208 | 00000* | E |
| 40100215 | 00000* | E |
| 40100216 | 00000* | E |
| 40100217 | 00000* | E |
| 40100221 | 00000* | E |
| 40100222 | 00000* | E |
| 40100223 | 00000* | E |
| 40100224 | 00000* | E |
| 40100225 | 00000* | E |
| 40100235 | 00000* | E |
| 40100236 | 00000* | E |
| 40100251 | 00000* | E |
| 40100252 | 00000* | E |
| 40100253 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40100254 | 00000* | E |
| 40100255 | 00000* | E |
| 40100256 | 00000* | E |
| 40100257 | 00000* | E |
| 40100258 | 00000* | E |
| 40100259 | 00000* | E |
| 40100295 | 00000* | E |
| 40100296 | 00000* | E |
| 40100297 | 00000* | E |
| 40100298 | 00000* | E |
| 40100299 | 00000* | E |
| 40100301 | 00000* | E |
| 40100302 | 00000* | E |
| 40100303 | 00000* | E |
| 40100304 | 00000* | E |
| 40100305 | 00000* | E |
| 40100306 | 00000* | E |
| 40100335 | 00000* | E |
| 40100336 | 00000* | E |
| 40100398 | 00000* | E |
| 40100399 | 00000* | E |
| 40100401 | 00000* | E |
| 40100499 | 00000* | E |
| 40188801 | 00000* | E |
| 40188802 | 00000* | E |
| 40188803 | 00000* | E |
| 40188804 | 00000* | E |
| 40188805 | 00000* | E |
| 40188898 | 00000* | E |
| 40200101 | 25403 | E |
| 40200110 | 25403* | E |
| 40200201 | 25403* | E |
| 40200210 | 25403* | E |
| 40200301 | 25403* | E |
| 40200310 | 25403* | E |
| 40200401 | 25403* | E |
| 40200410 | 25403* | E |
| 40200501 | 00000* | E |
| 40200510 | 25403* | E |
| 40200601 | 25403* | E |
| 40200610 | 25403* | E |
| 40200701 | 25403* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40200706 | 00000* | E |
| 40200707 | 00000* | E |
| 40200710 | 25403* | E |
| 40200801 | 25403* | E |
| 40200802 | 25403* | E |
| 40200803 | 25403* | E |
| 40200810 | 25403* | E |
| 40200898 | 25403* | E |
| 40200899 | 25403* | E |
| 40200901 | 00000* | E |
| 40200902 | 00000* | E |
| 40200903 | 00000* | E |
| 40200904 | 00000* | E |
| 40200905 | 00000* | E |
| 40200906 | 00000* | E |
| 40200907 | 00000* | E |
| 40200908 | 00000* | E |
| 40200909 | 00000* | E |
| 40200910 | 00000* | E |
| 40200911 | 00000* | E |
| 40200912 | 00000* | E |
| 40200913 | 00000* | E |
| 40200914 | 00000* | E |
| 40200915 | 00000* | E |
| 40200916 | 00000* | E |
| 40200917 | 00000* | E |
| 40200918 | 00000* | E |
| 40200919 | 00000* | E |
| 40200920 | 00000* | E |
| 40200921 | 00000* | E |
| 40200922 | 00000* | E |
| 40200923 | 00000* | E |
| 40200924 | 00000* | E |
| 40200925 | 00000* | E |
| 40200926 | 00000* | E |
| 40200927 | 00000* | E |
| 40200928 | 00000* | E |
| 40200998 | 00000* | E |
| 40201001 | 26101* | E |
| 40201002 | 13501* | D |
| 40201003 | 13501* | D |
| 40201004 | 26101* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40201101 | 25403* | E |
| 40201103 | 25403* | E |
| 40201104 | 25403* | E |
| 40201105 | 25403* | E |
| 40201111 | 25403* | E |
| 40201112 | 25403* | E |
| 40201113 | 25403* | E |
| 40201114 | 25403* | E |
| 40201115 | 25403* | E |
| 40201116 | 25403* | E |
| 40201199 | 25403* | E |
| 40201201 | 25403* | E |
| 40201210 | 25403* | E |
| 40201301 | 25403* | E |
| 40201303 | 25403* | E |
| 40201304 | 25403* | E |
| 40201305 | 25403* | E |
| 40201399 | 25403* | E |
| 40201401 | 25403* | E |
| 40201402 | 25403* | E |
| 40201403 | 25403* | E |
| 40201404 | 25403* | E |
| 40201405 | 25403* | E |
| 40201406 | 25403* | E |
| 40201431 | 25403* | E |
| 40201432 | 25403* | E |
| 40201433 | 25403* | E |
| 40201434 | 25403* | E |
| 40201435 | 25403* | E |
| 40201436 | 25403* | E |
| 40201437 | 25403* | E |
| 40201438 | 25403* | E |
| 40201499 | 25403* | E |
| 40201501 | 25403* | E |
| 40201502 | 25403* | E |
| 40201503 | 25403* | E |
| 40201504 | 25403* | E |
| 40201505 | 25403* | E |
| 40201531 | 25403* | E |
| 40201599 | 25403* | E |
| 40201601 | 25403* | E |
| 40201602 | 25403* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40201603 | 25403* | E |
| 40201604 | 25403* | E |
| 40201605 | 25403* | E |
| 40201606 | 25403* | E |
| 40201619 | 25403* | E |
| 40201620 | 25403* | E |
| 40201621 | 25403* | E |
| 40201622 | 25403* | E |
| 40201623 | 25403* | E |
| 40201624 | 25403* | E |
| 40201625 | 25403* | E |
| 40201626 | 25403* | E |
| 40201627 | 25403* | E |
| 40201628 | 25403* | E |
| 40201629 | 25403* | E |
| 40201630 | 25403* | E |
| 40201631 | 25403* | E |
| 40201632 | 25403* | E |
| 40201699 | 25403* | E |
| 40201702 | 25403* | E |
| 40201703 | 25403* | E |
| 40201704 | 25403* | E |
| 40201705 | 25403* | E |
| 40201721 | 25403* | E |
| 40201722 | 25403* | E |
| 40201723 | 25403* | E |
| 40201724 | 25403* | E |
| 40201725 | 25403* | E |
| 40201726 | 25403* | E |
| 40201727 | 25403* | E |
| 40201728 | 25403* | E |
| 40201731 | 25403* | E |
| 40201732 | 25403* | E |
| 40201733 | 25403* | E |
| 40201734 | 25403* | E |
| 40201735 | 25403* | E |
| 40201736 | 25403* | E |
| 40201799 | 25403* | E |
| 40201801 | 25403* | E |
| 40201803 | 25403* | E |
| 40201804 | 25403* | E |
| 40201805 | 25403* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40201806 | 25403* | E |
| 40201899 | 25403* | E |
| 40201901 | 25403* | E |
| 40201903 | 25403* | E |
| 40201904 | 25403* | E |
| 40201999 | 25403* | E |
| 40202001 | 25403* | E |
| 40202002 | 25403* | E |
| 40202003 | 25403* | E |
| 40202004 | 25403* | E |
| 40202005 | 25403* | E |
| 40202031 | 25403* | E |
| 40202032 | 25403* | E |
| 40202033 | 25403* | E |
| 40202034 | 25403* | E |
| 40202099 | 25403* | E |
| 40202101 | 25403* | E |
| 40202103 | 25403* | E |
| 40202104 | 25403* | E |
| 40202105 | 25403* | E |
| 40202106 | 25403* | E |
| 40202107 | 25403* | E |
| 40202108 | 25403* | E |
| 40202109 | 25403* | E |
| 40202131 | 25403* | E |
| 40202132 | 25403* | E |
| 40202133 | 25403* | E |
| 40202199 | 25403* | E |
| 40202201 | 25403* | E |
| 40202202 | 25403* | E |
| 40202203 | 25403* | E |
| 40202204 | 25403* | E |
| 40202205 | 25403* | E |
| 40202299 | 25403* | E |
| 40202301 | 25403* | E |
| 40202302 | 25403* | E |
| 40202303 | 25403* | E |
| 40202304 | 25403* | E |
| 40202305 | 25403* | E |
| 40202306 | 25403* | E |
| 40202399 | 25403* | E |
| 40202401 | 25403* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40202402 | 25403* | E |
| 40202403 | 25403* | E |
| 40202404 | 25403* | E |
| 40202405 | 25403* | E |
| 40202406 | 25403* | E |
| 40202499 | 25403* | E |
| 40202501 | 25403* | E |
| 40202502 | 25403* | E |
| 40202503 | 25403* | E |
| 40202504 | 25403* | E |
| 40202505 | 25403* | E |
| 40202531 | 25403* | E |
| 40202532 | 25403* | E |
| 40202533 | 25403* | E |
| 40202534 | 25403* | E |
| 40202535 | 25403* | E |
| 40202536 | 25403* | E |
| 40202537 | 25403* | E |
| 40202599 | 25403* | E |
| 40202601 | 25403* | E |
| 40202602 | 25403* | E |
| 40202603 | 25403* | E |
| 40202604 | 25403* | E |
| 40202605 | 25403* | E |
| 40202606 | 25403* | E |
| 40202607 | 25403* | E |
| 40202699 | 25403* | E |
| 40288801 | 25403* | E |
| 40288802 | 25403* | E |
| 40288803 | 25403* | E |
| 40288804 | 25403* | E |
| 40288805 | 25403* | E |
| 40290023 | 25403* | E |
| 40299995 | 25403* | E |
| 40299996 | 25403* | E |
| 40299997 | 25403* | E |
| 40299998 | 25403* | E |
| 40299999 | 25403* | E |
| 40300101 | 00000* | E |
| 40300102 | 00000* | E |
| 40300103 | 00000* | E |
| 40300104 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40300105 | 00000* | E |
| 40300106 | 00000* | E |
| 40300107 | 00000* | E |
| 40300108 | 00000* | E |
| 40300109 | 00000* | E |
| 40300110 | 00000* | E |
| 40300111 | 00000* | E |
| 40300112 | 00000* | E |
| 40300113 | 00000* | E |
| 40300114 | 00000* | E |
| 40300115 | 00000* | E |
| 40300116 | 00000* | E |
| 40300150 | 00000* | E |
| 40300151 | 00000* | E |
| 40300152 | 00000* | E |
| 40300153 | 00000* | E |
| 40300154 | 00000* | E |
| 40300155 | 00000* | E |
| 40300156 | 00000* | E |
| 40300157 | 00000* | E |
| 40300158 | 00000* | E |
| 40300159 | 00000* | E |
| 40300160 | 00000* | E |
| 40300161 | 00000* | E |
| 40300198 | 00000* | E |
| 40300199 | 00000* | E |
| 40300201 | 00000* | E |
| 40300202 | 00000* | E |
| 40300203 | 00000* | E |
| 40300204 | 00000* | E |
| 40300205 | 00000* | E |
| 40300207 | 00000* | E |
| 40300208 | 00000* | E |
| 40300209 | 00000* | E |
| 40300210 | 00000* | E |
| 40300211 | 00000* | E |
| 40300212 | 00000* | E |
| 40300213 | 00000* | E |
| 40300214 | 00000* | E |
| 40300215 | 00000* | E |
| 40300216 | 00000* | E |
| 40300299 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40300302 | 00000* | E |
| 40301001 | 00000* | E |
| 40301002 | 00000* | E |
| 40301003 | 00000* | E |
| 40301004 | 00000* | E |
| 40301005 | 00000* | E |
| 40301006 | 00000* | E |
| 40301007 | 00000* | E |
| 40301008 | 00000* | E |
| 40301009 | 00000* | E |
| 40301010 | 00000* | E |
| 40301011 | 00000* | E |
| 40301012 | 00000* | E |
| 40301013 | 00000* | E |
| 40301014 | 00000* | E |
| 40301015 | 00000* | E |
| 40301016 | 00000* | E |
| 40301017 | 00000* | E |
| 40301018 | 00000* | E |
| 40301019 | 00000* | E |
| 40301020 | 00000* | E |
| 40301021 | 00000* | E |
| 40301097 | 00000* | E |
| 40301098 | 00000* | E |
| 40301099 | 00000* | E |
| 40301101 | 00000* | E |
| 40301102 | 00000* | E |
| 40301103 | 00000* | E |
| 40301104 | 00000* | E |
| 40301105 | 00000* | E |
| 40301106 | 00000* | E |
| 40301107 | 00000* | E |
| 40301108 | 00000* | E |
| 40301109 | 00000* | E |
| 40301110 | 00000* | E |
| 40301111 | 00000* | E |
| 40301112 | 00000* | E |
| 40301113 | 00000* | E |
| 40301114 | 00000* | E |
| 40301115 | 00000* | E |
| 40301116 | 00000* | E |
| 40301117 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40301118 | 00000* | E |
| 40301119 | 00000* | E |
| 40301120 | 00000* | E |
| 40301130 | 00000* | E |
| 40301131 | 00000* | E |
| 40301132 | 00000* | E |
| 40301133 | 00000* | E |
| 40301134 | 00000* | E |
| 40301135 | 00000* | E |
| 40301140 | 00000* | E |
| 40301141 | 00000* | E |
| 40301142 | 00000* | E |
| 40301143 | 00000* | E |
| 40301144 | 00000* | E |
| 40301145 | 00000* | E |
| 40301150 | 00000* | E |
| 40301151 | 00000* | E |
| 40301152 | 00000* | E |
| 40301153 | 00000* | E |
| 40301154 | 00000* | E |
| 40301155 | 00000* | E |
| 40301197 | 00000* | E |
| 40301198 | 00000* | E |
| 40301199 | 00000* | E |
| 40301201 | 00000* | E |
| 40301202 | 00000* | E |
| 40301203 | 00000* | E |
| 40301204 | 00000* | E |
| 40301205 | 00000* | E |
| 40301206 | 00000* | E |
| 40301207 | 00000* | E |
| 40301299 | 00000* | E |
| 40388801 | 00000* | E |
| 40388802 | 00000* | E |
| 40388803 | 00000* | E |
| 40388804 | 00000* | E |
| 40388805 | 00000* | E |
| 40399999 | 00000* | E |
| 40400101 | 00000* | E |
| 40400102 | 00000* | E |
| 40400103 | 00000* | E |
| 40400104 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40400105 | 00000* | E |
| 40400106 | 00000* | E |
| 40400107 | 00000* | E |
| 40400108 | 00000* | E |
| 40400109 | 00000* | E |
| 40400110 | 00000* | E |
| 40400111 | 00000* | E |
| 40400112 | 00000* | E |
| 40400113 | 00000* | E |
| 40400114 | 00000* | E |
| 40400115 | 00000* | E |
| 40400116 | 00000* | E |
| 40400117 | 00000* | E |
| 40400118 | 00000* | E |
| 40400119 | 00000* | E |
| 40400120 | 00000* | E |
| 40400151 | 00000* | E |
| 40400152 | 00000* | E |
| 40400153 | 00000* | E |
| 40400154 | 00000* | E |
| 40400199 | 00000* | E |
| 40400201 | 00000* | E |
| 40400202 | 00000* | E |
| 40400203 | 00000* | E |
| 40400204 | 00000* | E |
| 40400205 | 00000* | E |
| 40400206 | 00000* | E |
| 40400207 | 00000* | E |
| 40400208 | 00000* | E |
| 40400209 | 00000* | E |
| 40400210 | 00000* | E |
| 40400211 | 00000* | E |
| 40400212 | 00000* | E |
| 40400213 | 00000* | E |
| 40400250 | 00000* | E |
| 40400251 | 00000* | E |
| 40400254 | 00000* | E |
| 40400301 | 00000* | E |
| 40400302 | 00000* | E |
| 40400303 | 00000* | E |
| 40400304 | 00000* | E |
| 40400305 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40400401 | 00000* | E |
| 40400402 | 00000* | E |
| 40400403 | 00000* | E |
| 40400404 | 00000* | E |
| 40400405 | 00000* | E |
| 40400406 | 00000* | E |
| 40400407 | 00000* | E |
| 40400408 | 00000* | E |
| 40400409 | 00000* | E |
| 40400410 | 00000* | E |
| 40400411 | 00000* | E |
| 40400412 | 00000* | E |
| 40400413 | 00000* | E |
| 40400414 | 00000* | E |
| 40400497 | 00000* | E |
| 40400498 | 00000* | E |
| 40500101 | 26101* | E |
| 40500199 | 26101* | E |
| 40500201 | 00000* | E |
| 40500202 | 00000* | E |
| 40500203 | 00000* | E |
| 40500211 | 00000* | E |
| 40500212 | 00000* | E |
| 40500301 | 00000* | E |
| 40500302 | 00000* | E |
| 40500303 | 00000* | E |
| 40500304 | 00000* | E |
| 40500305 | 00000* | E |
| 40500306 | 00000* | E |
| 40500307 | 00000* | E |
| 40500311 | 00000* | E |
| 40500312 | 00000* | E |
| 40500401 | 00000* | E |
| 40500411 | 00000* | E |
| 40500412 | 00000* | E |
| 40500413 | 00000* | E |
| 40500501 | 00000* | E |
| 40500502 | 00000* | E |
| 40500503 | 00000* | E |
| 40500506 | 00000* | E |
| 40500507 | 00000* | E |
| 40500510 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40500511 | 00000* | E |
| 40500512 | 00000* | E |
| 40500513 | 00000* | E |
| 40500598 | 00000* | E |
| 40500599 | 00000* | E |
| 40500601 | 00000* | E |
| 40500701 | 00000* | E |
| 40588801 | 00000* | E |
| 40588802 | 00000* | E |
| 40588803 | 00000* | E |
| 40588804 | 00000* | E |
| 40588805 | 00000* | E |
| 40600101 | 00000* | E |
| 40600126 | 00000* | E |
| 40600130 | 00000* | E |
| 40600131 | 00000* | E |
| 40600132 | 00000* | E |
| 40600133 | 00000* | E |
| 40600134 | 00000* | E |
| 40600135 | 00000* | E |
| 40600136 | 00000* | E |
| 40600137 | 00000* | E |
| 40600138 | 00000* | E |
| 40600139 | 00000* | E |
| 40600140 | 00000* | E |
| 40600141 | 00000* | E |
| 40600142 | 00000* | E |
| 40600143 | 00000* | E |
| 40600144 | 00000* | E |
| 40600145 | 00000* | E |
| 40600146 | 00000* | E |
| 40600147 | 00000* | E |
| 40600148 | 00000* | E |
| 40600149 | 00000* | E |
| 40600160 | 00000* | E |
| 40600161 | 00000* | E |
| 40600162 | 00000* | E |
| 40600163 | 00000* | E |
| 40600197 | 00000* | E |
| 40600198 | 00000* | E |
| 40600199 | 00000* | E |
| 40600231 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40600232 | 00000* | E |
| 40600233 | 00000* | E |
| 40600234 | 00000* | E |
| 40600235 | 00000* | E |
| 40600236 | 00000* | E |
| 40600237 | 00000* | E |
| 40600238 | 00000* | E |
| 40600239 | 00000* | E |
| 40600240 | 00000* | E |
| 40600241 | 00000* | E |
| 40600242 | 00000* | E |
| 40600243 | 00000* | E |
| 40600244 | 00000* | E |
| 40600245 | 00000* | E |
| 40600246 | 00000* | E |
| 40600248 | 00000* | E |
| 40600249 | 00000* | E |
| 40600250 | 00000* | E |
| 40600251 | 00000* | E |
| 40600253 | 00000* | E |
| 40600254 | 00000* | E |
| 40600255 | 00000* | E |
| 40600256 | 00000* | E |
| 40600257 | 00000* | E |
| 40600259 | 00000* | E |
| 40600298 | 00000* | E |
| 40600299 | 00000* | E |
| 40600301 | 00000* | E |
| 40600302 | 00000* | E |
| 40600305 | 00000* | E |
| 40600306 | 00000* | E |
| 40600307 | 00000* | E |
| 40600399 | 00000* | E |
| 40600401 | 00000* | E |
| 40600402 | 00000* | E |
| 40600403 | 00000* | E |
| 40600499 | 00000* | E |
| 40688801 | 00000* | E |
| 40688802 | 00000* | E |
| 40688803 | 00000* | E |
| 40688804 | 00000* | E |
| 40688805 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40700401 | 00000* | E |
| 40700402 | 00000* | E |
| 40700497 | 00000* | E |
| 40700498 | 00000* | E |
| 40700801 | 00000* | E |
| 40700802 | 00000* | E |
| 40700803 | 00000* | E |
| 40700804 | 00000* | E |
| 40700805 | 00000* | E |
| 40700806 | 00000* | E |
| 40700807 | 00000* | E |
| 40700808 | 00000* | E |
| 40700809 | 00000* | E |
| 40700810 | 00000* | E |
| 40700811 | 00000* | E |
| 40700812 | 00000* | E |
| 40700813 | 00000* | E |
| 40700814 | 00000* | E |
| 40700815 | 00000* | E |
| 40700816 | 00000* | E |
| 40700817 | 00000* | E |
| 40700818 | 00000* | E |
| 40700897 | 00000* | E |
| 40700898 | 00000* | E |
| 40701601 | 00000* | E |
| 40701602 | 00000* | E |
| 40701603 | 00000* | E |
| 40701604 | 00000* | E |
| 40701605 | 00000* | E |
| 40701606 | 00000* | E |
| 40701609 | 00000* | E |
| 40701610 | 00000* | E |
| 40701611 | 00000* | E |
| 40701612 | 00000* | E |
| 40701613 | 00000* | E |
| 40701614 | 00000* | E |
| 40701697 | 00000* | E |
| 40701698 | 00000* | E |
| 40702001 | 00000* | E |
| 40702002 | 00000* | E |
| 40702003 | 00000* | E |
| 40702004 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40702097 | 00000* | E |
| 40702098 | 00000* | E |
| 40703201 | 00000* | E |
| 40703202 | 00000* | E |
| 40703203 | 00000* | E |
| 40703204 | 00000* | E |
| 40703205 | 00000* | E |
| 40703206 | 00000* | E |
| 40703297 | 00000* | E |
| 40703298 | 00000* | E |
| 40703601 | 00000* | E |
| 40703602 | 00000* | E |
| 40703603 | 00000* | E |
| 40703604 | 00000* | E |
| 40703605 | 00000* | E |
| 40703606 | 00000* | E |
| 40703607 | 00000* | E |
| 40703608 | 00000* | E |
| 40703609 | 00000* | E |
| 40703610 | 00000* | E |
| 40703611 | 00000* | E |
| 40703612 | 00000* | E |
| 40703613 | 00000* | E |
| 40703614 | 00000* | E |
| 40703615 | 00000* | E |
| 40703616 | 00000* | E |
| 40703617 | 00000* | E |
| 40703618 | 00000* | E |
| 40703619 | 00000* | E |
| 40703620 | 00000* | E |
| 40703621 | 00000* | E |
| 40703622 | 00000* | E |
| 40703623 | 00000* | E |
| 40703624 | 00000* | E |
| 40703697 | 00000* | E |
| 40703698 | 00000* | E |
| 40704001 | 00000* | E |
| 40704002 | 00000* | E |
| 40704003 | 00000* | E |
| 40704004 | 00000* | E |
| 40704005 | 00000* | E |
| 40704006 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40704007 | 00000* | E |
| 40704008 | 00000* | E |
| 40704009 | 00000* | E |
| 40704010 | 00000* | E |
| 40704097 | 00000* | E |
| 40704098 | 00000* | E |
| 40704401 | 00000* | E |
| 40704402 | 00000* | E |
| 40704403 | 00000* | E |
| 40704404 | 00000* | E |
| 40704405 | 00000* | E |
| 40704406 | 00000* | E |
| 40704407 | 00000* | E |
| 40704408 | 00000* | E |
| 40704409 | 00000* | E |
| 40704410 | 00000* | E |
| 40704411 | 00000* | E |
| 40704412 | 00000* | E |
| 40704413 | 00000* | E |
| 40704414 | 00000* | E |
| 40704415 | 00000* | E |
| 40704416 | 00000* | E |
| 40704417 | 00000* | E |
| 40704418 | 00000* | E |
| 40704419 | 00000* | E |
| 40704420 | 00000* | E |
| 40704421 | 00000* | E |
| 40704422 | 00000* | E |
| 40704423 | 00000* | E |
| 40704424 | 00000* | E |
| 40704497 | 00000* | E |
| 40704498 | 00000* | E |
| 40704801 | 00000* | E |
| 40704802 | 00000* | E |
| 40704897 | 00000* | E |
| 40704898 | 00000* | E |
| 40705201 | 00000* | E |
| 40705202 | 00000* | E |
| 40705203 | 00000* | E |
| 40705204 | 00000* | E |
| 40705205 | 00000* | E |
| 40705206 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40705207 | 00000* | E |
| 40705208 | 00000* | E |
| 40705209 | 00000* | E |
| 40705210 | 00000* | E |
| 40705211 | 00000* | E |
| 40705212 | 00000* | E |
| 40705213 | 00000* | E |
| 40705214 | 00000* | E |
| 40705215 | 00000* | E |
| 40705216 | 00000* | E |
| 40705217 | 00000* | E |
| 40705218 | 00000* | E |
| 40705297 | 00000* | E |
| 40705298 | 00000* | E |
| 40705601 | 00000* | E |
| 40705602 | 00000* | E |
| 40705603 | 00000* | E |
| 40705604 | 00000* | E |
| 40705605 | 00000* | E |
| 40705606 | 00000* | E |
| 40705607 | 00000* | E |
| 40705608 | 00000* | E |
| 40705609 | 00000* | E |
| 40705610 | 00000* | E |
| 40705697 | 00000* | E |
| 40705698 | 00000* | E |
| 40706001 | 00000* | E |
| 40706002 | 00000* | E |
| 40706003 | 00000* | E |
| 40706004 | 00000* | E |
| 40706005 | 00000* | E |
| 40706006 | 00000* | E |
| 40706007 | 00000* | E |
| 40706008 | 00000* | E |
| 40706009 | 00000* | E |
| 40706010 | 00000* | E |
| 40706011 | 00000* | E |
| 40706012 | 00000* | E |
| 40706013 | 00000* | E |
| 40706014 | 00000* | E |
| 40706015 | 00000* | E |
| 40706016 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40706017 | 00000* | E |
| 40706018 | 00000* | E |
| 40706019 | 00000* | E |
| 40706020 | 00000* | E |
| 40706021 | 00000* | E |
| 40706022 | 00000* | E |
| 40706023 | 00000* | E |
| 40706024 | 00000* | E |
| 40706097 | 00000* | E |
| 40706098 | 00000* | E |
| 40706401 | 00000* | E |
| 40706402 | 00000* | E |
| 40706403 | 00000* | E |
| 40706404 | 00000* | E |
| 40706497 | 00000* | E |
| 40706498 | 00000* | E |
| 40706801 | 00000* | E |
| 40706802 | 00000* | E |
| 40706813 | 00000* | E |
| 40706814 | 00000* | E |
| 40706897 | 00000* | E |
| 40706898 | 00000* | E |
| 40707601 | 00000* | E |
| 40707602 | 00000* | E |
| 40707697 | 00000* | E |
| 40707698 | 00000* | E |
| 40708001 | 00000* | E |
| 40708002 | 00000* | E |
| 40708097 | 00000* | E |
| 40708098 | 00000* | E |
| 40708401 | 00000* | E |
| 40708402 | 00000* | E |
| 40708403 | 00000* | E |
| 40708404 | 00000* | E |
| 40708497 | 00000* | E |
| 40708498 | 00000* | E |
| 40717205 | 00000* | E |
| 40717206 | 00000* | E |
| 40717207 | 00000* | E |
| 40717208 | 00000* | E |
| 40717209 | 00000* | E |
| 40717210 | 00000* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40717211 | 00000* | E |
| 40717212 | 00000* | E |
| 40717297 | 00000* | E |
| 40717298 | 00000* | E |
| 40717601 | 00000* | E |
| 40717602 | 00000* | E |
| 40717603 | 00000* | E |
| 40717604 | 00000* | E |
| 40717697 | 00000* | E |
| 40717698 | 00000* | E |
| 40718097 | 00000* | E |
| 40720801 | 00000* | E |
| 40720802 | 00000* | E |
| 40720803 | 00000* | E |
| 40720804 | 00000* | E |
| 40720897 | 00000* | E |
| 40720898 | 00000* | E |
| 40722001 | 00000* | E |
| 40722002 | 00000* | E |
| 40722003 | 00000* | E |
| 40722004 | 00000* | E |
| 40722005 | 00000* | E |
| 40722006 | 00000* | E |
| 40722007 | 00000* | E |
| 40722008 | 00000* | E |
| 40722009 | 00000* | E |
| 40722010 | 00000* | E |
| 40722097 | 00000* | E |
| 40722098 | 00000* | E |
| 40722801 | 00000* | E |
| 40722802 | 00000* | E |
| 40722803 | 00000* | E |
| 40722804 | 00000* | E |
| 40722805 | 00000* | E |
| 40722806 | 00000* | E |
| 40722897 | 00000* | E |
| 40722898 | 00000* | E |
| 40723201 | 00000* | E |
| 40723202 | 00000* | E |
| 40723297 | 00000* | E |
| 40723298 | 00000* | E |
| 40781201 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 40781202 | 00000* | E |
| 40781601 | 00000* | E |
| 40781602 | 00000* | E |
| 40781603 | 00000* | E |
| 40781604 | 00000* | E |
| 40781605 | 00000* | E |
| 40781699 | 00000* | E |
| 40782001 | 00000* | E |
| 40782002 | 00000* | E |
| 40782003 | 00000* | E |
| 40782004 | 00000* | E |
| 40782005 | 00000* | E |
| 40782006 | 00000* | E |
| 40782007 | 00000* | E |
| 40782008 | 00000* | E |
| 40782009 | 00000* | E |
| 40782010 | 00000* | E |
| 40782011 | 00000* | E |
| 40782099 | 00000* | E |
| 40782401 | 00000* | E |
| 40782499 | 00000* | E |
| 40783201 | 00000* | E |
| 40783202 | 00000* | E |
| 40783203 | 00000* | E |
| 40783299 | 00000* | E |
| 40784801 | 00000* | E |
| 40784899 | 00000* | E |
| 40786001 | 00000* | E |
| 40786002 | 00000* | E |
| 40786003 | 00000* | E |
| 40786004 | 00000* | E |
| 40786099 | 00000* | E |
| 40786401 | 00000* | E |
| 40786499 | 00000* | E |
| 40787201 | 00000* | E |
| 40787299 | 00000* | E |
| 40799997 | 00000* | E |
| 40799998 | 00000* | E |
| 40899995 | 00000* | E |
| 40899997 | 00000* | E |
| 40899999 | 00000* | E |
| 49000101 | 00000* | E |

TABLE E-1. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 49000102 | 00000* | E |
| 49000103 | 00000* | E |
| 49000104 | 00000* | E |
| 49000105 | 00000* | E |
| 49000199 | 00000* | E |
| 49000201 | 00000* | E |
| 49000202 | 00000* | E |
| 49000203 | 26101* | E |
| 49000204 | 00000* | E |
| 49000205 | 00000* | E |
| 49000206 | 00000* | E |
| 49000299 | 00000* | E |
| 49000301 | 00000* | E |
| 49000302 | 00000* | E |
| 49000303 | 00000* | E |
| 49000304 | 00000* | E |
| 49000399 | 00000* | E |
| 49000401 | 00000* | E |
| 49000402 | 00000* | E |
| 49000403 | 00000* | E |
| 49000404 | 00000* | E |
| 49000405 | 00000* | E |
| 49000499 | 00000* | E |
| 49090011 | 13501* | D |
| 49090012 | 13501* | D |
| 49090013 | 26101* | E |
| 49090023 | 26101* | E |
| 49099998 | 00000* | E |
| 49099999 | 00000* | E |
| 50100101 | 17105 | E |
| 50100101 | 17106 | E |
| 50100101 | 17107 | E |
| 50100101 | 17108 | E |
| 50100102 | 17106* | E |
| 50100201 | 90001* | E |
| 50100202 | 42320* | E |
| 50100505 | 90001* | E |
| 50100506 | 17120 | D |
| 50100506 | 17121 | D |
| 50100506 | 17122 | D |
| 50100506 | 17123 | D |
| 50100506 | 17124 | D |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 50100507 | 90001* | E |
| 50100508 | 90001* | E |
| 50100510 | 42320* | E |
| 50100511 | 90001* | E |
| 50100512 | 90001* | E |
| 50100601 | 90001* | E |
| 50100602 | 90001* | E |
| 50100603 | 90001* | E |
| 50100604 | 42320* | E |
| 50100701 | 90001* | E |
| 50100702 | 90001* | E |
| 50100703 | 90001* | E |
| 50100704 | 90001* | E |
| 50190005 | 00000* | E |
| 50190006 | 00000* | E |
| 50190010 | 00000* | E |
| 50200101 | 90001* | E |
| 50200102 | 90001* | E |
| 50200103 | 90001* | E |
| 50200104 | 17106* | E |
| 50200105 | 42320* | E |
| 50200201 | 42320* | E |
| 50200202 | 90001* | E |
| 50200301 | 90001* | E |
| 50200302 | 90001* | E |
| 50200505 | 90001* | E |
| 50200506 | 17120* | E |
| 50200601 | 90001* | E |
| 50200602 | 90001* | E |
| 50200901 | 90001* | E |
| 50290005 | 00000* | E |
| 50290006 | 00000* | E |
| 50290010 | 00000* | E |
| 50300101 | 90001* | E |
| 50300102 | 90001* | E |
| 50300103 | 90001* | E |
| 50300104 | 90001* | E |
| 50300105 | 42320* | E |
| 50300106 | 42320* | E |
| 50300107 | 90001* | E |
| 50300108 | 90001* | E |
| 50300109 | 90001* | E |

TABLE E-1. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 50300201 | 42301 | E |
| 50300201 | 42302 | E |
| 50300201 | 42304 | E |
| 50300201 | 42320* | E |
| 50300201 | 42305 | E |
| 50300201 | 42306 | E |
| 50300201 | 42307 | E |
| 50300201 | 42308 | E |
| 50300201 | 42309 | E |
| 50300201 | 42310 | E |
| 50300201 | 42311 | E |
| 50300201 | 42312 | E |
| 50300201 | 42313 | E |
| 50300201 | 42314 | E |
| 50300201 | 42315 | E |
| 50300201 | 42316 | E |
| 50300202 | 90001* | E |
| 50300203 | 90001* | E |
| 50300204 | 90001* | E |
| 50300501 | 90001* | E |
| 50300506 | 17120* | E |
| 50300601 | 90001* | E |
| 50300602 | 90001* | E |
| 50300603 | 90001* | E |
| 50300701 | 90001* | E |
| 50300801 | 90001* | E |
| 50300810 | 90001* | E |
| 50300820 | 90001* | E |
| 50300901 | 90001* | E |
| 50390005 | 00000* | E |
| 50390006 | 00000* | E |
| 50390010 | 00000* | E |

TABLE E-2. AREA SOURCE PROFILE ASSIGNMENTS

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 001 | 11201* | E |
| 002 | 43201* | E |
| 003 | 13501* | D |
| 004 | 13501* | D |
| 005 | 26101* | E |
| 006 | 42330* | D |
| 006 | 42317 | D |
| 006 | 42318 | D |
| 006 | 42319 | C |
| 007 | 11201* | E |
| 008 | 11201* | E |
| 009 | 13501* | D |
| 010 | 13501* | C |
| 011 | 26101* | E |
| 012 | 12704* | E |
| 013 | 11201* | E |
| 014 | 11201* | E |
| 015 | 11201* | E |
| 015 | 44101 | E |
| 015 | 44104 | E |
| 016 | 13501* | D |
| 017 | 13501* | D |
| 018 | 26101* | E |
| 019 | 12704* | D |
| 020 | 26101* | E |
| 021 | 17106* | E |
| 022 | 17106* | E |
| 023 | 17106* | E |
| 024 | 42320* | D |
| 025 | 42320* | D |
| 026 | 42320* | D |
| 027 | 31230* | D |
| 027 | 31202 | D |
| 027 | 31203 | D |
| 028 | 31230* | D |
| 028 | 31202 | D |
| 028 | 31203 | D |
| 029 | 31230* | D |
| 029 | 31202 | D |
| 029 | 31203 | D |
| 030 | 31230* | D |
| 030 | 31202 | D |

TABLE E-2. (Continued)

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| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 030 | 31203 | D |
| 031 | 31230* | E |
| 032 | 31230* | E |
| 033 | 31230* | E |
| 034 | 31230* | E |
| 034 | 25701 | E |
| 034 | 25703 | E |
| 035 | 31102* | D |
| 035 | 31103 | D |
| 035 | 31104 | D |
| 035 | 31105 | C |
| 036 | 31102* | D |
| 036 | 31103 | D |
| 036 | 31104 | D |
| 036 | 31105 | C |
| 037 | 31102* | D |
| 037 | 31103 | D |
| 037 | 31104 | D |
| 037 | 31105 | C |
| 038 | 31102* | D |
| 038 | 31103 | D |
| 038 | 31104 | D |
| 038 | 31105 | C |
| 039 | 31230* | E |
| 040 | 32202* | C |
| 040 | 32203 | C |
| 040 | 32204 | C |
| 040 | 32205 | C |
| 040 | 32206 | C |
| 041 | 32202* | C |
| 041 | 32203 | C |
| 041 | 32204 | C |
| 041 | 32205 | C |
| 041 | 32206 | C |
| 042 | 32202* | C |
| 042 | 32203 | C |
| 042 | 32204 | C |
| 042 | 32205 | C |
| 042 | 32206 | C |
| 043 | 32202* | C |
| 043 | 32203 | C |
| 043 | 32204 | C |

TABLE E-2. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 043 | 32205 | C |
| 043 | 32206 | C |
| 044 | 32101* | E |
| 045 | 32202* | D |
| 046 | 34001* | E |
| 047 | 34001* | E |
| 048 | 34001* | E |
| 049 | 11201* | E |
| 050 | 32202* | D |
| 051 | 13501* | D |
| 052 | 31102* | E |
| 054 | 00000* | E |
| 055 | 41220* | D |
| 055 | 41205 | D |
| 055 | 44101* | C |
| 056 | 41220* | E |
| 057 | 41350* | E |
| 057 | 44104* | C |
| 058 | 41350* | D |
| 058 | 41321 | D |
| 058 | 41322 | D |
| 058 | 41323 | D |
| 058 | 41324 | D |
| 058 | 41351 | D |
| 059 | 41350* | E |
| 060 | 42320* | E |
| 061 | 42320* | E |
| 062 | 42320* | D |
| 062 | 42305 | D |
| 062 | 42306 | D |
| 062 | 42307 | D |
| 062 | 42308 | D |
| 062 | 42309 | D |
| 062 | 42310 | D |
| 062 | 42311 | D |
| 062 | 42312 | D |
| 062 | 42313 | D |
| 062 | 42314 | D |
| 062 | 42315 | D |
| 062 | 42316 | D |
| 063 | 43302* | D |
| 064 | 42320* | E |

TABLE E-2. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 071 | 90003* | E |
| 072 | 90003* | E |
| 073 | 90003* | E |
| 074 | 90003* | E |
| 076 | 90003* | E |
| 077 | 41350* | E |
| 078 | 00000* | E |
| 079 | 00000* | E |
| 080 | 00000* | E |
| 081 | 00000* | E |
| 082 | 00000* | E |
| 083 | 00000* | E |
| 084 | 00000* | E |
| 085 | 00000* | E |
| 086 | 00000* | E |
| 087 | 00000* | E |
| 088 | 00000* | E |
| 089 | 00000* | E |
| 090 | 00000* | E |
| 091 | 00000* | E |
| 092 | 00000* | E |
| 093 | 00000* | E |
| 094 | 00000* | E |
| 095 | 00000* | E |
| 096 | 11201* | D |
| 097 | 11501* | D |
| 098 | 26101* | E |
| 099 | 90016* | E |
| 100 | 90001* | E |
| 101 | 00000* | E |
| 102 | 00000* | E |
| 103 | 00000* | E |
| 104 | 00000* | E |
| 105 | 90002* | E |
| 106 | 90002* | E |
| 107 | 90016* | E |
| 108 | 90013* | E |
| 109 | 90001* | E |
| 110 | 33020 | D |
| 110 | 33004 | D |
| 110 | 33005 | D |
| 110 | 33006 | D |

TABLE E-2. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 110 | 33007 | D |
| 110 | 33008 | D |
| 110 | 33009 | D |
| 110 | 33010 | D |
| 110 | 33011 | C |
| 111 | 32101 | D |
| 111 | 32102 | D |
| 111 | 32103 | D |
| 111 | 32104 | C |
| 112 | 34002 | E |
| 112 | 34003 | E |
| 112 | 34004 | E |
| 112 | 34005 | E |
| 112 | 34006 | E |
| 113 | 41130 | E |
| 113 | 41111 | E |
| 113 | 41112 | E |
| 113 | 41113 | E |
| 113 | 41114 | E |
| 113 | 41115 | E |
| 113 | 41116 | E |
| 113 | 41117 | E |
| 113 | 41118 | E |
| 113 | 41119 | E |
| 113 | 41120 | E |
| 113 | 41121 | E |
| 113 | 41122 | E |
| 113 | 41123 | E |
| 113 | 41124 | E |
| 113 | 41131 | E |
| 113 | 41132 | E |
| 113 | 41133 | E |
| 113 | 41134 | E |
| 113 | 41135 | E |
| 113 | 41136 | E |
| 113 | 41137 | E |
| 114 | 43101 | E |
| 115 | 43301 | D |
| 115 | 43304 | D |
| 115 | 43305 | D |
| 115 | 43306 | D |
| 115 | 43307 | D |

TABLE E-2. (Continued)



| SCC | PROFILE NUMBER | QUALITY |
|---|---|---|
| 115 | 43308 | D |
| 115 | 43309 | D |

TABLE E-3. AREA SOURCE CODE DESCRIPTIONS

| Area Source Code | Category Description |
|---|---|
| 001 | Residential Fuel - Anthracite Coal |
| 002 | Residential Fuel - Bituminous Coal |
| 003 | Residential Fuel - Distillate Oil |
| 004 | Residential Fuel - Residual Oil |
| 005 | Residential Fuel - Natural Gas |
| 006 | Residential Fuel - Wood |
| 007 | Commercial/Institutional Fuel - Anthracite Coal |
| 008 | Commercial/Institutional Fuel - Bituminous Coal |
| 009 | Commercial/Institutional Fuel - Distillate Oil |
| 010 | Commercial/Institutional Fuel - Residual Oil |
| 011 | Commercial/Institutional Fuel - Natural Gas |
| 012 | Commercial/Institutional Fuel - Wood |
| 013 | Industrial Fuel - Anthracite Coal |
| 014 | Industrial Fuel - Bituminous Coal |
| 015 | Industrial Fuel - Coke |
| 016 | Industrial Fuel - Distillate Oil |
| 017 | Industrial Fuel - Residual Oil |
| 018 | Industrial Fuel - Natural Gas |
| 019 | Industrial Fuel - Wood |
| 020 | Industrial Fuel - Process Gas |
| 021 | On-Site Incineration - Residential |
| 022 | On-Site Incineration - Industrial |
| 023 | On-Site Incineration - Commercial/Institutional |
| 024 | Open Burning - Residential |
| 025 | Open Burning - Industrial |
| 026 | Open Burning - Commercial/Institutional |
| 027 | Light-Duty Gasoline Vehicles - Limited Access Roads |
| 028 | Light-Duty Gasoline Vehicles - Rural Roads |
| 029 | Light-Duty Gasoline Vehicles - Suburban Roads |

TABLE E-3. AREA SOURCE CODE DESCRIPTIONS (Continued)

| Area Source Code | Category Description |
|---|---|
| 030 | Light-Duty Gasoline Vehicles - Urban Roads |
| 031 | Medium-Duty Gasoline Vehicles - Limited Access Roads |
| 032 | Medium-Duty Gasoline Vehicles - Rural Roads |
| 033 | Medium-Duty Gasoline Vehicles - Suburban Roads |
| 034 | Medium-Duty Gasoline Vehicles - Urban Roads |
| 035 | Heavy-Duty Gasoline Vehicles - Limited Access Roads |
| 036 | Heavy-Duty Gasoline Vehicles - Rural Roads |
| 037 | Heavy-Duty Gasoline Vehicles - Suburban Roads |
| 038 | Heavy-Duty Gasoline Vehicles - Urban Roads |
| 039 | Off-Highway Gasoline Vehicles |
| 040 | Heavy-Duty Diesel Vehicles - Limited Access Roads |
| 041 | Heavy-Duty Diesel Vehicles - Rural Roads |
| 042 | Heavy-Duty Diesel Vehicles - Suburban Roads |
| 043 | Heavy-Duty Diesel Vehicles - Urban Roads |
| 044 | Off-Highway Diesel Vehicles |
| 045 | Railroad Locomotives |
| 046 | Aircraft (Landing and Takeoff) LTO - Military |
| 047 | Aircraft (Landing and Takeoff) LTO - Civil |
| 048 | Aircraft (Landing and Takeoff) LTO - Commercial |
| 049 | Vessels - Coal |
| 050 | Vessels - Diesel Oil |
| 051 | Vessels - Residual Oil |
| 052 | Vessels - Gasoline |
| 054 | Gasoline Marketed |
| 055 | Unpaved Road Travel |
| 056 | Unpaved Airstrip LTOs |
| 057 | Construction |
| 058 | Miscellaneous Wind Erosion |
| 059 | Land Tilling |

TABLE E-3. AREA SOURCE CODE DESCRIPTIONS (Continued)

| Area Source Code | Category Description |
|---|---|
| 060 | Forest Wild Fires |
| 061 | Managed Burning - Prescribed |
| 062 | Agricultural Field Burning |
| 063 | Frost Control - Orchard Heaters |
| 064 | Structural Fires |
| 071 | Beef Cattle Manure Field Application |
| 072 | Dairy Cattle Manure Field Application |
| 073 | Hog and Pig Manure Field Application |
| 074 | Broiler Chicken Manure Field Application |
| 075 | Other Chicken Manure Field Application |
| 076 | Anhydrous Ammonia Fertilizer Application |
| 077 | Beef Cattle Feed Lots |
| 078 | Degreasing |
| 079 | Drycleaning |
| 080 | Graphic Arts (Printing) |
| 081 | Rubber and Plastics Manufacturing |
| 082 | Architectural Coating |
| 083 | Auto Body Repair |
| 084 | Motor Vehicle Manufacturing |
| 085 | Paper Coating |
| 086 | Fabricated Metals |
| 087 | Machinery Manufacturing |
| 088 | Furniture Manufacturing |
| 089 | Flat Wood Products |
| 090 | Other Transportation Equipment Manufacturing |
| 091 | Electrical Equipment Manufacturing |
| 092 | Ship Building and Repairing |
| 093 | Miscellaneous Industrial Manufacturing |
| 094 | Miscellaneous Industrial Solvent Use |

TABLE E-3. AREA SOURCE CODE DESCRIPTIONS (Continued)

| Area Source Code | Category Description |
|---|---|
| 095 | Miscellaneous Nonindustrial Solvent Use |
| 096 | Minor Utility Sources - Coal |
| 097 | Minor Utility Sources - Oil |
| 098 | Minor Utility Sources - Gas |
| 099 | Minor Point Sources |
| 100 | Publicly Owned Treatment Works (POTWs) |
| 101 | Fugitive Emissions from Synthetic Organic Chemical Manufacture |
| 102 | Bulk Terminals and Bulk Plants |
| 103 | Fugitive Emissions from Petroleum Refining Operations |
| 104 | Process Emissions from Bakeries |
| 105 | Process Emissions from Pharmaceutical Manufacture |
| 106 | Process Emissions from Synthetic Fibers Manufacture |
| 107 | Crude Oil and Natural Gas Production Fields |
| 108 | Cutback Asphalt Paving Operations |
| 109 | Hazardous Waste Treatment, Storage, and Disposal Facilities |
| 110 | Transportation Composite |
| 111 | Light-Duty Diesel Vehicles |
| 112 | Tire Wear |
| 113 | Paved Roads |
| 114 | Marine Aerosol |
| 115 | Volcanic Ash |

The third column entitled "Data Quality" contains a rating of the profile assignment. If the profile assignment is based on an original profile, the entry for this column consists of the Profile Data Quality as it appears in Section 3. If engineering judgement is used, the data quality is lowered one or more levels, depending on how well the profile represents the "new" source category.

# APPENDIX F
# REACTIVITY FRACTIONS FOR THE ALKALINE ELEMENTS K, Na, Ca, AND Mg

# APPENDIX F
# REACTIVITY FRACTIONS FOR THE ALKALINE ELEMENTS K, Na, Ca, AND Mg

This appendix discusses the development and compilation of reactivity fractions for alkaline particulate species (K, Na, Ca, and Mg). Alkaline particulate emissions such as K, Na, Ca, and Mg can play a role in reducing the acidity of precipitation produced by some air pollutants. "Reactivity fraction" in this text refers to the fraction of each of these elements which is present as an oxide, carbonate, carbide, or hydroxide. These are species in which the cation is readily dissociated and available for reaction with acidic solutions. The reactivity fraction would be the portion of the element which could potentially react with acidic species. The following expression can be used to estimate the "reactive" emissions rate in size interval Y for a specific alkaline species Z from source category X:

> "Reactive" emissions $rate_{Z,X,Y}$ = (total particulate emissions rate, category X) x [(1/100) x weight percent of Z, category X, size range Y] x (reactive fraction, category X, species Z)

Total particulate emissions rate can be determined from data in National Emissions Data System (NEDS). The PM profiles in this document provide the composition data and this appendix contains the reactive fraction data that would be required to carry out this calculation.

It should be noted that reactive fraction data have only been developed for profiles contained in the earlier version of the Species Manual entitled "Air Emissions Species Manual - Volume II, Particulate Matter Species Profiles" (EPA-450/2-88-033b). Reactive fraction data have not been assembled specifically for the PM profiles contained in the document "Addendum to the Air Emissions Species Manual." The data in this appendix may be able to be applied to these newer profiles in cases where the source categories/SCC's are similar.

In this study, reactivity fractions were developed for the PM profiles in the Receptor Model Source Composition Library. Where applicable, the reactivity fractions were taken directly from Reference 1 ("Anthropogenic Sources and Emissions of Alkaline Particulate Matter in Canada"). The reactivity data were located by using a computerized literature search and review of references listed in useful documents. The literature search was initiated with a preliminary run using the keywords: sodium, calcium, potassium, magnesium, particulate emission, oxide, hydroxide, and carbonate. Data bases used include: Biosis Previews, Enviroline, Pollution Abstracts, CAB Abstracts, Engineering Meetings, CAsearch, and NTIS. In the second phase of the search, the key words used were sodium, calcium, potassium, magnesium, emissions, and source category name. NTIS, Enviroline, and Engineering Meetings were the data bases reviewed.

Approximately 80 references were identified as possibly useful sources. Half of the sources could be located, but only seven proved useful. Many references contained information on K, Na, Ca, and Mg percentages but did not indicate the species or compound with which they were associated. Therefore, engineering judgement was used in several cases to develop estimates for the reactivity fractions. Table F-1 presents a listing of the PM profiles in the data base and the reactivity fractions associated with K, Na, Ca, and Mg. The "Data Quality" column in this table indicates the confidence levels associated with the reactivity fractions. The following rating scheme is used here to assign data quality or confidence levels to the reactivity numbers. This is the same scheme used in the Canadian report (Reference 1) cited above.

Data Quality Classification:

A - Based on actual source test data for a specific point source.
B - Based on limited number of tests or source measurements for similar industries.
C - Developed from analytical data on product, feed, or other secondary material.
D - Based on limited analytical data for category or related category and where some estimation is involved.
E - Estimate.

The last column in the table indicates the data source. For cases where no information was identified, a default value of 0.5 was assigned as indicated by an asterisk (*).

An attempt was made to develop better numbers for categories with "E" ratings from the Canadian report. For example, a value of 0.70 reactive fraction was derived for wood combustion from Reference 4 in this study. This value is close to the 0.75 value given in the Canadian report.

In another instance, the ferroalloy and the iron/steel industry would likely have reactivity values near 1.00. Based on Reference 5, this is due to the high temperatures which would probably produce oxides as the only species. The Canadian values for ferroalloy manufacture are 1.00 for Ca, Mg, and Na, and 0.00 for K. The Canadian iron and steel industry values are 0.75, 0.88, 0.98, and 0.84 for Ca, Mg, Na, and K, respectively. These values agree well with the estimates developed in this report.

TABLE F-1. REACTIVITY FRACTIONS

| Profile Number | Name | K | Ca | Na | Mg | Data Quality | Reference |
|---|---|---|---|---|---|---|---|
| 11201 | Coal-Fired Power Plant | 1.00 | 0.51 | 1.00 | 1.00 | C | 1 |
| 11501 | Oil-Fired Power Plant | 1.00 | 0.51 | 1.00 | 1.00 | C | 1 |
| 11801 | Wood-Fired Boiler with Multicyclone | 0.75 | 0.75 | 0.75 | 0.75 | E | 1 |
| 12201 | External Combustion Boiler - Coal Slurry | 1.00 | 0.51 | 1.00 | 1.00 | C | 1 |
| 12704 | Wood-Fired Boiler with Wet Scrubber | 0.75 | 0.75 | 0.75 | 0.75 | E | 1 |
| 13501 | Residual Oil Combustion | 1.00 | 0.51 | 1.00 | 1.00 | C | 1 |
| 17105 | Municipal Incinerator Philadelphia | 0.10 | 0.10 | 0.10 | 0.10 | E | 1 |
| 17106 | Municipal Incinerator Composite | 0.10 | 0.10 | 0.10 | 0.10 | E | 1 |
| 17120 | Sewage Sludge Incinerator - Composite | 0.10 | 0.10 | 0.10 | 0.10 | E | 1 |
| 17121 | Sewage Sludge Incinerator | 0.10 | 0.10 | 0.10 | 0.10 | E | 1 |
| 17122 | Sewage Sludge Incinerator | 0.10 | 0.10 | 0.10 | 0.10 | E | 1 |
| 17123 | Sewage Sludge Incinerator | 0.10 | 0.10 | 0.10 | 0.10 | E | 1 |
| 17124 | Sewage Sludge Incinerator | 0.10 | 0.10 | 0.10 | 0.10 | E | 1 |
| 19101 | Scrap Copper Incinerator | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 20101 | Al - Foundry - Reverb. Furnace | 0.00 | 0.00 | 0.00 | 0.00 | D | 1 |
| 20102 | Secondary Aluminum Plant | 0.00 | 0.00 | 0.00 | 0.00 | D | 1 |
| 20401 | Secondary Pb Smelter | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 20501 | Zn Oxide Kiln | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 20502 | Sb Oxide Plant | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21101 | Limestone Dust | 0.00 | 1.00 | 1.00 | 1.00 | C | 1 |
| 21102 | Primary Pb Smelting Ore Conc. | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21103 | Primary Pb Smelting Ore Conc. Composite | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21150 | Primary Pb Smelting Ore Conc. Composite | 0.50 | 0.50 | 0.50 | 0.50 | E | * |

TABLE F-1. REACTIVITY FRACTIONS (Continued)

| Profile Number | Name | K | Ca | Na | Mg | Data Quality | Reference |
|---|---|---|---|---|---|---|---|
| 21203 | Coke Dust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21204 | Coal Dust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21205 | Primary Pb Smelting Species Fug. Dust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21206 | Primary Pb Smelting Soda Flux Fug. Dust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21301 | Cu Ore Crushing | 0.00 | 0.00 | 0.00 | 0.00 | E | 5 |
| 21302 | Cu Ore Mill Wastepile | 0.00 | 0.00 | 0.00 | 0.00 | E | 5 |
| 21303 | Cu Ore Concentrate | 0.00 | 0.00 | 0.00 | 0.00 | E | 5 |
| 21304 | Cu Mining Waste | 0.00 | 0.00 | 0.00 | 0.00 | E | 5 |
| 21320 | Cu Ore Processing Composite | 0.00 | 0.00 | 0.00 | 0.00 | E | 5 |
| 21340 | Cu Ore Composite | 0.00 | 0.00 | 0.00 | 0.00 | E | 5 |
| 21401 | Feed and Grain Handling Dust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 21501 | Primary Pb Smelting - Slag Dust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 22101 | Particle Board Dryer | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 22102 | Particle Board Dryer | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 22201 | Wood Products - Sanderdust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 22202 | Sawdust | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 22301 | Veneer Dryer | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 23103 | Kraft Recov. Furnace | 0.00 | 1.00 | 0.05 | 0.00 | C | 1 |
| 23202 | Lime Kiln | 0.00 | 1.00 | 1.00 | 1.00 | C | 1 |
| 24101 | Sulfite Rec. Boiler | 0.00 | 1.00 | 0.05 | 0.00 | D | 1 |
| 25201 | Calcium Carbide Furnace | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 25302 | Charcoal Manufacturing | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 25401 | Silica Manufacturing | 0.14 | 0.14 | 0.14 | 0.14 | D | 2 |

TABLE F-1. REACTIVITY FRACTIONS (Continued)

| Profile Number | Name | K | Ca | Na | Mg | Data Quality | Reference |
|---|---|---|---|---|---|---|---|
| 25402 | Asphalt Roofing Manufacturing | 0.30 | 0.30 | 0.30 | 0.30 | D | 2 |
| 25403 | Paint Spray Booth | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 25404 | Urea Fert. Production | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 25405 | Boric Acid Manufacturing | 0.00 | 0.00 | 0.00 | 0.00 | B | 2 |
| 25406 | Carborundum Manufacturing | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 25407 | Phosphorous Plant Plume | 0.00 | 0.09 | 0.00 | 0.00 | C | 1 |
| 26101 | Refinery Process Heaters - Gas | 1.00 | 0.51 | 1.00 | 1.00 | C | 1 |
| 26202 | Petroleum Ref. Catalytic Cracker | 1.00 | 0.51 | 1.00 | 1.00 | C | 1 |
| 27102 | Glass Furnace | 0.14 | 0.14 | 0.14 | 0.14 | D | 2 |
| 27201 | Cement Kiln (Gas-Fired) | 0.00 | 0.95 | 0.00 | 1.00 | B | 1 |
| 27203 | Cement Kiln (Coal-Fired) | 0.00 | 0.95 | 0.00 | 1.00 | B | 1 |
| 27501 | Gypsum Calciner | 0.00 | 0.00 | 0.00 | 0.00 | C | 1 |
| 28201 | Cast Fe Induction Furnace | 0.85 | 0.75 | 0.98 | 0.88 | E | 1 |
| 28202 | Cast Fe Cupola | 0.85 | 0.75 | 0.98 | 0.88 | E | 1 |
| 28301 | Steel Production - Steel Sinter Plant | 0.85 | 0.75 | 0.98 | 0.88 | E | 1 |
| 28302 | Steel Production - Open Hearth Furnace | 0.85 | 0.75 | 0.98 | 0.88 | E | 1 |
| 28303 | Steel Production - Basic Oxygen Furnace | 0.85 | 0.75 | 0.98 | 0.88 | E | 1 |
| 28305 | Steel Electric Arc Furnace | 0.85 | 0.75 | 0.98 | 0.88 | E | 1 |
| 28401 | Ferromanganese Furnace | 0.00 | 1.00 | 1.00 | 1.00 | C | 1 |
| 28601 | Steel Foundry - Steel Heat Treating (Salt Quench) | 0.85 | 0.75 | 0.98 | 0.88 | E | 1 |
| 29101 | Al Processing | 0.00 | 0.00 | 0.00 | 0.00 | D | 1 |
| 29102 | Al Reduction Potline | 0.00 | 0.00 | 0.00 | 0.00 | D | 1 |

TABLE F-1. REACTIVITY FRACTIONS (Continued)

| Profile Number | Name | K | Ca | Na | Mg | Data Quality | Reference |
|---|---|---|---|---|---|---|---|
| 29201 | Cu Oxide Kiln | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29202 | Primary Cu Smelter | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29301 | Primary Pb Smelting - Slag Pouring | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29302 | Primary Pb Smelting - Blast Furnace | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29303 | Primary Pb Smelting - Zn Fuming | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29304 | Primary Pb Smelting - Sintering | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29305 | Primary Pb Smelting - Blast Furnace Upset | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29306 | Primary Pb Smelting - Zn Baghouse | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29307 | Primary Pb Smelting - Dross Reverb. Furnace | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29309 | Primary Pb Smelting - Sinter Production | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 29330 | Primary Pb Smelting - Zn Process Composite | 0.50 | 0.50 | 0.50 | 0.50 | E | * |
| 31101 | Light-Duty Vehicles - Leaded | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 31102 | Heavy-Duty Vehicles - Leaded | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 31201 | Light-Duty Vehicles - Unleaded | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 31230 | Light-Duty Vehicles Composite | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 32101 | Light-Duty Vehicles - Diesel | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 32202 | Heavy-Duty Diesel | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 33001 | Leaded/Unleaded Gas Composite - 1977 | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 33002 | Transportation Composite - Medford, OR (1980) | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 33003 | Transportation Composite - Portland, OR (1979) | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |
| 33020 | Transportation Composite | 0.00 | 0.00 | 0.00 | 0.00 | E | 1 |