EMISSION FACTOR DOCUMENTATION FOR

AP-42 SECTION 2.6

MEDICAL WASTE INCINERATION

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Office of Air and Radiation
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1.0 INTRODUCTION

The document "Compilation of Air Pollutant Emission Factors" (AP-42) has been published by the U.S. Environmental Protection Agency (EPA) since 1970. Supplements to AP-42 have been routinely published to add new emission source categories and to update existing emission factors. The AP-42 is routinely updated by EPA to respond to new emission factor needs of EPA, State, and local air pollution control programs and industry.

An emission factor relates the quantity (weight) of pollutants emitted to a unit of activity of the source. The uses for the emission factors reported in AP-42 include:

1. Estimates of area-wide emissions;

2. Emission estimates for a specific facility; and

3. Evaluation of emissions relative to ambient air quality.

The purpose of this report is to provide background information from test reports to support calculation of emission factors for medical waste incinerators (MWIs).

The emissions information in this document will be most useful in making preliminary estimates of air emissions and should not be used in exact assessments of emissions from any particular facility. The reason for this is that insufficient data are available to estimate the statistical accuracy of these emission factors. In addition, variability in waste composition contributes to variations in emission factors. In fact, the difference between measured and estimated emissions could be as great as orders of magnitude in extreme cases. A test is the best way to determine air emissions from a particular source.

Including the introduction (Chapter 1.0), this report contains five chapters. Chapter 2.0 gives a description of the medical waste incineration industry. It includes a characterization of the industry, an overview of the different process types, a description of emissions, and descriptions of the technologies used to control air emissions resulting from medical waste incineration. Chapter 3.0 is a review of emissions data collection and analysis procedures. It describes the methods used to locate and collect test data, the screening of emission data reports, and the quality rating system for both emissions data and emission factors. Chapter 4.0 details pollutant emission factor development. It includes the review of specific data sets, the results of data analyses, and the database protocol. Chapter 5.0 presents Section 2.6 of AP-42.

2.0 INDUSTRY DESCRIPTION

Medical waste incineration involves the burning of wastes produced by hospitals, veterinary facilities, and medical research facilities. These wastes include both infectious medical wastes, as well as non-infectious, general housekeeping wastes.

The primary purposes for MWIs are to: 1) reduce the hazard associated with the waste, and 2) reduce the volume and mass of the waste. These objectives are accomplished by exposing the waste to high temperatures over a sufficiently long period of time to destroy threatening organisms and burn the combustible portion of the waste. The disadvantages of incineration include the necessity of ash disposal and the potential for emissions of toxic and other pollutants.

2.1 CHARACTERIZATION OF THE INDUSTRY

An estimated 3.4 million tons of medical waste are generated annually in the United States from hospitals, pharmaceutical companies, research facilities, nursing homes, and other facilities. Using a broad definition that includes all of these facility types, there are an estimated 5,000 MWIs in the U.S. About half of these MWIs are located at hospitals, and 72 percent have capacities less than 300 pounds per hour (lb/hr).[1]

Of MWIs identified in a previous study,[2] the majority (>95 percent) are controlled air units. A small percentage (<2 percent) were identified as excess air; less than 1 percent were identified as rotary kiln. The rotary kiln units tend to be larger and are typically equipped with air pollution control devices. Approximately 2 percent of the total population identified in this study were found to be equipped with air pollution control devices.

2.2 OVERVIEW OF INCINERATOR TYPES

The design of a MWI, like that of any combustor, must account for a number of interrelated factors, including residence time, temperature, and air/fuel mixing. Other factors which can influence combustion performance are fuel feeding and distribution patterns, air supply and distribution, heat transfer, and ash withdrawal. Like municipal solid waste (MSW), medical waste is more difficult to burn than conventional fuels such as oil, gas, or coal because its composition is highly variable.

Medical waste, also like MSW, has a variable ash content. Due to its variable moisture content, the waste can have a relatively low heating value, although generally higher than MSW. Usually, a heating value of approximately 19,700 kJ/kg (8,500 Btu/lb) is assumed for medical waste which consists of trash, paper, cardboard, and wood boxes. The heating value of waste that consists only of human and animal remains is about 2,325 kJ/Kg (1,000 Btu/lb). Corrosion can also be a problem with medical waste flue gases, due to the presence of chlorine, principally from plastic materials in the waste. The composition of medical waste can be highly variable due to differing collection and disposal practices at different hospitals.

2.2.1 Controlled Air Incinerators

Controlled air incineration is the most widely used MWI technology, and now dominates the market for new systems at hospitals and similar medical facilities. This technology is also known as starved air incineration, two-stage incineration, or modular combustion.

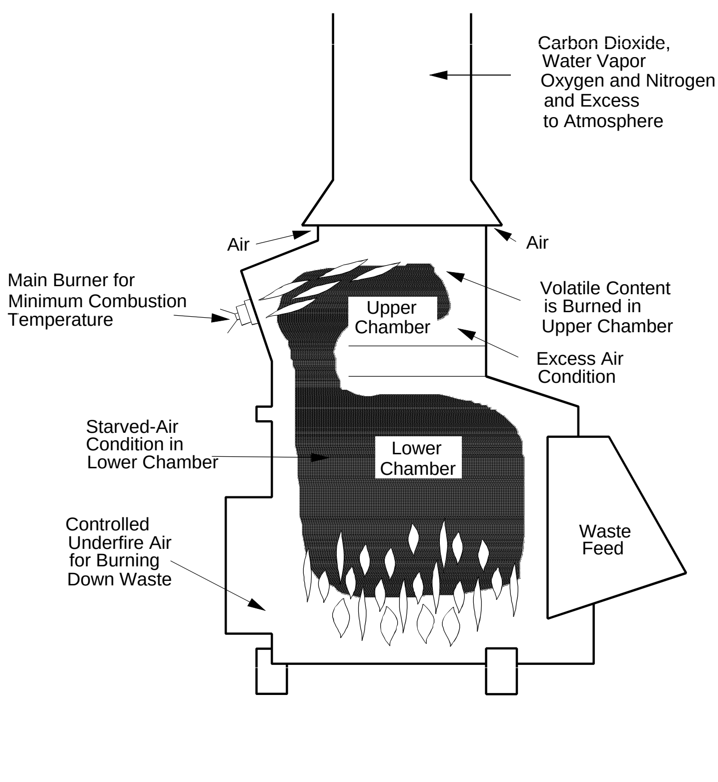

Figure 2-1. Controlled Air Incinerator2

Figure 2-1 presents a schematic diagram of a controlled air unit.

Combustion of waste in controlled air incinerators occurs in two stages. In the first stage, waste is fed into the primary, or lower, combustion chamber, which is operated with less than the stoichiometric (theoretical) amount of air required for combustion. Combustion air enters the primary chamber from beneath the incinerator hearth (below the burning bed of waste). This air is called primary or underfire air. In the primary (starved air) chamber, the low air-to-fuel ratio dries and facilitates volatilization of the waste, and most of the residual carbon in the ash burns. At these conditions, temperatures are relatively low, about 760 to 980°C (1,400 to 1,800°F).

Because of the low air addition rates in the primary chamber and correspondingly low flue gas velocities and turbulence, the amount of solids entrained in the gases leaving the primary chamber is low. As a result, controlled air incinerators can meet many current State and local particulate matter (PM) emission limits without add-on gas cleaning devices.

In the secondary chamber, excess air is added to burn the volatile gases evolved from the primary chamber. Optimization of controlled air incinerators includes thorough fuel and air mixing in the secondary chamber and prolonging residence time for complete combustion. Temperatures in the secondary chamber may reach 980 to 1,090°C (1,800 to 2,000°F).

Each chamber may also be equipped with auxiliary burners to handle wastes with high moisture content, to maintain minimum operating temperatures, or to assist in burnout during start-up or shut-down procedures.

Waste feed capacities for controlled air incinerators range from about 35 to 2,950 kg (75 to 6,500 lb) per hour at an assumed fuel heating value of 19,700 kJ/kg (8,500 Btu/lb). Waste feed and ash removal can be manual or automatic, depending on the unit size and options purchased. Throughput capacities for lower heating value wastes may be higher, since feed capacities are limited by primary chamber heat release rates. Heat release rates for controlled air incinerators typically range from about 430,000 to 710,000 kJ/hr-m^3 (15,000 to 25,000 Btu/hr-ft^3).[2]

2.2.2 Excess Air Incinerators

While there are some similarities in operating procedures between excess air and controlled air incinerators, overall equipment design and appearance are quite different. Excess air incinerators are typically small modular units. They are also referred to as batch incinerators, multiple chamber incinerators, or "retort" incinerators. Excess air incinerators typically appear as a compact cube from the outside with a series of chambers and baffles on the inside. Although they can be operated continuously, they are usually operated in a batch mode.

Incinerators in this class, designed to burn general hospital waste, operate at excess air levels of up to 300 percent. If only pathological wastes are burned, excess air levels near 100 percent are more common. The quantity of excess air controls the secondary chamber temperature; lower heating value fuels typically use lower amounts of excess air.

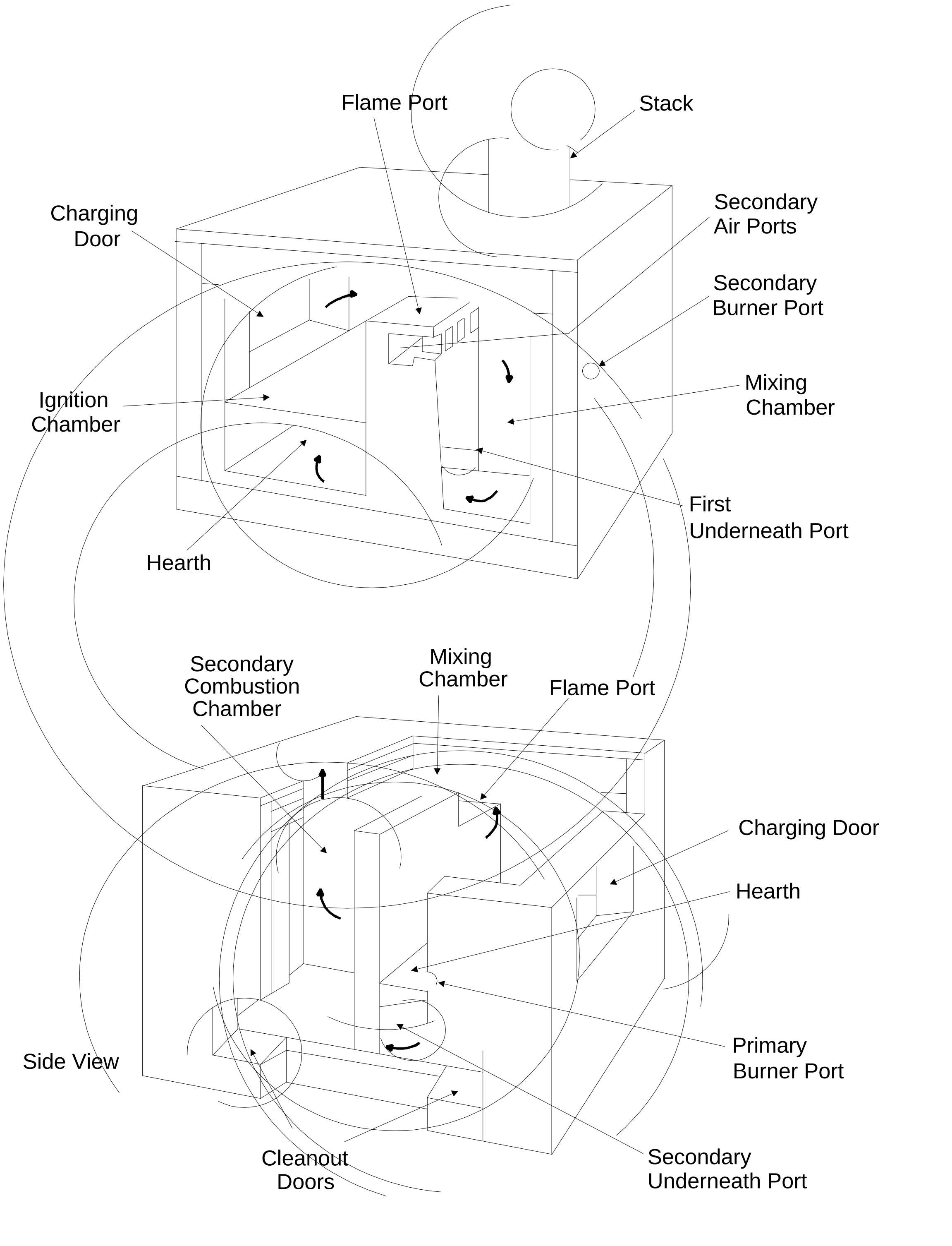

Figure 2.6-2. Excess Air Incinerator

Figure 2-2 presents a schematic for an excess air unit. Like controlled air incinerators, combustion of waste in excess air incinerators occurs in two stages. First, waste is fed into the combustion (primary) chamber. The charging door is then closed, and an afterburner is ignited to bring the secondary chamber to a target temperature [typically 870 to 980°C (1,600 to 1,800°F)]. When the target temperature is reached, the primary chamber burner ignites. The waste is dried, ignited, and burned by heat provided from the primary chamber burner as well as by radiant heat from the chamber walls. Moisture and volatile components in the waste are vaporized and pass (along with combustion gases) out of the primary chamber and through a flame port which connects the primary chamber to the secondary or mixing chamber. Secondary air is added through the flame port and is mixed with the volatile components in the secondary chamber. Burners are also installed in the secondary chamber to maintain adequate temperatures for combustion of volatile gases. Optimization of excess air incinerators involves maintaining high temperatures with afterburners and prolonging residence times. Gases exiting the secondary chamber are directed to the incinerator stack or to an air pollution control device. When the waste is consumed, the primary burner shuts off. Typically, the afterburner shuts off after a set time. Once the chamber cools, ash is removed from the primary chamber floor, and a new charge of waste can be added.

2.2.3 Rotary Kiln Incinerators

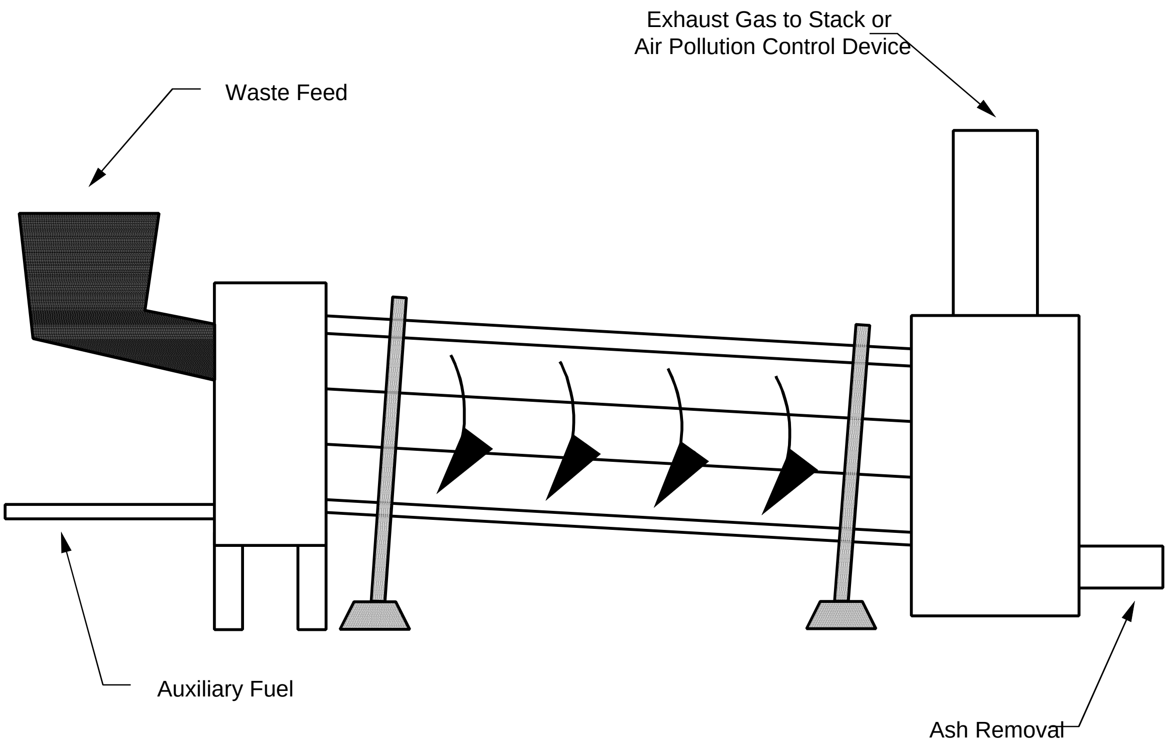

Figure 2-3 illustrates a rotary kiln incinerator. Rotary kiln incinerators, like the incinerator types already presented, are designed with a primary chamber, where waste is heated and volatilized (volatile gases released), and a secondary chamber, where combustion is completed. The primary chamber consists of a slightly inclined, rotating kiln in which waste material migrates from the feed end to the ash discharge end. The waste throughput rate is controlled by adjusting the rate of kiln rotation and the angle of inclination. Combustion air enters the primary chamber through a port. An auxiliary burner is generally used to start combustion and maintain desired combustion temperatures. Both the primary and secondary chambers are usually lined with acid-resistant refractory brick.

Volatiles and combustion gases pass from the primary chamber to the secondary chamber where combustion is completed. The secondary chamber operates with excess air. Due to the turbulent motion of the waste in the primary chamber, solids burnout rates and particulate entrainment in the flue gas are higher for rotary kiln incinerators than for other incinerator designs; thus, rotary kiln incinerators generally have add-on gas cleaning devices.

2.3 MEDICAL WASTE INCINERATOR EMISSIONS

Medical waste incinerators can emit significant quantities of pollutants to the atmosphere. These pollutants can include: 1) PM, 2) metals, 3) acid gases, 4) oxides of nitrogen (NO_X), 5) carbon monoxide (CO), 6) organics, and 7) various other materials present in medical wastes such as cytotoxins, radioactive diagnostic materials, infectious materials, and pathogens. This section discusses the factors affecting emissions of these pollutants.

2.3.1 Particulate Matter

Particulate matter is emitted as a result of incomplete combustion of organics (i.e., soot) and by the entrainment of noncombustibles in the flue gas stream. Particulate matter may exit as a solid or an aerosol, and, in addition to fly ash, it may contain heavy metals, acids, and trace organics. Depending on the method used to measure PM in the flue gas, condensable PM (i.e., materials with boiling points or condensation temperatures below 250°F and salts that form in the back half impingers) may or may not be included in the measurement. Inorganic matter is not destroyed during combustion; most of this material leaves the incinerator as bottom ash. However, some does become entrained in the stack gas as PM.

In general, good combustion conditions, which depend on residence time, temperature, and turbulence (good air/fuel mixing), minimize PM emissions. As the residence time increases, particle size and total particulate mass tend to decrease.[2] Smaller particle sizes and lower PM emissions are also associated with higher temperatures. Oxidation rates increase at higher temperatures, so more of the combustible matter is oxidized to gaseous products.

Entrainment of PM into the incinerator exhaust is often a reflection of the gas velocity within the primary combustion chambers. Controlled air incinerators have the lowest turbulence and, consequently, lowest PM emissions; rotary kilns employ high turbulence waste combustion and, therefore, have the highest PM emissions. Although total particulate emission concentrations from MWIs are generally lower than in municipal waste combustors, the particle size range is also generally lower and in the inhalable range ($\leq$10 µm). Up to 80 percent of the total particulate from MWIs is fine particles (<2 µm).[2]

2.3.2 Metals

Organo-metallic compounds and inorganic wastes present in the waste stream can be volatilized and oxidized under high temperatures and oxidizing conditions in an incinerator. The type and amount of trace (heavy) metals in the flue gas are directly related to the metals contained in the incinerator waste. Some trace metal sources in the waste include surgical blades, batteries, measuring devices, foil wrappers, and plastics. Plastic objects made of PVC contain cadmium (Cd) heat-stabilizing compounds; additionally, Cd may be found in paints and/or dyes.

The volatilized organo-metallic compounds condense uniformly on all available particulate surface area. Since submicron particles contribute most of the available surface area, these particles have a higher concentration of volatile metals per unit of mass.[10] Results of one study performed at a MSW facility indicate that trace metals are found predominantly in the respirable particulate fraction, even when the bulk of the emissions are in the nonrespirable fraction.[11]

Control of metal emissions to the atmosphere involves minimizing vaporization of metals in the waste feed and maximizing small particle collection in the air pollution control device. Fabric filters achieve low metal particulate emissions; this is believed to be because of their efficient control of small particles. Generally, particulate control by the air pollution control system is a surrogate for metal control, except for Hg; Hg is thought to leave the incinerator largely in the vapor form.

2.3.3 Acid Gases

Combustion of medical wastes can produce acid gas emissions in the form of hydrochloric acid (HCl) and sulfur dioxide (SO_2), as well as lesser quantities of other compounds. Acid gas control is achieved by neutralization of the acid and/or collection of the acid constituents in dry sorbents or aqueous solutions.

Hydrochloric acid is formed in the flue gases by the conversion of chlorine found in the waste [e.g., in plastics such as polyvinyl chloride (PVC)]. Swedish studies have found that 60 to 65 percent of the fuel-bound chlorine in MSW is converted to HCl. Uncontrolled HCl emissions from MWIs are estimated to be on the order of 1000 ppm or less.[3]

Sulfur is present both in the materials making up medical waste and in auxiliary fuels. Medical waste, like municipal waste, typically contains about 0.2 percent sulfur.[3] The rate of SO_2 emissions is directly proportional to the sulfur content of the waste and auxiliary fuels. Uncontrolled SO_2 emissions from MWIs are estimated to be on the order of 100 ppm or less.[3]

2.3.4 Oxides of Nitrogen

Nitrogen oxides (NO_x) represent a mixture mainly of nitric oxide (NO) and nitrogen dioxide (NO_2). In combustion systems, NO predominates due to kinetic limitations in the oxidation of NO to NO_2. Nitrogen oxides are formed by one of two general mechanisms. "Thermal NO_x" is the result of the high-temperature reaction between molecular nitrogen and molecular oxygen, both of which enter the combustion zone in the combustion air. "Fuel NO_x" results from the oxidation of nitrogen that is chemically bound within the fuel structure.

Thermal NO_x formation is extremely sensitive to temperature, whereas fuel NO_x is not. At the lower adiabatic temperatures which characterize MWIs, fuel NO_x accounts for most NO_x

emissions, while thermal NO_X generally contributes less than 10 ppm. Incinerator data indicate that NO_X levels are on the order of 200 ppm.[3]

2.3.5 Carbon Monoxide

Carbon monoxide (CO) is also a PIC. Carbon monoxide emissions are related to shorter residence times, lower temperatures, and poorer mixing conditions than are optimal. When combustion has not proceeded to completion, CO is formed in lieu of carbon dioxide (CO_2).

2.3.6 Organics

Failure to achieve complete combustion can result in emissions of unreacted or partially reacted combustion products. Products of incomplete combustion (PICs) can include compounds ranging from low molecular weight hydrocarbons to high molecular weight chlorinated compounds such as dibenzo-p-dioxins and dibenzofurans (CDD/CDF).

Many factors are believed to be involved in the formation of CDD and CDF compounds, and various theories exist concerning the formation of these compounds.[4-6] One theory for CDD and CDF formation in incinerators postulates that precursors of CDD and CDF can be produced by pyrolysis of chlorinated plastics in the waste in oxygen-starved zones, such as those which exist in controlled air incinerators.[7] Another theory proposes that CDD/CDF are synthesized from a variety of organics and a chlorine donor.[8] A third possible mechanism involves catalytic reactions on fly ash particles at temperatures in the range of 230 to 345°C (450-650°F).[2,6] Of specific relevance to wet scrubbing systems is the potential for formation of CDD/CDF from precursor materials, such as chlorobenzene and chlorophenols that are present in the recirculated scrubber solution.[9] Another mechanism proposed involves the breakthrough of unburned CDDs and CDFs present in the feed.[4,10]

The goal in CDD/CDF control is to minimize their formation using good combustion practice (GCP) in the incinerator. The elements of GCP include:[5]

1. Uniform waste feed;
2. Adequate supply and good distribution of air in the incinerator;
3. Sufficiently high incinerator gas temperatures [>985°C (1,800°F)];
4. Gas (secondary chamber) residence time;
5. Good mixing of combustion gas and air in all zones;
6. Minimization of PM entrainment into flue gas leaving the incinerator; and
7. Control of the gas temperature entering the air pollution control device to 230°C (450°F) or less.

Low molecular weight organic compounds (LMWC) are PICs of the volatiles evolved from the waste. The same control mechanisms discussed above for CDDs and CDFs are also applicable to LMWC. When residence time, temperature, and turbulence in the combustion zone are high, LMWC emissions will be low.

2.3.7 Other Pollutants Specific to Medical Waste

Cytotoxic chemicals used in chemotherapy are toxic to cell growth and are capable of impairing, injuring, or killing cells. Temperatures greater than 1,095°C (2,000°F) are thought to be necessary for >99 percent destruction of cytotoxic chemicals.[10] Examples of cytotoxins are nitrosourea, cyclophoshamid, and anthracycline antibiotics.

Radioactive species used in vitro diagnostic studies may also be present in medical wastes. The levels of radioactivity are thought to be low (<100 Ci/g), but are difficult to estimate.[11] Incineration is considered by the Nuclear Regulatory Commission (NRC) to be an excellent means of low level radioactive waste disposal.[11] Measures must be taken to control temperature if high overall treatment efficiency of radioactive waste is to be maintained.

Infectious material is contributed to medical waste from animal and human blood, other body fluids and parts, and instruments or bedding material that have come into contact with infectious materials.

Pathogens are generally thermally sensitive and easy to destroy when exposed to typical gas temperatures in a primary incinerator chamber for residence times of one to two seconds.[11] In general, conditions that maximize the destruction of organics (i.e., time, temperature, and turbulence) will promote proper destruction of pathogens and bacteria.[11] If mainly pathological waste is charged, burners need to operate at all times in the primary chamber to maintain adequate temperature levels.

2.4 CONTROL TECHNOLOGIES

The most frequently used air pollution control device (APCD) for MWI emissions is a packed bed, venturi, or other type of wet scrubber. The second most common APCD is a fabric filter (FF), typically used with a dry injection system. A less common type of APCD used is an electrostatic precipitator (ESP).

2.4.1 Wet Scrubbers

Wet scrubbers use gas-liquid absorption to transfer of pollutants from the flue gas to a liquid stream. Scrubber design and the type of liquid solution used largely determine contaminant removal efficiencies. With plain water, removal efficiencies for acid gases can be as high as 70 percent for HCl and 30 percent for SO_2. Addition of calcium hydroxide [$Ca(OH)_2$] to the scrubber liquor for acid neutralization has been shown to result in removal efficiencies of 93-96 percent.[2] In general, high gas-side pressure drops also provide for high removal efficiencies for PM control with venturi scrubbers.

There are three basic types of scrubbers:

1. Low energy, primarily for acid gas control;
2. Medium energy for PM and/or acid gas control; and
3. High energy, primarily for PM control.

Low energy scrubbers (spray towers) are usually circular in cross-section. The liquid is sprayed down the tower as the gases rise. Acid gases are absorbed/neutralized by the scrubbing liquid. Large particles are removed by liquid impingement. Low energy scrubbers mainly remove particles larger than 5-10 microns.[2]

Medium energy scrubbers achieve additional removal of PM by increasing gas-liquid contact. This can be accomplished through a variety of configurations, such as packed columns, baffle plates, and liquid impingement scrubbers.

High energy scrubbers utilize venturis for still greater PM removal. A typical venturi scrubber consists of a converging section, a throat, and a diverging section. The flue gases impinge on the liquid stream in the converging section. As the gases pass through the throat, the shearing action atomizes the liquid into fine droplets. When the gases pass through the diverging section, they decelerate, resulting in further contact between particles and liquid droplets. The droplets are then removed from the device by centrifugal action in the de-entrainment section.[2]

When simultaneous acid gas and PM removal are necessary, a combination of scrubber types can be used. Venturi scrubbers followed by low or medium energy acid gas scrubbers are commonly applied. The venturi accomplishes primarily PM control, while the low/medium energy scrubber uses an alkaline liquor and functions mainly to absorb acid gases.

2.4.2 Fabric Filters

A fabric filtration system, also called a baghouse, consists of a number of filtering elements (bags) along with a bag cleaning system contained in a main shell structure. A baghouse is typically divided into several compartments or sections. Particulate-laden gases pass through the bags so that the particles are retained on the upstream side of the fabric, thus cleaning the gas. The collection efficiency and the pressure drop across the bag surface increase as the dust layer on the bag builds up. Since the system cannot continue to operate with an increasing pressure drop, the bags are cleaned periodically. Cleaning processes include reverse flow with bag collapse, mechanical shaking, or pulse-jet cleaning. When the first two cleaning methods are used, the PM is collected on the inside of the bag; it is collected on the outside of the bag in pulse-jet systems. Generally, reverse flow FFs operate with lower gas flow per unit area of bag surface than pulse-jet systems. This means they are larger and, thus, more costly for a given gas flow rate or application.

Fabric filters can achieve very high (>99.9 percent) PM removal efficiencies. These systems are also very effective in controlling fine (<2 micrometers) PM, which implies good control of condensed metals and organics, two major constituents of fine PM.[9] A disadvantage of using FFs with MWIs is the limitation of operating temperature: The upper limit of most filter media is about 260°C (500°F). Flue gases leave the incinerator at about 815 to 1,095°C (1,500-2,000°F), so the gases must be cooled considerably before contact with the filter bags. However, the dew point of the flue gas must also be considered. Temperature excursions below the acid dew point [about 110°C (230°F)] cause condensation of acid gases and can ruin the bags and require premature replacement.

2.4.3 Dry Sorbent Injection

In the dry sorbent injection (DSI) process for controlling acid gases, a dry alkaline material is injected into the flue gas using a dry venturi within the ducting or into the duct ahead of a particulate control device. The alkaline material reacts with and neutralizes the acid gases in the flue gas. Fabric filters are applied downstream of DSI to control the PM generated by the incinerator, capture the DSI reaction products and unreacted sorbent, and increase sorbent/acid gas contact time, thus enhancing acid gas removal efficiency and sorbent utilization.

The major factors affecting DSI performance are flue gas temperature, acid gas dew point, and sorbent-to-acid gas ratio. Dry sorbent injection performance improves as the difference between flue gas and acid dew point temperatures decreases and the sorbent-to-acid gas ratio increases. Flue gas temperatures at the point of sorbent injection range from 140 to 320°C (280 to 610°F), depending on the sorbent used and the design of the process. To reduce flue gas temperatures, some DSI systems inject water into the hot flue gas.

Acid gas removal efficiencies with DSI also depend on sorbent type, sorbent feed rate, and the extent of sorbent mixing with the flue gas. Sorbents that have been successfully tested include hydrated lime [calcium hydroxide, $Ca(OH)_2$], sodium hydroxide (NaOH), sodium bicarbonate ($NaHCO_3$), and magnesium oxide. Based on published data for hydrated lime, DSI can achieve relatively high removals of HCl (80 to 95 percent) and SO_2 (40 to 70 percent) under proper operating conditions. Limestone ($CaCO_3$) and lime (CaO) have also been tested but are relatively unreactive at the normal operating temperatures.[2]

Because calcium chloride ($CaCl_2$, one of the DSI reaction products) has a high affinity for water (deliquescent), the flue gas exit temperature for MWIs is higher than in fossil-fuel furnaces/boilers. As a result, higher sorbent-to-acid gas ratios are needed to achieve high acid gas control efficiencies. Water use should be minimized since excess water may cause cement-like deposits on the fabric filters, thus impairing flow.

The primary advantage of DSI compared to wet scrubbers is the relative simplicity of the sorbent preparation, handling, and injection systems as well as the easier handling and disposal of dry solid process wastes. The primary disadvantages are its lower sorbent utilization rate and correspondingly higher sorbent and waste disposal rates.

2.4.4 Electrostatic Precipitators

Particulate collection in an ESP occurs in three steps: (1) suspended particles are given an electrical charge; (2) the charged particles migrate to a collecting electrode of opposite polarity; and (3) the collected PM is dislodged from the collecting electrodes and collected in hopper for disposal.

Charging of the particles is usually caused by ions produced in high-voltage corona. The electric fields and the corona necessary for particle charging are provided by converting conventional alternative current to direct current using high-voltage transformers and rectifiers. Removal of the collected particulate matter is accomplished mechanically by rapping or vibrating the collecting electrode plates.

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3.0 GENERAL DATA REVIEW AND ANALYSIS PROCEDURES

3.1 LITERATURE SEARCH AND SCREENING

The first step in this investigation was the preparation phase; namely, collecting information relating to emissions from MWI facilities. The information collected represents source test reports from different facilities and background documents relevant to AP-42, and, more specifically, to Section 2.6 on medical waste incineration.

The criteria set forth in this section were taken from the bulletin, "Technical Procedures for Developing AP-42 Emission Factors and Preparing AP-42 Sections." In order to avoid analyzing excessive amounts of data, and also to ensure that proper data were used in updating the section, some general criteria were used:

1. Emissions data had to be from a primary source. This means that report summaries could not be used, and if a source of information could not be identified, it was eliminated.

2. More than one test run had to be performed at each facility.

3. The report had to contain sufficient data to evaluate the testing procedures and source operating conditions: each report had to have charge rate data, run sequences referenced, and sampling methodologies stated to be considered valid.

3.2 EPA PROTOCOL FOR DATA QUALITY

Emission factors in AP-42 are based on data obtained from several sources, such as published technical papers and reports and documented emission test results. Data provided by individual sources vary from single values, to ranges of minimum and maximum values, and finally to data from replicated source tests. Some data sources provide complete details about their collecting and analyzing procedures, while others provide only sketchy information in this regard.

In developing the section on medical waste incineration for AP-42, the following procedures were used to select data for both its quality and quantity. The following data were always excluded from consideration:

1. Test series averages reported in units that could not be converted to the selected reporting units.

2. Test series representing incompatible test methods (i.e., comparison of EPA Method 5 front-half with EPA method 5 front- and back-half).

3. Test series of controlled emissions for which the control device was not fully specified.

4. Test series in which the source process was not clearly identified and described.

5. Test series in which it is not clear whether the emissions measured were controlled or uncontrolled.

If there was no reason to exclude particular data or data sets from consideration, each data set was assigned a quality rating from A (best) to D (worst). A rating system was needed to indicate data reliability since some data were used when little other information was available but were excluded when sufficient high-quality data existed. The data were rated as follows:

A - When tests are performed by a sound methodology and are reported in enough detail for adequate validation. These tests are not necessarily EPA reference method tests, although such reference methods are preferred and certainly should be used as a guide.

B - When tests are performed by a generally sound methodology, but they lack enough detail for adequate validation.

C - When tests are based on an untested or new methodology or are lacking a significant amount of background data.

D - When tests are based on a generally unacceptable method, but the method may provide an order-of-magnitude value for the source.

Following are the criteria used to evaluate source test reports for sound methodology and adequate detail:

1. Source operation. The manner in which the source was operated is well documented in the report. The source was operating within typical parameters during the test.

2. Sampling procedures. If actual procedures deviated from standard methods, the deviations are well documented. Procedural alterations are often made in testing an uncommon type of source. When this occurs, an evaluation is made of how such alternative procedures could influence the test results.

3. Sampling and process data. Many variations can occur without warning during testing, sometimes without being noticed. Such variations can induce wide

deviation in sampling results. If a large spread between test results cannot be explained by information contained in the test report, the data are suspect and are given a lower rating.

4. Analysis and calculations. The test reports contain original raw data sheets. The nomenclature and equations used are compared with those specified by EPA to establish equivalency. The depth of review of the calculations is dictated by the reviewers' confidence in the ability and conscientiousness of the tester, which in turn is based on factors such as consistency of results and completeness of other areas of the test report.

As an example, an A-rated test may be a stack test, a material balance, or some other methodology, as long as it is generally accepted as a sound method of measuring emissions from that source. In some cases, a material balance calculation may be rated A, but a stack test may be rated only B or C.

Because only one combined value was used to calculate the AP-42 emission factor for each facility, only the results of tests of equal quality ratings were retained when multiple-series tests were run at the same facility.

Although the rating system described above is subjective, it provided a basis for excluding poor data when sufficient good data were available. In preparing the Medical Waste Incinerator Section of AP-42, the quality standards were applied to the data used to calculate the emission factors. All data ratings are documented, and the reasons for assigning the A through D ratings will be clearly stated in the background information to follow.

The reliability of each emission factor presented in the AP-42 is indicated by an overall Emission Factor Rating from A (excellent) to E (poor). These ratings take into account the quality and quantity of data from which the factors were calculated. The following emission factor ratings are applied to the emission factor table.

A - Excellent. Developed only from A-rated source test data taken from many randomly chosen facilities in the industry population. The source category is specific enough to minimize variability within the source population.

B - Above average. Developed only from A-rated test data from a reasonable number of facilities. Although no specific bias is evident, it is not clear if the facilities tested represent a random sample of the industries. As with the A rating, the source is specific enough to minimize variability within the source population.

C - Average. Developed only from A- and B-rated test data from a reasonable number of facilities. Although no specific bias is evident, it is not clear if the facilities tested represent a random sample of the industry. As with the A rating, the source category is specific enough to minimize variability within the source population.

D - Below average. The emission factor was developed only from A- and B-rated test data from a small number of facilities, and there may be reason to suspect that these facilities do not represent a random sample of the industry. There also may be evidence of variability within the source population.

E - Poor. The emission factor was developed from C- and or D- rated test data, and there may be reason to suspect that the facilities tested do not represent a random sample of the industry. There also may be evidence of variability within the source category population. Any limitations on the use of these factors are always clearly noted.

Ideally, a large number of A-rated source test sets representing a cross-section of the medical waste industry would be reduced to a single emission factor value for each individual source by computing arithmetic means for each test set and then calculating an overall arithmetic mean for all the sources. However, because the information presented in this document represents less than 1 percent of the total MWI population, the emission factors presented in Section 5.0 should be used cautiously.

4.0 POLLUTANT EMISSION FACTOR DEVELOPMENT

This chapter describes the test data and methodology used to develop pollutant emission factors for the medical waste incineration industry.

4.1 REVIEW OF SPECIFIC SOURCES OF DATA

Although there are an estimated 7,000 medical waste incinerators in the United States, not many informational reports are in existence; in developing a revised AP-42 Section 2.6 on medical waste incineration, only 37 source reports were used. Of these reports, only 2 contained test data for rotary kiln incinerators, and there were no data on excess air incinerators. Other reports exist containing source test data, but because of various deficiencies (limited process descriptions, noncompatible analytical methods, atypical wastes charged, etc.), they were not used.

The following is a discussion of the data contained in each of the primary references used to develop candidate emission factors. Emission factor calculations were made in terms of weight of pollutant per weight of waste incinerated. It should be noted that the terms "controlled" and "uncontrolled" in this discussion are indicative only of the location in the system where measurements were taken.

4.1.1 St. Bernardines[1]

This reference contains test data from a small [less than 135 kg (300 lb) per day throughput] facility at St. Bernardines Hospital in San Bernardino, California. The tests were conducted by the Engineering Evaluation Branch of the California Air Resources Board (CARB). The objectives of this testing were to characterize criteria and select non-criteria air pollutants released to the atmosphere. The incinerator was manufactured by MCI energy, has a rated capacity of 45 kg/hr (100 lb/hr), and is manually charged. The criteria air pollutants were THC, CO, SO_2, NO_x, and PM. Other, non-criteria pollutants which were tested for were eight metals [arsenic (As), Cd, chromium (Cr), Fe, manganese (Mn), nickel (Ni), and Pb], HCl, CDDs, and CDFs. Since this facility has no control devices, only uncontrolled data are presented.

The pollutants monitored by continuous emission monitoring (CEM) were rated "A." These include THC, CO, SO_2, and NO_x. The CARB Method (1200) used for testing requires the same CEM devices as the EPA uses for these parameters: NO_x are analyzed by a chemiluminescence, SO_2 by ultra-violet (UV) photometry, CO by a non-dispersion infrared detector (NDIR), and THC by flame ionization detector (FID). Also, the particulate data were rated "A" because CARB Method 5 was used (equivalent to EPA Method 5).

The data for metals, HCl, and CDDs and CDFs were treated "B" because, although the modified Method 5 (MM5) trains were similar to those used in EPA methods for these pollutants, the number of impingers present and their contents differed; therefore, it is difficult to determine whether the CARB and the EPA tests can be considered equivalent.

4.1.2 Cape Fear[2]

This facility at Cape Fear Memorial Hospital in Wilmington, North Carolina, has an Environmental Controll Products (now Joy Energy Systems) ram-fed, controlled air incinerator rated at 175 kg/hr (385 lb/hr); it has no add-on pollution control equipment. The objective of testing here, conducted by EPA, was to collect incineration data to meet EPA's commitment to the Medical Waste Tracking Act of 1988 (MWTA) which states that the EPA must prepare a series of reports to Congress that provide information on the advantages and disadvantages of medical waste incineration, including its ability to render a medical waste non-infectious and unrecognizable.

Data collected at Cape Fear included the criteria pollutants mentioned above, 11 metals [antimony (Sb), As, barium (Ba), beryllium (Be), Cd, Cr, Pb, Hg, Ni, silver (Ag), and thallium (Tl)], acid gases [HCl, hydrogen bromide (HBr), and hydrogen fluoride (HF)], CDDs and CDFs, and polychlorinated biphenyls (PCBs).

The PCB data in this report were not used since only one sample was analyzed and Analytical Quantification Procedures (AQP) were not performed. The rest of the data were rated "A" based on all tests being performed using approved EPA methodologies or draft methodologies.

4.1.3 Jordan Hospital[3]

Jordan Hospital in Plymouth, Massachusetts, has a batch-fed controlled air MWI, manufactured by Simonds, which can handle 340 kg (750 lb) per batch of waste and has a heat exchanger. This facility also has add-on control devices, namely, a FF followed by a packed bed absorber. Thus, both controlled and uncontrolled emissions data are presented in this report. The U.S. EPA conducted testing here to aide in developing New Source Performance Standards (NSPS) for MWIs under the Clean Air Act as amended in November 1990.

At the Jordan facility, uncontrolled emissions data were collected for all of the same pollutants as were noted for the facility at Cape Fear except for PCBs. Emissions data after the control device were collected for the HCl, HBr, HF, and SO_2, 11 metals, CDDs and CDFs, and PM.

These data were rated "A." All tests performed used approved EPA methodologies or draft EPA methodologies. The CDD/CDF data were not used, however, because of the uncertainty regarding the impact of the heat exchanger on dioxin formation.

4.1.4 Kaiser Permanente[4]

The Kaiser Permanente Hospital in San Diego, California, has a Therm-tec incinerator rated at 365 kg/hr (800 lb/hr). It also is equipped for waste heat recovery, and it has a caustic scrubber (which uses magnesium hydroxide) for acid gas control. Testing was conducted by CARB for criteria and non-criteria pollutants. The pollutants included CO, SO_2, NO_x, PM, HCl, the same eight metals tested for at St. Bernardines, CDDs and CDFs, and PCBs. Testing for controlled and uncontrolled emissions was similar except for the number of test runs.

The methods and procedures followed for the testing at Kaiser Permanente were identical to those followed at St. Bernardine's; thus, the data were rated in the same way.

The particle size distribution (PSD) data collected at Kaiser were rated "C" because a scanning electron microscope (SEM) was used to count and measure the particles on the Method 5 filter, whereas the EPA methodology utilizes a cascade impactor to separate particulates by size to be counted.

4.1.5 Lenoir Memorial[5]

The facility at Lenoir Memorial Hospital in Kinston, North Carolina, has a medical waste incinerator rated at 145 kg/hr (320 lb/hr). The incinerator is a ram-fed (Joy Energy Systems) model with no air pollution control devices. As with the tests conducted at Cape Fear, the EPA conducted testing to meet reporting requirements of the MWTA to Congress. Emissions data collected at this facility included data for the 4 acid gases, 11 metals, CDDs and CDFs, NO_x, CO, PM, PCBs, chlorinated biphenyls (CBs), and total chlorinated phenols (CPs).

The PCB data were qualitative only and were not used. The CP and CB data were given "D" ratings and not used because only one run of each were valid and AQP were not performed. The rest of the data were rated "A."

4.1.6 AMI[6]

The AMI Central Carolina Hospital in Sanford, North Carolina, has an incinerator with a design charging rate for Type IV (pathological) waste of 80 kg/hr (175 lb/hr). There are no air pollution control devices. Testing was done by the EPA to meet the requirements of the MWTA of 1988. Testing was done at Sanford for the same pollutants as at Lenoir, except that data on PCBs, CBs, and CPs were not collected. These data were all rated "A."

4.1.7 Cedars Sinai[7]

The controlled air MWI (Ecolaire Combustion Products, Inc.) at Cedars Sinai Medical Center in Los Angeles, California, was operated at an average charge rate of 445 kg/hr (980 lb/hr) during tests conducted by CARB. This incinerator is equipped with a fabric filter for particulate control, so emissions data before and after the control device were collected. Emissions data collected for uncontrolled emissions included the following pollutants: CDDs and CDFs, HCl, As, Cd, Cr, Fe, Mn, Pb, and Ni. Data collected for controlled emissions included all the pollutants for which uncontrolled emissions data were collected as well as PM, SO_2, NO_x, and CO.

The data collected at Cedars Sinai were rated in the same way as the previously mentioned CARB reports, and the same test methods were used as in the other CARB reports.

4.1.8 St. Agnes[8]

Testing was conducted by CARB at the Saint Agnes Medical Center in Fresno, California for an incinerator operating at an average charge rate of 355 kg/hr (780 lb/hr) without pollution control devices. The MWI at St. Agnes is a controlled air unit (Environmental Control Products) with waste heat recovery. During the testing, emissions data were collected for HCl, eight metals, CDDs and CDFs, and the "criteria pollutants" as specified by CARB (PM, SO_2, NO_x, and CO). The data for this report was rated the same as for the other CARB reports. No PSD data were collected.

4.1.9 Sutter General[9]

Due to design modifications made to the previously tested incinerator at Sutter General Hospital in Sacramento, California, CARB performed a second evaluation test program to evaluate the effect of the design changes on emissions from the facility. The first report was not available for comparison. The incinerator at Sutter is a controlled air (Therm-tec) with waste heat recovery. During testing, it operated at an average loading rate of 215 kg/hr (475 lb/hr). Testing done at Sutter was for controlled emissions only and included collecting data on the following pollutants: HCl, seven metals, CDDs and CDFs, PM, SO_2, NO_x, and CO. The data were rated in the same way as the other CARB reports mentioned above.

4.1.10 Swedish American Hospital[10]

Testing at the Swedish American Hospital of Rockford, Illinois was done by Beling Consultants for Burden-Cooper, Inc. Uncontrolled emissions were monitored for an incinerator rated at 80 kg/hr (175 lb/hr), and the only data which was usable for AP-42 purposes were two HCl tests, three PM tests, and two CO tests.

The data for particulate matter were rated "A" because EPA Method 5 was followed for sampling. The data on CO and HCl were rated "D" for lack of exact documentation of test procedures.

4.1.11 University of Southern California[11]

Testing at the Los Angeles County--University of Southern California Medical Facility in Los Angeles--was conducted by CARB. The facility has three identical MWIs with no pollution controls. They are controlled air, manually loaded, and each burn no more than 270 kg (600 lb) per day of medical waste; testing was conducted on one of the three incinerators. Pollutants for which emissions data were collected included HCl, eight metals, CDDs and CDFs, PM, SO_2, NO_x, and CO.

The particulate data were rated "A" (MM5 train used). Carbon monoxide data were reported but not used because most readings were off scale.

4.1.12 Royal Jubilee[12]

The Royal Jubilee Hospital in Victoria, British Columbia has a MWI (Consumat) with no controls which was charged at between 680 and 910 kg/hr (1,500 and 2,000 lb/hr) during testing. Data were collected for the following pollutants: HCl, 12 metals, particulate matter, and PCBs.

These data were rated "B." The sampling methodologies used were Canadian, and it was not clear whether they were equivalent to EPA methods. Polychlorinated biphenyl data were reported, but they were not used because of the methodology (rated "D").

4.1.13 Borgess Medical Center[13]

Borgess Medical Center in Kalamazoo, Michigan has a controlled air MWI, manufactured for intermittent duty (manual ash removal), and roughly rated at 295 kg/hr (650 lb/hr). It is equipped with waste heat recovery, dry lime injection for acid gas control and a fabric filter baghouse for PM control. Activated carbon injection was used (for Hg control) on a trial basis. Both controlled and uncontrolled emissions data are presented in this report. The U.S. EPA sponsored testing here to aid in developing NSPS for MWIs under the Clean Air Act as amended in November 1990.

At the Borgess facility, controlled and uncontrolled emissions data were collected for the criteria pollutants, 13 metals (Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Ag, Tl), acid gases (HCl, HBr, and HF), CDDs, and CDFs.

These data were rated "A." All tests performed used approved EPA methodologies or draft EPA methodologies.

4.1.14 Morristown Memorial Hospital[14]

Morristown Memorial Hospital in Morristown, New Jersey has a rotary kiln MWI. This facility has a spray dryer/fabric filter air pollution control device. Tests were conducted November 18-23, 1991 for CO, PM, SO_2, NO_x, HCl, metals, total hydrocarbons, and polychlorinated dibenzo-p-dioxins, and polychlorinated dibenzofurans. Controlled emissions exiting the spray dryer/fabric filter were tested for PM, acid gases, metals, and CDD/CDF. In addition, mercury and dioxin removal efficiencies following carbon injection were investigated. The data were rated "A." All tests performed used EPA methodologies or draft EPA methodologies.

4.1.15 Burlington County Memorial Hospital[15]

The Burlington County Memorial Hospital is located in Mount Holly, New Jersey. Tests were conducted by the New Jersey Department of Environmental Protection, Air Quality Engineering and Technology Element, Bureau of Technical Services in August of 1989. The incinerator tested was an American Energy Corporation Pathological AEC Model 700 incinerator with a York-Shipley HRH-750 heat recovery boiler. Natural gas is utilized as an auxiliary fuel for the primary and secondary combustion chambers. This incinerator is permitted to charge up to 318 kg (700 lbs) of waste per hour. Pollutants tested for are PM, HCl, CO, total hydrocarbons, and NO_x. The data for NO_x and CO are rated "A;" the data for PM, HCl, and total hydrocarbons were rated "B" because New Jersey test methods were used.

4.1.16 Mayo Foundation Institute Hill Research Facility - November 4 and 11[16]

The Morse Boulger Incinerator at the Mayo Foundation Institute Hill Research Facility in Rochester, Minnesota was tested November 4th and 11th, 1988 by PACE Laboratories, Inc.

Particulate matter and HCl emissions were tested. The input capacity of the incinerator is 725 kg/hr (1,600 lb/hr). Emissions are controlled by incinerator operational parameters with no secondary control. With the exception of two runs in Test 3, which were not included because only "red bag" waste weights were recorded, all data were rated "B" because EPA test methods were used, but there is a lack of process description information.

4.1.17 ERA Tech, North Jackson, Ohio[17]

This ram feed incinerator is operated by Multitech Group, Inc. in Mahoning County, Ohio and is fired at a rate of about 680 kg/hr (1,500 lbs/hr). It is equipped with a secondary chamber, quench tower, absorption unit for acid removal, and baghouse for particulate removal. Tests for controlled PM and HCl were conducted by OSA Company in December of 1988. The PM data were rated "B" because EPA Method 5 was used, but little process description is provided; HCl data were rated "C" because it is not clear what test method was used.

4.1.18 Milton S. Hershey Medical Center[18]

The Milton S. Hershey Medical Center in Derry Township, Pennsylvania operates an Ecolaire Model 1500TE Thermal Incinerator with a maximum charging rate of approximately 590 kg/hr (1,300 lbs/hr). Emissions are controlled with a wet scrubber. Tests were conducted by AirNova in October and November of 1989. Uncontrolled and controlled emissions of PM, CO, and CDD/CDF were tested, as well as controlled emissions of SO_2 and HCl. Metals were also tested, but the data were not used because handwritten data conflicted with the data presented in Table 3-7 of the test report. The PM and CO data were rated "A" because EPA methods, or modified EPA methods, were used. The SO_2 and HCl data were rated "B" because PADER test methods were used, and insufficient information about the DER method is provided for it to be adequately validated. Dioxins/furans test data were rated "C" because the report does not provide a charge rate during the CDD/CDF test runs. An average charge rate as measured during the PM and SO_2 test runs was assumed to apply.

4.1.19 Erlanger Medical Center - South Unit[19]

Emission tests were conducted on the South incinerator unit at the Erlanger Medical Center, Chattanooga, Tennessee, in April of 1988. Testing was conducted by Almega Corporation. The South Unit is a Basic Model 1250 incinerator with a dry lime injector baghouse, with a capacity of 565 kg/hr (1,250 lbs/hr), and equipped with a waste heat recovery boiler. Pollutants tested were controlled levels of PM, HCl, Cl, CO, and NO_2. The data were rated "C" because the charge rates were measured on an hourly basis which did not correspond with the actual time of testing, and the waste stream was not well characterized.

4.1.20 Nazareth Hospital[20]

The Nazareth Hospital is located in Philadelphia, Pennsylvania, and operates a Cleaver Brooks Model 1280-A/72 incinerator with a waste heat recovery boiler and a maximum charging rate of 375 kg/hr (825 lbs/hr). The main combustion chamber and integral afterburner are fired by natural gas. Flue gas exiting the waste heat boiler is treated by a wet scrubber. Emissions testing was performed by AirNova, Inc. in July of 1989. Controlled emissions of PM, CO, SO_2 HCl, and metals were measured and uncontrolled HCl and SO_2. The data were all rated "D" because charge rates were not provided for individual test runs, only two test runs were conducted, and for SO_2 and HCl, inlet flows exceeded outlet flows.

4.1.21 Hamilton Hospital[21]

Hamilton Hospital in Hamilton, New Jersey operates a Comtro controlled air incinerator, Model A-24, which is fired with No. 2 fuel oil. Tests were conducted by the New Jersey Department of Environmental Protection, Air Quality Engineering and Technology Element, Bureau of Technical Services in August of 1989. Uncontrolled emissions were tested for PM, HCl, CO, NO_x, and total hydrocarbons. Only runs in which mixed waste streams were fired (rubbish and pathological) were used. All data were rated "B" because New Jersey test methods were used and adequate detail was not provided to determine if the results are comparable to EPA test methods.

4.1.22 Raritan Bay Health Services Corporation[22]

The Raritan Bay Health Services Corporation is located in Perth Amboy, New Jersey and operates a Power Pac Environmental Control Products ECP-Model 1100 incinerator equipped with a waste heat recovery system. The unit is fired with No. 2 fuel oil, and is permitted to operate at a maximum charge rate of 500 kg/hr (1,100 lbs/hr). Tests were conducted in August of 1989 by the New Jersey Department of Environmental Protection, Air Quality Engineering and Technology Element, Bureau of Technical Services. Uncontrolled emissions of PM, HCl, CO, NO_x and total hydrocarbons were measured. All test data were rated "B" because New Jersey test methods were used.

4.1.23 Bio-Waste Management Corporation[23]

This source emission evaluation was conducted at Bio-Waste Management Corporation's facility in Klamath Falls, Oregon to quantify controlled and uncontrolled emissions of PM and HCl. The Consumat biomedical waste incinerator is equipped with a Emcotek Corporation Rotary Atomizing scrubber. Tests were conducted by the Air Quality Division of Am Test, Inc. in June of 1989. All test data were rated "A" because sufficient information is provided to evaluate the Oregon test methods used.

4.1.24 Safeway Disposal System[24]

Safeway Disposal System's facility in Middletown, Connecticut has a M & S Engineering and Manufacturing model number MKI-10-S hospital waste incinerator, which was tested by TRC Environmental Consultants, Inc. in August of 1988. This rotary kiln incinerator is equipped with wet scrubbers. Emissions tested were controlled PM, HCl, sulfuric acid, NO_X, hydrocarbons, and CO. All test data were rated "A" because EPA methods were used, and good documentation is provided for test methods, parameters, and results.

4.1.25 Erlanger Medical Center - North Unit[25]

Emissions tests were conducted on the North Unit incinerator at the Erlanger Medical Center, Chattanooga, Tennessee in March of 1988. Testing was conducted by Almega Corporation. The North Unit is a Basic Model 1250 incinerator equipped with both a dry lime injector baghouse and a waste heat recovery boiler. The incinerator has a charge rate capacity of 565 kg/hr (1,250 lbs/hr). Data were gathered to characterize the controlled emissions levels of PM, HCl, Cl, CO, and NO_2. The data were assigned a quality rating of "B" because the report provided a good description of methods, including a complete set of appendices documenting all phases of testing and laboratory analyses. Information was lacking on the description of the composition of the medical waste.

4.1.26 Memorial Hospital[26]

Memorial Hospital, located in Chattanooga, Tennessee, conducted compliance emissions testing on the Atlas Model CA-1500AR waste incinerator. The testing was performed by Air Systems Testing, Inc. on July 29, 1988. Emissions were estimated for PM, HCl, and Cl. The reported emissions data were assigned a quality rating of "C" because there was no description of air pollution control devices associated with the incinerator. An adequate description of the incinerated waste was also lacking.

4.1.27 ERA Tech[27]

CSA Company performed source emissions tests at the ERA Tech North Incinerator located in Northwood, Ohio. The incinerator is equipped with a quench tower, absorption reactor, and baghouse. The samples were collected in the stainless steel stack downstream of the absorption reactor and the baghouse. The testing was completed in July of 1989, estimating controlled PM and HCl emissions. The data were assigned a quality rating of "B" since information describing the composition of the waste was missing.

4.1.28 Southland Exchange Joint Venture[28]

An emissions compliance test was conducted at the Southland Exchange Waste-to-Energy Facility in Hampton, South Carolina in April of 1989. The facility consists of three Consumat Model CS-3000 incinerators with two recovery boilers. Household, commercial, industrial, and medical wastes are burned; only test data with medical waste were used. The incinerators can employ natural gas as auxiliary fuel, but none was used during the test. The incinerators are equipped with a DSI acid gas scrubber and three parallel ESPs. Tests were performed by ETS, Inc. Controlled emissions of PM, HCl, and CO were tested, as well as 2,3,7,8-tetrachlorinated dibenzo-p-dioxin, 2,3,7,8-tetrachlorinated dibenzofurans, and metals (As, Cd, Cr, Pb, Hg, and Ni). In addition, HCl emissions were measured exiting the boilers prior to the scrubber so the HCl reduction efficiency of the scrubber could be determined, but the data were insufficient to calculate an emission factor. For Cd, Cr, and Ni, it was reported that the analytical blanks were high, results may be biased high due to background sample contamination. These data were rated "D." All EPA test methods were used, or enough information was presented to validate modified methods. With the exception of the waste composition, all information is well documented. All data other than Cd, Cr, and Ni were rated "B."

4.1.29 Medical Energy Generation Associates[29]

Medical Energy Generation Associates (MEGA) of Louisville, Kentucky operates a Simonds Model #AF-58 Incinerator to destroy hospital waste materials. The unit supports a variable throat venturi wet scrubber and a vertical cyclonic entrainment separator. Galson Technical Services, Inc. performed emissions testing of the incinerator unit on August 23-25, 1989, and again on November 15-16, 1989. Emissions estimates were compiled for PM, HCl, CO, CDD, CDF, and several heavy metals including arsenic, cadmium, chromium, lead, mercury, nickel, and silver. The estimates were assigned a data quality rating of "B" because a description of the composition of the waste was not provided.

4.1.30 Therm-Tec Destruction Service - January 1989[30]

The Model AR-1250-2-78DS Therm-Tec incinerator located in Elyria, Ohio was tested in January of 1989 by Maurice L. Kelsey & Associates, Inc. and Almega Corporation. Emissions tests for PM and HCl exiting the baghouse exhaust stack were performed. The emissions data were rated "B" due to the lack of information regarding waste composition.

4.1.31 Bio-Medical Service Corporation[31]

Compliance emissions testing was performed on the incinerator at Bio-Medical Service Corporation, Lake City, Georgia. Testing was performed in May of 1989 by Air Techniques. The incinerator is equipped with a caustic and water quench chamber, venturi, and a packed separator. Controlled emissions of PM and HCl were measured. The data were rated "B" due to the lack of process description information and the use of Georgia methods for determining PM and HCl concentrations.

4.1.32 Mayo Foundation Institute Hills Research Facility - November 3 and 10[32]

PACE Laboratories conducted particulate and chloride emission compliance testing on the Environmental Control Incinerator at the Mayo Foundation Institute Hills Research Facility in Rochester, Minnesota on November 3rd and 10th, 1988. The waste stream for this incinerator is typically non-infectious hospital waste and research animals. The input capacity of the incinerator is 725 kg/hr (1,600 lbs/hr) and emissions are controlled by incinerator operational parameters with no secondary control. Particulate matter and HCl were tested. All data were rated "A" because EPA test methods were used and the tests are well documented.

4.1.33 Therm-Tec Destruction Service - May 1989[33]

Therm-Tec Destruction Service incinerator Model AR-1250-2-78DS is equipped with a heat exchanger and controlled with a fabric filter. The incinerator was again tested by Maurice L. Kelsey and Associates, Inc. in association with the Almega Corporation on May 22, 1989 for emissions of PM and HCl. Emissions were measured after the fabric filter using EPA Method 5 for PM and EPA Method 3 for HCl. While sufficient data were provided by the test report to verify calculations, the data were rated "B" because the waste was not characterized.

4.1.34 Hamot Medical Center[34]

Hamot Medical Center in Erie Pennsylvania operates an Cleaver Brooks incinerator Model No. 1280A/72 equipped with a heat recovery boiler and controlled with lime injection proceeding a fabric filter and wet scrubber. The incinerator combusts approximately 455 kg/hr (1,000 lbs/hr) of waste consisting of 85 percent hospital refuse and 15 percent infectious waste, which is loaded into the primary chamber of the starved air thermal incinerator. Clean Air Engineering tested the incinerator in February and March of 1990 for emissions of PM, metals, HCl, SO_2, SO_3, CO, dioxins, and furans. Controlled emissions were presented for these pollutants in addition to presenting uncontrolled emissions for HCl. Emission factors, however, were not developed for dioxins and furans as emission rates could not be associated with corresponding charge rates from the information available in the report. Emission factors were developed for the remaining pollutants. The remaining pollutants were sampled with EPA methods modified by the Pennsylvania Department of Environmental Resources (PADER), with the exception of HCl, which was measured using a PADER method. The deviations in the test methods were not well documented, consequently the data were rated "B."

4.1.35 HCA North Park Hospital[35]

Compliance emissions testing was performed on the Simonds Model 750B incinerator at the HCA North Park Hospital located in Hixson, Tennessee in February of 1988. Testing was conducted by Air Systems, Inc for uncontrolled PM, HCl, and Cl_2 emissions. All data were rated "B" due to the lack of process description and waste composition data.

4.1.36 Humana East Ridge Hospital[36]

The Humana East Ridge Hospital in Chattanooga, Tennessee contracted Air Techniques to perform compliance emission testing on a natural gas-fired incinerator. The incinerator, which is uncontrolled, was tested in November of 1987 for PM, HCl, and Cl_2. All EPA test methods were used, however the report lacked adequate documentation to validate the emissions data. For this reason, the data were rated "B."

4.1.37 Helene Fuld Medical Center[37]

The Helene Fuld Medical Center in Trenton, New Jersey operates an incinerator with an 360 kg/hr (800 lb/hr) design charge rate, which is equipped with a waste heat boiler recovery system and fired with auxiliary No. 2 fuel oil. Uncontrolled emissions were measured by the State's Bureau of Technical Services in July of 1989 for PM, HCl, CO, NO_x, and THC. EPA test methods were employed for CO and NO_X, while New Jersey test methods were used for PM, THC, and HCl. The report provide adequate detail for validation of the reported emission rates for CO and NO_X, which were rated as "A," however, PM, HCl and THC were rated as "B" due to the use of non-EPA methods.

4.1.38 Other Data

Fifteen additional source test reports were obtained but not used. The reports and reasons for not being included in AP-42 are listed below.

1. Source Emission Testing of Hospital and Classified Waste Incinerators, Plattsburg AFB, New York. Hydrochloric acid and total particulate emissions were reported. Large variations in chamber temperatures were noted during the test. The test report recommends a maintenance inspection to insure proper operation. These data were not included in the database due to the operating conditions during testing. The conditions did not seem representative of typical incinerator operation, and sufficient data were available for HCl and PM from other reports.
2. Source Emission Testing of a Hospital Pathological Waste Incinerator, K.I. Sawyer AFB, Michigan. Total particulate emissions were reported. Data were not included for two reasons: 1) Only the capacity of the unit and "typical" loading rates were given. Actual loading rate during the test was not given. 2) The incinerator was stated to be in poor repair, and thus not representative of the general population.
3. Source Emission Testing of a Hospital Pathological Waste Incinerator, Beale AFB, California. Total particulate and HCl emissions were reported. Data were not reported due to poor maintenance of the incinerator. A hole in the refractory and incinerator wall was noted as well as flames exiting the incinerator stack. Actual loading rates during the test were also not reported.
4. Emissions Testing of Incinerator at Queen of the Valley Hospitals, Napa, California. Total particulate and HCl emissions were reported. Data were excluded due to the lack of process description/waste stream composition information.

5. Compliance Test Report, Cranston General Hospital Waste Incinerator, Cranston, Rhode Island. Particulate and HCl emissions were reported. These data were excluded due to the lack of process description and test methods information.

6. Report of Particulate/HCl/CO Emissions Test for National Incinerator, Inc. Model P-50 Incinerator, Corsicana, Texas. These data were excluded because of the lack of process description, test methods, and waste stream composition data.

7. Emissions Compliance Evaluation, Particulate Matter and Hydrogen Chloride. Pathological Waste Incinerator No. 2, Multitech Industries, Inc.. These data were excluded due to the lack of process description information.

8. Stack Emission Testing, Anderson Scrubber, Inlet and Outlet. Albert Einstein Waste Incinerator. These particulate data were excluded because the copy was illegible, and no facility description or test method information was presented.

9. Performance Tests at Borgess Hospital, Kalamazoo, Michigan. These HCl were excluded due to the absence of throughput data.

10. Report of Particulate/HCl/CO Emissions Test for National Incinerator, Inc. Model P-200 Incinerator. Corsicana, Texas. These data were excluded because the text states only that this pathological incinerator was charged with a "representative mixture of refuse." It is not clear if the charge rate includes just pathological waste or the total mixture.

11. Report of Emission Tests, American Cyanamid Company, West Windsor, Township, New Jersey. These particulate, total hydrocarbon, nitrogen oxide, and carbon monoxide data were not used because atypical (100% pathological) wastes appear to have been fired.

12. Final Report, Kent County Memorial Hospital Incinerator Compliance Test. Compounds tested for include total suspended particulate, trace metals, HCl, carbon monoxide, and dioxins/furans. These data were excluded due to the lack of process description and test methods information.

13. Source Sampling Report for Bio Ecological Services, Inc. Model 2500 TES Incinerator, Huntersville, North Carolina. These particulate, carbon monoxide, and HCl data were excluded because atypical (pathological only) wastes were burned.

14. Particulate, Metals, and Hydrogen Chloride Emission Test of Incinerator. University of Michigan Hospital, Ann Arbor, Michigan. These data were excluded because water was added to the waste during the tests, indicating that the waste stream may not be representative.

15. Compliance Emission Testing for HCA Parkridge Hospital, Chattanooga, Tennessee. These PM, HCl, and Cl_2 test data were excluded because the charge rate was only provided for the entire duration of testing, and one of four runs was void. It was not clear how much waste was charged during the individual test runs.

4.2 PROTOCOL FOR DATABASE

Due to the variety of formats used to report test results at different medical waste incineration facilities, the emissions data required some preprocessing to standardize the units of measure prior to computer calculation of emission factors. Emission factors were then calculated in terms of lb/ton and mg/Mg of waste fed for all pollutants. Table 4-1 presents a list of the emission factors, calculated on a run-by-run basis, which were used to calculate the emission factors presented in AP-42 Section 2.6 for controlled air and rotary kiln MWIs. Table 4-1 is sorted first by air pollution control type for controlled air incinerators, then by pollutant and facility. Table 4-2 presents similar information for test data from two rotary kiln MWIs.
The following subsections illustrate how the raw data were manipulated to calculate all emission factors in similar units.

4.2.1 Charge Rates

In each report, charge rates were given in either pounds per hour (lb/hr) or kilograms per hour (kg/hr). To convert the two, the following conversion was used:

$$\text{Charge rate (lb/hr)} = \text{Charge rate (kg/hr)} * 2.2046$$

4.2.2 Data Presented in Pounds per Hour or Grams per Hour

In the simplest cases, raw data were given in units of lb/hr or g/hr. In this case, the number given was simply divided by the charge rate for that particular test run:

EF1 (emission factor,lb/ton) = 2,000 * Emission rate (lb/hr)

Charge rate (lb/hr)

$$EF2\ (mg/Mg) = \frac{1{,}000{,}000 * \text{Emission rate (g/hr)}}{\text{Charge rate (kg/hr)}}$$

For data presented in µg/hr or mg/hr, divide the EF2 equation by 1 or 1,000, respectively. Also, for data presented in ng/sec, multiply the EF2 equation by 0.0036.

TABLE 4-1. SUMMARY OF CONTROLLED AIR MWI EMISSION FACTORS ON A TEST-BY-TEST BASIS

TABLE 4-1. SUMMARY OF EMISSION FACTORS ON A TEST-BY-TEST BASIS

						Emission Factor	
						- - - - -	- - - - -
Type*	Facility	Reference	Run		Pollutant	lb/ton	mg/Mg
= = =	= = = = = = = = =	= = = = =	= = =	=	= = = = = = = = = = =	= = = = =	= = = = =
1	Cape Fear	2	1		2378 TCDD	6.66e-08	3.33e-02
1	Cape Fear	2	2		2378 TCDD	3.36e-08	1.68e-02
1	Cape Fear	2	3		2378 TCDD	9.23e-08	4.61e-02
1	Cape Fear	2	4		2378 TCDD	4.32e-08	2.16e-02
1	Cape Fear	2	5		2378 TCDD	9.83e-08	4.91e-02
1	Cape Fear	2	6		2378 TCDD	3.61e-08	1.80e-02
1	Cape Fear	2	7		2378 TCDD	2.33e-07	1.16e-01
1	Cape Fear	2	8		2378 TCDD	6.31e-08	3.16e-02
1	Cape Fear	2	9		2378 TCDD	1.23e-07	6.15e-02
1	Cedars Sinai	7	1		2378 TCDD	3.24e-09	1.62e-03
1	Cedars Sinai	7	2		2378 TCDD	7.77e-09	3.89e-03
1	Cedars Sinai	7	3		2378 TCDD	5.51e-09	2.75e-03
1	Jordan	3	2		2378 TCDD	3.10e-09	1.55e-03
1	Jordan	3	4		2378 TCDD	5.72e-09	2.86e-03
1	Jordan	3	6		2378 TCDD	3.71e-08	1.86e-02
1	Kaiser	4	1		2378 TCDD	8.48e-09	4.24e-03
1	Kaiser	4	2		2378 TCDD	3.92e-09	1.96e-03
1	Kaiser	4	3		2378 TCDD	1.23e-08	6.13e-03
1	Lenoir	5	1		2378 TCDD	3.79e-08	1.89e-02
1	Lenoir	5	2		2378 TCDD	1.20e-07	6.02e-02
1	Lenoir	5	3		2378 TCDD	2.35e-08	1.18e-02
1	Lenoir	5	4		2378 TCDD	3.73e-07	1.87e-01

1	Lenoir	5	5		2378 TCDD	8.13e-08	4.07e-02
1	Lenoir	5	6		2378 TCDD	4.39e-07	2.20e-01
1	Lenoir	5	7		2378 TCDD	6.44e-08	3.21e-02
1	Lenoir	5	8		2378 TCDD	5.41e-07	2.71e-01
1	Lenoir	5	9		2378 TCDD	6.14e-08	3.06e-02
1	Sanford	6	1		2378 TCDD	1.41e-08	7.07e-03
1	Sanford	6	2		2378 TCDD	3.60e-08	1.80e-02
1	Sanford	6	3		2378 TCDD	2.57e-08	1.29e-02
1	Sanford	6	4		2378 TCDD	9.17e-09	4.59e-03
1	Sanford	6	5		2378 TCDD	3.89e-07	1.94e-01
1	Sanford	6	6		2378 TCDD	1.07e-08	5.35e-03
1	Sanford	6	8		2378 TCDD	8.90e-07	4.45e-01
1	Sanford	6	9		2378 TCDD	2.92e-07	1.46e-01
1	Sanford	6	10		2378 TCDD	3.83e-09	1.91e-03
1	St. Bernardine's	1	1		2378 TCDD	1.50e-09	7.52e-04
1	St. Bernardine's	1	2		2378 TCDD	1.20e-08	6.02e-03
1	St. Bernardine's	1	3		2378 TCDD	1.81e-09	9.07e-04
1	St. Bernardine's	1	4		2378 TCDD	1.81e-09	9.07e-04
1	St.Agnes	8	2		2378 TCDD	1.07e-08	5.37e-03
1	Sutter	9	1		2378 TCDD	6.42e-09	3.21e-03
1	Sutter	9	2		2378 TCDD	3.55e-09	1.77e-03
1	Sutter	9	3		2378 TCDD	4.52e-09	2.26e-03
1	USC	11	1		2378 TCDD	1.33e-07	6.64e-02
1	USC	11	3		2378 TCDD	3.00e-08	1.50e-02
1	USC	11	4		2378 TCDD	6.62e-08	3.31e-02
1	Cape Fear	2	1		TOTAL TCDD	2.86e-06	1.43e+00
1	Cape Fear	2	2		TOTAL TCDD	7.68e-07	3.84e-01
1	Cape Fear	2	3		TOTAL TCDD	2.77e-07	1.38e-01

1	Cape Fear	2	4		TOTAL TCDD	1.26e-06	6.28e-01
1	Cape Fear	2	5		TOTAL TCDD	8.63e-08	4.32e-02
1	Cape Fear	2	6		TOTAL TCDD	3.66e-06	1.83e+00
1	Cape Fear	2	7		TOTAL TCDD	1.86e-06	9.32e-01
1	Cape Fear	2	8		TOTAL TCDD	1.33e-06	6.65e-01
1	Cape Fear	2	9		TOTAL TCDD	4.79e-07	2.40e-01
1	Cedars Sinai	7	1		TOTAL TCDD	3.90e-08	1.95e-02
1	Cedars Sinai	7	2		TOTAL TCDD	1.30e-07	6.48e-02
1	Cedars Sinai	7	3		TOTAL TCDD	7.63e-08	3.81e-02
1	Jordan	3	2		TOTAL TCDD	7.10e-09	3.55e-03
1	Jordan	3	4		TOTAL TCDD	3.57e-07	1.79e-01
1	Jordan	3	6		TOTAL TCDD	4.07e-07	2.04e-01
1	Kaiser	4	1		TOTAL TCDD	8.48e-09	4.24e-03
1	Kaiser	4	2		TOTAL TCDD	1.50e-08	7.51e-03
1	Kaiser	4	3		TOTAL TCDD	1.41e-07	7.06e-02
1	Lenoir	5	1		TOTAL TCDD	7.75e-06	3.88e+00
1	Lenoir	5	2		TOTAL TCDD	5.47e-06	2.74e+00
1	Lenoir	5	3		TOTAL TCDD	6.46e-07	3.22e-01
1	Lenoir	5	4		TOTAL TCDD	9.01e-07	4.51e-01
1	Lenoir	5	5		TOTAL TCDD	4.82e-06	2.41e+00
1	Lenoir	5	6		TOTAL TCDD	3.97e-07	1.98e-01
1	Lenoir	5	7		TOTAL TCDD	3.13e-07	1.57e-01
1	Lenoir	5	8		TOTAL TCDD	1.48e-06	7.40e-01
1	Lenoir	5	9		TOTAL TCDD	8.71e-07	4.34e-01
1	Sanford	6	1		TOTAL TCDD	1.02e-05	5.08e+00
1	Sanford	6	2		TOTAL TCDD	4.19e-07	2.09e-01
1	Sanford	6	3		TOTAL TCDD	1.99e-07	9.96e-02
1	Sanford	6	4		TOTAL TCDD	1.67e-05	8.36e+00

1	Sanford	6	5		TOTAL TCDD	7.16e-06	3.58e+00
1	Sanford	6	6		TOTAL TCDD	8.61e-07	4.31e-01
1	Sanford	6	8		TOTAL TCDD	3.37e-06	1.68e+00
1	Sanford	6	9		TOTAL TCDD	4.85e-07	2.43e-01
1	Sanford	6	10		TOTAL TCDD	2.14e-06	1.07e+00
1	St. Bernardine's	1	1		TOTAL TCDD	1.25e-07	6.27e-02
1	St. Bernardine's	1	2		TOTAL TCDD	1.75e-07	8.75e-02
1	St. Bernardine's	1	3		TOTAL TCDD	9.66e-08	4.83e-02
1	St. Bernardine's	1	4		TOTAL TCDD	3.63e-09	1.81e-03
1	St.Agnes	8	1		TOTAL TCDD	1.07e-06	5.36e-01
1	St.Agnes	8	2		TOTAL TCDD	8.76e-08	4.38e-02
1	Sutter	9	1		TOTAL TCDD	6.80e-07	3.40e-01
1	Sutter	9	2		TOTAL TCDD	6.78e-07	3.39e-01
1	Sutter	9	3		TOTAL TCDD	1.07e-06	5.37e-01
1	USC	11	1		TOTAL TCDD	8.10e-07	4.05e-01
1	USC	11	3		TOTAL TCDD	4.26e-07	2.13e-01
1	USC	11	4		TOTAL TCDD	3.64e-07	1.82e-01
1	Cape Fear	2	1		TOTAL CDD	3.85e-05	1.92e+01
1	Cape Fear	2	2		TOTAL CDD	1.91e-05	9.56e+00
1	Cape Fear	2	3		TOTAL CDD	6.45e-06	3.22e+00
1	Cape Fear	2	4		TOTAL CDD	2.45e-05	1.23e+01
1	Cape Fear	2	5		TOTAL CDD	2.06e-05	1.03e+01
1	Cape Fear	2	6		TOTAL CDD	2.46e-06	1.23e+00
1	Cape Fear	2	7		TOTAL CDD	1.35e-05	6.74e+00
1	Cape Fear	2	8		TOTAL CDD	3.26e-05	1.63e+01
1	Cape Fear	2	9		TOTAL CDD	2.06e-05	1.03e+01
1	Cedars Sinai	7	1		TOTAL CDD	3.00e-06	1.50e+00
1	Cedars Sinai	7	2		TOTAL CDD	4.07e-06	2.03e+00

1	Cedars Sinai	7	3		TOTAL CDD	4.83e-06	2.41e+00
1	Jordan	3	2		TOTAL CDD	5.93e-08	2.96e-02
1	Jordan	3	4		TOTAL CDD	4.96e-06	2.48e+00
1	Jordan	3	6		TOTAL CDD	1.69e-05	8.45e+00
1	Kaiser	4	1		TOTAL CDD	6.04e-06	3.02e+00
1	Kaiser	4	2		TOTAL CDD	7.32e-06	3.66e+00
1	Kaiser	4	3		TOTAL CDD	2.20e-05	1.10e+01
1	Lenoir	5	1		TOTAL CDD	1.55e-05	7.74e+00
1	Lenoir	5	2		TOTAL CDD	1.01e-04	5.06e+01
1	Lenoir	5	3		TOTAL CDD	4.10e-05	2.04e+01
1	Lenoir	5	4		TOTAL CDD	2.76e-05	1.38e+01
1	Lenoir	5	5		TOTAL CDD	9.63e-05	4.80e+01
1	Lenoir	5	6		TOTAL CDD	3.92e-05	1.95e+01
1	Lenoir	5	7		TOTAL CDD	4.21e-05	2.11e+01
1	Lenoir	5	8		TOTAL CDD	6.20e-05	3.10e+01
1	Lenoir	5	9		TOTAL CDD	6.82e-05	3.41e+01
1	Sanford	6	1		TOTAL CDD	1.31e-04	6.53e+01
1	Sanford	6	2		TOTAL CDD	6.22e-06	3.11e+00
1	Sanford	6	3		TOTAL CDD	9.67e-05	4.83e+01
1	Sanford	6	4		TOTAL CDD	2.53e-06	1.26e+00
1	Sanford	6	5		TOTAL CDD	4.25e-05	2.12e+01
1	Sanford	6	6		TOTAL CDD	1.21e-05	6.03e+00
1	Sanford	6	8		TOTAL CDD	3.62e-06	1.81e+00
1	Sanford	6	9		TOTAL CDD	1.93e-06	9.63e-01
1	Sanford	6	10		TOTAL CDD	1.04e-06	5.22e-01
1	St. Bernardine's	1	1		TOTAL CDD	3.26e-06	1.63e+00
1	St. Bernardine's	1	2		TOTAL CDD	8.76e-06	4.38e+00
1	St. Bernardine's	1	3		TOTAL CDD	5.15e-06	2.58e+00

1	St. Bernardine's	1	4		TOTAL CDD	1.91e-06	9.54e-01
1	St.Agnes	8	1		TOTAL CDD	1.25e-05	6.26e+00
1	St.Agnes	8	2		TOTAL CDD	7.64e-06	3.82e+00
1	Sutter	9	1		TOTAL CDD	2.79e-05	1.39e+01
1	Sutter	9	2		TOTAL CDD	3.09e-05	1.55e+01
1	Sutter	9	3		TOTAL CDD	3.24e-05	1.62e+01
1	USC	11	1		TOTAL CDD	3.21e-05	1.61e+01
1	USC	11	3		TOTAL CDD	7.87e-05	3.93e+01
1	USC	11	4		TOTAL CDD	6.37e-05	3.18e+01
1	Cape Fear	2	1		2378 TCDF	5.82e-07	2.91e-01
1	Cape Fear	2	1		2378 TCDF	2.34e-07	1.17e-01
1	Cape Fear	2	2		2378 TCDF	2.10e-07	1.05e-01
1	Cape Fear	2	2		2378 TCDF	6.09e-07	3.05e-01
1	Cape Fear	2	3		2378 TCDF	3.18e-07	1.59e-01
1	Cape Fear	2	3		2378 TCDF	2.44e-07	1.22e-01
1	Cape Fear	2	4		2378 TCDF	9.53e-07	4.76e-01
1	Cape Fear	2	5		2378 TCDF	1.35e-08	6.77e-03
1	Cape Fear	2	6		2378 TCDF	2.17e-07	1.08e-01
1	Cape Fear	2	7		2378 TCDF	3.99e-07	2.00e-01
1	Cape Fear	2	8		2378 TCDF	3.45e-07	1.72e-01
1	Cape Fear	2	9		2378 TCDF	2.28e-07	1.14e-01
1	Cedars Sinai	7	1		2378 TCDF	2.07e-08	1.04e-02
1	Cedars Sinai	7	2		2378 TCDF	4.50e-08	2.25e-02
1	Cedars Sinai	7	3		2378 TCDF	3.43e-08	1.72e-02
1	Jordan	3	2		2378 TCDF	4.56e-09	2.28e-03
1	Jordan	3	4		2378 TCDF	8.31e-08	4.15e-02
1	Jordan	3	6		2378 TCDF	2.82e-07	1.41e-01
1	Kaiser	4	1		2378 TCDF	3.40e-08	1.70e-02

1	Kaiser	4	2		2378 TCDF	1.50e-08	7.51e-03
1	Kaiser	4	3		2378 TCDF	1.53e-07	7.67e-02
1	Lenoir	5	1		2378 TCDF	3.80e-07	1.90e-01
1	Lenoir	5	1		2378 TCDF	6.42e-07	3.21e-01
1	Lenoir	5	2		2378 TCDF	2.45e-07	1.22e-01
1	Lenoir	5	2		2378 TCDF	2.71e-07	1.35e-01
1	Lenoir	5	3		2378 TCDF	2.20e-06	1.10e+00
1	Lenoir	5	3		2378 TCDF	1.31e-07	6.57e-02
1	Lenoir	5	4		2378 TCDF	2.01e-06	1.01e+00
1	Lenoir	5	5		2378 TCDF	3.86e-07	1.92e-01
1	Lenoir	5	6		2378 TCDF	2.20e-06	1.10e+00
1	Lenoir	5	7		2378 TCDF	2.20e-06	1.10e+00
1	Lenoir	5	8		2378 TCDF	3.66e-07	1.83e-01
1	Lenoir	5	9		2378 TCDF	1.83e-07	9.11e-02
1	Sanford	6	1		2378 TCDF	4.74e-08	2.37e-02
1	Sanford	6	1		2378 TCDF	9.47e-08	4.74e-02
1	Sanford	6	2		2378 TCDF	1.67e-07	8.35e-02
1	Sanford	6	2		2378 TCDF	1.42e-06	7.10e-01
1	Sanford	6	3		2378 TCDF	6.00e-08	3.00e-02
1	Sanford	6	3		2378 TCDF	8.00e-08	4.00e-02
1	Sanford	6	4		2378 TCDF	1.50e-08	7.50e-03
1	Sanford	6	5		2378 TCDF	8.90e-07	4.45e-01
1	Sanford	6	6		2378 TCDF	3.29e-06	1.64e+00
1	Sanford	6	8		2378 TCDF	1.65e-07	8.23e-02
1	Sanford	6	9		2378 TCDF	5.11e-08	2.56e-02
1	Sanford	6	10		2378 TCDF	1.76e-07	8.78e-02
1	St. Bernardine's	1	1		2378 TCDF	3.16e-08	1.58e-02
1	St. Bernardine's	1	2		2378 TCDF	2.91e-08	1.45e-02

1	St. Bernardine's	1	3		2378 TCDF	1.72e-08	8.62e-03
1	St. Bernardine's	1	4		2378 TCDF	1.04e-08	5.22e-03
1	St.Agnes	8	1		2378 TCDF	4.64e-08	2.32e-02
1	St.Agnes	8	2		2378 TCDF	5.62e-08	2.81e-02
1	Sutter	9	1		2378 TCDF	1.74e-07	8.71e-02
1	Sutter	9	2		2378 TCDF	1.57e-07	7.84e-02
1	Sutter	9	3		2378 TCDF	1.95e-07	9.76e-02
1	USC	11	1		2378 TCDF	6.36e-07	3.18e-01
1	USC	11	3		2378 TCDF	3.63e-07	1.81e-01
1	USC	11	4		2378 TCDF	5.22e-07	2.61e-01
1	Cape Fear	2	1		TOTAL TCDF	6.50e-06	3.25e+00
1	Cape Fear	2	2		TOTAL TCDF	1.01e-05	5.03e+00
1	Cape Fear	2	3		TOTAL TCDF	1.91e-05	9.56e+00
1	Cape Fear	2	4		TOTAL TCDF	1.20e-05	6.01e+00
1	Cape Fear	2	5		TOTAL TCDF	2.87e-05	1.43e+01
1	Cape Fear	2	6		TOTAL TCDF	1.13e-05	5.65e+00
1	Cape Fear	2	7		TOTAL TCDF	8.70e-06	4.35e+00
1	Cape Fear	2	8		TOTAL TCDF	4.73e-07	2.36e-01
1	Cape Fear	2	9		TOTAL TCDF	9.27e-06	4.63e+00
1	Cedars Sinai	7	1		TOTAL TCDF	6.53e-07	3.26e-01
1	Cedars Sinai	7	2		TOTAL TCDF	1.55e-06	7.77e-01
1	Cedars Sinai	7	3		TOTAL TCDF	1.16e-06	5.81e-01
1	Jordan	3	2		TOTAL TCDF	6.08e-08	3.04e-02
1	Jordan	3	4		TOTAL TCDF	4.09e-06	2.04e+00
1	Jordan	3	6		TOTAL TCDF	7.57e-06	3.79e+00
1	Kaiser	4	1		TOTAL TCDF	4.88e-07	2.44e-01
1	Kaiser	4	2		TOTAL TCDF	4.45e-07	2.23e-01
1	Kaiser	4	3		TOTAL TCDF	2.33e-06	1.17e+00

1	Lenoir	5	1		TOTAL TCDF	5.98e-05	2.99e+01
1	Lenoir	5	2		TOTAL TCDF	5.11e-06	2.56e+00
1	Lenoir	5	3		TOTAL TCDF	4.63e-05	2.32e+01
1	Lenoir	5	4		TOTAL TCDF	5.72e-05	2.86e+01
1	Lenoir	5	5		TOTAL TCDF	1.38e-05	6.90e+00
1	Lenoir	5	6		TOTAL TCDF	1.08e-05	5.38e+00
1	Lenoir	5	7		TOTAL TCDF	2.26e-05	1.13e+01
1	Lenoir	5	8		TOTAL TCDF	8.40e-06	4.19e+00
1	Lenoir	5	9		TOTAL TCDF	1.08e-05	5.39e+00
1	Sanford	6	1		TOTAL TCDF	6.15e-07	3.08e-01
1	Sanford	6	2		TOTAL TCDF	1.98e-06	9.91e-01
1	Sanford	6	3		TOTAL TCDF	2.75e-05	1.37e+01
1	Sanford	6	4		TOTAL TCDF	1.03e-05	5.15e+00
1	Sanford	6	5		TOTAL TCDF	1.67e-06	8.33e-01
1	Sanford	6	6		TOTAL TCDF	7.02e-06	3.51e+00
1	Sanford	6	8		TOTAL TCDF	9.58e-05	4.79e+01
1	Sanford	6	9		TOTAL TCDF	6.59e-06	3.30e+00
1	Sanford	6	10		TOTAL TCDF	2.24e-06	1.12e+00
1	St. Bernardine's	1	1		TOTAL TCDF	8.91e-07	4.46e-01
1	St. Bernardine's	1	2		TOTAL TCDF	1.41e-06	7.04e-01
1	St. Bernardine's	1	3		TOTAL TCDF	4.99e-07	2.50e-01
1	St. Bernardine's	1	4		TOTAL TCDF	1.33e-07	6.65e-02
1	St.Agnes	8	1		TOTAL TCDF	1.81e-06	9.04e-01
1	St.Agnes	8	2		TOTAL TCDF	2.07e-06	1.03e+00
1	Sutter	9	1		TOTAL TCDF	8.81e-06	4.40e+00
1	Sutter	9	2		TOTAL TCDF	8.16e-06	4.08e+00
1	Sutter	9	3		TOTAL TCDF	8.26e-06	4.13e+00
1	USC	11	1		TOTAL TCDF	9.25e-06	4.63e+00

1	USC	11	3		TOTAL TCDF	4.27e-06	2.13e+00
1	USC	11	4		TOTAL TCDF	7.18e-06	3.59e+00
1	Cape Fear	2	1		TOTAL CDF	1.43e-04	7.17e+01
1	Cape Fear	2	2		TOTAL CDF	1.14e-04	5.70e+01
1	Cape Fear	2	3		TOTAL CDF	1.49e-05	7.43e+00
1	Cape Fear	2	4		TOTAL CDF	6.99e-05	3.50e+01
1	Cape Fear	2	5		TOTAL CDF	4.55e-05	2.27e+01
1	Cape Fear	2	6		TOTAL CDF	1.20e-04	6.01e+01
1	Cape Fear	2	7		TOTAL CDF	1.13e-04	5.65e+01
1	Cape Fear	2	8		TOTAL CDF	2.05e-04	1.02e+02
1	Cape Fear	2	9		TOTAL CDF	1.02e-04	5.09e+01
1	Cedars Sinai	7	1		TOTAL CDF	8.10e-06	4.05e+00
1	Cedars Sinai	7	2		TOTAL CDF	1.12e-05	5.61e+00
1	Cedars Sinai	7	3		TOTAL CDF	1.29e-05	6.46e+00
1	Jordan	3	2		TOTAL CDF	2.83e-07	1.41e-01
1	Jordan	3	4		TOTAL CDF	1.23e-05	6.14e+00
1	Jordan	3	6		TOTAL CDF	6.48e-05	3.24e+01
1	Kaiser	4	1		TOTAL CDF	1.60e-05	7.99e+00
1	Kaiser	4	2		TOTAL CDF	1.46e-05	7.30e+00
1	Kaiser	4	3		TOTAL CDF	4.26e-05	2.13e+01
1	Lenoir	5	1		TOTAL CDF	2.90e-04	1.45e+02
1	Lenoir	5	2		TOTAL CDF	1.65e-04	8.24e+01
1	Lenoir	5	3		TOTAL CDF	1.21e-04	6.05e+01
1	Lenoir	5	4		TOTAL CDF	2.69e-04	1.34e+02
1	Lenoir	5	5		TOTAL CDF	1.45e-04	7.21e+01
1	Lenoir	5	6		TOTAL CDF	4.12e-04	2.06e+02
1	Lenoir	5	7		TOTAL CDF	1.11e-04	5.54e+01
1	Lenoir	5	8		TOTAL CDF	5.44e-05	2.72e+01

1	Lenoir	5	9		TOTAL CDF	6.45e-04	3.23e+02
1	Sanford	6	1		TOTAL CDF	1.40e-05	6.98e+00
1	Sanford	6	2		TOTAL CDF	1.50e-04	7.49e+01
1	Sanford	6	3		TOTAL CDF	4.87e-06	2.43e+00
1	Sanford	6	4		TOTAL CDF	6.54e-04	3.27e+02
1	Sanford	6	5		TOTAL CDF	2.61e-04	1.30e+02
1	Sanford	6	6		TOTAL CDF	2.00e-06	9.98e-01
1	Sanford	6	8		TOTAL CDF	8.69e-06	4.34e+00
1	Sanford	6	9		TOTAL CDF	4.49e-06	2.24e+00
1	Sanford	6	10		TOTAL CDF	2.99e-05	1.49e+01
1	St. Bernardine's	1	1		TOTAL CDF	1.01e-05	5.03e+00
1	St. Bernardine's	1	2		TOTAL CDF	2.13e-05	1.06e+01
1	St. Bernardine's	1	3		TOTAL CDF	1.10e-05	5.50e+00
1	St. Bernardine's	1	4		TOTAL CDF	3.63e-06	1.82e+00
1	St.Agnes	8	1		TOTAL CDF	2.19e-05	1.09e+01
1	St.Agnes	8	2		TOTAL CDF	1.85e-05	9.26e+00
1	Sutter	9	1		TOTAL CDF	5.40e-05	2.70e+01
1	Sutter	9	2		TOTAL CDF	5.92e-05	2.96e+01
1	Sutter	9	3		TOTAL CDF	6.11e-05	3.05e+01
1	USC	11	1		TOTAL CDF	1.17e-04	5.87e+01
1	USC	11	3		TOTAL CDF	1.66e-04	8.32e+01
1	USC	11	4		TOTAL CDF	1.96e-04	9.82e+01
1	Cape Fear	2	8		TOTAL PCB	1.23e-08	6.16e-03
1	Kaiser	4	1		TOTAL PCB	1.23e-08	6.16e-03
1	Kaiser	4	2		TOTAL PCB	8.59e-05	4.29e+01
1	Kaiser	4	3		TOTAL PCB	9.64e-05	4.82e+01
1	Lenoir	5	7		Chlorobenzene	1.40e-03	6.99e+02
1	Lenoir	5	7		Chlorophenol	8.24e-04	4.12e+02

1	Cape Fear	2	1		Total Hydrocarbons	6.23e-02	3.12e+04
1	Cape Fear	2	2		Total Hydrocarbons	3.60e-02	1.80e+04
1	Cape Fear	2	3		Total Hydrocarbons	1.16e+00	5.82e+05
1	Cape Fear	2	4		Total Hydrocarbons	1.67e+00	8.37e+05
1	Cape Fear	2	5		Total Hydrocarbons	1.60e-01	8.00e+04
1	Cape Fear	2	6		Total Hydrocarbons	8.92e-02	4.46e+04
1	Cape Fear	2	7		Total Hydrocarbons	2.28e-01	1.14e+05
1	Cape Fear	2	8		Total Hydrocarbons	2.89e-01	1.45e+05
1	Cape Fear	2	9		Total Hydrocarbons	2.72e-01	1.36e+05
1	Jordan	3	2		Total Hydrocarbons	7.60e-01	3.80e+05
1	Jordan	3	6		Total Hydrocarbons	3.71e-01	1.85e+05
1	Kaiser	4	1		Total Hydrocarbons	1.27e-01	6.34e+04
1	Kaiser	4	2		Total Hydrocarbons	1.27e-01	6.34e+04
1	Kaiser	4	3		Total Hydrocarbons	1.27e-01	6.34e+04
1	Kaiser	4	4		Total Hydrocarbons	1.43e-01	7.16e+04
1	Kaiser	4	5		Total Hydrocarbons	1.43e-01	7.16e+04
1	Kaiser	4	6		Total Hydrocarbons	1.55e-01	7.77e+04
1	Kaiser	4	7		Total Hydrocarbons	1.55e-01	7.77e+04
1	Kaiser	4	8		Total Hydrocarbons	1.66e-01	8.28e+04
1	Lenoir	5	1		Total Hydrocarbons	1.68e-01	8.41e+04
1	Lenoir	5	2		Total Hydrocarbons	3.07e-01	1.53e+05
1	Lenoir	5	3		Total Hydrocarbons	2.84e-01	1.42e+05
1	Lenoir	5	4		Total Hydrocarbons	8.44e-02	4.22e+04
1	Lenoir	5	6		Total Hydrocarbons	2.25e-01	1.13e+05
1	Lenoir	5	7		Total Hydrocarbons	2.33e-01	1.16e+05
1	Lenoir	5	9		Total Hydrocarbons	9.08e-01	4.54e+05
1	Sanford	6	1		Total Hydrocarbons	3.54e-01	1.77e+05
1	Sanford	6	2		Total Hydrocarbons	6.59e-01	3.30e+05

1	Sanford	6	3		Total Hydrocarbons	3.91e-01	1.95e+05
1	Sanford	6	4		Total Hydrocarbons	1.96e+00	9.80e+05
1	Sanford	6	5		Total Hydrocarbons	1.18e-01	5.89e+04
1	Sanford	6	6		Total Hydrocarbons	1.94e-01	9.71e+04
1	Sanford	6	8		Total Hydrocarbons	9.50e-01	4.75e+05
1	Sanford	6	9		Total Hydrocarbons	1.17e-01	5.87e+04
1	Sanford	6	10		Total Hydrocarbons	1.20e-01	6.01e+04
1	St. Bernardine's	1	4		Total Hydrocarbons	3.95e-02	1.97e+04
1	St.Agnes	8	1		Total Hydrocarbons	4.15e-02	2.08e+04
1	St.Agnes	8	2		Total Hydrocarbons	4.88e-02	2.44e+04
1	St.Agnes	8	3		Total Hydrocarbons	4.88e-02	2.44e+04
1	St.Agnes	8	4		Total Hydrocarbons	5.58e-02	2.79e+04
1	St.Agnes	8	5		Total Hydrocarbons	5.16e-02	2.58e+04
1	St.Agnes	8	6		Total Hydrocarbons	4.67e-02	2.34e+04
1	St.Agnes	8	7		Total Hydrocarbons	4.67e-02	2.34e+04
1	St.Agnes	8	8		Total Hydrocarbons	4.91e-02	2.46e+04
1	St.Agnes	8	9		Total Hydrocarbons	1.11e-02	5.55e+03
1	Sutter	9	1		Total Hydrocarbons	5.51e-02	2.75e+04
1	Sutter	9	2		Total Hydrocarbons	8.60e-02	4.30e+04
1	Sutter	9	3		Total Hydrocarbons	8.21e-02	4.11e+04
1	Sutter	9	4		Total Hydrocarbons	5.03e-01	2.52e+05
1	Cape Fear	2	1		Antimony	3.50e-02	1.75e+04
1	Cape Fear	2	2		Antimony	2.02e-02	1.01e+04
1	Cape Fear	2	3		Antimony	8.27e-03	4.13e+03
1	Cape Fear	2	4		Antimony	3.57e-02	1.79e+04
1	Cape Fear	2	5		Antimony	6.76e-02	3.38e+04
1	Cape Fear	2	6		Antimony	4.54e-02	2.27e+04
1	Cape Fear	2	7		Antimony	4.53e-02	2.26e+04

1	Cape Fear	2	8		Antimony	1.15e-01	5.76e+04
1	Cape Fear	2	9		Antimony	3.86e-02	1.93e+04
1	Jordan	3	2		Antimony	2.74e-03	1.37e+03
1	Jordan	3	4		Antimony	3.70e-03	1.85e+03
1	Jordan	3	6		Antimony	4.51e-03	2.26e+03
1	Jubilee	12	1		Antimony	4.57e-04	2.29e+02
1	Jubilee	12	2		Antimony	6.50e-04	3.25e+02
1	Lenoir	5	1		Antimony	2.38e-02	1.19e+04
1	Lenoir	5	2		Antimony	9.99e-03	5.00e+03
1	Lenoir	5	3		Antimony	1.08e-02	5.38e+03
1	Lenoir	5	4		Antimony	4.14e-02	2.07e+04
1	Lenoir	5	5		Antimony	1.12e-02	5.59e+03
1	Lenoir	5	6		Antimony	2.13e-02	1.07e+04
1	Lenoir	5	7		Antimony	2.27e-02	1.13e+04
1	Lenoir	5	8		Antimony	6.39e-03	3.19e+03
1	Lenoir	5	9		Antimony	1.57e-02	7.87e+03
1	Sanford	6	1		Antimony	7.46e-03	3.73e+03
1	Sanford	6	2		Antimony	6.79e-03	3.40e+03
1	Sanford	6	3		Antimony	1.25e-02	6.26e+03
1	Sanford	6	4		Antimony	1.13e-03	5.64e+02
1	Sanford	6	5		Antimony	1.01e-03	5.05e+02
1	Sanford	6	6		Antimony	1.05e-02	5.25e+03
1	Sanford	6	8		Antimony	9.39e-04	4.70e+02
1	Sanford	6	9		Antimony	1.41e-03	7.07e+02
1	Sanford	6	10		Antimony	1.76e-03	8.78e+02
1	Cape Fear	2	1		Arsenic	2.97e-04	1.48e+02
1	Cape Fear	2	2		Arsenic	4.57e-04	2.28e+02
1	Cape Fear	2	3		Arsenic	4.37e-04	2.18e+02

1	Cape Fear	2	4		Arsenic	2.30e-04	1.15e+02
1	Cape Fear	2	5		Arsenic	4.56e-04	2.28e+02
1	Cape Fear	2	6		Arsenic	8.29e-04	4.14e+02
1	Cape Fear	2	7		Arsenic	8.32e-04	4.16e+02
1	Cape Fear	2	8		Arsenic	5.28e-04	2.64e+02
1	Cape Fear	2	9		Arsenic	7.52e-04	3.76e+02
1	Cedars Sinai	7	1		Arsenic	2.92e-04	1.46e+02
1	Cedars Sinai	7	2		Arsenic	1.85e-04	9.23e+01
1	Cedars Sinai	7	3		Arsenic	1.47e-04	7.37e+01
1	Jordan	3	2		Arsenic	1.42e-04	7.09e+01
1	Jordan	3	4		Arsenic	4.24e-05	2.12e+01
1	Jordan	3	6		Arsenic	2.67e-04	1.34e+02
1	Kaiser	4	2		Arsenic	1.66e-04	8.28e+01
1	Kaiser	4	3		Arsenic	4.18e-05	2.09e+01
1	Kaiser	4	4		Arsenic	4.18e-05	2.09e+01
1	Lenoir	5	1		Arsenic	2.20e-04	1.10e+02
1	Lenoir	5	2		Arsenic	2.94e-04	1.47e+02
1	Lenoir	5	3		Arsenic	2.20e-04	1.10e+02
1	Lenoir	5	4		Arsenic	1.47e-04	7.35e+01
1	Lenoir	5	5		Arsenic	2.94e-04	1.47e+02
1	Lenoir	5	6		Arsenic	2.94e-04	1.47e+02
1	Lenoir	5	7		Arsenic	1.47e-04	7.35e+01
1	Lenoir	5	8		Arsenic	2.20e-04	1.10e+02
1	Lenoir	5	9		Arsenic	2.94e-04	1.47e+02
1	Sanford	6	1		Arsenic	1.57e-04	7.83e+01
1	Sanford	6	2		Arsenic	4.41e-05	2.20e+01
1	Sanford	6	3		Arsenic	4.07e-03	2.03e+03
1	Sanford	6	4		Arsenic	1.10e-04	5.48e+01

1	Sanford	6	5		Arsenic	2.95e-03	1.48e+03
1	Sanford	6	6		Arsenic	2.43e-04	1.22e+02
1	Sanford	6	8		Arsenic	2.24e-04	1.12e+02
1	Sanford	6	9		Arsenic	1.73e-04	8.65e+01
1	Sanford	6	10		Arsenic	2.45e-04	1.22e+02
1	St. Bernardine's	1	1		Arsenic	3.82e-05	1.91e+01
1	St. Bernardine's	1	2		Arsenic	4.29e-05	2.15e+01
1	St. Bernardine's	1	3		Arsenic	3.60e-05	1.80e+01
1	St.Agnes	8	1		Arsenic	2.15e-04	1.07e+02
1	St.Agnes	8	2		Arsenic	7.41e-05	3.70e+01
1	St.Agnes	8	3		Arsenic	7.15e-05	3.58e+01
1	USC	11	1		Arsenic	4.00e-05	2.00e+01
1	USC	11	2		Arsenic	9.21e-05	4.61e+01
1	USC	11	4		Arsenic	3.24e-05	1.62e+01
1	Cape Fear	2	1		Barium	6.40e-03	3.20e+03
1	Cape Fear	2	2		Barium	7.30e-03	3.65e+03
1	Cape Fear	2	3		Barium	3.56e-03	1.78e+03
1	Cape Fear	2	4		Barium	1.68e-02	8.39e+03
1	Cape Fear	2	5		Barium	5.05e-03	2.53e+03
1	Cape Fear	2	6		Barium	2.35e-02	1.17e+04
1	Cape Fear	2	7		Barium	1.84e-02	9.20e+03
1	Cape Fear	2	8		Barium	8.00e-03	4.00e+03
1	Cape Fear	2	9		Barium	1.66e-02	8.32e+03
1	Jordan	3	2		Barium	7.96e-04	3.98e+02
1	Jordan	3	4		Barium	4.26e-03	2.13e+03
1	Jordan	3	6		Barium	2.03e-03	1.02e+03
1	Jubilee	12	1		Barium	8.24e-04	4.12e+02
1	Jubilee	12	2		Barium	1.97e-04	9.83e+01

1	Lenoir	5	1		Barium	2.65e-03	1.32e+03
1	Lenoir	5	2		Barium	3.75e-03	1.87e+03
1	Lenoir	5	3		Barium	1.32e-03	6.62e+02
1	Lenoir	5	4		Barium	1.76e-03	8.82e+02
1	Lenoir	5	5		Barium	3.75e-03	1.87e+03
1	Lenoir	5	6		Barium	2.65e-03	1.32e+03
1	Lenoir	5	7		Barium	3.38e-03	1.69e+03
1	Lenoir	5	8		Barium	2.35e-03	1.18e+03
1	Lenoir	5	9		Barium	1.62e-03	8.09e+02
1	Sanford	6	1		Barium	8.59e-04	4.30e+02
1	Sanford	6	2		Barium	1.60e-03	7.98e+02
1	Sanford	6	3		Barium	5.25e-04	2.62e+02
1	Sanford	6	4		Barium	1.41e-03	7.06e+02
1	Sanford	6	5		Barium	3.91e-04	1.96e+02
1	Sanford	6	6		Barium	6.43e-04	3.22e+02
1	Sanford	6	8		Barium	5.82e-04	2.91e+02
1	Sanford	6	9		Barium	0.00e+00	0.00e+00
1	Sanford	6	10		Barium	1.29e-03	6.44e+02
1	Cape Fear	2	1		Beryllium	3.04e-06	1.52e+00
1	Cape Fear	2	2		Beryllium	2.64e-06	1.32e+00
1	Cape Fear	2	3		Beryllium	2.30e-06	1.15e+00
1	Cape Fear	2	4		Beryllium	2.51e-06	1.25e+00
1	Cape Fear	2	5		Beryllium	2.08e-06	1.04e+00
1	Cape Fear	2	6		Beryllium	1.48e-05	7.42e+00
1	Cape Fear	2	7		Beryllium	1.66e-06	8.29e-01
1	Cape Fear	2	8		Beryllium	2.28e-06	1.14e+00
1	Cape Fear	2	9		Beryllium	1.46e-06	7.28e-01
1	Jordan	3	2		Beryllium	7.60e-06	3.80e+00

1	Jordan	3	4		Beryllium	7.83e-06	3.91e+00
1	Jordan	3	6		Beryllium	7.45e-06	3.72e+00
1	Lenoir	5	1		Beryllium	1.47e-06	7.35e-01
1	Lenoir	5	2		Beryllium	2.94e-06	1.47e+00
1	Lenoir	5	3		Beryllium	2.20e-06	1.10e+00
1	Lenoir	5	4		Beryllium	1.47e-06	7.35e-01
1	Lenoir	5	5		Beryllium	2.20e-06	1.10e+00
1	Lenoir	5	6		Beryllium	2.20e-06	1.10e+00
1	Lenoir	5	7		Beryllium	1.47e-06	7.35e-01
1	Lenoir	5	8		Beryllium	2.94e-06	1.47e+00
1	Lenoir	5	9		Beryllium	1.47e-06	7.35e-01
1	Sanford	6	1		Beryllium	3.74e-06	1.87e+00
1	Sanford	6	2		Beryllium	4.41e-06	2.20e+00
1	Sanford	6	3		Beryllium	2.62e-06	1.31e+00
1	Sanford	6	4		Beryllium	2.71e-06	1.35e+00
1	Sanford	6	5		Beryllium	2.61e-06	1.30e+00
1	Sanford	6	6		Beryllium	2.74e-05	1.37e+01
1	Sanford	6	8		Beryllium	4.16e-06	2.08e+00
1	Sanford	6	9		Beryllium	3.06e-06	1.53e+00
1	Sanford	6	10		Beryllium	2.88e-05	1.44e+01
1	Cape Fear	2	1		Cadmium	7.81e-03	3.90e+03
1	Cape Fear	2	2		Cadmium	1.35e-02	6.74e+03
1	Cape Fear	2	3		Cadmium	1.14e-02	5.72e+03
1	Cape Fear	2	4		Cadmium	1.25e-02	6.24e+03
1	Cape Fear	2	5		Cadmium	1.31e-02	6.54e+03
1	Cape Fear	2	6		Cadmium	1.24e-02	6.20e+03
1	Cape Fear	2	7		Cadmium	7.86e-03	3.93e+03
1	Cape Fear	2	8		Cadmium	1.25e-02	6.24e+03

1	Cape Fear	2	9		Cadmium	1.13e-02	5.64e+03
1	Cedars Sinai	7	1		Cadmium	6.80e-03	3.40e+03
1	Cedars Sinai	7	2		Cadmium	3.61e-03	1.81e+03
1	Cedars Sinai	7	3		Cadmium	2.90e-03	1.45e+03
1	Jordan	3	2		Cadmium	8.07e-03	4.04e+03
1	Jordan	3	4		Cadmium	7.02e-03	3.51e+03
1	Jordan	3	6		Cadmium	6.18e-03	3.09e+03
1	Jubilee	12	1		Cadmium	1.90e-03	9.51e+02
1	Jubilee	12	2		Cadmium	3.32e-03	1.66e+03
1	Kaiser	4	2		Cadmium	1.06e-02	5.31e+03
1	Kaiser	4	3		Cadmium	2.12e-03	1.06e+03
1	Kaiser	4	4		Cadmium	2.66e-03	1.33e+03
1	Lenoir	5	1		Cadmium	8.82e-03	4.41e+03
1	Lenoir	5	2		Cadmium	2.35e-03	1.18e+03
1	Lenoir	5	3		Cadmium	3.31e-03	1.65e+03
1	Lenoir	5	4		Cadmium	6.61e-03	3.31e+03
1	Lenoir	5	5		Cadmium	6.03e-03	3.01e+03
1	Lenoir	5	6		Cadmium	3.09e-03	1.54e+03
1	Lenoir	5	7		Cadmium	4.63e-03	2.31e+03
1	Lenoir	5	8		Cadmium	2.06e-03	1.03e+03
1	Lenoir	5	9		Cadmium	1.32e-02	6.59e+03
1	Sanford	6	1		Cadmium	0.00e+00	0.00e+00
1	Sanford	6	2		Cadmium	8.12e-04	4.06e+02
1	Sanford	6	3		Cadmium	3.94e-04	1.97e+02
1	Sanford	6	4		Cadmium	2.09e-04	1.04e+02
1	Sanford	6	5		Cadmium	8.07e-04	4.03e+02
1	Sanford	6	6		Cadmium	1.15e-03	5.75e+02
1	Sanford	6	8		Cadmium	4.59e-04	2.30e+02

1	Sanford	6	9		Cadmium	4.16e-04	2.08e+02
1	Sanford	6	10		Cadmium	1.08e-03	5.42e+02
1	St. Bernardine's	1	1		Cadmium	9.44e-04	4.72e+02
1	St. Bernardine's	1	2		Cadmium	1.03e-03	5.15e+02
1	St. Bernardine's	1	3		Cadmium	1.60e-03	8.00e+02
1	St.Agnes	8	1		Cadmium	4.09e-03	2.04e+03
1	St.Agnes	8	2		Cadmium	3.00e-03	1.50e+03
1	St.Agnes	8	3		Cadmium	2.48e-03	1.24e+03
1	Sutter	9	1		Cadmium	3.62e-03	1.81e+03
1	Sutter	9	2		Cadmium	3.71e-03	1.86e+03
1	USC	11	1		Cadmium	7.38e-03	3.69e+03
1	USC	11	2		Cadmium	6.39e-03	3.19e+03
1	USC	11	4		Cadmium	1.84e-03	9.21e+02
1	Cape Fear	2	1		Chromium	4.37e-04	2.18e+02
1	Cape Fear	2	2		Chromium	6.08e-04	3.04e+02
1	Cape Fear	2	3		Chromium	1.83e-03	9.14e+02
1	Cape Fear	2	4		Chromium	1.04e-03	5.20e+02
1	Cape Fear	2	5		Chromium	4.45e-04	2.23e+02
1	Cape Fear	2	6		Chromium	1.25e-03	6.26e+02
1	Cape Fear	2	7		Chromium	6.89e-04	3.44e+02
1	Cape Fear	2	8		Chromium	1.06e-03	5.28e+02
1	Cape Fear	2	9		Chromium	9.95e-04	4.97e+02
1	Cedars Sinai	7	1		Chromium	3.63e-04	1.82e+02
1	Cedars Sinai	7	2		Chromium	1.02e-04	5.10e+01
1	Cedars Sinai	7	3		Chromium	1.29e-04	6.43e+01
1	Jordan	3	2		Chromium	1.84e-03	9.20e+02
1	Jordan	3	4		Chromium	1.12e-03	5.59e+02
1	Jordan	3	6		Chromium	1.14e-03	5.69e+02

1	Jubilee	12	1		Chromium	1.25e-03	6.25e+02
1	Jubilee	12	2		Chromium	1.95e-03	9.77e+02
1	Kaiser	4	2		Chromium	3.94e-04	1.97e+02
1	Kaiser	4	3		Chromium	3.85e-04	1.93e+02
1	Kaiser	4	4		Chromium	4.89e-04	2.44e+02
1	Lenoir	5	1		Chromium	1.10e-03	5.49e+02
1	Lenoir	5	2		Chromium	5.88e-04	2.94e+02
1	Lenoir	5	3		Chromium	2.94e-04	1.47e+02
1	Lenoir	5	4		Chromium	6.61e-04	3.30e+02
1	Lenoir	5	5		Chromium	4.41e-04	2.21e+02
1	Lenoir	5	6		Chromium	6.61e-04	3.30e+02
1	Lenoir	5	7		Chromium	5.88e-04	2.94e+02
1	Lenoir	5	8		Chromium	5.88e-04	2.94e+02
1	Lenoir	5	9		Chromium	1.76e-03	8.82e+02
1	Sanford	6	1		Chromium	6.49e-04	3.25e+02
1	Sanford	6	2		Chromium	4.99e-04	2.49e+02
1	Sanford	6	3		Chromium	6.03e-04	3.01e+02
1	Sanford	6	4		Chromium	1.08e-03	5.42e+02
1	Sanford	6	5		Chromium	4.16e-04	2.08e+02
1	Sanford	6	6		Chromium	9.00e-03	4.50e+03
1	Sanford	6	8		Chromium	6.00e-04	3.00e+02
1	Sanford	6	9		Chromium	4.41e-05	2.20e+01
1	Sanford	6	10		Chromium	5.76e-04	2.88e+02
1	St. Bernardine's	1	1		Chromium	2.75e-04	1.37e+02
1	St. Bernardine's	1	2		Chromium	2.79e-04	1.39e+02
1	St. Bernardine's	1	3		Chromium	1.60e-03	8.00e+02
1	St.Agnes	8	1		Chromium	5.11e-04	2.55e+02
1	St.Agnes	8	2		Chromium	2.89e-04	1.44e+02

1	St.Agnes	8	3		Chromium	6.08e-04	3.04e+02
1	Sutter	9	1		Chromium	3.96e-04	1.98e+02
1	Sutter	9	2		Chromium	6.29e-04	3.14e+02
1	USC	11	1		Chromium	3.38e-04	1.69e+02
1	USC	11	2		Chromium	5.15e-04	2.58e+02
1	USC	11	4		Chromium	2.84e-04	1.42e+02
1	Cedars Sinai	7	1		Iron	5.20e-03	2.60e+03
1	Cedars Sinai	7	2		Iron	7.27e-03	3.63e+03
1	Cedars Sinai	7	3		Iron	4.12e-03	2.06e+03
1	Jubilee	12	1		Iron	2.24e-02	1.12e+04
1	Jubilee	12	2		Iron	1.80e-02	9.02e+03
1	Kaiser	4	2		Iron	1.43e-02	7.14e+03
1	Kaiser	4	3		Iron	9.07e-03	4.53e+03
1	Kaiser	4	4		Iron	1.23e-02	6.15e+03
1	St. Bernardine's	1	1		Iron	2.49e-03	1.24e+03
1	St. Bernardine's	1	2		Iron	2.27e-03	1.14e+03
1	St. Bernardine's	1	3		Iron	3.66e-03	1.83e+03
1	St.Agnes	8	1		Iron	1.02e-02	5.08e+03
1	St.Agnes	8	2		Iron	3.98e-03	1.99e+03
1	St.Agnes	8	3		Iron	8.40e-03	4.20e+03
1	Sutter	9	1		Iron	8.24e-03	4.12e+03
1	Sutter	9	2		Iron	5.75e-02	2.87e+04
1	USC	11	1		Iron	3.03e-02	1.52e+04
1	USC	11	2		Iron	2.13e-02	1.06e+04
1	USC	11	4		Iron	9.19e-03	4.59e+03
1	Cape Fear	2	1		Lead	7.38e-02	3.69e+04
1	Cape Fear	2	2		Lead	1.08e-01	5.41e+04
1	Cape Fear	2	3		Lead	1.68e-01	8.41e+04

1	Cape Fear	2	4		Lead	1.63e-01	8.16e+04
1	Cape Fear	2	5		Lead	2.56e-01	1.28e+05
1	Cape Fear	2	6		Lead	2.03e-01	1.02e+05
1	Cape Fear	2	7		Lead	1.83e-01	9.13e+04
1	Cape Fear	2	8		Lead	2.14e-01	1.07e+05
1	Cape Fear	2	9		Lead	7.86e-02	3.93e+04
1	Cedars Sinai	7	1		Lead	5.80e-02	2.90e+04
1	Cedars Sinai	7	2		Lead	4.18e-02	2.09e+04
1	Cedars Sinai	7	3		Lead	3.04e-02	1.52e+04
1	Jordan	3	2		Lead	2.31e-01	1.15e+05
1	Jordan	3	4		Lead	1.48e-01	7.42e+04
1	Jordan	3	6		Lead	1.96e-01	9.80e+04
1	Jubilee	12	1		Lead	4.90e-02	2.45e+04
1	Jubilee	12	2		Lead	4.34e-02	2.17e+04
1	Kaiser	4	2		Lead	1.04e-01	5.19e+04
1	Kaiser	4	3		Lead	5.88e-02	2.94e+04
1	Kaiser	4	4		Lead	5.63e-02	2.82e+04
1	Lenoir	5	1		Lead	4.54e-02	2.26e+04
1	Lenoir	5	2		Lead	3.51e-02	1.76e+04
1	Lenoir	5	3		Lead	3.67e-02	1.84e+04
1	Lenoir	5	4		Lead	2.75e-02	1.38e+04
1	Lenoir	5	5		Lead	1.46e-01	7.27e+04
1	Lenoir	5	6		Lead	4.10e-02	2.04e+04
1	Lenoir	5	7		Lead	5.32e-02	2.66e+04
1	Lenoir	5	8		Lead	4.16e-02	2.08e+04
1	Lenoir	5	9		Lead	2.67e-02	1.34e+04
1	Sanford	6	1		Lead	5.40e-03	2.70e+03
1	Sanford	6	2		Lead	6.98e-03	3.49e+03

1	Sanford	6	3		Lead	3.58e-03	1.79e+03
1	Sanford	6	4		Lead	0.00e+00	0.00e+00
1	Sanford	6	5		Lead	3.51e-02	1.75e+04
1	Sanford	6	6		Lead	2.27e-02	1.13e+04
1	Sanford	6	8		Lead	1.51e-02	7.55e+03
1	Sanford	6	9		Lead	1.28e-02	6.41e+03
1	Sanford	6	10		Lead	3.54e-02	1.77e+04
1	St. Bernardine's	1	1		Lead	1.12e-02	5.58e+03
1	St. Bernardine's	1	2		Lead	1.12e-02	5.58e+03
1	St. Bernardine's	1	3		Lead	2.29e-02	1.14e+04
1	St.Agnes	8	1		Lead	5.59e-02	2.80e+04
1	St.Agnes	8	2		Lead	3.10e-02	1.55e+04
1	St.Agnes	8	3		Lead	4.31e-02	2.16e+04
1	Sutter	9	1		Lead	3.42e-02	1.71e+04
1	Sutter	9	2		Lead	6.67e-02	3.33e+04
1	USC	11	1		Lead	2.40e-01	1.20e+05
1	USC	11	2		Lead	1.71e-01	8.54e+04
1	USC	11	4		Lead	6.35e-02	3.17e+04
1	Cedars Sinai	7	1		Manganese	4.37e-04	2.18e+02
1	Cedars Sinai	7	2		Manganese	4.37e-04	2.18e+02
1	Cedars Sinai	7	3		Manganese	3.29e-04	1.64e+02
1	Jubilee	12	1		Manganese	1.40e-03	6.99e+02
1	Jubilee	12	2		Manganese	7.80e-04	3.90e+02
1	Kaiser	4	2		Manganese	7.26e-04	3.63e+02
1	Kaiser	4	3		Manganese	8.12e-04	4.06e+02
1	Kaiser	4	4		Manganese	5.84e-04	2.92e+02
1	St. Bernardine's	1	1		Manganese	1.59e-04	7.94e+01
1	St. Bernardine's	1	2		Manganese	1.42e-04	7.08e+01

1	St. Bernardine's	1	3		Manganese	2.11e-04	1.06e+02
1	St.Agnes	8	1		Manganese	3.93e-04	1.97e+02
1	St.Agnes	8	2		Manganese	1.58e-04	7.92e+01
1	St.Agnes	8	3		Manganese	2.76e-04	1.38e+02
1	Sutter	9	1		Manganese	4.34e-04	2.17e+02
1	Sutter	9	2		Manganese	1.38e-03	6.91e+02
1	USC	11	1		Manganese	5.26e-04	2.63e+02
1	USC	11	2		Manganese	4.74e-04	2.37e+02
1	USC	11	4		Manganese	2.56e-04	1.28e+02
1	Cape Fear	2	1		Mercury	1.99e-02	9.96e+03
1	Cape Fear	2	2		Mercury	1.16e-03	5.80e+02
1	Cape Fear	2	3		Mercury	1.10e-02	5.51e+03
1	Cape Fear	2	4		Mercury	4.80e-03	2.40e+03
1	Cape Fear	2	5		Mercury	8.44e-03	4.22e+03
1	Cape Fear	2	6		Mercury	2.30e-02	1.15e+04
1	Cape Fear	2	7		Mercury	2.37e-02	1.19e+04
1	Cape Fear	2	8		Mercury	5.51e-03	2.76e+03
1	Cape Fear	2	9		Mercury	1.12e-01	5.60e+04
1	Jordan	3	2		Mercury	5.45e-02	2.72e+04
1	Jordan	3	4		Mercury	3.35e-01	1.67e+05
1	Jordan	3	6		Mercury	3.50e-02	1.75e+04
1	Jubilee	12	1		Mercury	2.69e-05	1.34e+01
1	Jubilee	12	2		Mercury	2.49e-05	1.24e+01
1	Kaiser	4	1		Mercury	2.74e-02	1.37e+04
1	Kaiser	4	2		Mercury	6.68e-02	3.34e+04
1	Kaiser	4	3		Mercury	8.20e-04	4.10e+02
1	Lenoir	5	1		Mercury	2.65e-03	1.32e+03
1	Lenoir	5	2		Mercury	1.98e-03	9.89e+02

1	Lenoir	5	3		Mercury	5.95e-03	2.97e+03
1	Lenoir	5	4		Mercury	1.03e-03	5.15e+02
1	Lenoir	5	5		Mercury	9.07e-02	4.54e+04
1	Lenoir	5	6		Mercury	2.06e-03	1.03e+03
1	Lenoir	5	7		Mercury	2.79e-03	1.40e+03
1	Lenoir	5	8		Mercury	3.23e-03	1.62e+03
1	Lenoir	5	9		Mercury	4.41e-03	2.20e+03
1	Sanford	6	1		Mercury	0.00e+00	0.00e+00
1	Sanford	6	2		Mercury	1.05e-05	5.25e+00
1	Sanford	6	3		Mercury	2.87e-03	1.43e+03
1	Sanford	6	4		Mercury	1.10e-05	5.48e+00
1	Sanford	6	5		Mercury	8.65e-05	4.32e+01
1	Sanford	6	6		Mercury	1.22e-05	6.12e+00
1	Sanford	6	8		Mercury	3.00e-03	1.50e+03
1	Sanford	6	9		Mercury	1.62e-04	8.12e+01
1	Sanford	6	10		Mercury	1.25e-04	6.24e+01
1	St. Bernardine's	1	1		Mercury	1.40e-02	7.01e+03
1	St. Bernardine's	1	2		Mercury	1.40e-02	6.99e+03
1	St. Bernardine's	1	3		Mercury	2.04e-02	1.02e+04
1	USC	11	1		Mercury	1.83e+00	9.14e+05
1	USC	11	2		Mercury	5.16e-02	2.58e+04
1	USC	11	3		Mercury	1.98e-02	9.92e+03
1	Cape Fear	2	1		Nickel	1.46e-04	7.28e+01
1	Cape Fear	2	2		Nickel	2.30e-04	1.15e+02
1	Cape Fear	2	3		Nickel	1.66e-04	8.29e+01
1	Cape Fear	2	4		Nickel	2.51e-04	1.25e+02
1	Cape Fear	2	5		Nickel	1.48e-04	7.42e+01
1	Cape Fear	2	6		Nickel	1.52e-04	7.60e+01

1	Cape Fear	2	7		Nickel	1.14e-03	5.71e+02
1	Cape Fear	2	8		Nickel	2.64e-04	1.32e+02
1	Cape Fear	2	9		Nickel	2.08e-04	1.04e+02
1	Cedars Sinai	7	1		Nickel	1.08e-04	5.42e+01
1	Cedars Sinai	7	2		Nickel	1.11e-04	5.54e+01
1	Cedars Sinai	7	3		Nickel	1.12e-04	5.58e+01
1	Jordan	3	2		Nickel	4.91e-04	2.46e+02
1	Jordan	3	4		Nickel	1.12e-03	5.59e+02
1	Jordan	3	6		Nickel	1.16e-03	5.80e+02
1	Jubilee	12	1		Nickel	4.47e-04	2.24e+02
1	Jubilee	12	2		Nickel	5.04e-04	2.52e+02
1	Kaiser	4	2		Nickel	2.48e-04	1.24e+02
1	Kaiser	4	3		Nickel	3.31e-04	1.66e+02
1	Kaiser	4	4		Nickel	3.06e-04	1.53e+02
1	Lenoir	5	1		Nickel	2.94e-04	1.47e+02
1	Lenoir	5	2		Nickel	4.41e-04	2.21e+02
1	Lenoir	5	3		Nickel	5.14e-04	2.57e+02
1	Lenoir	5	4		Nickel	1.62e-03	8.09e+02
1	Lenoir	5	5		Nickel	2.20e-04	1.10e+02
1	Lenoir	5	6		Nickel	2.94e-04	1.47e+02
1	Lenoir	5	7		Nickel	2.79e-04	1.40e+02
1	Lenoir	5	8		Nickel	4.41e-04	2.20e+02
1	Lenoir	5	9		Nickel	6.61e-04	3.30e+02
1	Sanford	6	1		Nickel	1.47e-03	7.35e+02
1	Sanford	6	2		Nickel	4.16e-05	2.08e+01
1	Sanford	6	3		Nickel	1.39e-02	6.95e+03
1	Sanford	6	4		Nickel	8.49e-04	4.24e+02
1	Sanford	6	5		Nickel	5.22e-04	2.61e+02

1	Sanford	6	6		Nickel	4.41e-05	2.20e+01
1	Sanford	6	8		Nickel	2.16e-04	1.08e+02
1	Sanford	6	9		Nickel	2.31e-04	1.15e+02
1	Sanford	6	10		Nickel	5.23e-04	2.62e+02
1	St. Bernardine's	1	1		Nickel	4.12e-04	2.06e+02
1	St. Bernardine's	1	2		Nickel	4.20e-04	2.10e+02
1	St. Bernardine's	1	3		Nickel	5.43e-04	2.72e+02
1	St.Agnes	8	1		Nickel	2.76e-04	1.38e+02
1	St.Agnes	8	2		Nickel	1.58e-04	7.92e+01
1	St.Agnes	8	3		Nickel	2.81e-04	1.40e+02
1	Sutter	9	1		Nickel	4.95e-04	2.47e+02
1	Sutter	9	2		Nickel	4.30e-04	2.15e+02
1	USC	11	1		Nickel	3.57e-04	1.79e+02
1	USC	11	2		Nickel	6.24e-04	3.12e+02
1	USC	11	4		Nickel	4.27e-04	2.13e+02
1	Cape Fear	2	1		Silver	7.92e-04	3.96e+02
1	Cape Fear	2	2		Silver	3.32e-04	1.66e+02
1	Cape Fear	2	3		Silver	6.24e-04	3.12e+02
1	Cape Fear	2	4		Silver	2.51e-04	1.25e+02
1	Cape Fear	2	5		Silver	3.04e-04	1.52e+02
1	Cape Fear	2	6		Silver	4.57e-04	2.28e+02
1	Cape Fear	2	7		Silver	9.19e-04	4.59e+02
1	Cape Fear	2	8		Silver	1.46e-04	7.28e+01
1	Cape Fear	2	9		Silver	1.48e-04	7.42e+01
1	Jordan	3	2		Silver	8.74e-05	4.37e+01
1	Jordan	3	4		Silver	1.68e-04	8.39e+01
1	Jordan	3	6		Silver	2.77e-04	1.39e+02
1	Jubilee	12	1		Silver	3.56e-04	1.78e+02

1	Jubilee	12	2		Silver	2.60e-04	1.30e+02
1	Lenoir	5	1		Silver	4.41e-04	2.20e+02
1	Lenoir	5	2		Silver	2.94e-05	1.47e+01
1	Lenoir	5	3		Silver	4.41e-05	2.20e+01
1	Lenoir	5	4		Silver	2.94e-05	1.47e+01
1	Lenoir	5	5		Silver	2.94e-04	1.47e+02
1	Lenoir	5	6		Silver	4.41e-05	2.21e+01
1	Lenoir	5	7		Silver	1.47e-04	7.35e+01
1	Lenoir	5	8		Silver	4.41e-05	2.21e+01
1	Lenoir	5	9		Silver	4.41e-04	2.20e+02
1	Sanford	6	1		Silver	5.25e-05	2.62e+01
1	Sanford	6	2		Silver	7.47e-05	3.74e+01
1	Sanford	6	3		Silver	8.32e-05	4.16e+01
1	Sanford	6	4		Silver	5.22e-05	2.61e+01
1	Sanford	6	5		Silver	1.73e-04	8.65e+01
1	Sanford	6	6		Silver	8.82e-05	4.41e+01
1	Sanford	6	8		Silver	6.12e-05	3.06e+01
1	Sanford	6	9		Silver	2.71e-04	1.35e+02
1	Sanford	6	10		Silver	5.48e-05	2.74e+01
1	Cape Fear	2	1		Thallium	3.12e-03	1.56e+03
1	Cape Fear	2	2		Thallium	4.59e-03	2.30e+03
1	Cape Fear	2	3		Thallium	4.41e-03	2.20e+03
1	Cape Fear	2	4		Thallium	1.05e-02	5.27e+03
1	Cape Fear	2	5		Thallium	4.48e-03	2.24e+03
1	Cape Fear	2	6		Thallium	3.01e-03	1.50e+03
1	Cape Fear	2	7		Thallium	3.43e-03	1.72e+03
1	Cape Fear	2	8		Thallium	5.24e-03	2.62e+03
1	Cape Fear	2	9		Thallium	5.48e-03	2.74e+03

1	Jordan	3	2		Thallium	7.60e-05	3.80e+01
1	Jordan	3	4		Thallium	7.83e-05	3.91e+01
1	Jordan	3	6		Thallium	7.45e-05	3.72e+01
1	Lenoir	5	1		Thallium	6.61e-05	3.30e+01
1	Lenoir	5	2		Thallium	6.61e-05	3.30e+01
1	Lenoir	5	3		Thallium	4.41e-05	2.21e+01
1	Lenoir	5	4		Thallium	7.35e-05	3.68e+01
1	Lenoir	5	5		Thallium	4.41e-05	2.21e+01
1	Lenoir	5	6		Thallium	6.61e-05	3.30e+01
1	Lenoir	5	7		Thallium	7.35e-05	3.68e+01
1	Lenoir	5	8		Thallium	4.41e-05	2.21e+01
1	Lenoir	5	9		Thallium	4.41e-05	2.21e+01
1	Sanford	6	1		Thallium	1.32e-04	6.61e+01
1	Sanford	6	2		Thallium	1.12e-04	5.60e+01
1	Sanford	6	3		Thallium	8.65e-05	4.32e+01
1	Sanford	6	4		Thallium	8.22e-05	4.11e+01
1	Sanford	6	5		Thallium	7.83e-05	3.91e+01
1	Sanford	6	6		Thallium	1.66e-04	8.32e+01
1	Sanford	6	8		Thallium	7.87e-05	3.94e+01
1	Sanford	6	9		Thallium	8.12e-05	4.06e+01
1	Sanford	6	10		Thallium	9.19e-05	4.59e+01
1	USC	11	1		PM .625	4.12e-02	2.06e+04
1	USC	11	2		PM .625	5.82e-03	2.91e+03
1	USC	11	3		PM .625	1.23e-02	6.16e+03
1	Sanford	6	5		PM .625	5.94e+00	2.97e+06
1	Sanford	6	6		PM .625	7.11e+00	3.55e+06
1	USC	11	1		PM 1.0	1.09e-01	5.44e+04
1	USC	11	2		PM 1.0	1.46e-02	7.28e+03

1	USC	11	3		PM 1.0	4.07e-02	2.04e+04
1	Sanford	6	5		PM 1.0	9.89e+00	4.94e+06
1	Sanford	6	6		PM 1.0	1.08e+01	5.39e+06
1	USC	11	1		PM 2.5	1.31e+00	6.53e+05
1	USC	11	2		PM 2.5	1.15e-01	5.76e+04
1	USC	11	3		PM 2.5	6.81e-01	3.40e+05
1	Sanford	6	5		PM 2.5	1.49e+01	7.44e+06
1	Sanford	6	6		PM 2.5	1.77e+01	8.83e+06
1	USC	11	1		PM 5.0	4.03e+00	2.01e+06
1	USC	11	2		PM 5.0	3.52e-01	1.76e+05
1	USC	11	3		PM 5.0	1.28e+00	6.39e+05
1	Sanford	6	5		PM 5.0	2.11e+01	1.05e+07
1	Sanford	6	6		PM 5.0	2.31e+01	1.15e+07
1	USC	11	1		PM 10.0	9.22e+00	4.61e+06
1	USC	11	2		PM 10.0	8.31e-01	4.16e+05
1	USC	11	3		PM 10.0	1.87e+00	9.33e+05
1	Sanford	6	5		PM 10.0	2.77e+01	1.39e+07
1	Sanford	6	6		PM 10.0	2.95e+01	1.48e+07
1	Cape Fear	2	1		Particulate Matter	3.61e+00	1.81e+06
1	Cape Fear	2	2		Particulate Matter	1.71e+01	8.57e+06
1	Cape Fear	2	3		Particulate Matter	6.17e+00	3.08e+06
1	Cape Fear	2	4		Particulate Matter	9.39e+00	4.70e+06
1	Cape Fear	2	5		Particulate Matter	8.17e+00	4.08e+06
1	Cape Fear	2	6		Particulate Matter	9.84e+00	4.92e+06
1	Cape Fear	2	7		Particulate Matter	1.08e+01	5.41e+06
1	Cape Fear	2	8		Particulate Matter	1.43e+01	7.15e+06
1	Cape Fear	2	9		Particulate Matter	8.68e+00	4.34e+06
1	Cedars Sinai	7	1		Particulate Matter	3.53e+00	1.77e+06

1	Cedars Sinai	7	2		Particulate Matter	2.59e+00	1.30e+06
1	Cedars Sinai	7	3		Particulate Matter	1.41e+00	7.04e+05
1	Jordan	3	2		Particulate Matter	1.90e+00	9.51e+05
1	Jordan	3	4		Particulate Matter	1.55e+00	7.75e+05
1	Jordan	3	6		Particulate Matter	2.69e+00	1.35e+06
1	Jubilee	12	1		Particulate Matter	1.68e+00	8.40e+05
1	Jubilee	12	2		Particulate Matter	1.82e+00	9.10e+05
1	Kaiser	4	1		Particulate Matter	8.59e+00	4.29e+06
1	Kaiser	4	2		Particulate Matter	4.14e+00	2.07e+06
1	Kaiser	4	3		Particulate Matter	8.70e+00	4.35e+06
1	Lenoir	5	1		Particulate Matter	1.39e+01	6.96e+06
1	Lenoir	5	2		Particulate Matter	8.02e+00	4.00e+06
1	Lenoir	5	3		Particulate Matter	7.19e+00	3.58e+06
1	Lenoir	5	4		Particulate Matter	4.54e+00	2.27e+06
1	Lenoir	5	5		Particulate Matter	1.54e+01	7.73e+06
1	Lenoir	5	6		Particulate Matter	6.00e+00	3.00e+06
1	Lenoir	5	7		Particulate Matter	6.27e+00	3.13e+06
1	Lenoir	5	8		Particulate Matter	1.50e+01	7.49e+06
1	Lenoir	5	9		Particulate Matter	8.65e+00	4.33e+06
1	Sanford	6	1		Particulate Matter	1.86e+00	9.32e+05
1	Sanford	6	2		Particulate Matter	3.99e+01	2.00e+07
1	Sanford	6	3		Particulate Matter	1.44e+00	7.22e+05
1	Sanford	6	4		Particulate Matter	6.15e+00	3.07e+06
1	Sanford	6	5		Particulate Matter	2.34e+00	1.17e+06
1	Sanford	6	6		Particulate Matter	2.38e+00	1.19e+06
1	Sanford	6	8		Particulate Matter	2.49e+00	1.24e+06
1	Sanford	6	9		Particulate Matter	9.48e+00	4.74e+06
1	Sanford	6	10		Particulate Matter	1.96e+00	9.82e+05

1	St. Bernardine's	1	1		Particulate Matter	5.15e+00	2.57e+06
1	St. Bernardine's	1	2		Particulate Matter	4.72e+00	2.36e+06
1	St. Bernardine's	1	3		Particulate Matter	7.43e+00	3.72e+06
1	St.Agnes	8	1		Particulate Matter	4.90e+00	2.45e+06
1	St.Agnes	8	2		Particulate Matter	4.64e+00	2.32e+06
1	St.Agnes	8	3		Particulate Matter	4.87e+00	2.44e+06
1	Sutter	9	1		Particulate Matter	5.91e+00	2.95e+06
1	Sutter	9	2		Particulate Matter	7.48e+00	3.74e+06
1	Swedish	10	1		Particulate Matter	5.83e+00	2.91e+06
1	Swedish	10	3		Particulate Matter	4.00e+00	2.00e+06
1	Swedish-American	10	2		Particulate Matter	1.51e+00	7.56e+05
1	USC	11	1		Particulate Matter	2.32e+01	1.16e+07
1	USC	11	2		Particulate Matter	5.82e+00	2.91e+06
1	USC	11	3		Particulate Matter	4.74e+00	2.37e+06
1	Cape Fear	2	1		Carbon Monoxide	5.93e+00	2.96e+06
1	Cape Fear	2	2		Carbon Monoxide	1.07e+00	5.35e+05
1	Cape Fear	2	3		Carbon Monoxide	2.21e+01	1.11e+07
1	Cape Fear	2	4		Carbon Monoxide	1.25e+01	6.25e+06
1	Cape Fear	2	5		Carbon Monoxide	1.42e+01	7.10e+06
1	Cape Fear	2	6		Carbon Monoxide	1.64e+01	8.18e+06
1	Cape Fear	2	7		Carbon Monoxide	3.62e+00	1.81e+06
1	Cape Fear	2	8		Carbon Monoxide	2.59e+01	1.30e+07
1	Cape Fear	2	9		Carbon Monoxide	1.36e+01	6.79e+06
1	Jordan	3	2		Carbon Monoxide	8.47e-01	4.23e+05
1	Jordan	3	4		Carbon Monoxide	5.78e-01	2.89e+05
1	Jordan	3	6		Carbon Monoxide	1.87e+00	9.33e+05
1	Kaiser	4	1		Carbon Monoxide	1.43e+00	7.13e+05
1	Kaiser	4	2		Carbon Monoxide	1.43e+00	7.13e+05

1	Kaiser	4	3		Carbon Monoxide	1.43e+00	7.13e+05
1	Kaiser	4	4		Carbon Monoxide	1.07e+00	5.37e+05
1	Kaiser	4	5		Carbon Monoxide	5.34e+01	2.67e+07
1	Kaiser	4	6		Carbon Monoxide	1.94e-01	9.71e+04
1	Kaiser	4	7		Carbon Monoxide	1.94e-01	9.71e+04
1	Kaiser	4	8		Carbon Monoxide	2.07e-01	1.04e+05
1	Lenoir	5	1		Carbon Monoxide	2.54e+00	1.27e+06
1	Lenoir	5	2		Carbon Monoxide	5.30e+01	2.65e+07
1	Lenoir	5	3		Carbon Monoxide	1.93e+00	9.61e+05
1	Lenoir	5	4		Carbon Monoxide	4.37e+01	2.19e+07
1	Lenoir	5	5		Carbon Monoxide	5.77e+00	2.89e+06
1	Lenoir	5	6		Carbon Monoxide	1.60e+01	8.00e+06
1	Lenoir	5	7		Carbon Monoxide	4.80e+00	2.40e+06
1	Lenoir	5	8		Carbon Monoxide	1.07e+00	5.35e+05
1	Lenoir	5	9		Carbon Monoxide	3.29e+00	1.64e+06
1	Sanford	6	1		Carbon Monoxide	6.08e+00	3.04e+06
1	Sanford	6	2		Carbon Monoxide	3.61e+00	1.80e+06
1	Sanford	6	3		Carbon Monoxide	9.34e+00	4.67e+06
1	Sanford	6	4		Carbon Monoxide	2.35e+00	1.17e+06
1	Sanford	6	5		Carbon Monoxide	3.30e+00	1.65e+06
1	Sanford	6	6		Carbon Monoxide	1.88e+00	9.39e+05
1	Sanford	6	8		Carbon Monoxide	1.86e+00	9.31e+05
1	Sanford	6	9		Carbon Monoxide	9.34e-01	4.67e+05
1	Sanford	6	10		Carbon Monoxide	6.26e+01	3.13e+07
1	St. Bernardine's	1	4		Carbon Monoxide	3.71e-01	1.85e+05
1	St.Agnes	8	1		Carbon Monoxide	1.62e+00	8.09e+05
1	St.Agnes	8	2		Carbon Monoxide	1.61e+00	8.07e+05
1	St.Agnes	8	3		Carbon Monoxide	1.61e+00	8.07e+05

1	St.Agnes	8	4		Carbon Monoxide	1.56e+00	7.78e+05
1	St.Agnes	8	5		Carbon Monoxide	1.53e+00	7.64e+05
1	St.Agnes	8	6		Carbon Monoxide	1.53e+00	7.64e+05
1	St.Agnes	8	7		Carbon Monoxide	1.53e+00	7.64e+05
1	St.Agnes	8	8		Carbon Monoxide	1.47e+00	7.36e+05
1	St.Agnes	8	9		Carbon Monoxide	1.37e+00	6.87e+05
1	Sutter	9	1		Carbon Monoxide	1.97e+00	9.86e+05
1	Sutter	9	2		Carbon Monoxide	2.78e+00	1.39e+06
1	Sutter	9	3		Carbon Monoxide	2.78e+00	1.39e+06
1	Sutter	9	4		Carbon Monoxide	3.41e+00	1.71e+06
1	Swedish	10	1		Carbon Monoxide	2.82e-01	1.41e+05
1	Cape Fear	2	1		Oxides of Nitrogen	6.21e+00	3.10e+06
1	Cape Fear	2	2		Oxides of Nitrogen	5.10e+00	2.55e+06
1	Cape Fear	2	3		Oxides of Nitrogen	3.60e+00	1.80e+06
1	Cape Fear	2	4		Oxides of Nitrogen	4.70e+00	2.35e+06
1	Cape Fear	2	5		Oxides of Nitrogen	5.33e+00	2.67e+06
1	Cape Fear	2	6		Oxides of Nitrogen	3.47e+00	1.73e+06
1	Cape Fear	2	7		Oxides of Nitrogen	4.93e+00	2.47e+06
1	Cape Fear	2	8		Oxides of Nitrogen	4.32e+00	2.16e+06
1	Cape Fear	2	9		Oxides of Nitrogen	2.94e+00	1.47e+06
1	Jordan	3	2		Oxides of Nitrogen	1.85e+01	9.26e+06
1	Jordan	3	4		Oxides of Nitrogen	1.14e+01	5.71e+06
1	Jordan	3	6		Oxides of Nitrogen	1.08e+01	5.41e+06
1	Kaiser	4	1		Oxides of Nitrogen	1.70e+00	8.50e+05
1	Kaiser	4	2		Oxides of Nitrogen	1.65e+00	8.26e+05
1	Kaiser	4	3		Oxides of Nitrogen	2.14e+00	1.07e+06
1	Kaiser	4	4		Oxides of Nitrogen	2.14e+00	1.07e+06
1	Kaiser	4	5		Oxides of Nitrogen	2.41e+00	1.21e+06

1	Kaiser	4	6		Oxides of Nitrogen	2.20e+00	1.10e+06
1	Kaiser	4	7		Oxides of Nitrogen	2.02e+00	1.01e+06
1	Kaiser	4	8		Oxides of Nitrogen	2.35e+00	1.17e+06
1	Lenoir	5	1		Oxides of Nitrogen	1.56e+00	7.82e+05
1	Lenoir	5	2		Oxides of Nitrogen	3.01e+00	1.50e+06
1	Lenoir	5	3		Oxides of Nitrogen	2.48e+00	1.24e+06
1	Lenoir	5	4		Oxides of Nitrogen	2.69e+00	1.34e+06
1	Lenoir	5	5		Oxides of Nitrogen	2.40e+00	1.20e+06
1	Lenoir	5	6		Oxides of Nitrogen	1.77e+00	8.88e+05
1	Lenoir	5	7		Oxides of Nitrogen	1.41e+00	7.07e+05
1	Lenoir	5	8		Oxides of Nitrogen	1.55e+00	7.77e+05
1	Lenoir	5	9		Oxides of Nitrogen	1.86e+00	9.30e+05
1	Sanford	6	1		Oxides of Nitrogen	3.36e+01	1.68e+07
1	Sanford	6	2		Oxides of Nitrogen	2.97e+01	1.49e+07
1	Sanford	6	3		Oxides of Nitrogen	4.38e+01	2.19e+07
1	Sanford	6	4		Oxides of Nitrogen	3.65e+01	1.82e+07
1	Sanford	6	5		Oxides of Nitrogen	3.94e+01	1.97e+07
1	Sanford	6	6		Oxides of Nitrogen	3.15e+01	1.57e+07
1	Sanford	6	8		Oxides of Nitrogen	1.57e+01	7.87e+06
1	Sanford	6	9		Oxides of Nitrogen	1.65e+01	8.26e+06
1	Sanford	6	10		Oxides of Nitrogen	1.24e+01	6.19e+06
1	St. Bernardine's	1	4		Oxides of Nitrogen	8.29e+00	4.15e+06
1	St.Agnes	8	9		Oxides of Nitrogen	1.80e+00	8.98e+05
1	Sutter	9	1		Oxides of Nitrogen	2.49e+00	1.25e+06
1	Sutter	9	2		Oxides of Nitrogen	4.04e+00	2.02e+06
1	Sutter	9	3		Oxides of Nitrogen	3.43e+00	1.71e+06
1	Sutter	9	4		Oxides of Nitrogen	4.38e+00	2.19e+06
1	USC	11	1		Oxides of Nitrogen	4.81e+00	2.40e+06

1	USC	11	2		Oxides of Nitrogen	4.26e+00	2.13e+06
1	USC	11	3		Oxides of Nitrogen	4.42e+00	2.21e+06
1	USC	11	4		Oxides of Nitrogen	3.81e+00	1.91e+06
1	USC	11	5		Oxides of Nitrogen	4.59e+00	2.29e+06
1	USC	11	6		Oxides of Nitrogen	4.15e+00	2.07e+06
1	USC	11	7		Oxides of Nitrogen	5.64e+00	2.82e+06
1	USC	11	8		Oxides of Nitrogen	4.42e+00	2.21e+06
1	USC	11	9		Oxides of Nitrogen	5.03e+00	2.52e+06
1	USC	11	10		Oxides of Nitrogen	1.11e+01	5.55e+06
1	USC	11	11		Oxides of Nitrogen	9.00e+00	4.50e+06
1	USC	11	12		Oxides of Nitrogen	9.00e+00	4.50e+06
1	USC	11	13		Oxides of Nitrogen	7.91e+00	3.96e+06
1	USC	11	14		Oxides of Nitrogen	6.80e+00	3.40e+06
1	USC	11	15		Oxides of Nitrogen	6.11e+00	3.05e+06
1	USC	11	16		Oxides of Nitrogen	6.11e+00	3.05e+06
1	USC	11	17		Oxides of Nitrogen	4.16e+00	2.08e+06
1	USC	11	18		Oxides of Nitrogen	5.62e+00	2.81e+06
1	USC	11	19		Oxides of Nitrogen	4.91e+00	2.46e+06
1	USC	11	20		Oxides of Nitrogen	6.55e+00	3.28e+06
1	Cape Fear	2	1		Sulfur Dioxide	9.71e-01	4.86e+05
1	Cape Fear	2	2		Sulfur Dioxide	2.91e+00	1.45e+06
1	Cape Fear	2	3		Sulfur Dioxide	1.94e+00	9.69e+05
1	Cape Fear	2	4		Sulfur Dioxide	2.21e+00	1.10e+06
1	Cape Fear	2	5		Sulfur Dioxide	2.34e+00	1.17e+06
1	Cape Fear	2	6		Sulfur Dioxide	3.39e+00	1.70e+06
1	Cape Fear	2	7		Sulfur Dioxide	1.83e+00	9.17e+05
1	Cape Fear	2	8		Sulfur Dioxide	8.14e-01	4.07e+05
1	Cape Fear	2	9		Sulfur Dioxide	1.68e+00	8.39e+05

1	Jordan	3	2		Sulfur Dioxide	4.83e+00	2.41e+06
1	Jordan	3	4		Sulfur Dioxide	3.22e+00	1.61e+06
1	Jordan	3	6		Sulfur Dioxide	3.69e+00	1.84e+06
1	Kaiser	4	1		Sulfur Dioxide	3.11e+00	1.55e+06
1	Kaiser	4	2		Sulfur Dioxide	2.38e+00	1.19e+06
1	Kaiser	4	3		Sulfur Dioxide	1.39e+00	6.97e+05
1	Kaiser	4	4		Sulfur Dioxide	5.37e-01	2.68e+05
1	Kaiser	4	5		Sulfur Dioxide	2.33e+00	1.16e+06
1	Kaiser	4	6		Sulfur Dioxide	2.10e+00	1.05e+06
1	Kaiser	4	7		Sulfur Dioxide	1.71e+00	8.54e+05
1	Kaiser	4	8		Sulfur Dioxide	2.24e+00	1.12e+06
1	Lenoir	5	1		Sulfur Dioxide	2.51e-01	1.25e+05
1	Lenoir	5	2		Sulfur Dioxide	1.40e-01	7.01e+04
1	Lenoir	5	3		Sulfur Dioxide	3.86e-01	1.93e+05
1	Lenoir	5	4		Sulfur Dioxide	2.05e-01	1.02e+05
1	Lenoir	5	5		Sulfur Dioxide	3.81e-01	1.91e+05
1	Lenoir	5	6		Sulfur Dioxide	5.97e-01	2.99e+05
1	Lenoir	5	7		Sulfur Dioxide	7.60e-01	3.80e+05
1	Lenoir	5	8		Sulfur Dioxide	2.78e-01	1.39e+05
1	Lenoir	5	9		Sulfur Dioxide	4.51e-01	2.25e+05
1	Sanford	6	1		Sulfur Dioxide	2.19e+00	1.10e+06
1	Sanford	6	2		Sulfur Dioxide	2.24e+00	1.12e+06
1	Sanford	6	3		Sulfur Dioxide	6.03e+00	3.02e+06
1	Sanford	6	4		Sulfur Dioxide	5.88e+00	2.94e+06
1	Sanford	6	5		Sulfur Dioxide	1.58e+00	7.90e+05
1	Sanford	6	6		Sulfur Dioxide	7.21e+00	3.60e+06
1	Sanford	6	8		Sulfur Dioxide	6.45e+00	3.23e+06
1	Sanford	6	9		Sulfur Dioxide	5.08e+00	2.54e+06

1	Sanford	6	10		Sulfur Dioxide	5.51e+00	2.75e+06
1	St. Bernardine's	1	4		Sulfur Dioxide	2.57e+00	1.28e+06
1	St.Agnes	8	1		Sulfur Dioxide	6.64e-01	3.32e+05
1	St.Agnes	8	2		Sulfur Dioxide	3.90e-01	1.95e+05
1	St.Agnes	8	3		Sulfur Dioxide	3.90e-01	1.95e+05
1	St.Agnes	8	4		Sulfur Dioxide	7.29e-01	3.65e+05
1	St.Agnes	8	5		Sulfur Dioxide	3.37e-01	1.69e+05
1	St.Agnes	8	6		Sulfur Dioxide	3.17e-01	1.58e+05
1	St.Agnes	8	7		Sulfur Dioxide	3.17e-01	1.58e+05
1	St.Agnes	8	8		Sulfur Dioxide	3.43e-01	1.71e+05
1	St.Agnes	8	9		Sulfur Dioxide	3.23e-01	1.61e+05
1	Sutter	9	1		Sulfur Dioxide	1.33e+00	6.67e+05
1	Sutter	9	2		Sulfur Dioxide	8.12e-01	4.06e+05
1	Sutter	9	4		Sulfur Dioxide	1.34e+00	6.71e+05
1	USC	11	1		Sulfur Dioxide	3.56e+01	1.78e+07
1	USC	11	2		Sulfur Dioxide	3.56e+01	1.78e+07
1	USC	11	3		Sulfur Dioxide	2.46e+00	1.23e+06
1	USC	11	4		Sulfur Dioxide	2.46e+00	1.23e+06
1	USC	11	5		Sulfur Dioxide	7.70e-02	3.85e+04
1	USC	11	6		Sulfur Dioxide	2.16e+00	1.08e+06
1	USC	11	7		Sulfur Dioxide	2.46e+00	1.23e+06
1	USC	11	8		Sulfur Dioxide	4.31e+00	2.16e+06
1	USC	11	9		Sulfur Dioxide	2.46e+00	1.23e+06
1	USC	11	10		Sulfur Dioxide	7.47e+00	3.73e+06
1	USC	11	11		Sulfur Dioxide	4.80e+00	2.40e+06
1	USC	11	12		Sulfur Dioxide	4.80e+00	2.40e+06
1	USC	11	13		Sulfur Dioxide	2.71e+00	1.35e+06
1	USC	11	14		Sulfur Dioxide	1.93e-01	9.66e+04

1	USC	11	15		Sulfur Dioxide	1.93e+00	9.66e+05
1	USC	11	16		Sulfur Dioxide	1.93e+00	9.66e+05
1	USC	11	17		Sulfur Dioxide	1.93e-01	9.66e+04
1	USC	11	18		Sulfur Dioxide	1.47e+00	7.33e+05
1	USC	11	19		Sulfur Dioxide	1.30e+00	6.52e+05
1	USC	11	20		Sulfur Dioxide	1.63e-01	8.15e+04
1	Cape Fear	2	1		Hydrogen Bromide	2.16e-03	1.08e+03
1	Cape Fear	2	2		Hydrogen Bromide	3.84e-03	1.92e+03
1	Cape Fear	2	3		Hydrogen Bromide	3.24e-03	1.62e+03
1	Cape Fear	2	4		Hydrogen Bromide	1.78e-02	8.88e+03
1	Cape Fear	2	5		Hydrogen Bromide	2.31e-03	1.15e+03
1	Cape Fear	2	6		Hydrogen Bromide	3.12e-03	1.56e+03
1	Cape Fear	2	7		Hydrogen Bromide	6.88e-02	3.44e+04
1	Cape Fear	2	8		Hydrogen Bromide	2.98e-02	1.49e+04
1	Cape Fear	2	9		Hydrogen Bromide	5.39e-02	2.70e+04
1	Jordan	3	2		Hydrogen Bromide	3.39e-02	1.70e+04
1	Jordan	3	4		Hydrogen Bromide	3.10e-02	1.55e+04
1	Jordan	3	6		Hydrogen Bromide	2.36e-02	1.18e+04
1	Lenoir	5	1		Hydrogen Bromide	2.16e-03	1.08e+03
1	Lenoir	5	2		Hydrogen Bromide	2.31e-03	1.15e+03
1	Lenoir	5	3		Hydrogen Bromide	3.12e-03	1.56e+03
1	Lenoir	5	4		Hydrogen Bromide	3.84e-03	1.92e+03
1	Lenoir	5	5		Hydrogen Bromide	3.24e-03	1.62e+03
1	Lenoir	5	6		Hydrogen Bromide	1.78e-02	8.88e+03
1	Lenoir	5	7		Hydrogen Bromide	6.88e-02	3.44e+04
1	Lenoir	5	8		Hydrogen Bromide	2.98e-02	1.49e+04
1	Lenoir	5	9		Hydrogen Bromide	5.39e-02	2.70e+04
1	Sanford	6	1		Hydrogen Bromide	4.62e-02	2.31e+04

1	Sanford	6	2		Hydrogen Bromide	6.33e-02	3.16e+04
1	Sanford	6	3		Hydrogen Bromide	4.07e-02	2.04e+04
1	Sanford	6	4		Hydrogen Bromide	7.20e-02	3.60e+04
1	Sanford	6	5		Hydrogen Bromide	4.67e-03	2.34e+03
1	Sanford	6	6		Hydrogen Bromide	2.63e-02	1.32e+04
1	Sanford	6	8		Hydrogen Bromide	1.07e-01	5.35e+04
1	Sanford	6	9		Hydrogen Bromide	2.52e-02	1.26e+04
1	Sanford	6	10		Hydrogen Bromide	4.32e-02	2.16e+04
1	Cape Fear	2	1		Hydrogen Chloride	3.37e+01	1.69e+07
1	Cape Fear	2	2		Hydrogen Chloride	4.57e+01	2.28e+07
1	Cape Fear	2	3		Hydrogen Chloride	4.63e+01	2.31e+07
1	Cape Fear	2	4		Hydrogen Chloride	4.28e+01	2.14e+07
1	Cape Fear	2	5		Hydrogen Chloride	3.14e+01	1.57e+07
1	Cape Fear	2	6		Hydrogen Chloride	4.55e+01	2.28e+07
1	Cape Fear	2	7		Hydrogen Chloride	3.84e+01	1.92e+07
1	Cape Fear	2	8		Hydrogen Chloride	4.31e+01	2.16e+07
1	Cape Fear	2	9		Hydrogen Chloride	3.44e+01	1.72e+07
1	Cedars Sinai	7	1		Hydrogen Chloride	2.62e+01	1.31e+07
1	Cedars Sinai	7	2		Hydrogen Chloride	1.87e+01	9.37e+06
1	Cedars Sinai	7	3		Hydrogen Chloride	1.29e+01	6.43e+06
1	Jordan	3	2		Hydrogen Chloride	2.07e+01	1.03e+07
1	Jordan	3	4		Hydrogen Chloride	2.07e+01	1.03e+07
1	Jordan	3	6		Hydrogen Chloride	1.80e+01	9.01e+06
1	Jubilee	12	1		Hydrogen Chloride	1.48e+01	7.40e+06
1	Jubilee	12	2		Hydrogen Chloride	1.82e+01	9.10e+06
1	Kaiser	4	1		Hydrogen Chloride	1.03e+01	5.13e+06
1	Kaiser	4	2		Hydrogen Chloride	1.29e+01	6.47e+06
1	Lenoir	5	1		Hydrogen Chloride	3.37e+01	1.69e+07

1	Lenoir	5	2		Hydrogen Chloride	3.14e+01	1.57e+07
1	Lenoir	5	3		Hydrogen Chloride	4.55e+01	2.28e+07
1	Lenoir	5	4		Hydrogen Chloride	4.57e+01	2.28e+07
1	Lenoir	5	5		Hydrogen Chloride	4.63e+01	2.31e+07
1	Lenoir	5	6		Hydrogen Chloride	4.28e+01	2.14e+07
1	Lenoir	5	7		Hydrogen Chloride	3.84e+01	1.92e+07
1	Lenoir	5	8		Hydrogen Chloride	4.31e+01	2.16e+07
1	Lenoir	5	9		Hydrogen Chloride	3.44e+01	1.72e+07
1	Sanford	6	1		Hydrogen Chloride	3.24e+00	1.62e+06
1	Sanford	6	2		Hydrogen Chloride	2.95e+01	1.48e+07
1	Sanford	6	3		Hydrogen Chloride	5.72e+00	2.86e+06
1	Sanford	6	4		Hydrogen Chloride	4.51e+01	2.25e+07
1	Sanford	6	5		Hydrogen Chloride	2.46e+00	1.23e+06
1	Sanford	6	6		Hydrogen Chloride	2.35e+00	1.17e+06
1	Sanford	6	8		Hydrogen Chloride	4.39e+01	2.19e+07
1	Sanford	6	9		Hydrogen Chloride	4.17e+00	2.09e+06
1	Sanford	6	10		Hydrogen Chloride	3.95e+00	1.97e+06
1	St. Bernardine's	1	1		Hydrogen Chloride	5.88e+01	2.94e+07
1	St. Bernardine's	1	2		Hydrogen Chloride	6.48e+01	3.24e+07
1	St. Bernardine's	1	3		Hydrogen Chloride	8.69e+01	4.34e+07
1	St.Agnes	8	1		Hydrogen Chloride	1.55e+01	7.73e+06
1	St.Agnes	8	2		Hydrogen Chloride	1.20e+01	5.99e+06
1	Sutter	9	1		Hydrogen Chloride	2.35e+01	1.18e+07
1	Sutter	9	2		Hydrogen Chloride	5.96e-06	2.98e+00
1	Swedish	10	1		Hydrogen Chloride	2.40e+01	1.20e+07
1	Swedish	10	2		Hydrogen Chloride	2.58e+01	1.29e+07
1	USC	11	1		Hydrogen Chloride	1.85e+02	9.27e+07
1	USC	11	2		Hydrogen Chloride	2.64e+02	1.32e+08

1	USC	11	4		Hydrogen Chloride	6.73e+01	3.36e+07
1	Cape Fear	2	1		Hydrogen Flouride	4.67e-02	2.34e+04
1	Cape Fear	2	2		Hydrogen Flouride	2.56e-01	1.28e+05
1	Cape Fear	2	3		Hydrogen Flouride	1.42e-01	7.12e+04
1	Cape Fear	2	4		Hydrogen Flouride	1.06e-01	5.30e+04
1	Cape Fear	2	5		Hydrogen Flouride	1.84e-01	9.19e+04
1	Cape Fear	2	6		Hydrogen Flouride	1.67e-01	8.34e+04
1	Cape Fear	2	7		Hydrogen Flouride	2.07e-01	1.03e+05
1	Cape Fear	2	8		Hydrogen Flouride	6.23e-02	3.12e+04
1	Cape Fear	2	9		Hydrogen Flouride	2.19e-01	1.10e+05
1	Jordan	3	2		Hydrogen Flouride	5.69e-02	2.84e+04
1	Jordan	3	4		Hydrogen Flouride	3.55e-02	1.78e+04
1	Jordan	3	6		Hydrogen Flouride	7.22e-02	3.61e+04
1	Lenoir	5	1		Hydrogen Flouride	4.67e-02	2.34e+04
1	Lenoir	5	2		Hydrogen Flouride	1.84e-01	9.19e+04
1	Lenoir	5	3		Hydrogen Flouride	1.67e-01	8.34e+04
1	Lenoir	5	4		Hydrogen Flouride	2.56e-01	1.28e+05
1	Lenoir	5	5		Hydrogen Flouride	1.42e-01	7.12e+04
1	Lenoir	5	6		Hydrogen Flouride	1.06e-01	5.30e+04
1	Lenoir	5	7		Hydrogen Flouride	2.07e-01	1.03e+05
1	Lenoir	5	8		Hydrogen Flouride	6.23e-02	3.12e+04
1	Lenoir	5	9		Hydrogen Flouride	2.19e-01	1.10e+05
1	Sanford	6	1		Hydrogen Flouride	6.49e-02	3.24e+04
1	Sanford	6	2		Hydrogen Flouride	5.38e-01	2.69e+05
1	Sanford	6	3		Hydrogen Flouride	1.49e-01	7.47e+04
1	Sanford	6	4		Hydrogen Flouride	2.20e-01	1.10e+05
1	Sanford	6	5		Hydrogen Flouride	5.14e-02	2.57e+04
1	Sanford	6	6		Hydrogen Flouride	3.89e-02	1.94e+04

1	Sanford	6	8		Hydrogen Flouride	2.99e-01	1.49e+05
1	Sanford	6	9		Hydrogen Flouride	5.33e-02	2.66e+04
1	Sanford	6	10		Hydrogen Flouride	1.23e-01	6.15e+04
2	Jordan	3	1		2378 TCDD	8.51e-08	4.26e-02
2	Jordan	3	3		2378 TCDD	1.49e-07	7.46e-02
2	Jordan	3	5		2378 TCDD	6.87e-08	3.43e-02
2	Jordan	3	1		TOTAL TCDD	3.59e-05	1.80e+01
2	Jordan	3	3		TOTAL TCDD	5.09e-05	2.54e+01
2	Jordan	3	5		TOTAL TCDD	3.62e-05	1.81e+01
2	Jordan	3	1		TOTAL CDD	9.11e-05	4.55e+01
2	Jordan	3	3		TOTAL CDD	1.46e-04	7.29e+01
2	Jordan	3	5		TOTAL CDD	7.75e-05	3.88e+01
2	Jordan	3	1		2378 TCDF	9.27e-07	4.64e-01
2	Jordan	3	3		2378 TCDF	1.46e-06	7.31e-01
2	Jordan	3	5		2378 TCDF	6.26e-07	3.13e-01
2	Jordan	3	1		TOTAL TCDF	6.69e-05	3.35e+01
2	Jordan	3	3		TOTAL TCDF	9.97e-05	4.98e+01
2	Jordan	3	5		TOTAL TCDF	5.18e-05	2.59e+01
2	Jordan	3	1		TOTAL CDF	1.18e-04	5.88e+01
2	Jordan	3	3		TOTAL CDF	2.06e-04	1.03e+02
2	Jordan	3	5		TOTAL CDF	8.95e-05	4.47e+01
2	Jordan	3	1		Antimony	3.04e-04	1.52e+02
2	Jordan	3	3		Antimony	3.80e-04	1.90e+02
2	Jordan	3	5		Antimony	2.44e-04	1.22e+02
2	Jordan	3	1		Arsenic	1.52e-05	7.60e+00
2	Jordan	3	3		Arsenic	1.57e-05	7.83e+00
2	Jordan	3	5		Arsenic	1.49e-05	7.45e+00
2	Jordan	3	1		Barium	1.85e-04	9.25e+01

2	Jordan	3	3		Barium	1.90e-04	9.50e+01
2	Jordan	3	5		Barium	2.45e-04	1.23e+02
2	Jordan	3	1		Beryllium	3.80e-06	1.90e+00
2	Jordan	3	3		Beryllium	4.25e-06	2.12e+00
2	Jordan	3	5		Beryllium	4.37e-06	2.18e+00
2	Jordan	3	1		Cadmium	2.38e-04	1.19e+02
2	Jordan	3	3		Cadmium	1.57e-04	7.83e+01
2	Jordan	3	5		Cadmium	1.39e-04	6.94e+01
2	Jordan	3	1		Chromium	2.81e-04	1.41e+02
2	Jordan	3	3		Chromium	2.68e-04	1.34e+02
2	Jordan	3	5		Chromium	2.23e-04	1.12e+02
2	Jordan	3	1		Lead	1.59e-03	7.93e+02
2	Jordan	3	3		Lead	1.23e-03	6.15e+02
2	Jordan	3	5		Lead	1.98e-03	9.89e+02
2	Jordan	3	1		Mercury	1.98e-02	9.89e+03
2	Jordan	3	3		Mercury	6.39e-02	3.19e+04
2	Jordan	3	5		Mercury	8.36e-03	4.18e+03
2	Jordan	3	1		Nickel	2.05e-04	1.03e+02
2	Jordan	3	3		Nickel	9.18e-04	4.59e+02
2	Jordan	3	5		Nickel	4.67e-04	2.34e+02
2	Jordan	3	1		Silver	4.34e-04	2.17e+02
2	Jordan	3	3		Silver	5.48e-05	2.74e+01
2	Jordan	3	5		Silver	2.56e-05	1.28e+01
2	Jordan	3	1		Thallium	5.45e-05	2.72e+01
2	Jordan	3	3		Thallium	5.59e-05	2.79e+01
2	Jordan	3	5		Thallium	5.33e-05	2.66e+01
2	Jordan	3	2		PM .625	1.67e+00	8.36e+05
2	Jordan	3	3		PM .625	2.68e-01	1.34e+05

2	Jordan	3	22		PM .625	8.71e-01	4.35e+05
2	Jordan	3	33		PM .625	7.13e-01	3.57e+05
2	Jordan	3	2		PM 1.0	9.47e-01	4.74e+05
2	Jordan	3	3		PM 1.0	7.33e-01	3.66e+05
2	Jordan	3	22		PM 1.0	1.75e+00	8.74e+05
2	Jordan	3	33		PM 1.0	2.87e-01	1.44e+05
2	Jordan	3	2		PM 2.5	9.99e-01	5.00e+05
2	Jordan	3	3		PM 2.5	7.61e-01	3.81e+05
2	Jordan	3	22		PM 2.5	1.80e+00	9.00e+05
2	Jordan	3	33		PM 2.5	3.15e-01	1.58e+05
2	Jordan	3	2		PM 5.0	1.01e+00	5.06e+05
2	Jordan	3	3		PM 5.0	3.47e-01	1.73e+05
2	Jordan	3	22		PM 5.0	1.81e+00	9.07e+05
2	Jordan	3	33		PM 5.0	7.92e-01	3.96e+05
2	Jordan	3	2		PM 10.0	1.83e+00	9.15e+05
2	Jordan	3	3		PM 10.0	3.51e-01	1.75e+05
2	Jordan	3	22		PM 10.0	1.03e+00	5.14e+05
2	Jordan	3	33		PM 10.0	7.96e-01	3.98e+05
2	Jordan	3	1		Particulate Matter	7.24e-02	3.62e+04
2	Jordan	3	3		Particulate Matter	1.63e-01	8.14e+04
2	Jordan	3	5		Particulate Matter	2.46e-01	1.23e+05
2	Jordan	3	1		Sulfur Dioxide	5.18e-01	2.59e+05
2	Jordan	3	3		Sulfur Dioxide	1.44e-01	7.19e+04
2	Jordan	3	5		Sulfur Dioxide	4.64e-01	2.32e+05
2	Jordan	3	1		Hydrogen Bromide	2.52e-02	1.26e+04
2	Jordan	3	3		Hydrogen Bromide	1.11e-01	1.06e+04
2	Jordan	3	5		Hydrogen Bromide	2.12e-02	1.48e+06
2	Jordan	3	1		Hydrogen Chloride	2.96e+00	2.11e+06

2	Jordan	3	3		Hydrogen Chloride	4.21e+00	6.37e+05
2	Jordan	3	5		Hydrogen Chloride	1.27e+00	2.99e+04
2	Jordan	3	1		Hydrogen Flouride	5.99e-02	1.78e+04
2	Jordan	3	3		Hydrogen Flouride	3.55e-02	1.69e+04
2	Jordan	3	5		Hydrogen Flouride	3.38e-02	1.69e+04
3	Cedars Sinai	7	1		2378 TCDD	5.18e-09	2.59e-03
3	Cedars Sinai	7	2		2378 TCDD	8.26e-09	4.13e-03
3	Cedars Sinai	7	1		TOTAL TCDD	1.26e-07	6.31e-02
3	Cedars Sinai	7	2		TOTAL TCDD	1.21e-07	6.03e-02
3	Cedars Sinai	7	1		TOTAL CDD	2.69e-06	1.34e+00
3	Cedars Sinai	7	2		TOTAL CDD	2.67e-06	1.34e+00
3	Cedars Sinai	7	1		2378 TCDF	3.17e-08	1.59e-02
3	Cedars Sinai	7	2		2378 TCDF	4.52e-08	2.26e-02
3	Cedars Sinai	7	1		TOTAL TCDF	1.17e-06	5.85e-01
3	Cedars Sinai	7	2		TOTAL TCDF	1.38e-06	6.92e-01
3	Cedars Sinai	7	1		TOTAL CDF	8.02e-06	4.01e+00
3	Cedars Sinai	7	2		TOTAL CDF	8.99e-06	4.49e+00
3	Cedars Sinai	7	1		Total Hydrocarbons	1.12e-01	5.62e+04
3	Cedars Sinai	7	2		Total Hydrocarbons	4.42e-02	2.21e+04
3	Cedars Sinai	7	3		Total Hydrocarbons	4.90e-02	2.45e+04
3	Cedars Sinai	7	1		Arsenic	4.08e-08	2.04e-02
3	Cedars Sinai	7	2		Arsenic	4.08e-08	2.04e-02
3	Cedars Sinai	7	3		Arsenic	3.67e-08	1.84e-02
3	Cedars Sinai	7	1		Cadmium	5.27e-06	2.63e+00
3	Cedars Sinai	7	2		Cadmium	5.31e-06	2.65e+00
3	Cedars Sinai	7	3		Cadmium	4.90e-06	2.45e+00
3	Cedars Sinai	7	1		Chromium	3.24e-06	1.62e+00
3	Cedars Sinai	7	2		Chromium	2.45e-06	1.22e+00

3	Cedars Sinai	7	3		Chromium	7.55e-07	3.78e-01
3	Cedars Sinai	7	1		Iron	2.43e-05	1.21e+01
3	Cedars Sinai	7	2		Iron	2.45e-05	1.22e+01
3	Cedars Sinai	7	3		Iron	2.27e-05	1.13e+01
3	Cedars Sinai	7	1		Lead	1.01e-04	5.07e+01
3	Cedars Sinai	7	2		Lead	1.02e-04	5.10e+01
3	Cedars Sinai	7	3		Lead	9.41e-05	4.70e+01
3	Cedars Sinai	7	1		Manganese	5.27e-06	2.63e+00
3	Cedars Sinai	7	2		Manganese	5.31e-06	2.65e+00
3	Cedars Sinai	7	3		Manganese	4.90e-06	2.45e+00
3	Cedars Sinai	7	1		Nickel	3.04e-05	1.52e+01
3	Cedars Sinai	7	2		Nickel	2.14e-05	1.07e+01
3	Cedars Sinai	7	3		Nickel	2.82e-05	1.41e+01
3	Cedars Sinai	7	1		Particulate Matter	6.12e-02	3.06e+04
3	Cedars Sinai	7	2		Particulate Matter	4.08e-02	2.04e+04
3	Cedars Sinai	7	3		Particulate Matter	1.02e-01	5.10e+04
3	Cedars Sinai	7	1		Carbon Monoxide	1.20e+00	6.02e+05
3	Cedars Sinai	7	2		Carbon Monoxide	1.20e+00	5.99e+05
3	Cedars Sinai	7	3		Carbon Monoxide	1.21e+00	6.04e+05
3	Cedars Sinai	7	1		Oxides of Nitrogen	4.53e+00	2.26e+06
3	Cedars Sinai	7	2		Oxides of Nitrogen	3.38e+00	1.69e+06
3	Cedars Sinai	7	3		Oxides of Nitrogen	2.73e+00	1.36e+06
3	Cedars Sinai	7	1		Sulfur Dioxide	1.17e+00	5.84e+05
3	Cedars Sinai	7	2		Sulfur Dioxide	5.35e-01	2.68e+05
3	Cedars Sinai	7	3		Sulfur Dioxide	8.31e-01	4.16e+05
3	Cedars Sinai	7	1		Hydrogen Chloride	1.63e+01	8.14e+06
3	Cedars Sinai	7	2		Hydrogen Chloride	1.27e+01	6.36e+06
4	Kaiser	4	1		2378 TCDD	1.84e-09	9.18e-04

4	Kaiser	4	2		2378 TCDD	1.61e-09	8.05e-04
4	Kaiser	4	3		2378 TCDD	4.17e-09	2.09e-03
4	Kaiser	4	1		TOTAL TCDD	1.70e-08	8.49e-03
4	Kaiser	4	2		TOTAL TCDD	1.01e-08	5.04e-03
4	Kaiser	4	3		TOTAL TCDD	1.32e-07	6.62e-02
4	Kaiser	4	1		TOTAL CDD	3.51e-06	1.75e+00
4	Kaiser	4	2		TOTAL CDD	4.49e-06	2.25e+00
4	Kaiser	4	3		TOTAL CDD	3.01e-06	1.50e+00
4	Kaiser	4	1		2378 TCDF	1.70e-08	8.49e-03
4	Kaiser	4	2		2378 TCDF	1.97e-08	9.87e-03
4	Kaiser	4	3		2378 TCDF	4.63e-08	2.32e-02
4	Kaiser	4	1		TOTAL TCDF	3.69e-07	1.85e-01
4	Kaiser	4	2		TOTAL TCDF	5.24e-07	2.62e-01
4	Kaiser	4	3		TOTAL TCDF	1.72e-06	8.61e-01
4	Kaiser	4	1		TOTAL CDF	8.79e-06	4.39e+00
4	Kaiser	4	2		TOTAL CDF	1.22e-05	6.11e+00
4	Kaiser	4	3		TOTAL CDF	8.41e-06	4.20e+00
4	Kaiser	4	1		TOTAL PCB	1.18e-04	5.92e+01
4	Kaiser	4	2		TOTAL PCB	9.59e-05	4.79e+01
4	Kaiser	4	3		TOTAL PCB	1.31e-04	6.56e+01
4	Kaiser	4	1		Total Hydrocarbons	1.27e-01	6.34e+04
4	Kaiser	4	2		Total Hydrocarbons	1.27e-01	6.34e+04
4	Kaiser	4	3		Total Hydrocarbons	1.43e-01	7.16e+04
4	Kaiser	4	4		Total Hydrocarbons	1.43e-01	7.16e+04
4	Kaiser	4	5		Total Hydrocarbons	1.43e-01	7.16e+04
4	Kaiser	4	6		Total Hydrocarbons	1.43e-01	7.16e+04
4	Kaiser	4	7		Total Hydrocarbons	1.55e-01	7.77e+04
4	Kaiser	4	1		Arsenic	1.89e-04	9.46e+01

4	Kaiser	4	2		Arsenic	2.08e-04	1.04e+02
4	Kaiser	4	3		Arsenic	3.04e-05	1.52e+01
4	Kaiser	4	1		Cadmium	9.09e-03	4.54e+03
4	Kaiser	4	2		Cadmium	9.77e-03	4.88e+03
4	Kaiser	4	3		Cadmium	2.06e-03	1.03e+03
4	Kaiser	4	1		Chromium	4.90e-04	2.45e+02
4	Kaiser	4	2		Chromium	4.83e-04	2.42e+02
4	Kaiser	4	3		Chromium	2.66e-04	1.33e+02
4	Kaiser	4	1		Iron	6.69e-03	3.35e+03
4	Kaiser	4	2		Iron	1.65e-02	8.26e+03
4	Kaiser	4	3		Iron	5.18e-03	2.59e+03
4	Kaiser	4	1		Lead	1.01e-01	5.04e+04
4	Kaiser	4	2		Lead	9.77e-02	4.88e+04
4	Kaiser	4	3		Lead	3.96e-02	1.98e+04
4	Kaiser	4	1		Manganese	5.55e-04	2.77e+02
4	Kaiser	4	2		Manganese	5.83e-04	2.92e+02
4	Kaiser	4	3		Manganese	2.61e-04	1.31e+02
4	Kaiser	4	1		Mercury	2.12e-02	1.06e+04
4	Kaiser	4	2		Mercury	2.43e-02	1.22e+04
4	Kaiser	4	3		Mercury	8.86e-04	4.43e+02
4	Kaiser	4	1		Nickel	2.71e-04	1.36e+02
4	Kaiser	4	2		Nickel	3.90e-04	1.95e+02
4	Kaiser	4	3		Nickel	3.21e-04	1.61e+02
4	Kaiser	4	1		PM .625	1.22e-03	6.08e+02
4	Kaiser	4	2		PM .625	1.28e-02	6.39e+03
4	Kaiser	4	1		PM 1.0	1.22e-03	6.08e+02
4	Kaiser	4	2		PM 1.0	1.63e-02	8.16e+03
4	Kaiser	4	1		PM 2.5	6.93e-02	3.47e+04

4	Kaiser	4	2		PM 2.5	5.23e-01	2.62e+05
4	Kaiser	4	1		PM 5.0	7.88e-01	3.94e+05
4	Kaiser	4	2		PM 5.0	1.93e+00	9.66e+05
4	Kaiser	4	1		PM 10.0	2.63e+00	1.31e+06
4	Kaiser	4	2		PM 10.0	4.34e+00	2.17e+06
4	Kaiser	4	1		Particulate Matter	6.08e+00	3.04e+06
4	Kaiser	4	2		Particulate Matter	6.80e+00	3.40e+06
4	Kaiser	4	3		Particulate Matter	1.66e+00	8.28e+05
4	Kaiser	4	1		Carbon Monoxide	1.43e+00	7.13e+05
4	Kaiser	4	2		Carbon Monoxide	1.43e+00	7.13e+05
4	Kaiser	4	3		Carbon Monoxide	1.07e+00	5.37e+05
4	Kaiser	4	4		Carbon Monoxide	1.07e+00	5.37e+05
4	Kaiser	4	5		Carbon Monoxide	4.29e+00	2.15e+06
4	Kaiser	4	6		Carbon Monoxide	2.68e+00	1.34e+06
4	Kaiser	4	7		Carbon Monoxide	1.94e-01	9.71e+04
4	Kaiser	4	1		Sulfur Dioxide	3.11e+00	1.55e+06
4	Kaiser	4	2		Sulfur Dioxide	1.71e+00	8.56e+05
4	Kaiser	4	3		Sulfur Dioxide	7.51e-01	3.76e+05
4	Kaiser	4	4		Sulfur Dioxide	1.93e+00	9.66e+05
4	Kaiser	4	5		Sulfur Dioxide	3.08e+00	1.54e+06
4	Kaiser	4	6		Sulfur Dioxide	2.33e+00	1.16e+06
4	Kaiser	4	7		Sulfur Dioxide	1.71e+00	8.54e+05
4	Kaiser	4	1		Oxides of Nitrogen	1.65e+00	8.26e+05
4	Kaiser	4	2		Oxides of Nitrogen	1.89e+00	9.47e+05
4	Kaiser	4	3		Oxides of Nitrogen	2.03e+00	1.01e+06
4	Kaiser	4	4		Oxides of Nitrogen	1.92e+00	9.60e+05
4	Kaiser	4	5		Oxides of Nitrogen	2.69e+00	1.34e+06
4	Kaiser	4	6		Oxides of Nitrogen	2.47e+00	1.23e+06

4	Kaiser	4	7		Oxides of Nitrogen	2.20e+00	1.10e+06
4	Kaiser	4	1		Hydrogen Chloride	2.06e+00	1.03e+06
4	Kaiser	4	2		Hydrogen Chloride	2.14e+00	1.07e+06
4	Kaiser	4	3		Hydrogen Chloride	1.74e+00	8.70e+05
= = =	= = = = = = = = =	= = = = =	= = =	=	= = = = = = = = = = =	= = = = =	
Abbreviation Key							

2378 TCDD = 2,3,7,8-Tetrachlorodibenzo-p-dioxins							
Total TCDD = Total tetrachlorinated dibenzo-p-dioxins							
Total CDD = Total chlorinated dibenzo-p-dioxins							
2378 TCDF = 2,3,7,8-Tetrachlorodibenzofurans							
Total TCDF = Total tetrachlorinated dibenzofurans							
Total CDF = Total chlorinated dibenzofurans							
Total PCB = Total polychlorinated biphenyls							
PM 0.625 = Particulate Matter 10, d ≤ 0.625 micrometers							
PM 1.0 = Particulate Matter 10, d ≤ 1.0 micrometers							
PM 2.5 = Particulate Matter 10, d ≤ 2.5 micrometers							
PM 5.0 = Particulate Matter 10, d ≤ 5.0 micrometers							
PM 10.0 = Particulate Matter 10, d ≤ 10.0 micrometers							

TABLE 4-1. SUMMARY OF CONTROLLED AIR MWI EMISSION FACTORS
ON A TEST-BY-TEST BASIS

		Type	Facility	Ref.	Run	Pollutant	lb/ton	kg/Mg		
		01	Bio-Waste Mgmt. C	23	5	Hydrogen Chloride	3.17e+01	1.59e+01		
		01	Bio-Waste Mgmt. C	23	2	Hydrogen Chloride	2.31e+01	1.15e+01		
		01	Bio-Waste Mgmt. C	23	4	Hydrogen Chloride	3.36e+01	1.68e+01		
		01	Bio-Waste Mgmt. C	23	3	Hydrogen Chloride	2.26e+01	1.13e+01		
		01	Bio-Waste Mgmt. C	23	4	Particulate Matter	3.92e+00	1.96e+00		
		01	Bio-Waste Mgmt. C	23	3	Particulate Matter	4.40e+00	2.20e+00		
		01	Bio-Waste Mgmt. C	23	5	Particulate Matter	6.21e+00	3.10e+00		
		01	Bio-Waste Mgmt. C	23	2	Particulate Matter	4.53e+00	2.26e+00		
		01	Borgess	13	1	2,3,7,8-TCDD	1.37e-09	6.85e-10		
		01	Borgess	13	2	2,3,7,8-TCDD	3.71e-09	1.86e-09		
		01	Borgess	13	3	2,3,7,8-TCDD	3.38e-09	1.69e-09		
		01	Borgess	13	1	2,3,7,8-TCDF	2.28e-08	1.14e-08		
		01	Borgess	13	2	2,3,7,8-TCDF	2.32e-08	1.16e-08		
		01	Borgess	13	3	2,3,7,8-TCDF	3.15e-08	1.58e-08		
		01	Borgess	13	3	Aluminum	8.80e-03	4.40e-03		

		01	Borgess	13	1	Aluminum	1.29e-02	6.43e-03		
		01	Borgess	13	2	Aluminum	9.77e-03	4.88e-03		
		01	Borgess	13	3	Antimony	2.85e-03	1.43e-03		
		01	Borgess	13	2	Antimony	6.86e-03	3.43e-03		
		01	Borgess	13	1	Antimony	4.11e-03	2.05e-03		
		01	Borgess	13	3	Arsenic	5.77e-05	2.88e-05		
		01	Borgess	13	2	Arsenic	8.84e-05	4.42e-05		
		01	Borgess	13	1	Arsenic	9.01e-05	4.51e-05		
		01	Borgess	13	3	Barium	1.53e-03	7.66e-04		
		01	Borgess	13	2	Barium	1.92e-03	9.61e-04		
		01	Borgess	13	1	Barium	1.42e-03	7.09e-04		
		01	Borgess	13	3	Beryllium	2.63e-06	1.31e-06		
		01	Borgess	13	2	Beryllium	2.68e-06	1.34e-06		
		01	Borgess	13	1	Beryllium	5.05e-06	2.53e-06		
		01	Borgess	13	1	Cadmium	5.43e-03	2.71e-03		
		01	Borgess	13	3	Cadmium	9.74e-03	4.87e-03		
		01	Borgess	13	2	Cadmium	2.71e-02	1.36e-02		
		01	Borgess	13	1	Carbon Monoxide	2.11e-01	1.05e-01		
		01	Borgess	13	2	Carbon Monoxide	1.34e-01	6.71e-02		
		01	Borgess	13	3	Carbon Monoxide	1.29e-01	6.46e-02		
		01	Borgess	13	2	Chromium	6.83e-04	3.41e-04		
		01	Borgess	13	3	Chromium	5.61e-04	2.81e-04		
		01	Borgess	13	1	Chromium	4.65e-04	2.33e-04		
		01	Borgess	13	3	Copper	1.06e-02	5.32e-03		
		01	Borgess	13	1	Copper	1.33e-02	6.66e-03		
		01	Borgess	13	2	Copper	1.35e-02	6.74e-03		
		01	Borgess	13	1	Hydrogen Bromide	7.33e-02	3.67e-02		
		01	Borgess	13	3	Hydrogen Bromide	1.06e-01	5.29e-02		

		01	Borgess	13	2	Hydrogen Bromide	1.16e-01	5.78e-02		
		01	Borgess	13	2	Hydrogen Chloride	4.33e+01	2.17e+01		
		01	Borgess	13	1	Hydrogen Chloride	3.48e+01	1.74e+01		
		01	Borgess	13	3	Hydrogen Chloride	3.88e+01	1.94e+01		
		01	Borgess	13	2	Hydrogen Fluoride	2.17e-01	1.09e-01		
		01	Borgess	13	3	Hydrogen Fluoride	1.96e-01	9.80e-02		
		01	Borgess	13	1	Hydrogen Fluoride	2.12e-01	1.06e-01		
		01	Borgess	13	1	Lead	2.14e-02	1.07e-02		
		01	Borgess	13	2	Lead	2.79e-02	1.39e-02		
		01	Borgess	13	3	Lead	2.05e-02	1.02e-02		
		01	Borgess	13	1	Mercury	9.51e-02	4.75e-02		
		01	Borgess	13	2	Mercury	9.99e-02	4.99e-02		
		01	Borgess	13	3	Mercury	1.26e-01	6.31e-02		
		01	Borgess	13	3	Nickel	4.91e-04	2.45e-04		
		01	Borgess	13	2	Nickel	1.42e-03	7.11e-04		
		01	Borgess	13	1	Nickel	6.49e-04	3.25e-04		
		01	Borgess	13	1	Oxides of Nitrogen	3.71e+00	1.85e+00		
		01	Borgess	13	2	Oxides of Nitrogen	3.49e+00	1.74e+00		
		01	Borgess	13	3	Oxides of Nitrogen	3.88e+00	1.94e+00		
		01	Borgess	13	2	Particulate Matter	2.26e+00	1.13e+00		
		01	Borgess	13	3	Particulate Matter	2.35e+00	1.17e+00		
		01	Borgess	13	1	Particulate Matter	2.41e+00	1.20e+00		
		01	Borgess	13	2	Silver	1.64e-04	8.22e-05		
		01	Borgess	13	3	Silver	1.75e-04	8.77e-05		
		01	Borgess	13	1	Silver	1.43e-04	7.14e-05		
		01	Borgess	13	3	Sulfur Dioxide	2.98e-01	1.49e-01		
		01	Borgess	13	2	Sulfur Dioxide	1.70e-01	8.49e-02		
		01	Borgess	13	1	Sulfur Dioxide	2.29e-01	1.14e-01		

		01	Borgess	13	3	Thallium	2.63e-04	1.31e-04		
		01	Borgess	13	1	Thallium	2.76e-04	1.38e-04		
		01	Borgess	13	2	Thallium	2.68e-04	1.34e-04		
		01	Borgess	13	3	Total CDD	1.15e-06	5.75e-07		
		01	Borgess	13	1	Total CDD	6.46e-07	3.23e-07		
		01	Borgess	13	2	Total CDD	1.14e-06	5.68e-07		
		01	Borgess	13	1	Total CDF	2.30e-06	1.15e-06		
		01	Borgess	13	3	Total CDF	3.94e-06	1.97e-06		
		01	Borgess	13	2	Total CDF	4.09e-06	2.05e-06		
		01	Borgess	13	3	Total Hydrocarbons	3.49e-02	1.74e-02		
		01	Borgess	13	2	Total Hydrocarbons	3.96e-02	1.98e-02		
		01	Borgess	13	1	Total Hydrocarbons	7.93e-02	3.96e-02		
		01	Borgess	13	3	Total TCDD	2.97e-08	1.48e-08		
		01	Borgess	13	2	Total TCDD	3.58e-08	1.79e-08		
		01	Borgess	13	1	Total TCDD	1.22e-08	6.12e-09		
		01	Borgess	13	2	Total TCDF	3.87e-07	1.94e-07		
		01	Borgess	13	3	Total TCDF	3.11e-07	1.56e-07		
		01	Borgess	13	1	Total TCDF	1.84e-07	9.20e-08		
		01	Burlington	15	3	Carbon Monoxide	3.47e-01	1.73e-01		
		01	Burlington	15	2	Carbon Monoxide	9.98e-01	4.99e-01		
		01	Burlington	15	1	Carbon Monoxide	2.89e-01	1.45e-01		
		01	Burlington	15	1	Hydrogen Chloride	1.25e+01	6.24e+00		
		01	Burlington	15	2	Hydrogen Chloride	1.53e+01	7.63e+00		
		01	Burlington	15	3	Hydrogen Chloride	6.53e+00	3.27e+00		
		01	Burlington	15	5	Oxides of Nitrogen	2.54e+00	1.27e+00		
		01	Burlington	15	4	Oxides of Nitrogen	2.76e+00	1.38e+00		
		01	Burlington	15	6	Oxides of Nitrogen	1.74e+00	8.71e-01		
		01	Burlington	15	4	Particulate Matter	2.98e+00	1.49e+00		

		01	Burlington	15	5	Particulate Matter	3.37e+00	1.69e+00		
		01	Burlington	15	6	Particulate Matter	2.36e+00	1.18e+00		
		01	Burlington	15	1	Total Hydrocarbons	1.81e-01	9.04e-02		
		01	Burlington	15	3	Total Hydrocarbons	1.07e-01	5.33e-02		
		01	Burlington	15	2	Total Hydrocarbons	2.08e-01	1.04e-01		
		01	Cape Fear	2	1	2,3,7,8-TCDD	5.00e-08	2.50e-08		
		01	Cape Fear	2	3	2,3,7,8-TCDD	9.63e-08	4.82e-08		
		01	Cape Fear	2	2	2,3,7,8-TCDD	1.43e-07	7.17e-08		
		01	Cape Fear	2	2	2,3,7,8-TCDF	6.09e-07	3.05e-07		
		01	Cape Fear	2	3	2,3,7,8-TCDF	3.18e-07	1.59e-07		
		01	Cape Fear	2	1	2,3,7,8-TCDF	2.34e-07	1.17e-07		
		01	Cape Fear	2	1	Antimony	5.09e-02	2.55e-02		
		01	Cape Fear	2	3	Antimony	3.39e-02	1.69e-02		
		01	Cape Fear	2	2	Antimony	4.98e-02	2.49e-02		
		01	Cape Fear	2	3	Arsenic	3.27e-04	1.63e-04		
		01	Cape Fear	2	2	Arsenic	8.00e-04	4.00e-04		
		01	Cape Fear	2	1	Arsenic	4.48e-04	2.24e-04		
		01	Cape Fear	2	1	Barium	9.71e-03	4.86e-03		
		01	Cape Fear	2	3	Barium	5.77e-03	2.88e-03		
		01	Cape Fear	2	2	Barium	1.91e-02	9.54e-03		
		01	Cape Fear	2	1	Beryllium	2.36e-06	1.18e-06		
		01	Cape Fear	2	3	Beryllium	1.49e-05	7.43e-06		
		01	Cape Fear	2	2	Beryllium	2.05e-06	1.03e-06		
		01	Cape Fear	2	3	Cadmium	1.11e-02	5.56e-03		
		01	Cape Fear	2	2	Cadmium	1.21e-02	6.03e-03		
		01	Cape Fear	2	1	Cadmium	1.09e-02	5.45e-03		
		01	Cape Fear	2	1	Carbon Monoxide	6.74e+00	3.37e+00		
		01	Cape Fear	2	3	Carbon Monoxide	1.35e+01	6.74e+00		

		01	Cape Fear	2	2	Carbon Monoxide	2.08e+01	1.04e+01		
		01	Cape Fear	2	2	Chromium	1.07e-03	5.33e-04		
		01	Cape Fear	2	1	Chromium	1.27e-03	6.37e-04		
		01	Cape Fear	2	3	Chromium	5.35e-04	2.68e-04		
		01	Cape Fear	2	8	Hydrogen Bromide	2.98e-02	1.49e-02		
		01	Cape Fear	2	7	Hydrogen Bromide	6.88e-02	3.44e-02	{APP4}FLB{R 6	
		01	Cape Fear	2	5	Hydrogen Bromide	2.31e-03	1.15e-03		
		01	Cape Fear	2	3	Hydrogen Bromide	3.24e-03	1.62e-03		
		01	Cape Fear	2	6	Hydrogen Bromide	3.12e-03	1.56e-03		
		01	Cape Fear	2	4	Hydrogen Bromide	1.78e-02	8.88e-03		
		01	Cape Fear	2	9	Hydrogen Bromide	5.39e-02	2.70e-02		
		01	Cape Fear	2	2	Hydrogen Bromide	3.84e-03	1.92e-03		
		01	Cape Fear	2	1	Hydrogen Bromide	2.16e-03	1.08e-03		
		01	Cape Fear	2	3	Hydrogen Chloride	4.63e+01	2.31e+01		
		01	Cape Fear	2	7	Hydrogen Chloride	3.84e+01	1.92e+01		
		01	Cape Fear	2	1	Hydrogen Chloride	3.37e+01	1.69e+01		
		01	Cape Fear	2	5	Hydrogen Chloride	3.14e+01	1.57e+01		
		01	Cape Fear	2	4	Hydrogen Chloride	4.28e+01	2.14e+01		
		01	Cape Fear	2	9	Hydrogen Chloride	3.44e+01	1.72e+01		
		01	Cape Fear	2	8	Hydrogen Chloride	4.31e+01	2.16e+01		
		01	Cape Fear	2	2	Hydrogen Chloride	4.57e+01	2.28e+01		
		01	Cape Fear	2	6	Hydrogen Chloride	4.55e+01	2.28e+01		
		01	Cape Fear	2	2	Hydrogen Fluoride	2.56e-01	1.28e-01		
		01	Cape Fear	2	9	Hydrogen Fluoride	2.19e-01	1.10e-01		
		01	Cape Fear	2	6	Hydrogen Fluoride	1.67e-01	8.34e-02		
		01	Cape Fear	2	3	Hydrogen Fluoride	1.42e-01	7.12e-02		
		01	Cape Fear	2	1	Hydrogen Fluoride	4.67e-02	2.34e-02		
		01	Cape Fear	2	4	Hydrogen Fluoride	1.06e-01	5.30e-02		

		01	Cape Fear	2	5	Hydrogen Fluoride	1.84e-01	9.19e-02		
		01	Cape Fear	2	7	Hydrogen Fluoride	2.07e-01	1.03e-01		
		01	Cape Fear	2	8	Hydrogen Fluoride	6.23e-02	3.12e-02		
		01	Cape Fear	2	1	Lead	1.82e-01	9.11e-02		
		01	Cape Fear	2	3	Lead	1.05e-01	5.23e-02		
		01	Cape Fear	2	2	Lead	1.99e-01	9.94e-02		
		01	Cape Fear	2	1	Mercury	7.00e-03	3.50e-03		
		01	Cape Fear	2	2	Mercury	1.43e-02	7.13e-03		
		01	Cape Fear	2	3	Mercury	4.67e-02	2.33e-02		
		01	Cape Fear	2	3	Nickel	1.78e-04	8.92e-05		
		01	Cape Fear	2	1	Nickel	5.42e-04	2.71e-04		
		01	Cape Fear	2	2	Nickel	2.46e-04	1.23e-04		
		01	Cape Fear	2	2	Oxides of Nitrogen	4.99e+00	2.50e+00		
		01	Cape Fear	2	1	Oxides of Nitrogen	5.49e+00	2.74e+00		
		01	Cape Fear	2	3	Oxides of Nitrogen	3.97e+00	1.99e+00		
		01	Cape Fear	2	2	Particulate Matter	1.36e+01	6.82e+00		
		01	Cape Fear	2	1	Particulate Matter	7.32e+00	3.66e+00		
		01	Cape Fear	2	3	Particulate Matter	8.78e+00	4.39e+00		
		01	Cape Fear	2	1	Silver	3.07e-04	1.53e-04		
		01	Cape Fear	2	3	Silver	2.08e-04	1.04e-04		
		01	Cape Fear	2	2	Silver	5.33e-04	2.67e-04		
		01	Cape Fear	2	2	Sulfur Dioxide	2.51e+00	1.26e+00		
		01	Cape Fear	2	1	Sulfur Dioxide	2.03e+00	1.02e+00		
		01	Cape Fear	2	3	Sulfur Dioxide	1.87e+00	9.37e-01		
		01	Cape Fear	2	2	Thallium	3.84e-03	1.92e-03		
		01	Cape Fear	2	3	Thallium	6.76e-03	3.38e-03		
		01	Cape Fear	2	1	Thallium	4.39e-03	2.19e-03		
		01	Cape Fear	2	1	Total CDD	1.39e-05	6.97e-06		

		01	Cape Fear	2	2	Total CDD	2.96e-05	1.48e-05		
		01	Cape Fear	2	3	Total CDD	1.50e-05	7.48e-06		
		01	Cape Fear	2	1	Total CDF	7.62e-05	3.81e-05		
		01	Cape Fear	2	2	Total CDF	1.58e-04	7.88e-05		
		01	Cape Fear	2	3	Total CDF	7.67e-05	3.83e-05		
		01	Cape Fear	2	2	Total Hydrocarbons	3.60e-02	1.80e-02		
		01	Cape Fear	2	8	Total Hydrocarbons	2.89e-01	1.45e-01		
		01	Cape Fear	2	5	Total Hydrocarbons	1.60e-01	8.00e-02		
		01	Cape Fear	2	4	Total Hydrocarbons	1.67e+00	8.37e-01		
		01	Cape Fear	2	1	Total Hydrocarbons	6.23e-02	3.12e-02		
		01	Cape Fear	2	9	Total Hydrocarbons	2.72e-01	1.36e-01		
		01	Cape Fear	2	3	Total Hydrocarbons	1.16e+00	5.82e-01		
		01	Cape Fear	2	6	Total Hydrocarbons	8.92e-02	4.46e-02		
		01	Cape Fear	2	7	Total Hydrocarbons	2.28e-01	1.14e-01		
		01	Cape Fear	2	8	Total PCB	1.23e-08	6.16e-09		
		01	Cape Fear	2	3	Total TCDD	9.84e-07	4.92e-07		
		01	Cape Fear	2	2	Total TCDD	2.71e-06	1.35e-06		
		01	Cape Fear	2	1	Total TCDD	6.09e-07	3.04e-07		
		01	Cape Fear	2	2	Total TCDF	2.02e-05	1.01e-05		
		01	Cape Fear	2	1	Total TCDF	6.15e-06	3.08e-06		
		01	Cape Fear	2	3	Total TCDF	9.56e-06	4.78e-06		
		01	Cedars Sinai	7	3	2,3,7,8-TCDD	5.51e-09	2.75e-09		
		01	Cedars Sinai	7	1	2,3,7,8-TCDD	3.24e-09	1.62e-09		
		01	Cedars Sinai	7	2	2,3,7,8-TCDD	7.77e-09	3.89e-09		
		01	Cedars Sinai	7	2	2,3,7,8-TCDF	4.50e-08	2.25e-08		
		01	Cedars Sinai	7	3	2,3,7,8-TCDF	3.43e-08	1.72e-08		
		01	Cedars Sinai	7	1	2,3,7,8-TCDF	2.07e-08	1.04e-08		
		01	Cedars Sinai	7	3	Arsenic	1.47e-04	7.37e-05		

		01	Cedars Sinai	7	1	Arsenic	2.92e-04	1.46e-04		
		01	Cedars Sinai	7	2	Arsenic	1.85e-04	9.23e-05		
		01	Cedars Sinai	7	2	Cadmium	3.61e-03	1.81e-03		
		01	Cedars Sinai	7	1	Cadmium	6.80e-03	3.40e-03		
		01	Cedars Sinai	7	3	Cadmium	2.90e-03	1.45e-03		
		01	Cedars Sinai	7	3	Chromium	1.29e-04	6.43e-05		
		01	Cedars Sinai	7	2	Chromium	1.02e-04	5.10e-05		
		01	Cedars Sinai	7	1	Chromium	3.63e-04	1.82e-04		
		01	Cedars Sinai	7	2	Hydrogen Chloride	1.87e+01	9.37e+00		
		01	Cedars Sinai	7	1	Hydrogen Chloride	2.62e+01	1.31e+01		
		01	Cedars Sinai	7	3	Hydrogen Chloride	1.29e+01	6.43e+00		
		01	Cedars Sinai	7	3	Iron	4.12e-03	2.06e-03		
		01	Cedars Sinai	7	1	Iron	5.20e-03	2.60e-03		
		01	Cedars Sinai	7	2	Iron	7.27e-03	3.63e-03		
		01	Cedars Sinai	7	1	Lead	5.80e-02	2.90e-02		
		01	Cedars Sinai	7	3	Lead	3.04e-02	1.52e-02		
		01	Cedars Sinai	7	2	Lead	4.18e-02	2.09e-02		
		01	Cedars Sinai	7	3	Manganese	3.29e-04	1.64e-04		
		01	Cedars Sinai	7	1	Manganese	4.37e-04	2.18e-04		
		01	Cedars Sinai	7	2	Manganese	4.37e-04	2.18e-04		
		01	Cedars Sinai	7	1	Nickel	1.08e-04	5.42e-05		
		01	Cedars Sinai	7	2	Nickel	1.11e-04	5.54e-05		
		01	Cedars Sinai	7	3	Nickel	1.12e-04	5.58e-05		
		01	Cedars Sinai	7	2	Particulate Matter	2.59e+00	1.30e+00		
		01	Cedars Sinai	7	3	Particulate Matter	1.41e+00	7.04e-01		
		01	Cedars Sinai	7	1	Particulate Matter	3.53e+00	1.77e+00		
		01	Cedars Sinai	7	3	Total CDD	4.83e-06	2.41e-06		
		01	Cedars Sinai	7	2	Total CDD	4.07e-06	2.03e-06		

		01	Cedars Sinai	7	1	Total CDD	3.00e-06	1.50e-06		
		01	Cedars Sinai	7	1	Total CDF	8.10e-06	4.05e-06		
		01	Cedars Sinai	7	3	Total CDF	1.29e-05	6.46e-06		
		01	Cedars Sinai	7	2	Total CDF	1.12e-05	5.61e-06		
		01	Cedars Sinai	7	1	Total TCDD	3.90e-08	1.95e-08		
		01	Cedars Sinai	7	3	Total TCDD	7.63e-08	3.81e-08		
		01	Cedars Sinai	7	2	Total TCDD	1.30e-07	6.48e-08		
		01	Cedars Sinai	7	2	Total TCDF	1.55e-06	7.77e-07		
		01	Cedars Sinai	7	1	Total TCDF	6.53e-07	3.26e-07		
		01	Cedars Sinai	7	3	Total TCDF	1.16e-06	5.81e-07		
		01	Hamilton	21	2	Carbon Monoxide	1.48e+00	7.41e-01		
		01	Hamilton	21	1	Carbon Monoxide	2.26e+00	1.13e+00		
		01	Hamilton	21	4	Carbon Monoxide	4.06e-01	2.03e-01		
		01	Hamilton	21	3	Carbon Monoxide	4.68e-01	2.34e-01		
		01	Hamilton	21	3	Hydrogen Chloride	1.08e+01	5.40e+00		
		01	Hamilton	21	4	Hydrogen Chloride	1.22e+01	6.11e+00		
		01	Hamilton	21	1	Hydrogen Chloride	2.82e+01	1.41e+01		
		01	Hamilton	21	3	Oxides of Nitrogen	2.34e+00	1.17e+00		
		01	Hamilton	21	4	Oxides of Nitrogen	3.65e+00	1.83e+00		
		01	Hamilton	21	1	Oxides of Nitrogen	5.33e+00	2.67e+00		
		01	Hamilton	21	3	Particulate Matter	1.27e+00	6.35e-01		
		01	Hamilton	21	1	Particulate Matter	3.81e+00	1.90e+00		
		01	Hamilton	21	4	Particulate Matter	2.03e+00	1.02e+00		
		01	Hamilton	21	2	Total Hydrocarbons	1.04e+00	5.18e-01		
		01	Hamilton	21	1	Total Hydrocarbons	5.95e-01	2.98e-01		
		01	Hamilton	21	3	Total Hydrocarbons	4.68e-01	2.34e-01		
		01	Hamot	34	1	Hydrogen Chloride	9.77e+00	4.89e+00		
		01	Hamot	34	2	Hydrogen Chloride	1.12e+01	5.60e+00		

		01	Hamot	34	3	Hydrogen Chloride	1.25e+01	6.27e+00		
		01	HCA Northpark	35	1	Chlorine	1.30e-01	6.50e-02		
		01	HCA Northpark	35	1	Hydrogen Chloride	1.32e+01	6.58e+00		
		01	HCA Northpark	35	1	Particulate Matter	4.58e-01	2.29e-01		
		01	Helene Fuld	37	2	Carbon Monoxide	1.75e-01	8.77e-02		
		01	Helene Fuld	37	1	Carbon Monoxide	4.86e-01	2.43e-01		
		01	Helene Fuld	37	3	Carbon Monoxide	2.15e-01	1.08e-01		
		01	Helene Fuld	37	2	Hydrogen Chloride	9.65e+00	4.82e+00		
		01	Helene Fuld	37	4	Hydrogen Chloride	1.45e+01	7.23e+00		
		01	Helene Fuld	37	6	Hydrogen Chloride	1.27e+01	6.35e+00		
		01	Helene Fuld	37	4	Oxides of Nitrogen	3.17e+00	1.59e+00		
		01	Helene Fuld	37	2	Oxides of Nitrogen	2.81e+00	1.40e+00		
		01	Helene Fuld	37	6	Oxides of Nitrogen	2.21e+00	1.10e+00		
		01	Helene Fuld	37	1	Particulate Matter	2.85e+00	1.42e+00		
		01	Helene Fuld	37	3	Particulate Matter	2.37e+00	1.18e+00		
		01	Helene Fuld	37	5	Particulate Matter	1.90e+00	9.52e-01		
		01	Helene Fuld	37	2	Total Hydrocarbons	3.23e-01	1.61e-01		
		01	Helene Fuld	37	3	Total Hydrocarbons	4.27e-01	2.13e-01		
		01	Helene Fuld	37	1	Total Hydrocarbons	6.25e-01	3.12e-01		
		01	Hershey	18	1	1,2,3,4,6,7,8-HpCDD	5.32e-09	2.66e-09		
		01	Hershey	18	2	1,2,3,4,6,7,8-HpCDD	4.41e-09	2.20e-09		
		01	Hershey	18	3	1,2,3,4,6,7,8-HpCDD	5.96e-09	2.98e-09		
		01	Hershey	18	3	1,2,3,4,6,7,8-HpCDF	1.61e-08	8.06e-09		
		01	Hershey	18	2	1,2,3,4,6,7,8-HpCDF	2.18e-08	1.09e-08		
		01	Hershey	18	1	1,2,3,4,6,7,8-HpCDF	1.48e-08	7.40e-09		
		01	Hershey	18	1	1,2,3,4,7,8,9-HpCDF	1.36e-09	6.81e-10		
		01	Hershey	18	3	1,2,3,4,7,8,9-HpCDF	2.09e-09	1.05e-09		
		01	Hershey	18	2	1,2,3,4,7,8,9-HpCDF	4.71e-09	2.35e-09		

		01	Hershey	18	2	1,2,3,4,7,8-HxCDF	9.67e-09	4.83e-09		
		01	Hershey	18	3	1,2,3,4,7,8-HxCDF	7.15e-09	3.58e-09		
		01	Hershey	18	1	1,2,3,4,7,8-HxCDF	5.82e-09	2.91e-09		
		01	Hershey	18	3	1,2,3,6,7,8-HxCDD	5.37e-10	2.69e-10		
		01	Hershey	18	2	1,2,3,6,7,8-HxCDD	3.02e-10	1.51e-10		
		01	Hershey	18	1	1,2,3,6,7,8-HxCDD	2.96e-10	1.48e-10		
		01	Hershey	18	1	1,2,3,6,7,8-HxCDF	2.48e-09	1.24e-09		
		01	Hershey	18	3	1,2,3,6,7,8-HxCDF	2.92e-09	1.46e-09		
		01	Hershey	18	2	1,2,3,6,7,8-HxCDF	2.18e-09	1.09e-09		
		01	Hershey	18	2	1,2,3,7,8,9-HxCDD	6.65e-10	3.33e-10		
		01	Hershey	18	3	1,2,3,7,8,9-HxCDD	2.32e-09	1.16e-09		
		01	Hershey	18	1	1,2,3,7,8,9-HxCDD	6.51e-10	3.25e-10		
		01	Hershey	18	3	1,2,3,7,8-PeCDF	8.95e-10	4.47e-10		
		01	Hershey	18	2	1,2,3,7,8-PeCDF	5.45e-10	2.72e-10		
		01	Hershey	18	1	1,2,3,7,8-PeCDF	8.30e-10	4.15e-10		
		01	Hershey	18	1	2,3,4,6,7,8-HxCDF	5.92e-09	2.96e-09		
		01	Hershey	18	2	2,3,4,6,7,8-HxCDF	7.26e-09	3.63e-09		
		01	Hershey	18	3	2,3,4,6,7,8-HxCDF	8.35e-09	4.18e-09		
		01	Hershey	18	2	2,3,4,7,8-PeCDF	2.11e-09	1.06e-09		
		01	Hershey	18	3	2,3,4,7,8-PeCDF	2.50e-09	1.25e-09		
		01	Hershey	18	1	2,3,4,7,8-PeCDF	1.60e-09	7.99e-10		
		01	Hershey	18	2	2,3,7,8-TCDF	3.39e-09	1.69e-09		
		01	Hershey	18	3	2,3,7,8-TCDF	4.00e-09	2.00e-09		
		01	Hershey	18	1	2,3,7,8-TCDF	3.25e-09	1.63e-09		
		01	Hershey	18	2	Carbon Monoxide	3.04e-01	1.52e-01		
		01	Hershey	18	1	Carbon Monoxide	2.63e-01	1.32e-01		
		01	Hershey	18	3	Carbon Monoxide	1.75e-01	8.73e-02		
		01	Hershey	18	3	OCDD	1.91e-08	9.56e-09		

		01	Hershey	18	1	OCDD	2.37e-08	1.18e-08		
		01	Hershey	18	2	OCDD	2.36e-08	1.18e-08		
		01	Hershey	18	2	OCDF	1.39e-07	6.95e-08		
		01	Hershey	18	3	OCDF	3.82e-08	1.91e-08		
		01	Hershey	18	1	OCDF	4.55e-08	2.28e-08		
		01	Hershey	18	3	Particulate Matter	2.79e+00	1.40e+00		
		01	Hershey	18	1	Particulate Matter	3.29e+00	1.64e+00		
		01	Hershey	18	2	Particulate Matter	1.54e+00	7.68e-01		
		01	Humana	36	1	Chlorine	7.92e-02	3.96e-02		
		01	Humana	36	1	Hydrogen Chloride	1.25e+01	6.25e+00		
		01	Humana	36	1	Particulate Matter	1.14e+00	5.72e-01		
		01	Jordan	3	2	2,3,7,8-TCDD	3.10e-09	1.55e-09		
		01	Jordan	3	6	2,3,7,8-TCDD	3.71e-08	1.86e-08		
		01	Jordan	3	4	2,3,7,8-TCDD	5.72e-09	2.86e-09		
		01	Jordan	3	6	2,3,7,8-TCDF	2.82e-07	1.41e-07		
		01	Jordan	3	2	2,3,7,8-TCDF	4.56e-09	2.28e-09		
		01	Jordan	3	4	2,3,7,8-TCDF	8.31e-08	4.15e-08		
		01	Jordan	3	6	Antimony	4.51e-03	2.26e-03		
		01	Jordan	3	4	Antimony	3.70e-03	1.85e-03		
		01	Jordan	3	2	Antimony	2.74e-03	1.37e-03		
		01	Jordan	3	4	Arsenic	4.24e-05	2.12e-05		
		01	Jordan	3	2	Arsenic	1.42e-04	7.09e-05		
		01	Jordan	3	6	Arsenic	2.67e-04	1.34e-04		
		01	Jordan	3	4	Barium	4.26e-03	2.13e-03		
		01	Jordan	3	2	Barium	7.96e-04	3.98e-04		
		01	Jordan	3	6	Barium	2.03e-03	1.02e-03		
		01	Jordan	3	4	Beryllium	7.83e-06	3.91e-06		
		01	Jordan	3	2	Beryllium	7.60e-06	3.80e-06		

		01	Jordan	3	6	Beryllium	7.45e-06	3.72e-06			
		01	Jordan	3	4	Cadmium	7.02e-03	3.51e-03			
		01	Jordan	3	6	Cadmium	6.18e-03	3.09e-03			
		01	Jordan	3	2	Cadmium	8.07e-03	4.04e-03			
		01	Jordan	3	6	Carbon Monoxide	1.87e+00	9.33e-01			
		01	Jordan	3	4	Carbon Monoxide	5.78e-01	2.89e-01			
		01	Jordan	3	2	Carbon Monoxide	8.47e-01	4.23e-01			
		01	Jordan	3	2	Chromium	1.84e-03	9.20e-04			
		01	Jordan	3	4	Chromium	1.12e-03	5.59e-04			
		01	Jordan	3	6	Chromium	1.14e-03	5.69e-04			
		01	Jordan	3	6	Hydrogen Bromide	2.36e-02	1.18e-02			
		01	Jordan	3	4	Hydrogen Bromide	3.10e-02	1.55e-02			
		01	Jordan	3	2	Hydrogen Bromide	3.39e-02	1.70e-02			
		01	Jordan	3	6	Hydrogen Chloride	1.80e+01	9.01e+00			
		01	Jordan	3	2	Hydrogen Chloride	2.07e+01	1.03e+01			
		01	Jordan	3	4	Hydrogen Chloride	2.07e+01	1.03e+01			
		01	Jordan	3	4	Hydrogen Fluoride	3.55e-02	1.78e-02			
		01	Jordan	3	6	Hydrogen Fluoride	7.22e-02	3.61e-02			
		01	Jordan	3	2	Hydrogen Fluoride	5.69e-02	2.84e-02			
		01	Jordan	3	2	Lead	2.31e-01	1.15e-01			
		01	Jordan	3	6	Lead	1.96e-01	9.80e-02			
		01	Jordan	3	4	Lead	1.48e-01	7.42e-02			
		01	Jordan	3	2	Mercury	5.45e-02	2.72e-02			
		01	Jordan	3	4	Mercury	3.35e-01	1.67e-01			
		01	Jordan	3	6	Mercury	3.50e-02	1.75e-02			
		01	Jordan	3	2	Nickel	4.91e-04	2.46e-04			
		01	Jordan	3	6	Nickel	1.16e-03	5.80e-04			
		01	Jordan	3	4	Nickel	1.12e-03	5.59e-04			

		01	Jordan	3	6	Oxides of Nitrogen	1.08e+01	5.41e+00		
		01	Jordan	3	2	Oxides of Nitrogen	1.85e+01	9.26e+00		
		01	Jordan	3	4	Oxides of Nitrogen	1.14e+01	5.71e+00		
		01	Jordan	3	4	Particulate Matter	1.55e+00	7.75e-01		
		01	Jordan	3	2	Particulate Matter	1.90e+00	9.51e-01		
		01	Jordan	3	6	Particulate Matter	2.69e+00	1.35e+00		
		01	Jordan	3	6	Silver	2.77e-04	1.39e-04		
		01	Jordan	3	2	Silver	8.74e-05	4.37e-05		
		01	Jordan	3	4	Silver	1.68e-04	8.39e-05		
		01	Jordan	3	2	Sulfur Dioxide	4.83e+00	2.41e+00		
		01	Jordan	3	6	Sulfur Dioxide	3.69e+00	1.84e+00		
		01	Jordan	3	4	Sulfur Dioxide	3.22e+00	1.61e+00		
		01	Jordan	3	2	Thallium	7.60e-05	3.80e-05		
		01	Jordan	3	6	Thallium	7.45e-05	3.72e-05		
		01	Jordan	3	4	Thallium	7.83e-05	3.91e-05		
		01	Jordan	3	2	Total CDD	5.93e-08	2.96e-08		
		01	Jordan	3	6	Total CDD	1.69e-05	8.45e-06		
		01	Jordan	3	4	Total CDD	4.96e-06	2.48e-06		
		01	Jordan	3	2	Total CDF	2.83e-07	1.41e-07		
		01	Jordan	3	6	Total CDF	6.48e-05	3.24e-05		
		01	Jordan	3	4	Total CDF	1.23e-05	6.14e-06		
		01	Jordan	3	2	Total Hydrocarbons	7.60e-01	3.80e-01		
		01	Jordan	3	6	Total Hydrocarbons	3.71e-01	1.85e-01		
		01	Jordan	3	6	Total TCDD	4.07e-07	2.04e-07		
		01	Jordan	3	4	Total TCDD	3.57e-07	1.79e-07		
		01	Jordan	3	2	Total TCDD	7.10e-09	3.55e-09		
		01	Jordan	3	4	Total TCDF	4.09e-06	2.04e-06		
		01	Jordan	3	6	Total TCDF	7.57e-06	3.79e-06		

		01	Jordan	3	2	Total TCDF	6.08e-08	3.04e-08		
		01	Jubilee	12	1	Antimony	4.57e-04	2.29e-04		
		01	Jubilee	12	2	Antimony	6.50e-04	3.25e-04		
		01	Jubilee	12	2	Barium	1.97e-04	9.83e-05		
		01	Jubilee	12	1	Barium	8.24e-04	4.12e-04		
		01	Jubilee	12	2	Cadmium	3.32e-03	1.66e-03		
		01	Jubilee	12	1	Cadmium	1.90e-03	9.51e-04		
		01	Jubilee	12	2	Chromium	1.95e-03	9.77e-04		
		01	Jubilee	12	1	Chromium	1.25e-03	6.25e-04		
		01	Jubilee	12	1	Hydrogen Chloride	1.48e+01	7.40e+00		
		01	Jubilee	12	2	Hydrogen Chloride	1.82e+01	9.10e+00		
		01	Jubilee	12	1	Iron	2.24e-02	1.12e-02		
		01	Jubilee	12	2	Iron	1.80e-02	9.02e-03		
		01	Jubilee	12	2	Lead	4.34e-02	2.17e-02		
		01	Jubilee	12	1	Lead	4.90e-02	2.45e-02		
		01	Jubilee	12	2	Manganese	7.80e-04	3.90e-04		
		01	Jubilee	12	1	Manganese	1.40e-03	6.99e-04		
		01	Jubilee	12	2	Mercury	2.49e-05	1.24e-05		
		01	Jubilee	12	1	Mercury	2.69e-05	1.34e-05		
		01	Jubilee	12	2	Nickel	5.04e-04	2.52e-04		
		01	Jubilee	12	1	Nickel	4.47e-04	2.24e-04		
		01	Jubilee	12	2	Particulate Matter	1.82e+00	9.10e-01		
		01	Jubilee	12	1	Particulate Matter	1.68e+00	8.40e-01		
		01	Jubilee	12	1	Silver	3.56e-04	1.78e-04		
		01	Jubilee	12	2	Silver	2.60e-04	1.30e-04		
		01	Kaiser	4	2	2,3,7,8-TCDD	3.92e-09	1.96e-09		
		01	Kaiser	4	3	2,3,7,8-TCDD	1.23e-08	6.13e-09		
		01	Kaiser	4	1	2,3,7,8-TCDD	8.48e-09	4.24e-09		

		01	Kaiser	4	1	2,3,7,8-TCDF	3.40e-08	1.70e-08		
		01	Kaiser	4	3	2,3,7,8-TCDF	1.53e-07	7.67e-08		
		01	Kaiser	4	2	2,3,7,8-TCDF	1.50e-08	7.51e-09		
		01	Kaiser	4	2	Arsenic	1.66e-04	8.28e-05		
		01	Kaiser	4	3	Arsenic	4.18e-05	2.09e-05		
		01	Kaiser	4	4	Arsenic	4.18e-05	2.09e-05		
		01	Kaiser	4	3	Cadmium	2.12e-03	1.06e-03		
		01	Kaiser	4	4	Cadmium	2.66e-03	1.33e-03		
		01	Kaiser	4	2	Cadmium	1.06e-02	5.31e-03		
		01	Kaiser	4	4	Carbon Monoxide	1.07e+00	5.37e-01		
		01	Kaiser	4	6	Carbon Monoxide	1.94e-01	9.71e-02		
		01	Kaiser	4	7	Carbon Monoxide	1.94e-01	9.71e-02		
		01	Kaiser	4	2	Carbon Monoxide	1.43e+00	7.13e-01		
		01	Kaiser	4	1	Carbon Monoxide	1.43e+00	7.13e-01		
		01	Kaiser	4	3	Carbon Monoxide	1.43e+00	7.13e-01		
		01	Kaiser	4	8	Carbon Monoxide	2.07e-01	1.04e-01		
		01	Kaiser	4	5	Carbon Monoxide	5.34e+01	2.67e+01		
		01	Kaiser	4	4	Chromium	4.89e-04	2.44e-04		
		01	Kaiser	4	2	Chromium	3.94e-04	1.97e-04		
		01	Kaiser	4	3	Chromium	3.85e-04	1.93e-04		
		01	Kaiser	4	2	Hydrogen Chloride	1.29e+01	6.47e+00		
		01	Kaiser	4	1	Hydrogen Chloride	1.03e+01	5.13e+00		
		01	Kaiser	4	3	Iron	9.07e-03	4.53e-03		
		01	Kaiser	4	2	Iron	1.43e-02	7.14e-03		
		01	Kaiser	4	4	Iron	1.23e-02	6.15e-03		
		01	Kaiser	4	2	Lead	1.04e-01	5.19e-02		
		01	Kaiser	4	3	Lead	5.88e-02	2.94e-02		
		01	Kaiser	4	4	Lead	5.63e-02	2.82e-02		

		01	Kaiser	4	2	Manganese	7.26e-04	3.63e-04		
		01	Kaiser	4	4	Manganese	5.84e-04	2.92e-04		
		01	Kaiser	4	3	Manganese	8.12e-04	4.06e-04		
		01	Kaiser	4	1	Mercury	2.74e-02	1.37e-02		
		01	Kaiser	4	2	Mercury	6.68e-02	3.34e-02		
		01	Kaiser	4	3	Mercury	8.20e-04	4.10e-04		
		01	Kaiser	4	3	Nickel	3.31e-04	1.66e-04		
		01	Kaiser	4	4	Nickel	3.06e-04	1.53e-04		
		01	Kaiser	4	2	Nickel	2.48e-04	1.24e-04		
		01	Kaiser	4	1	Oxides of Nitrogen	1.70e+00	8.50e-01		
		01	Kaiser	4	2	Oxides of Nitrogen	1.65e+00	8.26e-01		
		01	Kaiser	4	4	Oxides of Nitrogen	2.14e+00	1.07e+00		
		01	Kaiser	4	3	Oxides of Nitrogen	2.14e+00	1.07e+00		
		01	Kaiser	4	8	Oxides of Nitrogen	2.35e+00	1.17e+00		
		01	Kaiser	4	7	Oxides of Nitrogen	2.02e+00	1.01e+00		
		01	Kaiser	4	5	Oxides of Nitrogen	2.41e+00	1.21e+00		
		01	Kaiser	4	6	Oxides of Nitrogen	2.20e+00	1.10e+00		
		01	Kaiser	4	1	Particulate Matter	8.59e+00	4.29e+00		
		01	Kaiser	4	3	Particulate Matter	8.70e+00	4.35e+00		
		01	Kaiser	4	2	Particulate Matter	4.14e+00	2.07e+00		
		01	Kaiser	4	4	Sulfur Dioxide	5.37e-01	2.68e-01		
		01	Kaiser	4	5	Sulfur Dioxide	2.33e+00	1.16e+00		
		01	Kaiser	4	3	Sulfur Dioxide	1.39e+00	6.97e-01		
		01	Kaiser	4	7	Sulfur Dioxide	1.71e+00	8.54e-01		
		01	Kaiser	4	6	Sulfur Dioxide	2.10e+00	1.05e+00		
		01	Kaiser	4	1	Sulfur Dioxide	3.11e+00	1.55e+00		
		01	Kaiser	4	2	Sulfur Dioxide	2.38e+00	1.19e+00		
		01	Kaiser	4	8	Sulfur Dioxide	2.24e+00	1.12e+00		

		01	Kaiser	4	2	Total CDD	7.32e-06	3.66e-06		
		01	Kaiser	4	3	Total CDD	2.20e-05	1.10e-05		
		01	Kaiser	4	1	Total CDD	6.04e-06	3.02e-06		
		01	Kaiser	4	2	Total CDF	1.46e-05	7.30e-06		
		01	Kaiser	4	1	Total CDF	1.60e-05	7.99e-06		
		01	Kaiser	4	3	Total CDF	4.26e-05	2.13e-05		
		01	Kaiser	4	3	Total Hydrocarbons	1.27e-01	6.34e-02		
		01	Kaiser	4	1	Total Hydrocarbons	1.27e-01	6.34e-02		
		01	Kaiser	4	2	Total Hydrocarbons	1.27e-01	6.34e-02		
		01	Kaiser	4	8	Total Hydrocarbons	1.66e-01	8.28e-02		
		01	Kaiser	4	5	Total Hydrocarbons	1.43e-01	7.16e-02		
		01	Kaiser	4	7	Total Hydrocarbons	1.55e-01	7.77e-02		
		01	Kaiser	4	6	Total Hydrocarbons	1.55e-01	7.77e-02		
		01	Kaiser	4	4	Total Hydrocarbons	1.43e-01	7.16e-02		
		01	Kaiser	4	2	Total PCB	9.64e-05	4.82e-05		
		01	Kaiser	4	3	Total PCB	9.70e-05	4.85e-05		
		01	Kaiser	4	1	Total PCB	8.59e-05	4.29e-05		
		01	Kaiser	4	2	Total TCDD	1.50e-08	7.51e-09		
		01	Kaiser	4	1	Total TCDD	8.48e-09	4.24e-09		
		01	Kaiser	4	3	Total TCDD	1.41e-07	7.06e-08		
		01	Kaiser	4	2	Total TCDF	4.45e-07	2.23e-07		
		01	Kaiser	4	1	Total TCDF	4.88e-07	2.44e-07		
		01	Kaiser	4	3	Total TCDF	2.33e-06	1.17e-06		
		01	Lenoir	5	3	2,3,7,8-TCDD	4.51e-07	2.25e-07		
		01	Lenoir	5	2	2,3,7,8-TCDD	5.46e-08	2.73e-08		
		01	Lenoir	5	1	2,3,7,8-TCDD	7.50e-08	3.75e-08		
		01	Lenoir	5	3	2,3,7,8-TCDF	2.20e-06	1.10e-06		
		01	Lenoir	5	2	2,3,7,8-TCDF	2.71e-07	1.35e-07		

		01	Lenoir	5	1	2,3,7,8-TCDF	3.80e-07	1.90e-07		
		01	Lenoir	5	2	Antimony	1.33e-02	6.67e-03		
		01	Lenoir	5	3	Antimony	2.88e-02	1.44e-02		
		01	Lenoir	5	1	Antimony	1.23e-02	6.15e-03		
		01	Lenoir	5	1	Arsenic	1.91e-04	9.54e-05		
		01	Lenoir	5	2	Arsenic	2.42e-04	1.21e-04		
		01	Lenoir	5	3	Arsenic	2.64e-04	1.32e-04		
		01	Lenoir	5	2	Barium	3.37e-03	1.69e-03		
		01	Lenoir	5	3	Barium	2.48e-03	1.24e-03		
		01	Lenoir	5	1	Barium	1.92e-03	9.62e-04		
		01	Lenoir	5	1	Beryllium	2.94e-06	1.47e-06		
		01	Lenoir	5	2	Beryllium	2.20e-06	1.10e-06		
		01	Lenoir	5	3	Beryllium	1.47e-06	7.34e-07		
		01	Lenoir	5	3	Cadmium	5.21e-03	2.61e-03		
		01	Lenoir	5	2	Cadmium	7.07e-03	3.54e-03		
		01	Lenoir	5	1	Cadmium	4.36e-03	2.18e-03		
		01	Lenoir	5	3	Carbon Monoxide	3.78e+01	1.89e+01		
		01	Lenoir	5	2	Carbon Monoxide	2.59e+00	1.29e+00		
		01	Lenoir	5	1	Carbon Monoxide	3.89e+00	1.94e+00		
		01	Lenoir	5	7	Chlorobenzene	1.40e-03	6.99e-04		
		01	Lenoir	5	7	Chlorophenol	8.24e-04	4.12e-04		
		01	Lenoir	5	3	Chromium	8.81e-04	4.41e-04		
		01	Lenoir	5	2	Chromium	7.71e-04	3.85e-04		
		01	Lenoir	5	1	Chromium	4.55e-04	2.28e-04		
		01	Lenoir	5	3	Hydrogen Bromide	3.12e-03	1.56e-03		
		01	Lenoir	5	4	Hydrogen Bromide	3.84e-03	1.92e-03		
		01	Lenoir	5	8	Hydrogen Bromide	2.98e-02	1.49e-02		
		01	Lenoir	5	2	Hydrogen Bromide	2.31e-03	1.15e-03		

		01	Lenoir	5	1	Hydrogen Bromide	2.16e-03	1.08e-03		
		01	Lenoir	5	6	Hydrogen Bromide	1.78e-02	8.88e-03		
		01	Lenoir	5	5	Hydrogen Bromide	3.24e-03	1.62e-03		
		01	Lenoir	5	7	Hydrogen Bromide	6.88e-02	3.44e-02		
		01	Lenoir	5	9	Hydrogen Bromide	5.39e-02	2.70e-02		
		01	Lenoir	5	7	Hydrogen Chloride	3.84e+01	1.92e+01		
		01	Lenoir	5	2	Hydrogen Chloride	3.14e+01	1.57e+01		
		01	Lenoir	5	8	Hydrogen Chloride	4.31e+01	2.16e+01		
		01	Lenoir	5	1	Hydrogen Chloride	3.37e+01	1.69e+01		
		01	Lenoir	5	4	Hydrogen Chloride	4.57e+01	2.28e+01		
		01	Lenoir	5	5	Hydrogen Chloride	4.63e+01	2.31e+01		
		01	Lenoir	5	6	Hydrogen Chloride	4.28e+01	2.14e+01		
		01	Lenoir	5	9	Hydrogen Chloride	3.44e+01	1.72e+01		
		01	Lenoir	5	3	Hydrogen Chloride	4.55e+01	2.28e+01		
		01	Lenoir	5	7	Hydrogen Fluoride	2.07e-01	1.03e-01		
		01	Lenoir	5	1	Hydrogen Fluoride	4.67e-02	2.34e-02		
		01	Lenoir	5	9	Hydrogen Fluoride	2.19e-01	1.10e-01		
		01	Lenoir	5	5	Hydrogen Fluoride	1.42e-01	7.12e-02		
		01	Lenoir	5	2	Hydrogen Fluoride	1.84e-01	9.19e-02		
		01	Lenoir	5	3	Hydrogen Fluoride	1.67e-01	8.34e-02		
		01	Lenoir	5	4	Hydrogen Fluoride	2.56e-01	1.28e-01		
		01	Lenoir	5	6	Hydrogen Fluoride	1.06e-01	5.30e-02		
		01	Lenoir	5	8	Hydrogen Fluoride	6.23e-02	3.12e-02		
		01	Lenoir	5	3	Lead	3.89e-02	1.95e-02		
		01	Lenoir	5	2	Lead	7.73e-02	3.87e-02		
		01	Lenoir	5	1	Lead	3.47e-02	1.73e-02		
		01	Lenoir	5	1	Mercury	2.66e-03	1.33e-03		
		01	Lenoir	5	2	Mercury	4.14e-03	2.07e-03		

		01	Lenoir	5	3	Mercury	3.14e-02	1.57e-02		
		01	Lenoir	5	2	Nickel	3.96e-04	1.98e-04		
		01	Lenoir	5	1	Nickel	3.52e-04	1.76e-04		
		01	Lenoir	5	3	Nickel	7.78e-04	3.89e-04		
		01	Lenoir	5	3	Oxides of Nitrogen	2.76e+00	1.38e+00		
		01	Lenoir	5	2	Oxides of Nitrogen	4.42e+00	2.21e+00		
		01	Lenoir	5	1	Oxides of Nitrogen	3.05e+00	1.52e+00		
		01	Lenoir	5	3	Particulate Matter	1.48e+01	7.39e+00		
		01	Lenoir	5	1	Particulate Matter	6.40e+00	3.20e+00		
		01	Lenoir	5	2	Particulate Matter	7.16e+00	3.58e+00		
		01	Lenoir	5	3	Silver	1.76e-04	8.81e-05		
		01	Lenoir	5	2	Silver	5.07e-04	2.53e-04		
		01	Lenoir	5	1	Silver	4.41e-05	2.20e-05		
		01	Lenoir	5	1	Sulfur Dioxide	8.47e-01	4.23e-01		
		01	Lenoir	5	3	Sulfur Dioxide	1.03e+00	5.13e-01		
		01	Lenoir	5	2	Sulfur Dioxide	7.48e-01	3.74e-01		
		01	Lenoir	5	2	Thallium	6.61e-05	3.30e-05		
		01	Lenoir	5	3	Thallium	4.41e-05	2.20e-05		
		01	Lenoir	5	1	Thallium	5.87e-05	2.94e-05		
		01	Lenoir	5	1	Total CDD	2.84e-05	1.42e-05		
		01	Lenoir	5	2	Total CDD	5.88e-05	2.94e-05		
		01	Lenoir	5	3	Total CDD	7.70e-05	3.85e-05		
		01	Lenoir	5	1	Total CDF	1.13e-04	5.67e-05		
		01	Lenoir	5	3	Total CDF	4.48e-04	2.24e-04		
		01	Lenoir	5	2	Total CDF	1.75e-04	8.73e-05		
		01	Lenoir	5	3	Total Hydrocarbons	2.84e-01	1.42e-01		
		01	Lenoir	5	2	Total Hydrocarbons	3.07e-01	1.53e-01		
		01	Lenoir	5	1	Total Hydrocarbons	1.68e-01	8.41e-02		

		01	Lenoir	5	7	Total Hydrocarbons	2.33e-01	1.16e-01		
		01	Lenoir	5	6	Total Hydrocarbons	2.25e-01	1.13e-01		
		01	Lenoir	5	9	Total Hydrocarbons	9.08e-01	4.54e-01		
		01	Lenoir	5	4	Total Hydrocarbons	8.44e-02	4.22e-02		
		01	Lenoir	5	1	Total TCDD	8.97e-07	4.49e-07		
		01	Lenoir	5	2	Total TCDD	6.38e-07	3.19e-07		
		01	Lenoir	5	3	Total TCDD	6.00e-06	3.00e-06		
		01	Lenoir	5	3	Total TCDF	5.44e-05	2.72e-05		
		01	Lenoir	5	1	Total TCDF	1.38e-05	6.92e-06		
		01	Lenoir	5	2	Total TCDF	1.00e-05	5.00e-06		
		01	Mayo	32	3	Hydrogen Chloride	4.78e+01	2.39e+01		
		01	Mayo	16	6	Hydrogen Chloride	1.02e+02	5.11e+01		
		01	Mayo	32	3	Hydrogen Chloride	3.74e+01	1.87e+01		
		01	Mayo	16	2	Hydrogen Chloride	8.65e+01	4.32e+01		
		01	Mayo	32	2	Hydrogen Chloride	5.10e+01	2.55e+01		
		01	Mayo	16	1	Hydrogen Chloride	4.79e+01	2.39e+01		
		01	Mayo	32	3	Hydrogen Chloride	4.57e+01	2.28e+01		
		01	Mayo	16	3	Hydrogen Chloride	1.06e+02	5.30e+01		
		01	Mayo	16	7	Hydrogen Chloride	6.49e+01	3.25e+01		
		01	Mayo	16	5	Hydrogen Chloride	7.20e+01	3.60e+01		
		01	Mayo	32	1	Hydrogen Chloride	6.27e+01	3.14e+01		
		01	Mayo	32	1	Hydrogen Chloride	7.19e+01	3.60e+01		
		01	Mayo	16	4	Hydrogen Chloride	7.69e+01	3.84e+01		
		01	Mayo	32	2	Hydrogen Chloride	7.90e+01	3.95e+01		
		01	Mayo	32	2	Hydrogen Chloride	4.53e+01	2.26e+01		
		01	Mayo	32	1	Hydrogen Chloride	3.50e+01	1.75e+01		
		01	Mayo	32	3	Particulate Matter	4.07e+00	2.04e+00		
		01	Mayo	16	2	Particulate Matter	7.15e+00	3.57e+00		

		01	Mayo	32	2	Particulate Matter	4.50e+00	2.25e+00		
		01	Mayo	16	4	Particulate Matter	5.36e+00	2.68e+00		
		01	Mayo	16	7	Particulate Matter	5.08e+00	2.54e+00		
		01	Mayo	32	3	Particulate Matter	4.29e+00	2.14e+00		
		01	Mayo	16	3	Particulate Matter	9.74e+00	4.87e+00		
		01	Mayo	32	1	Particulate Matter	6.63e+00	3.32e+00		
		01	Mayo	16	1	Particulate Matter	5.67e+00	2.84e+00		
		01	Mayo	32	1	Particulate Matter	3.25e+00	1.62e+00		
		01	Mayo	32	2	Particulate Matter	7.18e+00	3.59e+00		
		01	Mayo	32	1	Particulate Matter	7.37e+00	3.68e+00		
		01	Mayo	32	3	Particulate Matter	5.48e+00	2.74e+00		
		01	Mayo	32	2	Particulate Matter	4.52e+00	2.26e+00		
		01	Mayo	16	5	Particulate Matter	6.05e+00	3.03e+00		
		01	Mayo	16	6	Particulate Matter	8.81e+00	4.41e+00		
		01	Memorial	26	2	Hydrogen Chloride	2.37e+01	1.19e+01		
		01	Memorial	26	1	Hydrogen Chloride	2.46e+01	1.23e+01		
		01	Memorial	26	3	Hydrogen Chloride	1.89e+01	9.43e+00		
		01	Memorial	26	3	Particulate Matter	1.90e+00	9.50e-01		
		01	Memorial	26	2	Particulate Matter	1.26e+00	6.30e-01		
		01	Memorial	26	1	Particulate Matter	1.67e+00	8.35e-01		
		01	Nazareth	20	1	Hydrogen Chloride	6.06e+01	3.03e+01		
		01	Nazareth	20	2	Hydrogen Chloride	3.49e+01	1.74e+01		
		01	Nazareth	20	1A	Sulfur Dioxide	2.20e-01	1.10e-01		
		01	Nazareth	20	1B	Sulfur Dioxide	4.00e-01	2.00e-01		
		01	Nazareth	20	2A	Sulfur Dioxide	1.20e-01	6.00e-02		
		01	Nazareth	20	2B	Sulfur Dioxide	1.30e-01	6.50e-02		
		01	Raritan	22	1	Carbon Monoxide	3.08e-01	1.54e-01		
		01	Raritan	22	2	Carbon Monoxide	1.73e-01	8.64e-02		

		01	Raritan	22	3	Carbon Monoxide	1.30e-01	6.48e-02		
		01	Raritan	22	1	Hydrogen Chloride	2.09e+01	1.05e+01		
		01	Raritan	22	3	Hydrogen Chloride	1.41e+01	7.07e+00		
		01	Raritan	22	2	Hydrogen Chloride	1.18e+01	5.92e+00		
		01	Raritan	22	1	Oxides of Nitrogen	2.13e+00	1.06e+00		
		01	Raritan	22	3	Oxides of Nitrogen	1.81e+00	9.06e-01		
		01	Raritan	22	2	Oxides of Nitrogen	2.27e+00	1.13e+00		
		01	Raritan	22	3	Particulate Matter	4.20e+00	2.10e+00		
		01	Raritan	22	4	Particulate Matter	3.41e+00	1.70e+00		
		01	Raritan	22	2	Particulate Matter	3.88e+00	1.94e+00		
		01	Raritan	22	2	Total Hydrocarbons	2.45e-01	1.23e-01		
		01	Raritan	22	4	Total Hydrocarbons	2.84e-01	1.42e-01		
		01	Raritan	22	3	Total Hydrocarbons	2.10e-01	1.05e-01		
		01	Sanford	6	3	2,3,7,8-TCDD	1.76e-08	8.80e-09		
		01	Sanford	6	2	2,3,7,8-TCDD	5.16e-07	2.58e-07		
		01	Sanford	6	1	2,3,7,8-TCDD	1.67e-08	8.37e-09		
		01	Sanford	6	2	2,3,7,8-TCDF	1.42e-06	7.10e-07		
		01	Sanford	6	1	2,3,7,8-TCDF	9.47e-08	4.74e-08		
		01	Sanford	6	3	2,3,7,8-TCDF	8.00e-08	4.00e-08		
		01	Sanford	6	3	Antimony	1.02e-03	5.09e-04		
		01	Sanford	6	2	Antimony	1.02e-02	5.10e-03		
		01	Sanford	6	1	Antimony	3.18e-03	1.59e-03		
		01	Sanford	6	3	Arsenic	1.54e-03	7.70e-04		
		01	Sanford	6	1	Arsenic	1.06e-03	5.31e-04		
		01	Sanford	6	2	Arsenic	1.94e-04	9.71e-05		
		01	Sanford	6	1	Barium	5.31e-04	2.65e-04		
		01	Sanford	6	3	Barium	5.23e-04	2.61e-04		
		01	Sanford	6	2	Barium	1.44e-03	7.21e-04		

		01	Sanford	6	3	Beryllium	2.75e-06	1.38e-06		
		01	Sanford	6	1	Beryllium	4.08e-06	2.04e-06		
		01	Sanford	6	2	Beryllium	2.77e-05	1.39e-05		
		01	Sanford	6	3	Cadmium	3.58e-04	1.79e-04		
		01	Sanford	6	2	Cadmium	9.15e-04	4.58e-04		
		01	Sanford	6	1	Cadmium	5.31e-03	2.65e-03		
		01	Sanford	6	3	Carbon Monoxide	2.41e+00	1.21e+00		
		01	Sanford	6	2	Carbon Monoxide	2.50e+01	1.25e+01		
		01	Sanford	6	1	Carbon Monoxide	2.11e+00	1.05e+00		
		01	Sanford	6	3	Chromium	3.08e-03	1.54e-03		
		01	Sanford	6	2	Chromium	6.10e-04	3.05e-04		
		01	Sanford	6	1	Chromium	5.31e-04	2.65e-04		
		01	Sanford	6	3	Hydrogen Bromide	4.07e-02	2.04e-02		
		01	Sanford	6	4	Hydrogen Bromide	7.20e-02	3.60e-02		
		01	Sanford	6	1	Hydrogen Bromide	4.62e-02	2.31e-02		
		01	Sanford	6	2	Hydrogen Bromide	6.33e-02	3.16e-02		
		01	Sanford	6	6	Hydrogen Bromide	2.63e-02	1.32e-02		
		01	Sanford	6	10	Hydrogen Bromide	4.32e-02	2.16e-02		
		01	Sanford	6	5	Hydrogen Bromide	4.67e-03	2.34e-03		
		01	Sanford	6	9	Hydrogen Bromide	2.52e-02	1.26e-02		
		01	Sanford	6	8	Hydrogen Bromide	1.07e-01	5.35e-02		
		01	Sanford	6	10	Hydrogen Chloride	3.95e+00	1.97e+00		
		01	Sanford	6	2	Hydrogen Chloride	2.95e+01	1.48e+01		
		01	Sanford	6	8	Hydrogen Chloride	4.39e+01	2.19e+01		
		01	Sanford	6	1	Hydrogen Chloride	3.24e+00	1.62e+00		
		01	Sanford	6	5	Hydrogen Chloride	2.46e+00	1.23e+00		
		01	Sanford	6	9	Hydrogen Chloride	4.17e+00	2.09e+00		
		01	Sanford	6	6	Hydrogen Chloride	2.35e+00	1.17e+00		

		01	Sanford	6	4	Hydrogen Chloride	4.51e+01	2.25e+01		
		01	Sanford	6	3	Hydrogen Chloride	5.72e+00	2.86e+00		
		01	Sanford	6	2	Hydrogen Fluoride	5.38e-01	2.69e-01		
		01	Sanford	6	8	Hydrogen Fluoride	2.99e-01	1.49e-01		
		01	Sanford	6	5	Hydrogen Fluoride	5.14e-02	2.57e-02		
		01	Sanford	6	4	Hydrogen Fluoride	2.20e-01	1.10e-01		
		01	Sanford	6	6	Hydrogen Fluoride	3.89e-02	1.94e-02		
		01	Sanford	6	1	Hydrogen Fluoride	6.49e-02	3.24e-02		
		01	Sanford	6	3	Hydrogen Fluoride	1.49e-01	7.47e-02		
		01	Sanford	6	10	Hydrogen Fluoride	1.23e-01	6.15e-02		
		01	Sanford	6	9	Hydrogen Fluoride	5.33e-02	2.66e-02		
		01	Sanford	6	3	Lead	5.42e-03	2.71e-03		
		01	Sanford	6	1	Lead	1.45e-02	7.27e-03		
		01	Sanford	6	2	Lead	3.11e-02	1.55e-02		
		01	Sanford	6	2	Mercury	1.39e-04	6.93e-05		
		01	Sanford	6	1	Mercury	1.39e-03	6.94e-04		
		01	Sanford	6	3	Mercury	3.16e-03	1.58e-03		
		01	Sanford	6	2	Nickel	4.44e-04	2.22e-04		
		01	Sanford	6	3	Nickel	4.87e-03	2.43e-03		
		01	Sanford	6	1	Nickel	5.72e-04	2.86e-04		
		01	Sanford	6	2	Oxides of Nitrogen	5.93e+00	2.97e+00		
		01	Sanford	6	1	Oxides of Nitrogen	1.45e+01	7.23e+00		
		01	Sanford	6	3	Oxides of Nitrogen	1.33e+01	6.67e+00		
		01	Sanford	6	3	Particulate Matter	1.93e+00	9.67e-01		
		01	Sanford	6	2	Particulate Matter	1.81e+01	9.05e+00		
		01	Sanford	6	1	Particulate Matter	2.19e+00	1.09e+00		
		01	Sanford	6	6	PM 10.0	2.95e+01	1.48e+01		
		01	Sanford	6	5	PM 10.0	2.77e+01	1.39e+01		

		01	Sanford	6	6	PM 1.0	1.08e+01	5.39e+00		
		01	Sanford	6	5	PM 1.0	9.89e+00	4.94e+00		
		01	Sanford	6	5	PM 2.5	1.49e+01	7.44e+00		
		01	Sanford	6	6	PM 2.5	1.77e+01	8.83e+00		
		01	Sanford	6	6	PM 5.0	2.31e+01	1.15e+01		
		01	Sanford	6	5	PM 5.0	2.11e+01	1.05e+01		
		01	Sanford	6	6	PM .625	7.11e+00	3.55e+00		
		01	Sanford	6	5	PM .625	5.94e+00	2.97e+00		
		01	Sanford	6	2	Silver	2.22e-04	1.11e-04		
		01	Sanford	6	1	Silver	8.17e-05	4.08e-05		
		01	Sanford	6	3	Silver	5.50e-05	2.75e-05		
		01	Sanford	6	2	Sulfur Dioxide	1.99e+00	9.96e-01		
		01	Sanford	6	1	Sulfur Dioxide	6.25e+00	3.13e+00		
		01	Sanford	6	3	Sulfur Dioxide	5.79e+00	2.89e+00		
		01	Sanford	6	2	Thallium	8.32e-05	4.16e-05		
		01	Sanford	6	3	Thallium	8.25e-05	4.13e-05		
		01	Sanford	6	1	Thallium	1.63e-04	8.17e-05		
		01	Sanford	6	1	Total CDD	6.16e-06	3.08e-06		
		01	Sanford	6	3	Total CDD	3.38e-06	1.69e-06		
		01	Sanford	6	2	Total CDD	8.90e-05	4.45e-05		
		01	Sanford	6	2	Total CDF	3.49e-04	1.75e-04		
		01	Sanford	6	3	Total CDF	7.04e-06	3.52e-06		
		01	Sanford	6	1	Total CDF	1.51e-05	7.57e-06		
		01	Sanford	6	5	Total Hydrocarbons	1.18e-01	5.89e-02		
		01	Sanford	6	8	Total Hydrocarbons	9.50e-01	4.75e-01		
		01	Sanford	6	9	Total Hydrocarbons	1.17e-01	5.87e-02		
		01	Sanford	6	1	Total Hydrocarbons	3.54e-01	1.77e-01		
		01	Sanford	6	6	Total Hydrocarbons	1.94e-01	9.71e-02		

		01	Sanford	6	10	Total Hydrocarbons	1.20e-01	6.01e-02		
		01	Sanford	6	2	Total Hydrocarbons	6.59e-01	3.30e-01		
		01	Sanford	6	3	Total Hydrocarbons	3.91e-01	1.95e-01		
		01	Sanford	6	4	Total Hydrocarbons	1.96e+00	9.80e-01		
		01	Sanford	6	2	Total TCDD	1.12e-05	5.62e-06		
		01	Sanford	6	3	Total TCDD	1.11e-06	5.55e-07		
		01	Sanford	6	1	Total TCDD	1.52e-06	7.58e-07		
		01	Sanford	6	3	Total TCDF	3.16e-06	1.58e-06		
		01	Sanford	6	1	Total TCDF	4.99e-06	2.50e-06		
		01	Sanford	6	2	Total TCDF	4.25e-05	2.12e-05		
		01	St. Bernardine's	1	3	2,3,7,8-TCDD	1.81e-09	9.07e-10		
		01	St. Bernardine's	1	2	2,3,7,8-TCDD	1.20e-08	6.02e-09		
		01	St. Bernardine's	1	4	2,3,7,8-TCDD	1.81e-09	9.07e-10		
		01	St. Bernardine's	1	1	2,3,7,8-TCDD	1.50e-09	7.52e-10		
		01	St. Bernardine's	1	1	2,3,7,8-TCDF	3.16e-08	1.58e-08		
		01	St. Bernardine's	1	4	2,3,7,8-TCDF	1.04e-08	5.22e-09		
		01	St. Bernardine's	1	3	2,3,7,8-TCDF	1.72e-08	8.62e-09		
		01	St. Bernardine's	1	2	2,3,7,8-TCDF	2.91e-08	1.45e-08		
		01	St. Bernardine's	1	3	Arsenic	3.60e-05	1.80e-05		
		01	St. Bernardine's	1	2	Arsenic	4.29e-05	2.15e-05		
		01	St. Bernardine's	1	1	Arsenic	3.82e-05	1.91e-05		
		01	St. Bernardine's	1	2	Cadmium	1.03e-03	5.15e-04		
		01	St. Bernardine's	1	3	Cadmium	1.60e-03	8.00e-04		
		01	St. Bernardine's	1	1	Cadmium	9.44e-04	4.72e-04		
		01	St. Bernardine's	1	4	Carbon Monoxide	3.71e-01	1.85e-01		
		01	St. Bernardine's	1	2	Chromium	2.79e-04	1.39e-04		
		01	St. Bernardine's	1	1	Chromium	2.75e-04	1.37e-04		
		01	St. Bernardine's	1	3	Chromium	1.60e-03	8.00e-04		

		01	St. Bernardine's	1	3	Hydrogen Chloride	8.69e+01	4.34e+01		
		01	St. Bernardine's	1	1	Hydrogen Chloride	5.88e+01	2.94e+01		
		01	St. Bernardine's	1	2	Hydrogen Chloride	6.48e+01	3.24e+01		
		01	St. Bernardine's	1	2	Iron	2.27e-03	1.14e-03		
		01	St. Bernardine's	1	1	Iron	2.49e-03	1.24e-03		
		01	St. Bernardine's	1	3	Iron	3.66e-03	1.83e-03		
		01	St. Bernardine's	1	3	Lead	2.29e-02	1.14e-02		
		01	St. Bernardine's	1	2	Lead	1.12e-02	5.58e-03		
		01	St. Bernardine's	1	1	Lead	1.12e-02	5.58e-03		
		01	St. Bernardine's	1	3	Manganese	2.11e-04	1.06e-04		
		01	St. Bernardine's	1	1	Manganese	1.59e-04	7.94e-05		
		01	St. Bernardine's	1	2	Manganese	1.42e-04	7.08e-05		
		01	St. Bernardine's	1	3	Mercury	2.04e-02	1.02e-02		
		01	St. Bernardine's	1	1	Mercury	1.40e-02	7.01e-03		
		01	St. Bernardine's	1	2	Mercury	1.40e-02	6.99e-03		
		01	St. Bernardine's	1	3	Nickel	5.43e-04	2.72e-04		
		01	St. Bernardine's	1	1	Nickel	4.12e-04	2.06e-04		
		01	St. Bernardine's	1	2	Nickel	4.20e-04	2.10e-04		
		01	St. Bernardine's	1	4	Oxides of Nitrogen	8.29e+00	4.15e+00		
		01	St. Bernardine's	1	3	Particulate Matter	7.43e+00	3.72e+00		
		01	St. Bernardine's	1	2	Particulate Matter	4.72e+00	2.36e+00		
		01	St. Bernardine's	1	1	Particulate Matter	5.15e+00	2.57e+00		
		01	St. Bernardine's	1	4	Sulfur Dioxide	2.57e+00	1.28e+00		
		01	St. Bernardine's	1	3	Total CDD	5.15e-06	2.58e-06		
		01	St. Bernardine's	1	2	Total CDD	8.76e-06	4.38e-06		
		01	St. Bernardine's	1	1	Total CDD	3.26e-06	1.63e-06		
		01	St. Bernardine's	1	4	Total CDD	1.91e-06	9.54e-07		
		01	St. Bernardine's	1	3	Total CDF	1.10e-05	5.50e-06		

		01	St. Bernardine's	1	4	Total CDF	3.63e-06	1.82e-06		
		01	St. Bernardine's	1	2	Total CDF	2.13e-05	1.06e-05		
		01	St. Bernardine's	1	1	Total CDF	1.01e-05	5.03e-06		
		01	St. Bernardine's	1	4	Total Hydrocarbons	3.95e-02	1.97e-02		
		01	St. Bernardine's	1	2	Total TCDD	1.75e-07	8.75e-08		
		01	St. Bernardine's	1	4	Total TCDD	3.63e-09	1.81e-09		
		01	St. Bernardine's	1	3	Total TCDD	9.66e-08	4.83e-08		
		01	St. Bernardine's	1	1	Total TCDD	1.25e-07	6.27e-08		
		01	St. Bernardine's	1	4	Total TCDF	1.33e-07	6.65e-08		
		01	St. Bernardine's	1	2	Total TCDF	1.41e-06	7.04e-07		
		01	St. Bernardine's	1	1	Total TCDF	8.91e-07	4.46e-07		
		01	St. Bernardine's	1	3	Total TCDF	4.99e-07	2.50e-07		
		01	St.Agnes	8	2	2,3,7,8-TCDD	1.07e-08	5.37e-09		
		01	St.Agnes	8	1	2,3,7,8-TCDF	4.64e-08	2.32e-08		
		01	St.Agnes	8	2	2,3,7,8-TCDF	5.62e-08	2.81e-08		
		01	St.Agnes	8	3	Arsenic	7.15e-05	3.58e-05		
		01	St.Agnes	8	2	Arsenic	7.41e-05	3.70e-05		
		01	St.Agnes	8	1	Arsenic	2.15e-04	1.07e-04		
		01	St.Agnes	8	2	Cadmium	3.00e-03	1.50e-03		
		01	St.Agnes	8	1	Cadmium	4.09e-03	2.04e-03		
		01	St.Agnes	8	3	Cadmium	2.48e-03	1.24e-03		
		01	St.Agnes	8	3	Carbon Monoxide	1.61e+00	8.07e-01		
		01	St.Agnes	8	8	Carbon Monoxide	1.47e+00	7.36e-01		
		01	St.Agnes	8	9	Carbon Monoxide	1.37e+00	6.87e-01		
		01	St.Agnes	8	2	Carbon Monoxide	1.61e+00	8.07e-01		
		01	St.Agnes	8	5	Carbon Monoxide	1.53e+00	7.64e-01		
		01	St.Agnes	8	6	Carbon Monoxide	1.53e+00	7.64e-01		
		01	St.Agnes	8	4	Carbon Monoxide	1.56e+00	7.78e-01		

		01	St.Agnes	8	1	Carbon Monoxide	1.62e+00	8.09e-01		
		01	St.Agnes	8	7	Carbon Monoxide	1.53e+00	7.64e-01		
		01	St.Agnes	8	2	Chromium	2.89e-04	1.44e-04		
		01	St.Agnes	8	3	Chromium	6.08e-04	3.04e-04		
		01	St.Agnes	8	1	Chromium	5.11e-04	2.55e-04		
		01	St.Agnes	8	1	Hydrogen Chloride	1.55e+01	7.73e+00		
		01	St.Agnes	8	2	Hydrogen Chloride	1.20e+01	5.99e+00		
		01	St.Agnes	8	2	Iron	3.98e-03	1.99e-03		
		01	St.Agnes	8	1	Iron	1.02e-02	5.08e-03		
		01	St.Agnes	8	3	Iron	8.40e-03	4.20e-03		
		01	St.Agnes	8	1	Lead	5.59e-02	2.80e-02		
		01	St.Agnes	8	2	Lead	3.10e-02	1.55e-02		
		01	St.Agnes	8	3	Lead	4.31e-02	2.16e-02		
		01	St.Agnes	8	3	Manganese	2.76e-04	1.38e-04		
		01	St.Agnes	8	2	Manganese	1.58e-04	7.92e-05		
		01	St.Agnes	8	1	Manganese	3.93e-04	1.97e-04		
		01	St.Agnes	8	3	Nickel	2.81e-04	1.40e-04		
		01	St.Agnes	8	2	Nickel	1.58e-04	7.92e-05		
		01	St.Agnes	8	1	Nickel	2.76e-04	1.38e-04		
		01	St.Agnes	8	9	Oxides of Nitrogen	1.80e+00	8.98e-01		
		01	St.Agnes	8	3	Particulate Matter	4.87e+00	2.44e+00		
		01	St.Agnes	8	2	Particulate Matter	4.64e+00	2.32e+00		
		01	St.Agnes	8	1	Particulate Matter	4.90e+00	2.45e+00		
		01	St.Agnes	8	7	Sulfur Dioxide	3.17e-01	1.58e-01		
		01	St.Agnes	8	6	Sulfur Dioxide	3.17e-01	1.58e-01		
		01	St.Agnes	8	5	Sulfur Dioxide	3.37e-01	1.69e-01		
		01	St.Agnes	8	1	Sulfur Dioxide	6.64e-01	3.32e-01		
		01	St.Agnes	8	9	Sulfur Dioxide	3.23e-01	1.61e-01		

		01	St.Agnes	8	2	Sulfur Dioxide	3.90e-01	1.95e-01		
		01	St.Agnes	8	3	Sulfur Dioxide	3.90e-01	1.95e-01		
		01	St.Agnes	8	4	Sulfur Dioxide	7.29e-01	3.65e-01		
		01	St.Agnes	8	8	Sulfur Dioxide	3.43e-01	1.71e-01		
		01	St.Agnes	8	1	Total CDD	1.25e-05	6.26e-06		
		01	St.Agnes	8	2	Total CDD	7.64e-06	3.82e-06		
		01	St.Agnes	8	1	Total CDF	2.19e-05	1.09e-05		
		01	St.Agnes	8	2	Total CDF	1.85e-05	9.26e-06		
		01	St.Agnes	8	9	Total Hydrocarbons	1.11e-02	5.55e-03		
		01	St.Agnes	8	4	Total Hydrocarbons	5.58e-02	2.79e-02		
		01	St.Agnes	8	2	Total Hydrocarbons	4.88e-02	2.44e-02		
		01	St.Agnes	8	6	Total Hydrocarbons	4.67e-02	2.34e-02		
		01	St.Agnes	8	1	Total Hydrocarbons	4.15e-02	2.08e-02		
		01	St.Agnes	8	3	Total Hydrocarbons	4.88e-02	2.44e-02		
		01	St.Agnes	8	8	Total Hydrocarbons	4.91e-02	2.46e-02		
		01	St.Agnes	8	5	Total Hydrocarbons	5.16e-02	2.58e-02		
		01	St.Agnes	8	7	Total Hydrocarbons	4.67e-02	2.34e-02		
		01	St.Agnes	8	1	Total TCDD	1.07e-06	5.36e-07		
		01	St.Agnes	8	2	Total TCDD	8.76e-08	4.38e-08		
		01	St.Agnes	8	2	Total TCDF	2.07e-06	1.03e-06		
		01	St.Agnes	8	1	Total TCDF	1.81e-06	9.04e-07		
		01	Sutter	9	1	2,3,7,8-TCDD	6.42e-09	3.21e-09		
		01	Sutter	9	3	2,3,7,8-TCDD	4.52e-09	2.26e-09		
		01	Sutter	9	2	2,3,7,8-TCDD	3.55e-09	1.77e-09		
		01	Sutter	9	1	2,3,7,8-TCDF	1.74e-07	8.71e-08		
		01	Sutter	9	2	2,3,7,8-TCDF	1.57e-07	7.84e-08		
		01	Sutter	9	3	2,3,7,8-TCDF	1.95e-07	9.76e-08		
		01	Sutter	9	1	Cadmium	3.62e-03	1.81e-03		

		01	Sutter	9	2	Cadmium	3.71e-03	1.86e-03		
		01	Sutter	9	3	Carbon Monoxide	2.78e+00	1.39e+00		
		01	Sutter	9	2	Carbon Monoxide	2.78e+00	1.39e+00		
		01	Sutter	9	1	Carbon Monoxide	1.97e+00	9.86e-01		
		01	Sutter	9	4	Carbon Monoxide	3.41e+00	1.71e+00		
		01	Sutter	9	1	Chromium	3.96e-04	1.98e-04		
		01	Sutter	9	2	Chromium	6.29e-04	3.14e-04		
		01	Sutter	9	2	Hydrogen Chloride	5.96e-06	2.98e-06		
		01	Sutter	9	1	Hydrogen Chloride	2.35e+01	1.18e+01		
		01	Sutter	9	1	Iron	8.24e-03	4.12e-03		
		01	Sutter	9	2	Iron	5.75e-02	2.87e-02		
		01	Sutter	9	1	Lead	3.42e-02	1.71e-02		
		01	Sutter	9	2	Lead	6.67e-02	3.33e-02		
		01	Sutter	9	2	Manganese	1.38e-03	6.91e-04		
		01	Sutter	9	1	Manganese	4.34e-04	2.17e-04		
		01	Sutter	9	1	Nickel	4.95e-04	2.47e-04		
		01	Sutter	9	2	Nickel	4.30e-04	2.15e-04		
		01	Sutter	9	4	Oxides of Nitrogen	4.38e+00	2.19e+00		
		01	Sutter	9	1	Oxides of Nitrogen	2.49e+00	1.25e+00		
		01	Sutter	9	3	Oxides of Nitrogen	3.43e+00	1.71e+00		
		01	Sutter	9	2	Oxides of Nitrogen	4.04e+00	2.02e+00		
		01	Sutter	9	2	Particulate Matter	7.48e+00	3.74e+00		
		01	Sutter	9	1	Particulate Matter	5.91e+00	2.95e+00		
		01	Sutter	9	4	Sulfur Dioxide	1.34e+00	6.71e-01		
		01	Sutter	9	1	Sulfur Dioxide	1.33e+00	6.67e-01		
		01	Sutter	9	2	Sulfur Dioxide	8.12e-01	4.06e-01		
		01	Sutter	9	2	Total CDD	3.09e-05	1.55e-05		
		01	Sutter	9	1	Total CDD	2.79e-05	1.39e-05		

		01	Sutter	9	3	Total CDD	3.24e-05	1.62e-05		
		01	Sutter	9	1	Total CDF	5.40e-05	2.70e-05		
		01	Sutter	9	2	Total CDF	5.92e-05	2.96e-05		
		01	Sutter	9	3	Total CDF	6.11e-05	3.05e-05		
		01	Sutter	9	2	Total Hydrocarbons	8.60e-02	4.30e-02		
		01	Sutter	9	1	Total Hydrocarbons	5.51e-02	2.75e-02		
		01	Sutter	9	3	Total Hydrocarbons	8.21e-02	4.11e-02		
		01	Sutter	9	4	Total Hydrocarbons	5.03e-01	2.52e-01		
		01	Sutter	9	2	Total TCDD	6.78e-07	3.39e-07		
		01	Sutter	9	1	Total TCDD	6.80e-07	3.40e-07		
		01	Sutter	9	3	Total TCDD	1.07e-06	5.37e-07		
		01	Sutter	9	3	Total TCDF	8.26e-06	4.13e-06		
		01	Sutter	9	2	Total TCDF	8.16e-06	4.08e-06		
		01	Sutter	9	1	Total TCDF	8.81e-06	4.40e-06		
		01	Swedish	10	1	Carbon Monoxide	2.82e-01	1.41e-01		
		01	Swedish	10	1	Hydrogen Chloride	2.40e+01	1.20e+01		
		01	Swedish	10	2	Hydrogen Chloride	2.58e+01	1.29e+01		
		01	Swedish	10	1	Particulate Matter	5.83e+00	2.91e+00		
		01	Swedish	10	3	Particulate Matter	4.00e+00	2.00e+00		
		01	Swedish-American	10	2	Particulate Matter	1.51e+00	7.56e-01		
		01	USC	11	4	2,3,7,8-TCDD	6.62e-08	3.31e-08		
		01	USC	11	3	2,3,7,8-TCDD	3.00e-08	1.50e-08		
		01	USC	11	1	2,3,7,8-TCDD	1.33e-07	6.64e-08		
		01	USC	11	1	2,3,7,8-TCDF	6.36e-07	3.18e-07		
		01	USC	11	4	2,3,7,8-TCDF	5.22e-07	2.61e-07		
		01	USC	11	3	2,3,7,8-TCDF	3.63e-07	1.81e-07		
		01	USC	11	2	Arsenic	9.21e-05	4.61e-05		

		01	USC	11	1	Arsenic	4.00e-05	2.00e-05		
		01	USC	11	4	Arsenic	3.24e-05	1.62e-05		
		01	USC	11	1	Cadmium	7.38e-03	3.69e-03		
		01	USC	11	2	Cadmium	6.39e-03	3.19e-03		
		01	USC	11	4	Cadmium	1.84e-03	9.21e-04		
		01	USC	11	2	Chromium	5.15e-04	2.58e-04		
		01	USC	11	1	Chromium	3.38e-04	1.69e-04		
		01	USC	11	4	Chromium	2.84e-04	1.42e-04		
		01	USC	11	4	Hydrogen Chloride	6.73e+01	3.36e+01		
		01	USC	11	1	Hydrogen Chloride	1.85e+02	9.27e+01		
		01	USC	11	2	Hydrogen Chloride	2.64e+02	1.32e+02		
		01	USC	11	1	Iron	3.03e-02	1.52e-02		
		01	USC	11	2	Iron	2.13e-02	1.06e-02		
		01	USC	11	4	Iron	9.19e-03	4.59e-03		
		01	USC	11	2	Lead	1.71e-01	8.54e-02		
		01	USC	11	1	Lead	2.40e-01	1.20e-01		
		01	USC	11	4	Lead	6.35e-02	3.17e-02		
		01	USC	11	2	Manganese	4.74e-04	2.37e-04		
		01	USC	11	1	Manganese	5.26e-04	2.63e-04		
		01	USC	11	4	Manganese	2.56e-04	1.28e-04		
		01	USC	11	2	Mercury	5.16e-02	2.58e-02		
		01	USC	11	3	Mercury	1.98e-02	9.92e-03		
		01	USC	11	1	Mercury	1.83e+00	9.14e-01		
		01	USC	11	2	Nickel	6.24e-04	3.12e-04		
		01	USC	11	1	Nickel	3.57e-04	1.79e-04		
		01	USC	11	4	Nickel	4.27e-04	2.13e-04		
		01	USC	11	3	Oxides of Nitrogen	4.42e+00	2.21e+00		
		01	USC	11	9	Oxides of Nitrogen	5.03e+00	2.52e+00		

		01	USC	11	15	Oxides of Nitrogen	6.11e+00	3.05e+00		
		01	USC	11	18	Oxides of Nitrogen	5.62e+00	2.81e+00		
		01	USC	11	16	Oxides of Nitrogen	6.11e+00	3.05e+00		
		01	USC	11	19	Oxides of Nitrogen	4.91e+00	2.46e+00		
		01	USC	11	10	Oxides of Nitrogen	1.11e+01	5.55e+00		
		01	USC	11	4	Oxides of Nitrogen	3.81e+00	1.91e+00		
		01	USC	11	12	Oxides of Nitrogen	9.00e+00	4.50e+00		
		01	USC	11	8	Oxides of Nitrogen	4.42e+00	2.21e+00		
		01	USC	11	13	Oxides of Nitrogen	7.91e+00	3.96e+00		
		01	USC	11	2	Oxides of Nitrogen	4.26e+00	2.13e+00		
		01	USC	11	20	Oxides of Nitrogen	6.55e+00	3.28e+00		
		01	USC	11	1	Oxides of Nitrogen	4.81e+00	2.40e+00		
		01	USC	11	7	Oxides of Nitrogen	5.64e+00	2.82e+00		
		01	USC	11	17	Oxides of Nitrogen	4.16e+00	2.08e+00		
		01	USC	11	14	Oxides of Nitrogen	6.80e+00	3.40e+00		
		01	USC	11	5	Oxides of Nitrogen	4.59e+00	2.29e+00		
		01	USC	11	6	Oxides of Nitrogen	4.15e+00	2.07e+00		
		01	USC	11	11	Oxides of Nitrogen	9.00e+00	4.50e+00		
		01	USC	11	3	Particulate Matter	4.74e+00	2.37e+00		
		01	USC	11	1	Particulate Matter	2.32e+01	1.16e+01		
		01	USC	11	2	Particulate Matter	5.82e+00	2.91e+00		
		01	USC	11	2	PM 10.0	8.31e-01	4.16e-01		
		01	USC	11	1	PM 10.0	9.22e+00	4.61e+00		
		01	USC	11	3	PM 10.0	1.87e+00	9.33e-01		
		01	USC	11	3	PM 1.0	4.07e-02	2.04e-02		
		01	USC	11	1	PM 1.0	1.09e-01	5.44e-02		
		01	USC	11	2	PM 1.0	1.46e-02	7.28e-03		
		01	USC	11	3	PM 2.5	6.81e-01	3.40e-01		

		01	USC	11	2	PM 2.5	1.15e-01	5.76e-02		
		01	USC	11	1	PM 2.5	1.31e+00	6.53e-01		
		01	USC	11	2	PM 5.0	3.52e-01	1.76e-01		
		01	USC	11	3	PM 5.0	1.28e+00	6.39e-01		
		01	USC	11	1	PM 5.0	4.03e+00	2.01e+00		
		01	USC	11	2	PM .625	5.82e-03	2.91e-03		
		01	USC	11	1	PM .625	4.12e-02	2.06e-02		
		01	USC	11	3	PM .625	1.23e-02	6.16e-03		
		01	USC	11	8	Sulfur Dioxide	4.31e+00	2.16e+00		
		01	USC	11	19	Sulfur Dioxide	1.30e+00	6.52e-01		
		01	USC	11	14	Sulfur Dioxide	1.93e-01	9.66e-02		
		01	USC	11	18	Sulfur Dioxide	1.47e+00	7.33e-01		
		01	USC	11	6	Sulfur Dioxide	2.16e+00	1.08e+00		
		01	USC	11	7	Sulfur Dioxide	2.46e+00	1.23e+00		
		01	USC	11	9	Sulfur Dioxide	2.46e+00	1.23e+00		
		01	USC	11	2	Sulfur Dioxide	3.56e+01	1.78e+01		
		01	USC	11	11	Sulfur Dioxide	4.80e+00	2.40e+00		
		01	USC	11	13	Sulfur Dioxide	2.71e+00	1.35e+00		
		01	USC	11	4	Sulfur Dioxide	2.46e+00	1.23e+00		
		01	USC	11	20	Sulfur Dioxide	1.63e-01	8.15e-02		
		01	USC	11	5	Sulfur Dioxide	7.70e-02	3.85e-02		
		01	USC	11	1	Sulfur Dioxide	3.56e+01	1.78e+01		
		01	USC	11	15	Sulfur Dioxide	1.93e+00	9.66e-01		
		01	USC	11	3	Sulfur Dioxide	2.46e+00	1.23e+00		
		01	USC	11	17	Sulfur Dioxide	1.93e-01	9.66e-02		
		01	USC	11	16	Sulfur Dioxide	1.93e+00	9.66e-01		
		01	USC	11	10	Sulfur Dioxide	7.47e+00	3.73e+00		
		01	USC	11	12	Sulfur Dioxide	4.80e+00	2.40e+00		

		01	USC	11	1	Total CDD	3.21e-05	1.61e-05		
		01	USC	11	4	Total CDD	6.37e-05	3.18e-05		
		01	USC	11	3	Total CDD	7.87e-05	3.93e-05		
		01	USC	11	4	Total CDF	1.96e-04	9.82e-05		
		01	USC	11	1	Total CDF	1.17e-04	5.87e-05		
		01	USC	11	3	Total CDF	1.66e-04	8.32e-05		
		01	USC	11	3	Total TCDD	4.26e-07	2.13e-07		
		01	USC	11	4	Total TCDD	3.64e-07	1.82e-07		
		01	USC	11	1	Total TCDD	8.10e-07	4.05e-07		
		01	USC	11	4	Total TCDF	7.18e-06	3.59e-06		
		01	USC	11	1	Total TCDF	9.25e-06	4.63e-06		
		01	USC	11	3	Total TCDF	4.27e-06	2.13e-06		
		02	ERA Tech	17	3	Hydrogen Chloride	2.22e+00	1.11e+00		
		02	ERA Tech	27	2	Hydrogen Chloride	7.29e-01	3.65e-01		
		02	ERA Tech	27	1	Hydrogen Chloride	6.74e-01	3.37e-01		
		02	ERA Tech	17	2	Hydrogen Chloride	2.85e+00	1.42e+00		
		02	ERA Tech	27	3	Hydrogen Chloride	7.66e-01	3.83e-01		
		02	ERA Tech	17	1	Hydrogen Chloride	4.14e+00	2.07e+00		
		02	ERA Tech	17	2	Particulate Matter	1.35e+00	6.74e-01		
		02	ERA Tech	17	1	Particulate Matter	1.29e+00	6.45e-01		
		02	ERA Tech	27	2	Particulate Matter	5.71e-01	2.86e-01		
		02	ERA Tech	27	3	Particulate Matter	5.81e-01	2.91e-01		
		02	ERA Tech	27	1	Particulate Matter	5.57e-01	2.78e-01		
		02	ERA Tech	17	3	Particulate Matter	1.11e+00	5.54e-01		
		02	Jordan	3	5	2,3,7,8-TCDD	6.87e-08	3.43e-08		
		02	Jordan	3	3	2,3,7,8-TCDD	1.49e-07	7.46e-08		
		02	Jordan	3	1	2,3,7,8-TCDD	8.51e-08	4.26e-08		
		02	Jordan	3	5	2,3,7,8-TCDF	6.26e-07	3.13e-07		

		02	Jordan	3	3	2,3,7,8-TCDF	1.46e-06	7.31e-07		
		02	Jordan	3	1	2,3,7,8-TCDF	9.27e-07	4.64e-07		
		02	Jordan	3	3	Antimony	3.80e-04	1.90e-04		
		02	Jordan	3	1	Antimony	3.04e-04	1.52e-04		
		02	Jordan	3	5	Antimony	2.44e-04	1.22e-04		
		02	Jordan	3	1	Barium	1.85e-04	9.25e-05		
		02	Jordan	3	5	Barium	2.45e-04	1.23e-04		
		02	Jordan	3	3	Barium	1.90e-04	9.50e-05		
		02	Jordan	3	5	Cadmium	1.39e-04	6.94e-05		
		02	Jordan	3	3	Cadmium	1.57e-04	7.83e-05		
		02	Jordan	3	1	Cadmium	2.38e-04	1.19e-04		
		02	Jordan	3	3	Chromium	2.68e-04	1.34e-04		
		02	Jordan	3	1	Chromium	2.81e-04	1.41e-04		
		02	Jordan	3	5	Chromium	2.23e-04	1.12e-04		
		02	Jordan	3	5	Hydrogen Bromide	2.12e-02	1.06e-02		
		02	Jordan	3	1	Hydrogen Bromide	2.52e-02	1.26e-02		
		02	Jordan	3	3	Hydrogen Bromide	1.11e-01	5.54e-02		
		02	Jordan	3	3	Hydrogen Chloride	4.21e+00	2.11e+00		
		02	Jordan	3	5	Hydrogen Chloride	1.27e+00	6.37e-01		
		02	Jordan	3	1	Hydrogen Chloride	2.96e+00	1.48e+00		
		02	Jordan	3	3	Lead	1.23e-03	6.15e-04		
		02	Jordan	3	5	Lead	1.98e-03	9.89e-04		
		02	Jordan	3	1	Lead	1.59e-03	7.93e-04		
		02	Jordan	3	1	Mercury	1.98e-02	9.89e-03		
		02	Jordan	3	5	Mercury	8.36e-03	4.18e-03		
		02	Jordan	3	3	Mercury	6.39e-02	3.19e-02		
		02	Jordan	3	5	Nickel	4.67e-04	2.34e-04		
		02	Jordan	3	1	Nickel	2.05e-04	1.03e-04		

		02	Jordan	3	3	Nickel	9.18e-04	4.59e-04		
		02	Jordan	3	1	Particulate Matter	7.24e-02	3.62e-02		
		02	Jordan	3	3	Particulate Matter	1.63e-01	8.14e-02		
		02	Jordan	3	5	Particulate Matter	2.46e-01	1.23e-01		
		02	Jordan	3	22	PM 10.0	1.03e+00	5.14e-01		
		02	Jordan	3	3	PM 10.0	3.51e-01	1.75e-01		
		02	Jordan	3	2	PM 10.0	1.83e+00	9.15e-01		
		02	Jordan	3	33	PM 10.0	7.96e-01	3.98e-01		
		02	Jordan	3	22	PM 1.0	1.75e+00	8.74e-01		
		02	Jordan	3	2	PM 1.0	9.47e-01	4.74e-01		
		02	Jordan	3	33	PM 1.0	2.87e-01	1.44e-01		
		02	Jordan	3	3	PM 1.0	7.33e-01	3.66e-01		
		02	Jordan	3	3	PM 2.5	7.61e-01	3.81e-01		
		02	Jordan	3	33	PM 2.5	3.15e-01	1.58e-01		
		02	Jordan	3	2	PM 2.5	9.99e-01	5.00e-01		
		02	Jordan	3	22	PM 2.5	1.80e+00	9.00e-01		
		02	Jordan	3	33	PM 5.0	7.92e-01	3.96e-01		
		02	Jordan	3	2	PM 5.0	1.01e+00	5.06e-01		
		02	Jordan	3	3	PM 5.0	3.47e-01	1.73e-01		
		02	Jordan	3	22	PM 5.0	1.81e+00	9.07e-01		
		02	Jordan	3	2	PM .625	1.67e+00	8.36e-01		
		02	Jordan	3	3	PM .625	2.68e-01	1.34e-01		
		02	Jordan	3	33	PM .625	7.13e-01	3.57e-01		
		02	Jordan	3	22	PM .625	8.71e-01	4.35e-01		
		02	Jordan	3	5	Silver	2.56e-05	1.28e-05		
		02	Jordan	3	1	Silver	4.34e-04	2.17e-04		
		02	Jordan	3	3	Silver	5.48e-05	2.74e-05		
		02	Jordan	3	1	Sulfur Dioxide	5.18e-01	2.59e-01		

		02	Jordan	3	3	Sulfur Dioxide	1.44e-01	7.19e-02			
		02	Jordan	3	5	Sulfur Dioxide	4.64e-01	2.32e-01			
		02	Jordan	3	3	Total CDD	1.46e-04	7.29e-05			
		02	Jordan	3	1	Total CDD	9.11e-05	4.55e-05			
		02	Jordan	3	5	Total CDD	7.75e-05	3.88e-05			
		02	Jordan	3	5	Total CDF	8.95e-05	4.47e-05			
		02	Jordan	3	3	Total CDF	2.06e-04	1.03e-04			
		02	Jordan	3	1	Total CDF	1.18e-04	5.88e-05			
		02	Jordan	3	1	Total TCDD	3.59e-05	1.80e-05			
		02	Jordan	3	3	Total TCDD	5.09e-05	2.54e-05			
		02	Jordan	3	5	Total TCDD	3.62e-05	1.81e-05			
		02	Jordan	3	3	Total TCDF	9.97e-05	4.98e-05			
		02	Jordan	3	5	Total TCDF	5.18e-05	2.59e-05			
		02	Jordan	3	1	Total TCDF	6.69e-05	3.35e-05			
		03	Cedars Sinai	7	2	2,3,7,8-TCDD	8.26e-09	4.13e-09			
		03	Cedars Sinai	7	1	2,3,7,8-TCDD	5.18e-09	2.59e-09			
		03	Cedars Sinai	7	2	2,3,7,8-TCDF	4.52e-08	2.26e-08			
		03	Cedars Sinai	7	1	2,3,7,8-TCDF	3.17e-08	1.59e-08			
		03	Cedars Sinai	7	1	Arsenic	4.08e-08	2.04e-08			
		03	Cedars Sinai	7	3	Arsenic	3.67e-08	1.84e-08			
		03	Cedars Sinai	7	2	Arsenic	4.08e-08	2.04e-08			
		03	Cedars Sinai	7	3	Carbon Monoxide	1.21e+00	6.04e-01			
		03	Cedars Sinai	7	1	Carbon Monoxide	1.20e+00	6.02e-01			
		03	Cedars Sinai	7	2	Carbon Monoxide	1.20e+00	5.99e-01			
		03	Cedars Sinai	7	2	Chromium	2.45e-06	1.22e-06			
		03	Cedars Sinai	7	1	Chromium	3.24e-06	1.62e-06			
		03	Cedars Sinai	7	3	Chromium	7.55e-07	3.78e-07			
		03	Cedars Sinai	7	1	Hydrogen Chloride	1.63e+01	8.14e+00			

		03	Cedars Sinai	7	2	Hydrogen Chloride	1.27e+01	6.36e+00		
		03	Cedars Sinai	7	2	Lead	1.02e-04	5.10e-05		
		03	Cedars Sinai	7	1	Lead	1.01e-04	5.07e-05		
		03	Cedars Sinai	7	3	Lead	9.41e-05	4.70e-05		
		03	Cedars Sinai	7	1	Oxides of Nitrogen	4.53e+00	2.26e+00		
		03	Cedars Sinai	7	2	Oxides of Nitrogen	3.38e+00	1.69e+00		
		03	Cedars Sinai	7	3	Oxides of Nitrogen	2.73e+00	1.36e+00		
		03	Cedars Sinai	7	1	Particulate Matter	6.12e-02	3.06e-02		
		03	Cedars Sinai	7	3	Particulate Matter	1.02e-01	5.10e-02		
		03	Cedars Sinai	7	2	Particulate Matter	4.08e-02	2.04e-02		
		03	Cedars Sinai	7	2	Sulfur Dioxide	5.35e-01	2.68e-01		
		03	Cedars Sinai	7	1	Sulfur Dioxide	1.17e+00	5.84e-01		
		03	Cedars Sinai	7	3	Sulfur Dioxide	8.31e-01	4.16e-01		
		03	Cedars Sinai	7	2	Total CDD	2.67e-06	1.34e-06		
		03	Cedars Sinai	7	1	Total CDD	2.69e-06	1.34e-06		
		03	Cedars Sinai	7	2	Total CDF	8.99e-06	4.49e-06		
		03	Cedars Sinai	7	1	Total CDF	8.02e-06	4.01e-06		
		03	Cedars Sinai	7	1	Total Hydrocarbons	1.12e-01	5.62e-02		
		03	Cedars Sinai	7	3	Total Hydrocarbons	4.90e-02	2.45e-02		
		03	Cedars Sinai	7	2	Total Hydrocarbons	4.42e-02	2.21e-02		
		03	Cedars Sinai	7	2	Total TCDD	1.21e-07	6.03e-08		
		03	Cedars Sinai	7	1	Total TCDD	1.26e-07	6.31e-08		
		03	Cedars Sinai	7	1	Total TCDF	1.17e-06	5.85e-07		
		03	Cedars Sinai	7	2	Total TCDF	1.38e-06	6.92e-07		
		03	Therm-Tec	33	2	Hydrogen Chloride	6.54e-01	3.27e-01		
		03	Therm-Tec	30	3	Hydrogen Chloride	1.49e+00	7.44e-01		
		03	Therm-Tec	30	2	Hydrogen Chloride	1.84e+00	9.18e-01		
		03	Therm-Tec	33	3	Hydrogen Chloride	7.35e-01	3.68e-01		

		03	Therm-Tec	33	1	Hydrogen Chloride	6.65e-01	3.32e-01		
		03	Therm-Tec	30	1	Hydrogen Chloride	1.97e+00	9.84e-01		
		03	Therm-Tec	33	1	Particulate Matter	4.31e-01	2.16e-01		
		03	Therm-Tec	30	3	Particulate Matter	1.84e-01	9.18e-02		
		03	Therm-Tec	30	2	Particulate Matter	1.01e-01	5.07e-02		
		03	Therm-Tec	33	3	Particulate Matter	1.43e-01	7.15e-02		
		03	Therm-Tec	33	2	Particulate Matter	2.62e-01	1.31e-01		
		03	Therm-Tec	30	1	Particulate Matter	2.52e-01	1.26e-01		
		04	Bio-Medical Servi	31	2	Hydrogen Chloride	5.69e-02	2.85e-02		
		04	Bio-Medical Servi	31	1	Hydrogen Chloride	7.59e-02	3.80e-02		
		04	Bio-Medical Servi	31	3	Hydrogen Chloride	7.59e-02	3.80e-02		
		04	Bio-Medical Servi	31	2	Particulate Matter	1.21e+00	6.07e-01		
		04	Bio-Medical Servi	31	1	Particulate Matter	1.57e+00	7.87e-01		
		04	Bio-Medical Servi	31	3	Particulate Matter	1.57e+00	7.87e-01		
		04	Bio-Waste Mgmt. C	23	2	Hydrogen Chloride	2.19e-02	1.10e-02		
		04	Bio-Waste Mgmt. C	23	5	Hydrogen Chloride	2.93e-02	1.47e-02		
		04	Bio-Waste Mgmt. C	23	4	Hydrogen Chloride	2.87e-02	1.44e-02		
		04	Bio-Waste Mgmt. C	23	3	Hydrogen Chloride	2.90e-02	1.45e-02		

		04	Bio-Waste Mgmt. C	23	5	Particulate Matter	8.10e-01	4.05e-01		
		04	Bio-Waste Mgmt. C	23	2	Particulate Matter	1.18e+00	5.90e-01		
		04	Bio-Waste Mgmt. C	23	3	Particulate Matter	1.03e+00	5.15e-01		
		04	Bio-Waste Mgmt. C	23	4	Particulate Matter	8.20e-01	4.10e-01		
		04	Hershey	18	2	1,2,3,4,6,7,8-HpCDD	1.41e-08	7.05e-09		
		04	Hershey	18	3	1,2,3,4,6,7,8-HpCDD	1.34e-08	6.70e-09		
		04	Hershey	18	1	1,2,3,4,6,7,8-HpCDD	1.09e-08	5.46e-09		
		04	Hershey	18	2	1,2,3,4,6,7,8-HpCDF	3.62e-08	1.81e-08		
		04	Hershey	18	1	1,2,3,4,6,7,8-HpCDF	3.23e-08	1.62e-08		
		04	Hershey	18	3	1,2,3,4,6,7,8-HpCDF	3.60e-08	1.80e-08		
		04	Hershey	18	2	1,2,3,4,7,8,9-HpCDF	2.91e-09	1.46e-09		
		04	Hershey	18	1	1,2,3,4,7,8,9-HpCDF	3.23e-09	1.62e-09		
		04	Hershey	18	3	1,2,3,4,7,8,9-HpCDF	4.36e-09	2.18e-09		
		04	Hershey	18	2	1,2,3,4,7,8-HxCDD	5.65e-10	2.82e-10		
		04	Hershey	18	1	1,2,3,4,7,8-HxCDD	5.45e-10	2.73e-10		
		04	Hershey	18	3	1,2,3,4,7,8-HxCDD	6.22e-10	3.11e-10		
		04	Hershey	18	3	1,2,3,4,7,8-HxCDF	1.77e-08	8.86e-09		
		04	Hershey	18	1	1,2,3,4,7,8-HxCDF	1.54e-08	7.69e-09		
		04	Hershey	18	2	1,2,3,4,7,8-HxCDF	1.74e-08	8.71e-09		
		04	Hershey	18	1	1,2,3,6,7,8-HxCDD	1.54e-09	7.69e-10		
		04	Hershey	18	3	1,2,3,6,7,8-HxCDD	2.01e-09	1.00e-09		
		04	Hershey	18	2	1,2,3,6,7,8-HxCDD	1.88e-09	9.40e-10		
		04	Hershey	18	3	1,2,3,6,7,8-HxCDF	6.22e-09	3.11e-09		
		04	Hershey	18	1	1,2,3,6,7,8-HxCDF	6.94e-09	3.47e-09		

		04	Hershey	18	2	1,2,3,6,7,8-HxCDF	7.06e-09	3.53e-09		
		04	Hershey	18	3	1,2,3,7,8,9-HxCDD	2.69e-09	1.34e-09		
		04	Hershey	18	2	1,2,3,7,8,9-HxCDD	2.16e-09	1.08e-09		
		04	Hershey	18	1	1,2,3,7,8,9-HxCDD	1.99e-09	9.93e-10		
		04	Hershey	18	3	1,2,3,7,8,9-HxCDF	5.27e-10	2.64e-10		
		04	Hershey	18	1	1,2,3,7,8,9-HxCDF	1.99e-10	9.93e-11		
		04	Hershey	18	2	1,2,3,7,8,9-HxCDF	3.29e-10	1.64e-10		
		04	Hershey	18	3	1,2,3,7,8-PeCDD	7.17e-10	3.59e-10		
		04	Hershey	18	2	1,2,3,7,8-PeCDD	6.59e-10	3.30e-10		
		04	Hershey	18	1	1,2,3,7,8-PeCDD	4.48e-10	2.24e-10		
		04	Hershey	18	1	1,2,3,7,8-PeCDF	2.04e-09	1.02e-09		
		04	Hershey	18	2	1,2,3,7,8-PeCDF	2.54e-09	1.27e-09		
		04	Hershey	18	3	1,2,3,7,8-PeCDF	2.11e-10	1.05e-10		
		04	Hershey	18	3	2,3,4,6,7,8-HxCDF	1.87e-08	9.33e-09		
		04	Hershey	18	2	2,3,4,6,7,8-HxCDF	1.84e-08	9.18e-09		
		04	Hershey	18	1	2,3,4,6,7,8-HxCDF	1.84e-08	9.18e-09		
		04	Hershey	18	2	2,3,4,7,8-PeCDF	5.65e-09	2.82e-09		
		04	Hershey	18	3	2,3,4,7,8-PeCDF	6.70e-09	3.35e-09		
		04	Hershey	18	1	2,3,4,7,8-PeCDF	4.62e-09	2.31e-09		
		04	Hershey	18	1	2,3,7,8-TCDD	1.49e-10	7.44e-11		
		04	Hershey	18	3	2,3,7,8-TCDD	1.91e-10	9.57e-11		
		04	Hershey	18	2	2,3,7,8-TCDD	4.70e-11	2.35e-11		
		04	Hershey	18	2	2,3,7,8-TCDF	1.03e-08	5.17e-09		
		04	Hershey	18	3	2,3,7,8-TCDF	9.57e-09	4.79e-09		
		04	Hershey	18	1	2,3,7,8-TCDF	8.93e-09	4.47e-09		
		04	Hershey	18	3	Carbon Monoxide	1.75e-01	8.73e-02		
		04	Hershey	18	1	Carbon Monoxide	2.63e-01	1.32e-01		
		04	Hershey	18	2	Carbon Monoxide	2.32e-01	1.16e-01		

		04	Hershey	18	1	Hydrogen Chloride	8.46e-01	4.23e-01		
		04	Hershey	18	3	Hydrogen Chloride	2.79e-01	1.40e-01		
		04	Hershey	18	2	Hydrogen Chloride	1.61e-01	8.04e-02		
		04	Hershey	18	1	OCDD	3.98e-08	1.99e-08		
		04	Hershey	18	2	OCDD	6.77e-08	3.38e-08		
		04	Hershey	18	3	OCDD	5.13e-08	2.56e-08		
		04	Hershey	18	3	OCDF	5.35e-08	2.68e-08		
		04	Hershey	18	2	OCDF	7.20e-08	3.60e-08		
		04	Hershey	18	1	OCDF	4.95e-08	2.48e-08		
		04	Hershey	18	1	Particulate Matter	9.58e-01	4.79e-01		
		04	Hershey	18	3	Particulate Matter	9.26e-01	4.63e-01		
		04	Hershey	18	2	Particulate Matter	8.40e-01	4.20e-01		
		04	Hershey	18	3	Sulfur Dioxide	3.06e-02	1.53e-02		
		04	Hershey	18	2	Sulfur Dioxide	3.03e-02	1.51e-02		
		04	Hershey	18	1	Sulfur Dioxide	1.63e-02	8.15e-03		
		04	Kaiser	4	2	2,3,7,8-TCDF	1.97e-08	9.87e-09		
		04	Kaiser	4	1	2,3,7,8-TCDF	1.70e-08	8.49e-09		
		04	Kaiser	4	3	2,3,7,8-TCDF	4.63e-08	2.32e-08		
		04	Kaiser	4	1	Arsenic	1.89e-04	9.46e-05		
		04	Kaiser	4	3	Arsenic	3.04e-05	1.52e-05		
		04	Kaiser	4	2	Arsenic	2.08e-04	1.04e-04		
		04	Kaiser	4	3	Cadmium	2.06e-03	1.03e-03		
		04	Kaiser	4	2	Cadmium	9.77e-03	4.88e-03		
		04	Kaiser	4	1	Cadmium	9.09e-03	4.54e-03		
		04	Kaiser	4	5	Carbon Monoxide	4.29e+00	2.15e+00		
		04	Kaiser	4	3	Carbon Monoxide	1.07e+00	5.37e-01		
		04	Kaiser	4	1	Carbon Monoxide	1.43e+00	7.13e-01		
		04	Kaiser	4	4	Carbon Monoxide	1.07e+00	5.37e-01		

		04	Kaiser	4	6	Carbon Monoxide	2.68e+00	1.34e+00		
		04	Kaiser	4	7	Carbon Monoxide	1.94e-01	9.71e-02		
		04	Kaiser	4	2	Carbon Monoxide	1.43e+00	7.13e-01		
		04	Kaiser	4	3	Chromium	2.66e-04	1.33e-04		
		04	Kaiser	4	1	Chromium	4.90e-04	2.45e-04		
		04	Kaiser	4	2	Chromium	4.83e-04	2.42e-04		
		04	Kaiser	4	3	Hydrogen Chloride	1.74e+00	8.70e-01		
		04	Kaiser	4	2	Hydrogen Chloride	2.14e+00	1.07e+00		
		04	Kaiser	4	1	Hydrogen Chloride	2.06e+00	1.03e+00		
		04	Kaiser	4	2	Iron	1.65e-02	8.26e-03		
		04	Kaiser	4	1	Iron	6.69e-03	3.35e-03		
		04	Kaiser	4	3	Iron	5.18e-03	2.59e-03		
		04	Kaiser	4	3	Lead	3.96e-02	1.98e-02		
		04	Kaiser	4	1	Lead	1.01e-01	5.04e-02		
		04	Kaiser	4	2	Lead	9.77e-02	4.88e-02		
		04	Kaiser	4	2	Manganese	5.83e-04	2.92e-04		
		04	Kaiser	4	3	Manganese	2.61e-04	1.31e-04		
		04	Kaiser	4	1	Manganese	5.55e-04	2.77e-04		
		04	Kaiser	4	3	Mercury	8.86e-04	4.43e-04		
		04	Kaiser	4	2	Mercury	2.43e-02	1.22e-02		
		04	Kaiser	4	1	Mercury	2.12e-02	1.06e-02		
		04	Kaiser	4	3	Nickel	3.21e-04	1.61e-04		
		04	Kaiser	4	2	Nickel	3.90e-04	1.95e-04		
		04	Kaiser	4	1	Nickel	2.71e-04	1.36e-04		
		04	Kaiser	4	5	Oxides of Nitrogen	2.69e+00	1.34e+00		
		04	Kaiser	4	2	Oxides of Nitrogen	1.89e+00	9.47e-01		
		04	Kaiser	4	3	Oxides of Nitrogen	2.03e+00	1.01e+00		
		04	Kaiser	4	1	Oxides of Nitrogen	1.65e+00	8.26e-01		

		04	Kaiser	4	7	Oxides of Nitrogen	2.20e+00	1.10e+00		
		04	Kaiser	4	6	Oxides of Nitrogen	2.47e+00	1.23e+00		
		04	Kaiser	4	4	Oxides of Nitrogen	1.92e+00	9.60e-01		
		04	Kaiser	4	3	Particulate Matter	1.66e+00	8.28e-01		
		04	Kaiser	4	2	Particulate Matter	6.80e+00	3.40e+00		
		04	Kaiser	4	1	Particulate Matter	6.08e+00	3.04e+00		
		04	Kaiser	4	1	PM 10.0	2.63e+00	1.31e+00		
		04	Kaiser	4	2	PM 10.0	4.34e+00	2.17e+00		
		04	Kaiser	4	1	PM 1.0	1.22e-03	6.08e-04		
		04	Kaiser	4	2	PM 1.0	1.63e-02	8.16e-03		
		04	Kaiser	4	2	PM 2.5	5.23e-01	2.62e-01		
		04	Kaiser	4	1	PM 2.5	6.93e-02	3.47e-02		
		04	Kaiser	4	2	PM 5.0	1.93e+00	9.66e-01		
		04	Kaiser	4	1	PM 5.0	7.88e-01	3.94e-01		
		04	Kaiser	4	1	PM .625	1.22e-03	6.08e-04		
		04	Kaiser	4	2	PM .625	1.28e-02	6.39e-03		
		04	Kaiser	4	2	Sulfur Dioxide	1.71e+00	8.56e-01		
		04	Kaiser	4	3	Sulfur Dioxide	7.51e-01	3.76e-01		
		04	Kaiser	4	6	Sulfur Dioxide	2.33e+00	1.16e+00		
		04	Kaiser	4	4	Sulfur Dioxide	1.93e+00	9.66e-01		
		04	Kaiser	4	7	Sulfur Dioxide	1.71e+00	8.54e-01		
		04	Kaiser	4	5	Sulfur Dioxide	3.08e+00	1.54e+00		
		04	Kaiser	4	1	Sulfur Dioxide	3.11e+00	1.55e+00		
		04	Kaiser	4	2	Total CDD	4.49e-06	2.25e-06		
		04	Kaiser	4	1	Total CDD	3.51e-06	1.75e-06		
		04	Kaiser	4	3	Total CDD	3.01e-06	1.50e-06		
		04	Kaiser	4	1	Total CDF	8.79e-06	4.39e-06		
		04	Kaiser	4	2	Total CDF	1.22e-05	6.11e-06		

		04	Kaiser	4	3	Total CDF	8.41e-06	4.20e-06		
		04	Kaiser	4	5	Total Hydrocarbons	1.43e-01	7.16e-02		
		04	Kaiser	4	7	Total Hydrocarbons	1.55e-01	7.77e-02		
		04	Kaiser	4	1	Total Hydrocarbons	1.27e-01	6.34e-02		
		04	Kaiser	4	3	Total Hydrocarbons	1.43e-01	7.16e-02		
		04	Kaiser	4	6	Total Hydrocarbons	1.43e-01	7.16e-02		
		04	Kaiser	4	2	Total Hydrocarbons	1.27e-01	6.34e-02		
		04	Kaiser	4	4	Total Hydrocarbons	1.43e-01	7.16e-02		
		04	Kaiser	4	3	Total TCDD	1.32e-07	6.62e-08		
		04	Kaiser	4	2	Total TCDD	1.01e-08	5.04e-09		
		04	Kaiser	4	1	Total TCDD	1.70e-08	8.49e-09		
		04	Kaiser	4	3	Total TCDF	1.72e-06	8.61e-07		
		04	Kaiser	4	2	Total TCDF	5.24e-07	2.62e-07		
		04	Kaiser	4	1	Total TCDF	3.69e-07	1.85e-07		
		04	Mega	29	2	1,2,3,4,6,7,8-HpCDD	1.25e-09	6.27e-10		
		04	Mega	29	1	1,2,3,4,6,7,8-HpCDD	1.29e-09	6.47e-10		
		04	Mega	29	3	1,2,3,4,6,7,8-HpCDD	6.46e-10	3.23e-10		
		04	Mega	29	2	1,2,3,4,6,7,8-HpCDF	1.87e-09	9.37e-10		
		04	Mega	29	1	1,2,3,4,6,7,8-HpCDF	1.17e-09	5.87e-10		
		04	Mega	29	3	1,2,3,4,6,7,8-HpCDF	4.89e-11	2.45e-11		
		04	Mega	29	1	1,2,3,4,7,8-HxCDF	7.99e-10	3.99e-10		
		04	Mega	29	2	1,2,3,4,7,8-HxCDF	1.50e-09	7.50e-10		
		04	Mega	29	3	1,2,3,4,7,8-HxCDF	9.29e-10	4.65e-10		
		04	Mega	29	2	1,2,3,6,7,8-HxCDF	8.46e-10	4.23e-10		
		04	Mega	29	3	1,2,3,6,7,8-HxCDF	3.91e-11	1.96e-11		
		04	Mega	29	1	1,2,3,6,7,8-HxCDF	3.63e-11	1.82e-11		
		04	Mega	29	3	1,2,3,7,8-PeCDF	5.97e-10	2.98e-10		
		04	Mega	29	2	1,2,3,7,8-PeCDF	8.46e-10	4.23e-10		

		04	Mega	29	1	1,2,3,7,8-PeCDF	3.63e-11	1.82e-11		
		04	Mega	29	1	2,3,4,6,7,8-HxCDF	5.93e-10	2.96e-10		
		04	Mega	29	2	2,3,4,6,7,8-HxCDF	7.93e-10	3.96e-10		
		04	Mega	29	3	2,3,4,6,7,8-HxCDF	7.73e-10	3.86e-10		
		04	Mega	29	2	2,3,4,7,9-PeCDF	1.35e-09	6.75e-10		
		04	Mega	29	3	2,3,4,7,9-PeCDF	3.91e-11	1.96e-11		
		04	Mega	29	1	2,3,4,7,9-PeCDF	3.63e-11	1.82e-11		
		04	Mega	29	1	2,3,7,8-TCDF	3.87e-10	1.94e-10		
		04	Mega	29	2	2,3,7,8-TCDF	6.64e-10	3.32e-10		
		04	Mega	29	3	2,3,7,8-TCDF	4.50e-10	2.25e-10		
		04	Mega	29	2	Arsenic	3.06e-05	1.53e-05		
		04	Mega	29	1	Arsenic	2.97e-05	1.49e-05		
		04	Mega	29	3	Arsenic	3.79e-05	1.90e-05		
		04	Mega	29	1	Cadmium	2.71e-03	1.35e-03		
		04	Mega	29	3	Cadmium	1.25e-02	6.26e-03		
		04	Mega	29	2	Cadmium	2.32e-03	1.16e-03		
		04	Mega	29	2	Chromium	1.34e-03	6.72e-04		
		04	Mega	29	3	Chromium	1.97e-03	9.86e-04		
		04	Mega	29	1	Chromium	2.56e-03	1.28e-03		
		04	Mega	29	4	Hydrogen Chloride	2.88e-02	1.44e-02		
		04	Mega	29	5	Hydrogen Chloride	7.36e-02	3.68e-02		
		04	Mega	29	6	Hydrogen Chloride	1.55e-02	7.76e-03		
		04	Mega	29	3	Lead	1.52e-01	7.59e-02		
		04	Mega	29	2	Lead	1.04e-01	5.19e-02		
		04	Mega	29	1	Lead	1.16e-01	5.80e-02		
		04	Mega	29	1	Mercury	4.16e-03	2.08e-03		
		04	Mega	29	3	Mercury	5.69e-03	2.84e-03		
		04	Mega	29	2	Mercury	9.47e-03	4.74e-03		

		04	Mega	29	1	Nickel	1.46e-03	7.28e-04		
		04	Mega	29	3	Nickel	4.17e-03	2.09e-03		
		04	Mega	29	2	Nickel	1.99e-03	9.93e-04		
		04	Mega	29	3	Other HpCDD	0.00e+00	0.00e+00		
		04	Mega	29	1	Other HpCDD	1.03e-09	5.14e-10		
		04	Mega	29	2	Other HpCDD	1.72e-09	8.62e-10		
		04	Mega	29	2	Other HpCDF	1.09e-09	5.46e-10		
		04	Mega	29	1	Other HpCDF	1.05e-09	5.26e-10		
		04	Mega	29	3	Other HpCDF	0.00e+00	0.00e+00		
		04	Mega	29	3	Other HxCDD	9.69e-10	4.84e-10		
		04	Mega	29	2	Other HxCDD	8.46e-10	4.23e-10		
		04	Mega	29	1	Other HxCDD	8.47e-11	4.24e-11		
		04	Mega	29	3	Other HxCDF	2.24e-09	1.12e-09		
		04	Mega	29	2	Other HxCDF	4.32e-09	2.16e-09		
		04	Mega	29	1	Other HxCDF	2.18e-09	1.09e-09		
		04	Mega	29	3	Other PeCDD	5.48e-10	2.74e-10		
		04	Mega	29	1	Other PeCDD	0.00e+00	0.00e+00		
		04	Mega	29	2	Other PeCDD	8.89e-10	4.44e-10		
		04	Mega	29	2	Other PeCDF	9.18e-09	4.59e-09		
		04	Mega	29	3	Other PeCDF	3.22e-09	1.61e-09		
		04	Mega	29	1	Other PeCDF	3.24e-09	1.62e-09		
		04	Mega	29	2	Other TCDD	0.00e+00	0.00e+00		
		04	Mega	29	1	Other TCDD	2.30e-10	1.15e-10		
		04	Mega	29	3	Other TCDD	3.23e-10	1.62e-10		
		04	Mega	29	3	Other TCDF	1.29e-08	6.46e-09		
		04	Mega	29	1	Other TCDF	1.45e-08	7.27e-09		
		04	Mega	29	2	Other TCDF	2.42e-08	1.21e-08		
		04	Mega	29	6	Particulate Matter	3.07e+00	1.54e+00		

		04	Mega	29	5	Particulate Matter	2.48e+00	1.24e+00		
		04	Mega	29	4	Particulate Matter	3.25e+00	1.63e+00		
		04	Mega	29	3	Silver	4.17e-04	2.09e-04		
		04	Mega	29	1	Silver	1.49e-04	7.43e-05		
		04	Mega	29	2	Silver	7.33e-04	3.67e-04		
		04	Mega	29	2	Total HpCDD	2.98e-09	1.49e-09		
		04	Mega	29	3	Total HpCDD	6.46e-10	3.23e-10		
		04	Mega	29	1	Total HpCDD	2.32e-09	1.16e-09		
		04	Mega	29	3	Total HpCDF	2.54e-10	1.27e-10		
		04	Mega	29	1	Total HpCDF	2.34e-09	1.17e-09		
		04	Mega	29	2	Total HpCDF	3.15e-09	1.57e-09		
		04	Mega	29	2	Total HxCDD	1.19e-09	5.94e-10		
		04	Mega	29	3	Total HxCDD	1.31e-09	6.56e-10		
		04	Mega	29	1	Total HxCDD	2.66e-10	1.33e-10		
		04	Mega	29	1	Total HxCDF	3.68e-09	1.84e-09		
		04	Mega	29	2	Total HxCDF	7.57e-09	3.79e-09		
		04	Mega	29	3	Total HxCDF	4.05e-09	2.03e-09		
		04	Mega	29	3	Total OCDD	0.00e+00	0.00e+00		
		04	Mega	29	1	Total OCDD	0.00e+00	0.00e+00		
		04	Mega	29	2	Total OCDD	0.00e+00	0.00e+00		
		04	Mega	29	1	Total OCDF	1.45e-10	7.26e-11		
		04	Mega	29	2	Total OCDF	1.93e-10	9.64e-11		
		04	Mega	29	3	Total OCDF	1.13e-09	5.67e-10		
		04	Mega	29	1	Total PCDD	3.97e-09	1.98e-09		
		04	Mega	29	2	Total PCDD	5.40e-09	2.70e-09		
		04	Mega	29	3	Total PCDD	3.22e-09	1.61e-09		
		04	Mega	29	1	Total PCDF	2.44e-08	1.22e-08		
		04	Mega	29	2	Total PCDF	4.72e-08	2.36e-08		

		04	Mega	29	3	Total PCDF	2.26e-08	1.13e-08			
		04	Mega	29	2	Total PeCDD	9.75e-10	4.88e-10			
		04	Mega	29	1	Total PeCDD	4.84e-11	2.42e-11			
		04	Mega	29	3	Total PeCDD	6.36e-10	3.18e-10			
		04	Mega	29	3	Total PeCDF	3.85e-09	1.93e-09			
		04	Mega	29	2	Total PeCDF	1.14e-08	5.69e-09			
		04	Mega	29	1	Total PeCDF	3.32e-09	1.66e-09			
		04	Mega	29	1	Total TCDD	2.66e-10	1.33e-10			
		04	Mega	29	3	Total TCDD	3.82e-10	1.91e-10			
		04	Mega	29	2	Total TCDD	6.43e-11	3.22e-11			
		04	Mega	29	2	Total TCDF	2.49e-08	1.24e-08			
		04	Mega	29	1	Total TCDF	1.49e-08	7.47e-09			
		04	Mega	29	3	Total TCDF	1.34e-08	6.68e-09			
		04	Nazareth	20	1	Antimony	4.08e-04	2.04e-04			
		04	Nazareth	20	2	Antimony	4.08e-04	2.04e-04			
		04	Nazareth	20	1	Cadmium	2.84e-01	1.42e-01			
		04	Nazareth	20	2	Cadmium	1.43e-03	7.14e-04			
		04	Nazareth	20	1	Carbon Monoxide	3.88e-01	1.94e-01			
		04	Nazareth	20	2	Carbon Monoxide	6.53e-01	3.27e-01			
		04	Nazareth	20	2	Chromium	0.00e+00	0.00e+00			
		04	Nazareth	20	1	Chromium	2.04e-04	1.02e-04			
		04	Nazareth	20	2	Hydrogen Chloride	2.04e-02	1.02e-02			
		04	Nazareth	20	1	Hydrogen Chloride	2.04e-02	1.02e-02			
		04	Nazareth	20	2	Lead	6.94e-03	3.47e-03			
		04	Nazareth	20	1	Lead	2.45e-02	1.22e-02			
		04	Nazareth	20	1	Manganese	6.12e-04	3.06e-04			
		04	Nazareth	20	2	Manganese	6.12e-04	3.06e-04			
		04	Nazareth	20	2	Mercury	1.61e-02	8.06e-03			

		04	Nazareth	20	1	Mercury	4.02e-02	2.01e-02		
		04	Nazareth	20	2	Particulate Matter	5.71e-01	2.86e-01		
		04	Nazareth	20	1	Particulate Matter	6.33e-01	3.16e-01		
		04	Nazareth	20	6	Particulate Matter	6.33e-01	3.16e-01		
		04	Nazareth	20	5	Particulate Matter	6.73e-01	3.37e-01		
		08	Borgess	13	1	2,3,7,8-TCDD	5.61e-10	2.81e-10		
		08	Borgess	13	1	2,3,7,8-TCDF	4.93e-09	2.47e-09		
		08	Borgess	13	1	Aluminum	3.03e-03	1.51e-03		
		08	Borgess	13	1	Antimony	2.10e-04	1.05e-04		
		08	Borgess	13	1	Arsenic	1.19e-05	5.93e-06		
		08	Borgess	13	1	Barium	7.39e-05	3.70e-05		
		08	Borgess	13	1	Cadmium	2.46e-05	1.23e-05		
		08	Borgess	13	1	Carbon Monoxide	7.13e-02	3.57e-02		
		08	Borgess	13	1	Chromium	3.06e-04	1.53e-04		
		08	Borgess	13	1	Copper	1.25e-03	6.25e-04		
		08	Borgess	13	1	Hydrogen Chloride	1.63e+00	8.13e-01		
		08	Borgess	13	1	Lead	6.25e-05	3.12e-05		
		08	Borgess	13	1	Mercury	1.11e-01	5.55e-02		
		08	Borgess	13	1	Nickel	4.54e-04	2.27e-04		
		08	Borgess	13	1	Oxides of Nitrogen	4.97e+00	2.49e+00		
		08	Borgess	13	1	Particulate Matter	8.95e-02	4.48e-02		
		08	Borgess	13	1	Silver	6.65e-05	3.32e-05		
		08	Borgess	13	1	Sulfur Dioxide	3.83e-01	1.92e-01		
		08	Borgess	13	1	Total CDD	3.44e-07	1.72e-07		
		08	Borgess	13	1	Total CDF	1.47e-06	7.37e-07		
		08	Borgess	13	1	Total Hydrocarbons	4.71e-02	2.35e-02		
		08	Borgess	13	1	Total TCDD	6.50e-09	3.25e-09		
		08	Borgess	13	1	Total TCDF	1.39e-07	6.96e-08		

		08	Erlanger-N	25	3	Carbon Monoxide	1.44e-01	7.18e-02		
		08	Erlanger-N	25	4	Carbon Monoxide	2.17e-01	1.08e-01		
		08	Erlanger-N	25	6	Carbon Monoxide	2.52e+00	1.26e+00		
		08	Erlanger-N	25	5	Carbon Monoxide	6.59e-01	3.29e-01		
		08	Erlanger-N	25	2	Carbon Monoxide	2.55e-01	1.27e-01		
		08	Erlanger-N	25	1	Carbon Monoxide	2.16e-01	1.08e-01		
		08	Erlanger-N	25	1	Hydrogen Chloride	1.29e+01	6.46e+00		
		08	Erlanger-N	25	2	Hydrogen Chloride	8.32e+00	4.16e+00		
		08	Erlanger-N	25	3	Hydrogen Chloride	2.00e+01	9.98e+00		
		08	Erlanger-N	25	6	Hydrogen Chloride	5.26e+01	2.63e+01		
		08	Erlanger-N	25	5	Hydrogen Chloride	3.63e+01	1.81e+01		
		08	Erlanger-N	25	4	Hydrogen Chloride	8.11e+00	4.06e+00		
		08	Erlanger-N	25	6	Oxides of Nitrogen	7.71e+00	3.86e+00		
		08	Erlanger-N	25	5	Oxides of Nitrogen	6.56e+00	3.28e+00		
		08	Erlanger-N	25	2	Particulate Matter	2.60e-01	1.30e-01		
		08	Erlanger-N	25	6	Particulate Matter	3.20e-01	1.60e-01		
		08	Erlanger-N	25	1	Particulate Matter	1.90e-01	9.50e-02		
		08	Erlanger-N	25	4	Particulate Matter	4.10e-01	2.05e-01		
		08	Erlanger-N	25	5	Particulate Matter	2.70e-01	1.35e-01		
		08	Erlanger-N	25	3	Particulate Matter	3.60e-01	1.80e-01		
		08	Erlanger-S	19	2	Carbon Monoxide	7.83e-01	3.92e-01		
		08	Erlanger-S	19	5	Carbon Monoxide	1.15e+00	5.76e-01		
		08	Erlanger-S	19	3	Carbon Monoxide	6.92e-01	3.46e-01		
		08	Erlanger-S	19	1	Carbon Monoxide	8.02e-01	4.01e-01		
		08	Erlanger-S	19	5	Hydrogen Chloride	3.68e+01	1.84e+01		
		08	Erlanger-S	19	1	Hydrogen Chloride	9.44e+00	4.72e+00		
		08	Erlanger-S	19	3	Hydrogen Chloride	2.20e+01	1.10e+01		
		08	Erlanger-S	19	1	Hydrogen Chloride	2.41e+01	1.20e+01		

		08	Erlanger-S	19	2	Hydrogen Chloride	2.67e+01	1.34e+01		
		08	Erlanger-S	19	3	Hydrogen Chloride	3.40e+01	1.70e+01		
		08	Erlanger-S	19	2	Hydrogen Chloride	2.70e+01	1.35e+01		
		08	Erlanger-S	19	1	Oxides of Nitrogen	7.34e+00	3.67e+00		
		08	Erlanger-S	19	5	Oxides of Nitrogen	6.61e+00	3.31e+00		
		08	Erlanger-S	19	1	Oxides of Nitrogen	6.79e+00	3.40e+00		
		08	Erlanger-S	19	2	Oxides of Nitrogen	7.26e+00	3.63e+00		
		08	Erlanger-S	19	3	Oxides of Nitrogen	5.88e+00	2.94e+00		
		08	Erlanger-S	19	2	Oxides of Nitrogen	7.68e+00	3.84e+00		
		08	Erlanger-S	19	3	Oxides of Nitrogen	7.21e+00	3.60e+00		
		08	Erlanger-S	19	1	Particulate Matter	7.38e-01	3.69e-01		
		08	Erlanger-S	19	2	Particulate Matter	1.01e+00	5.06e-01		
		08	Erlanger-S	19	5	Particulate Matter	2.31e-01	1.15e-01		
		08	Erlanger-S	19	1	Particulate Matter	5.54e-01	2.77e-01		
		08	Erlanger-S	19	2	Particulate Matter	3.49e-01	1.74e-01		
		08	Erlanger-S	19	3	Particulate Matter	9.30e-01	4.65e-01		
		08	Erlanger-S	19	3	Particulate Matter	5.32e-01	2.66e-01		
		08	Hamot	34	1	Hydrogen Chloride	4.91e-01	2.45e-01		
		08	Hamot	34	2	Hydrogen Chloride	6.50e-01	3.25e-01		
		08	Hamot	34	3	Hydrogen Chloride	7.99e-01	4.00e-01		
		09	Borgess	13	2	2,3,7,8-TCDF	9.26e-10	4.63e-10		
		09	Borgess	13	3	2,3,7,8-TCDF	5.36e-10	2.68e-10		
		09	Borgess	13	3	Aluminum	2.94e-03	1.47e-03		
		09	Borgess	13	2	Aluminum	3.04e-03	1.52e-03		
		09	Borgess	13	3	Antimony	1.49e-04	7.44e-05		
		09	Borgess	13	2	Antimony	1.53e-04	7.63e-05		
		09	Borgess	13	3	Arsenic	1.24e-05	6.18e-06		
		09	Borgess	13	2	Arsenic	1.69e-05	8.45e-06		

		09	Borgess	13	3	Barium	7.97e-05	3.98e-05		
		09	Borgess	13	2	Barium	6.80e-05	3.40e-05		
		09	Borgess	13	2	Beryllium	3.07e-06	1.53e-06		
		09	Borgess	13	3	Beryllium	4.62e-06	2.31e-06		
		09	Borgess	13	3	Cadmium	1.66e-04	8.32e-05		
		09	Borgess	13	2	Cadmium	3.33e-05	1.67e-05		
		09	Borgess	13	3	Carbon Monoxide	5.33e-03	2.66e-03		
		09	Borgess	13	2	Carbon Monoxide	4.84e-03	2.42e-03		
		09	Borgess	13	3	Chromium	1.62e-04	8.09e-05		
		09	Borgess	13	2	Chromium	2.21e-04	1.11e-04		
		09	Borgess	13	2	Copper	2.70e-04	1.35e-04		
		09	Borgess	13	3	Copper	2.80e-04	1.40e-04		
		09	Borgess	13	2	Hydrogen Bromide	6.98e-03	3.49e-03		
		09	Borgess	13	3	Hydrogen Bromide	1.86e-03	9.30e-04		
		09	Borgess	13	3	Hydrogen Chloride	1.01e+00	5.06e-01		
		09	Borgess	13	2	Hydrogen Chloride	7.89e-01	3.95e-01		
		09	Borgess	13	3	Hydrogen Fluoride	5.28e-03	2.64e-03		
		09	Borgess	13	2	Hydrogen Fluoride	2.13e-02	1.07e-02		
		09	Borgess	13	3	Lead	1.12e-04	5.62e-05		
		09	Borgess	13	2	Lead	7.30e-05	3.65e-05		
		09	Borgess	13	3	Mercury	6.06e-03	3.03e-03		
		09	Borgess	13	2	Mercury	1.34e-02	6.71e-03		
		09	Borgess	13	3	Nickel	3.46e-04	1.73e-04		
		09	Borgess	13	2	Nickel	2.21e-04	1.10e-04		
		09	Borgess	13	3	Oxides of Nitrogen	2.07e+00	1.04e+00		
		09	Borgess	13	2	Oxides of Nitrogen	3.72e+00	1.86e+00		
		09	Borgess	13	3	Particulate Matter	8.98e-02	4.49e-02		
		09	Borgess	13	2	Particulate Matter	5.48e-02	2.74e-02		

		09	Borgess	13	3	Silver	8.32e-05	4.16e-05		
		09	Borgess	13	2	Silver	6.06e-05	3.03e-05		
		09	Borgess	13	3	Sulfur Dioxide	6.77e-01	3.39e-01		
		09	Borgess	13	2	Sulfur Dioxide	7.50e-01	3.75e-01		
		09	Borgess	13	3	Total CDD	3.26e-08	1.63e-08		
		09	Borgess	13	2	Total CDD	7.50e-08	3.75e-08		
		09	Borgess	13	2	Total CDF	1.32e-07	6.58e-08		
		09	Borgess	13	3	Total CDF	5.77e-08	2.89e-08		
		09	Borgess	13	3	Total TCDD	7.90e-10	3.95e-10		
		09	Borgess	13	2	Total TCDD	8.56e-10	4.28e-10		
		09	Borgess	13	3	Total TCDF	7.23e-09	3.61e-09		
		09	Borgess	13	2	Total TCDF	1.31e-08	6.53e-09		
		11	Southland	28	1	2,3,7,8-TCDD	1.69e-10	8.44e-11		
		11	Southland	28	2	2,3,7,8-TCDD	1.72e-10	8.59e-11		
		11	Southland	28	3	2,3,7,8-TCDD	1.78e-10	8.91e-11		
		11	Southland	28	3	2,3,7,8-TCDF	1.28e-09	6.41e-10		
		11	Southland	28	1	2,3,7,8-TCDF	1.74e-09	8.69e-10		
		11	Southland	28	2	2,3,7,8-TCDF	2.18e-09	1.09e-09		
		11	Southland	28	5	Arsenic	3.91e-05	1.95e-05		
		11	Southland	28	4	Arsenic	6.45e-05	3.22e-05		
		11	Southland	28	6	Arsenic	4.69e-05	2.35e-05		
		11	Southland	28	4	Cadmium	7.20e-04	3.60e-04		
		11	Southland	28	5	Cadmium	5.32e-04	2.66e-04		
		11	Southland	28	6	Cadmium	5.29e-04	2.64e-04		
		11	Southland	28	3	Carbon Monoxide	1.38e-02	6.88e-03		
		11	Southland	28	1	Carbon Monoxide	6.25e-03	3.12e-03		
		11	Southland	28	2	Carbon Monoxide	1.25e-03	6.25e-04		
		11	Southland	28	4	Chromium	5.90e-04	2.95e-04		

		11	Southland	28	5	Chromium	3.44e-04	1.72e-04		
		11	Southland	28	6	Chromium	1.04e-03	5.20e-04		
		11	Southland	28	4	Hydrogen Chloride	2.78e-01	1.39e-01		
		11	Southland	28	6	Hydrogen Chloride	4.56e-01	2.28e-01		
		11	Southland	28	5	Hydrogen Chloride	7.60e-01	3.80e-01		
		11	Southland	28	6	Lead	4.72e-03	2.36e-03		
		11	Southland	28	4	Lead	4.80e-03	2.40e-03		
		11	Southland	28	5	Lead	4.56e-03	2.28e-03		
		11	Southland	28	5	Mercury	5.46e-03	2.73e-03		
		11	Southland	28	6	Mercury	1.54e-02	7.70e-03		
		11	Southland	28	4	Mercury	3.34e-02	1.67e-02		
		11	Southland	28	4	Nickel	5.55e-04	2.78e-04		
		11	Southland	28	6	Nickel	6.21e-04	3.11e-04		
		11	Southland	28	5	Nickel	2.75e-04	1.37e-04		
		11	Southland	28	6	Particulate Matter	9.75e-01	4.88e-01		
		11	Southland	28	5	Particulate Matter	9.80e-01	4.90e-01		
		11	Southland	28	4	Particulate Matter	2.46e-01	1.23e-01		
		12	Hamot	34	3	Cadmium	9.71e-06	4.85e-06		
		12	Hamot	34	2	Cadmium	9.58e-06	4.79e-06		
		12	Hamot	34	1	Cadmium	1.96e-05	9.81e-06		
		12	Hamot	34	2	Chromium	3.79e-05	1.90e-05		
		12	Hamot	34	1	Chromium	3.14e-05	1.57e-05		
		12	Hamot	34	3	Chromium	4.95e-05	2.47e-05		
		12	Hamot	34	2	Hydrogen Chloride	8.31e-02	4.16e-02		
		12	Hamot	34	1	Hydrogen Chloride	5.89e-02	2.94e-02		
		12	Hamot	34	3	Hydrogen Chloride	1.41e-01	7.04e-02		
		12	Hamot	34	2	Lead	6.68e-05	3.34e-05		
		12	Hamot	34	3	Lead	6.85e-05	3.43e-05		

		12	Hamot	34	1	Lead	1.96e-05	9.81e-06		
		12	Hamot	34	3	Mercury	1.27e-04	6.37e-05		
		12	Hamot	34	2	Mercury	7.05e-04	3.52e-04		
		12	Hamot	34	1	Mercury	2.36e-04	1.18e-04		
		12	Hamot	34	2	Particulate Matter	1.55e+00	7.77e-01		
		12	Hamot	34	1	Particulate Matter	3.43e+00	1.72e+00		
		12	Hamot	34	3	Particulate Matter	3.04e+00	1.52e+00		
		12	Hamot	34	1	Sulfur Dioxide	2.45e-02	1.23e-02		
		12	Hamot	34	3	Sulfur Dioxide	1.71e-02	8.53e-03		
		12	Hamot	34	2	Sulfur Dioxide	3.87e-03	1.94e-03		
		12	Hamot	34	2	Sulfur Trioxide	1.28e-02	6.39e-03		
		12	Hamot	34	3	Sulfur Trioxide	8.53e-04	4.27e-04		
35.510638		12	Hamot	34	1	Sulfur Trioxide	1.36e-02	6.79e-03		
		Type 1 = Controlled Air Incinerator Uncontrolled								
		Type 2 = Controlled Air Incinerator with Wet Scrubber/FF Control								
		Type 3 = Controlled Air Incinerator with FF Only								
		Type 4 = Controlled Air Incinerator with Wet Scrubber Only								
		Type 8 = Controlled Air Incinerator with DSI/FF Control								
		Type 9 = Controlled Air Incinerator with DSI/Carbon Injection/FF								
		Type 11 = Controlled Air with DSI/ESP								
		Type 12 = Controlled Air with DSI/FF/Wet Scrubber								

						Emission Factor
Type	Facility	Ref.	Run	Pollutant	lb/ton	kg/Mg
05	Morristown	14	2	2,3,7,8-TCDD	4.91e-10	2.45e-10
05	Morristown	14	1	2,3,7,8-TCDD	8.31e-10	4.16e-10
05	Morristown	14	2	2,3,7,8-TCDF	5.40e-09	2.70e-09
05	Morristown	14	1	2,3,7,8-TCDF	2.81e-08	1.40e-08
05	Morristown	14	2	Aluminum	4.94e-01	2.47e-01
05	Morristown	14	1	Aluminum	7.31e-01	3.66e-01
05	Morristown	14	2	Antimony	2.39e-02	1.19e-02
05	Morristown	14	1	Antimony	1.60e-02	7.98e-03
05	Morristown	14	2	Arsenic	2.73e-04	1.37e-04
05	Morristown	14	1	Arsenic	3.90e-04	1.95e-04
05	Morristown	14	2	Barium	7.88e-02	3.94e-02
05	Morristown	14	1	Barium	9.97e-02	4.99e-02
05	Morristown	14	2	Beryllium	5.00e-05	2.50e-05
05	Morristown	14	1	Beryllium	4.63e-05	2.32e-05

		05	Morristown	14	2	Cadmium	1.51e-02	7.53e-03		
		05	Morristown	14	1	Cadmium	1.51e-02	7.53e-03		
		05	Morristown	14	2	Carbon Monoxide	2.97e-01	1.49e-01		
		05	Morristown	14	1	Carbon Monoxide	4.67e-01	2.34e-01		
		05	Morristown	14	2	Chromium	4.66e-03	2.33e-03		
		05	Morristown	14	1	Chromium	4.19e-03	2.09e-03		
		05	Morristown	14	2	Copper	2.13e-01	1.07e-01		
		05	Morristown	14	1	Copper	1.77e-01	8.87e-02		
		05	Morristown	14	2	Hydrogen Bromide	6.51e-01	3.25e-01		
		05	Morristown	14	1	Hydrogen Bromide	1.45e+00	7.24e-01		
		05	Morristown	14	2	Hydrogen Chloride	4.53e+01	2.26e+01		
		05	Morristown	14	1	Hydrogen Chloride	4.32e+01	2.16e+01		
		05	Morristown	14	2	Hydrogen Fluoride	1.42e-01	7.11e-02		
		05	Morristown	14	1	Hydrogen Fluoride	4.40e-02	2.20e-02		
		05	Morristown	14	2	Lead	1.37e-01	6.85e-02		
		05	Morristown	14	1	Lead	1.11e-01	5.53e-02		
		05	Morristown	14	2	Mercury	8.06e-02	4.03e-02		
		05	Morristown	14	1	Mercury	9.30e-02	4.65e-02		
		05	Morristown	14	2	Nickel	3.97e-03	1.98e-03		
		05	Morristown	14	1	Nickel	3.09e-03	1.55e-03		
		05	Morristown	14	2	Oxides of Nitrogen	4.46e+00	2.23e+00		
		05	Morristown	14	1	Oxides of Nitrogen	4.80e+00	2.40e+00		
		05	Morristown	14	2	Particulate Matter	3.44e+01	1.72e+01		
		05	Morristown	14	1	Particulate Matter	3.46e+01	1.73e+01		
		05	Morristown	14	2	Silver	2.25e-05	1.13e-05		
		05	Morristown	14	1	Silver	2.38e-04	1.19e-04		
		05	Morristown	14	2	Sulfur Dioxide	1.36e+00	6.79e-01		
		05	Morristown	14	1	Sulfur Dioxide	8.13e-01	4.07e-01		

		05	Morristown	14	2	Thallium	6.58e-04	3.29e-04		
		05	Morristown	14	1	Thallium	8.58e-04	4.29e-04		
		05	Morristown	14	2	Total CDD	7.19e-07	3.59e-07		
		05	Morristown	14	1	Total CDD	7.80e-07	3.90e-07		
		05	Morristown	14	2	Total CDF	5.00e-06	2.50e-06		
		05	Morristown	14	1	Total CDF	5.40e-06	2.70e-06		
		05	Morristown	14	2	Total Hydrocarbons	5.83e-02	2.91e-02		
		05	Morristown	14	1	Total Hydrocarbons	7.49e-02	3.75e-02		
		05	Morristown	14	2	Total TCDD	7.05e-09	3.53e-09		
		05	Morristown	14	1	Total TCDD	7.40e-09	3.70e-09		
		05	Morristown	14	2	Total TCDF	1.98e-07	9.91e-08		
		05	Morristown	14	1	Total TCDF	3.12e-07	1.56e-07		
		06	Morristown	14	1	2,3,7,8-TCDD	4.52e-10	2.26e-10		
		06	Morristown	14	1	2,3,7,8-TCDF	1.68e-08	8.42e-09		
		06	Morristown	14	1	Aluminum	4.18e-03	2.09e-03		
		06	Morristown	14	1	Antimony	2.31e-04	1.15e-04		
		06	Morristown	14	1	Barium	2.71e-04	1.35e-04		
		06	Morristown	14	1	Beryllium	5.81e-06	2.91e-06		
		06	Morristown	14	1	Cadmium	5.36e-05	2.68e-05		
		06	Morristown	14	1	Carbon Monoxide	3.89e-02	1.94e-02		
		06	Morristown	14	1	Chromium	9.85e-05	4.92e-05		
		06	Morristown	14	1	Copper	6.23e-04	3.12e-04		
		06	Morristown	14	1	Hydrogen Bromide	6.01e-02	3.00e-02		
		06	Morristown	14	1	Hydrogen Chloride	2.68e-01	1.34e-01		
		06	Morristown	14	1	Hydrogen Fluoride	2.99e-02	1.50e-02		
		06	Morristown	14	1	Lead	1.89e-04	9.47e-05		
		06	Morristown	14	1	Mercury	6.65e-02	3.33e-02		
		06	Morristown	14	1	Nickel	8.69e-05	4.34e-05		

		06	Morristown	14	1	Oxides of Nitrogen	5.25e+00	2.63e+00		
		06	Morristown	14	1	Particulate Matter	3.09e-01	1.54e-01		
		06	Morristown	14	1	Silver	9.23e-05	4.61e-05		
		06	Morristown	14	1	Sulfur Dioxide	6.47e-01	3.24e-01		
		06	Morristown	14	1	Total CDD	5.79e-08	2.90e-08		
		06	Morristown	14	1	Total CDF	7.91e-07	3.96e-07		
		06	Morristown	14	1	Total Hydrocarbons	4.11e-02	2.05e-02		
		06	Morristown	14	1	Total TCDD	4.16e-09	2.08e-09		
		06	Morristown	14	1	Total TCDF	1.92e-07	9.58e-08		
		07	Morristown	14	2	2,3,7,8-TCDD	6.42e-11	3.21e-11		
		07	Morristown	14	2	2,3,7,8-TCDF	4.96e-10	2.48e-10		
		07	Morristown	14	2	Aluminum	2.62e-03	1.31e-03		
		07	Morristown	14	2	Antimony	1.41e-04	7.04e-05		
		07	Morristown	14	2	Barium	1.25e-04	6.25e-05		
		07	Morristown	14	2	Cadmium	2.42e-05	1.21e-05		
		07	Morristown	14	2	Carbon Monoxide	4.99e-02	2.50e-02		
		07	Morristown	14	2	Chromium	7.73e-05	3.86e-05		
		07	Morristown	14	2	Copper	4.11e-04	2.06e-04		
		07	Morristown	14	2	Hydrogen Bromide	1.90e-02	9.48e-03		
		07	Morristown	14	2	Hydrogen Chloride	3.57e-01	1.79e-01		
		07	Morristown	14	2	Lead	7.38e-05	3.69e-05		
		07	Morristown	14	2	Mercury	7.86e-03	3.93e-03		
		07	Morristown	14	2	Nickel	3.58e-05	1.79e-05		
		07	Morristown	14	2	Oxides of Nitrogen	4.91e+00	2.45e+00		
		07	Morristown	14	2	Particulate Matter	7.56e-02	3.78e-02		
		07	Morristown	14	2	Silver	8.05e-05	4.03e-05		
		07	Morristown	14	2	Sulfur Dioxide	3.00e-01	1.50e-01		
		07	Morristown	14	2	Total CDD	2.01e-08	1.01e-08		

		07	Morristown	14	2	Total CDF	7.57e-08	3.78e-08		
		07	Morristown	14	2	Total Hydrocarbons	5.05e-02	2.53e-02		
		07	Morristown	14	2	Total TCDD	1.55e-10	7.77e-11		
		07	Morristown	14	2	Total TCDF	1.15e-08	5.74e-09		
		10	Safeway Disposal	24	6	Carbon Monoxide	7.03e-02	3.52e-02		
		10	Safeway Disposal	24	5	Carbon Monoxide	2.10e-02	1.05e-02		
		10	Safeway Disposal	24	4	Carbon Monoxide	1.21e-01	6.05e-02		
		10	Safeway Disposal	24	3	Carbon Monoxide	5.55e-02	2.78e-02		
		10	Safeway Disposal	24	2	Carbon Monoxide	5.71e-02	2.86e-02		
		10	Safeway Disposal	24	1	Carbon Monoxide	3.45e-02	1.72e-02		
		10	Safeway Disposal	24	3	Hydrogen Chloride	6.35e+01	3.17e+01		
		10	Safeway Disposal	24	3	Hydrogen Chloride	5.40e-01	2.70e-01		
		10	Safeway Disposal	24	2	Hydrogen Chloride	6.78e+01	3.39e+01		
		10	Safeway Disposal	24	2	Hydrogen Chloride	3.70e-01	1.85e-01		
		10	Safeway Disposal	24	1	Hydrogen Chloride	2.30e-01	1.15e-01		
		10	Safeway Disposal	24	1	Hydrogen Chloride	4.39e+01	2.19e+01		
		10	Safeway Disposal	24	6	Oxides of Nitrogen	4.70e+00	2.35e+00		
		10	Safeway Disposal	24	5	Oxides of Nitrogen	2.51e+00	1.25e+00		
		10	Safeway Disposal	24	4	Oxides of Nitrogen	3.87e+00	1.94e+00		
		10	Safeway Disposal	24	3	Oxides of Nitrogen	5.05e+00	2.52e+00		
		10	Safeway Disposal	24	2	Oxides of Nitrogen	4.08e+00	2.04e+00		
		10	Safeway Disposal	24	1	Oxides of Nitrogen	4.29e+00	2.14e+00		
		10	Safeway Disposal	24	3	Particulate Matter	3.20e-01	1.60e-01		
		10	Safeway Disposal	24	2	Particulate Matter	2.70e-01	1.35e-01		
		10	Safeway Disposal	24	1	Particulate Matter	1.97e+00	9.85e-01		
		10	Safeway Disposal	24	3	Sulfuric Acid	2.00e-02	1.00e-02		
		10	Safeway Disposal	24	3	Sulfuric Acid	1.10e+01	5.50e+00		
		10	Safeway Disposal	24	2	Sulfuric Acid	6.58e-01	3.29e-01		

		10	Safeway Disposal	24	2	Sulfuric Acid	1.00e-02	5.00e-03		
		10	Safeway Disposal	24	1	Sulfuric Acid	6.15e+00	3.08e+00		
		10	Safeway Disposal	24	1	Sulfuric Acid	3.00e-02	1.50e-02		
		10	Safeway Disposal	24	6	Total Hydrocarbons	4.00e-02	2.00e-02		
		10	Safeway Disposal	24	5	Total Hydrocarbons	0.00e+00	0.00e+00		
		10	Safeway Disposal	24	4	Total Hydrocarbons	0.00e+00	0.00e+00		
		10	Safeway Disposal	24	3	Total Hydrocarbons	9.00e-02	4.50e-02		
		10	Safeway Disposal	24	2	Total Hydrocarbons	0.00e+00	0.00e+00		
		10	Safeway Disposal	24	1	Total Hydrocarbons	0.00e+00	0.00e+00		
		Type 5 = Rotary Kiln Incinerator Uncontrolled								
		Type 6 = Rotary Kiln Incinerator with Spray Dryer/FF Control								
		Type 7 = Rotary Kiln Incinerator with Spray Dryer/Carbon Injection/FF								
		Type 10 = Rotary Kiln with Wet Scrubber Only								

Table 4-2. SUMMARY OF ROTARY KILN MWI EMISSION FACTORS ON A TEST-BY-TEST BASIS-

4.2.3 Data Presented in Grains per Dry Standard Cubic Foot (gr/dscf)

For raw data presented in grains per dry standard cubic foot, flue gas flow rates for each test run in dry standard cubic feet per minute are necessary. When this is the case, the following equation is used:

Emission rate = 0.00857 * Emission rate * flow rate
(lb/hr) (gr/dscf) (dscfm)

The factor of 0.00857 includes the conversion from minutes to hours and the conversion from grains to pounds (7,000 grains = 1 pound).

4.2.4 Data Presented in Parts per Million, Dry Volume (ppmdv)

In order to convert gas concentrations in parts per million (ppm) to lb/hr or g/hr flow rates, the stack gas flow rate in dry standard cubic feet per minute (dscfm) or dry standard cubic meters per minute (dscmm) was needed. Also, each gas has an individual conversion factor due to its molecular weight. To convert ppmdv to concentrations in micrograms per cubic meter and pounds per cubic foot, the following equations are used. The first equation represents the conversion of the reported gas concentration from STP conditions (Standard Temperature and Pressure, equal to 273K and 101.3 kPa) to standard atmospheric conditions (293K and 101.3 kPa):

$$1 \text{ ppmdv} = (1 \text{ mole}/22.4\text{L})*(1000\text{L/m}^3)*(\text{MW})/(294\text{K}/273\text{K}) \ \mu\text{g/m}^3$$

L = liters
MW = molecular weight of the given gas (g/mole)

$$\text{Concentration (lb/ft}^3) = 6.243 * 10^{-11} * \text{conc } (\mu\text{g/m}^3)$$

The compounds for which these conversions were needed and the conversions are listed in Table 4-3

Table 4-3. CONVERSIONS[a]

Pollutant	To get µg/m³, Multiply ppmdv by:	To get lb/ft³, Multiply ppmdv by:
SO_2	2654.56	$1.6572*10^{-7}$
NO_x	1906.59	$1.19*10^{-7}$
CO	1160.7	$7.25*10^{-8}$
THC	1827.86	$1.14*10^{-7}$

[a]Flue gas referenced to 20°C (293°K) AND 101.3 kPa

. Once the data are in this form, the conversion to lb/hr or g/hr is:

Emissions (lb/hr) = 60*Conc (lb/ft^3)*Flow rate (dscfm)

Emissions (g/hr) = $6.0*10^{-5}$*Conc ($\mu g/m^3$)*Flow rate (dscmm)

Conc ( ) = concentration in units listed in parentheses

With the data in one of these forms, the equations of Section 4.2.2 can be used.

4.2.5 Oxygen or Moisture Corrected Data

Some of the data reviewed were reported in terms of ppmv, wet, and some were reported as ppmv corrected to a percent oxygen (O_2). The equations to convert these to ppmdv are as follows:

Conc(ppmdv dry gas) = Conc(ppmv, wet)/(1-moisture fraction)

Conc(ppmdv @ measured%O_2) = (20.9 - (measured%O_2)*Conc(ppmdv@x%O_2)/(20.9 - x%O_2)

x = dummy variable

The measured oxygen and moisture fractions, respectively, must be reported on a percent volume basis for each equation to be properly manipulated. Once the data are in the form of parts per million, dry volume, the equations of Section 4.2.4 may be used to convert to mass flow rates (lb/hr or g/hr). Finally, those results may be used with the equations of Section 4.2.2 to calculate emission factors.

4.3 DATA QUALITY CHECKING

Originally, the emission factor calculations done for the AP-42 Section 2.6 were done by hand. In order to condense the data, and also to validate the calculations, the raw data were entered into two separate spreadsheets, one for controlled emissions and one for uncontrolled emissions. Once the raw data were entered, calculations were done within the spreadsheet. As a second check, emission factors calculated in the spreadsheet were directly compared to those done on paper; at least 20 percent of the values were checked in this way. Emission factors for the remaining test reports (which were added later) were calculated in a spreadsheet, with a random check of over 10 percent of the calculations performed by a different team member.

4.4 EMISSION FACTORS FOR AP-42 SECTION 2.6

Once the database was completed, composite emission factors from all the test reports were calculated. For each pollutant, the test runs for each facility were averaged to determine a final emission factor by facility. Data from each facility were then combined to develop an overall average by pollutant, facility type, and air pollution control type. Non-detect values were included in the averages only if the pollutant was detected in at least one of the runs. For example, if all three runs showed non-detect values for a given pollutant, the data were excluded from Tables 4-1 and 4-2 and no emission factor was calculated. This may result in an emission factor that is more conservative than if non-detect values were included.

Particle size distribution data are presented only as percent of total PM because the data (as emission factors) conflicted with the total PM emission factors which were derived from many more test reports.

The emission factors presented following control with some type of wet scrubber delineate the scrubbers as high, medium, or low energy for PM, metals, and acid gases.

In rating the emission factors, two main factors, number of data points and equivalent testing methodologies, were weighed. All of the "B" rated factors were compiled from multiple source test reports, and the results from each of those reports were compiled using equivalent test methodologies. All data rated "E" were taken from only one or two sources. Emissions data for pathogens (spore survivability) are not presented here because the EPA test program was designed primarily to further develop testing methods to determine microbial survivability in incinerator processes.[2,3,5,6,13]

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5.0 AP-42 SECTION 2.6

Section 2.6 of AP-42 is presented in the following pages as it would appear in the document.

2.3 Medical Waste Incineration

Medical waste incineration involves the burning of wastes produced by hospitals, veterinary facilities, and medical research facilities. These wastes include both infectious ("red bag") medical wastes as well as non-infectious, general housekeeping wastes. The emission factors presented here represent emissions when both types of these wastes are combusted rather than just infectious wastes.

Three main types of incinerators are used: controlled air, excess air, and rotary kiln. Of the incinerators identified in this study, the majority (>95 percent) are controlled air units. A small percentage (<2 percent) are excess air. Less than 1 percent were identified as rotary kiln. The rotary kiln units tend to be larger, and typically are equipped with air pollution control devices. Approximately 2 percent of the total population identified in this study were found to be equipped with air pollution control devices.

2.3.1 Process Description[1-6]

Types of incineration described in this section include:

- Controlled air,
- Excess air, and
- Rotary kiln.

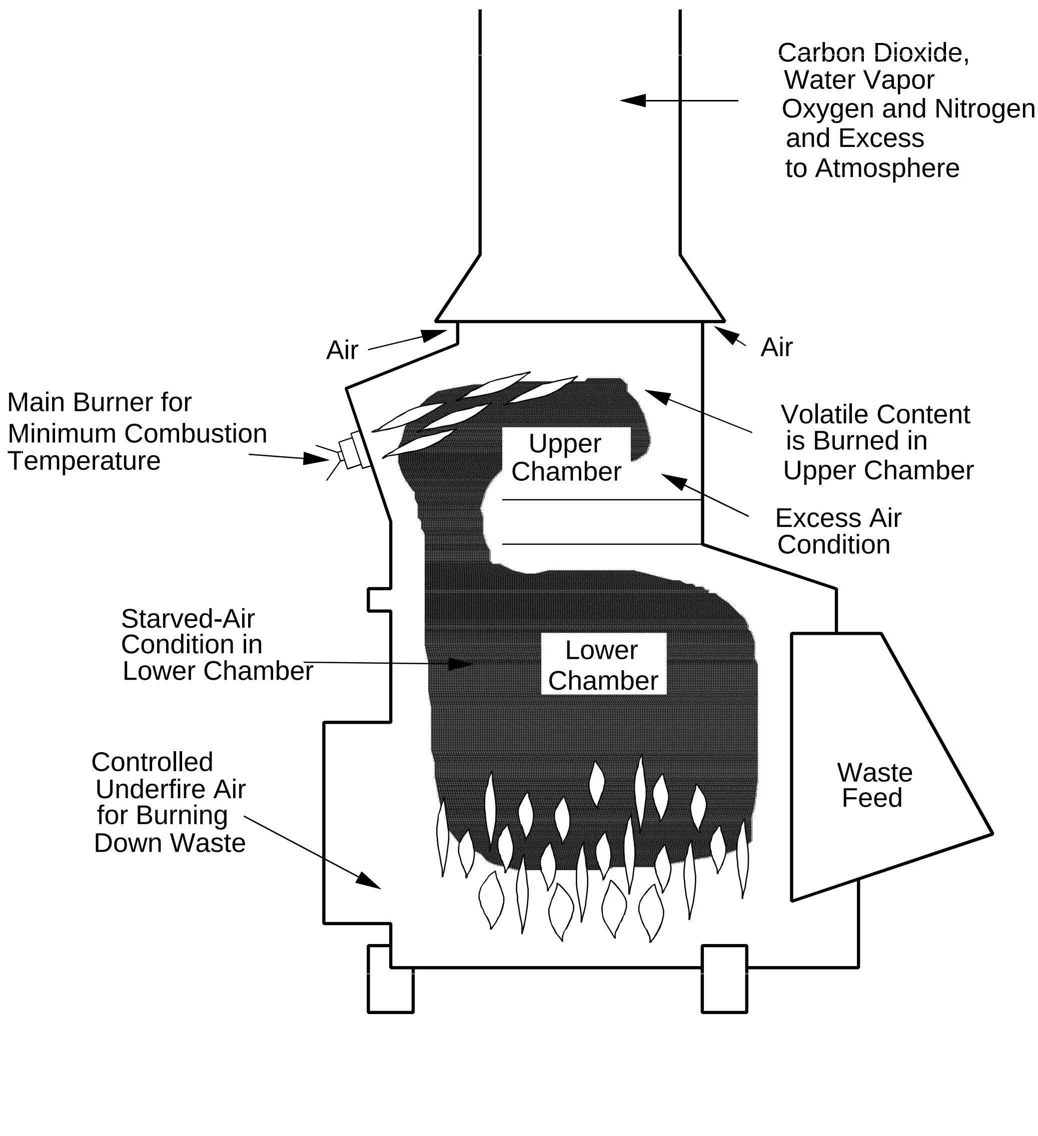
2.3.1.1 Controlled-Air Incinerators -

Controlled-air incineration is the most widely used medical waste incinerator (MWI) technology, and now dominates the market for new systems at hospitals and similar medical facilities. This technology is also known as starved-air incineration, two-stage incineration, or modular combustion. Figure 2.3-1 presents a typical schematic diagram of a controlled air unit.

Combustion of waste in controlled air incinerators occurs in two stages. In the first stage, waste is fed into the primary, or lower, combustion chamber, which is operated with less than the stoichiometric amount of air required for combustion. Combustion air enters the primary chamber from beneath the incinerator hearth (below the burning bed of waste). This air is called primary or underfire air. In the primary (starved-air) chamber, the low air-to-fuel ratio dries and facilitates volatilization of the waste, and most of the residual carbon in the ash burns. At these conditions, combustion gas temperatures are relatively low (760 to 980°C [1,400 to 1,800°F]).

In the second stage, excess air is added to the volatile gases formed in the primary chamber to complete combustion. Secondary chamber temperatures are higher than primary chamber temperatures--typically 980 to 1,095°C (1,800 to 2,000°F). Depending on the heating value and moisture content of the waste, additional heat may be needed. This can be provided by auxiliary burners located at the entrance to the secondary (upper) chamber to maintain desired temperatures.

Waste feed capacities for controlled air incinerators range from about 0.6 to 50 kg/min (75 to 6,500 lb/hr) (at an assumed fuel heating value of 19,700 kJ/kg [8,500 Btu/lb]). Waste feed and ash removal can be manual or automatic, depending on the unit size and options purchased.



Throughput capacities for lower heating value wastes may be higher, since feed capacities are limited by primary chamber heat release rates. Heat release rates for controlled air incinerators typically range from about 430,000 to 710,000 kJ/hr-m^3 (15,000 to 25,000 Btu/hr-ft^3).

Because of the low air addition rates in the primary chamber, and corresponding low flue gas velocities (and turbulence), the amount of solids entrained in the gases leaving the primary chamber is low. Therefore, the majority of controlled air incinerators do not have add-on gas cleaning devices.

2.3.1.2 Excess Air Incinerators -

Excess air incinerators are typically small modular units. They are also referred to as batch incinerators, multiple chamber incinerators, or "retort" incinerators. Excess air incinerators are typically a compact cube with a series of internal chambers and baffles. Although they can be operated continuously, they are usually operated in a batch mode.

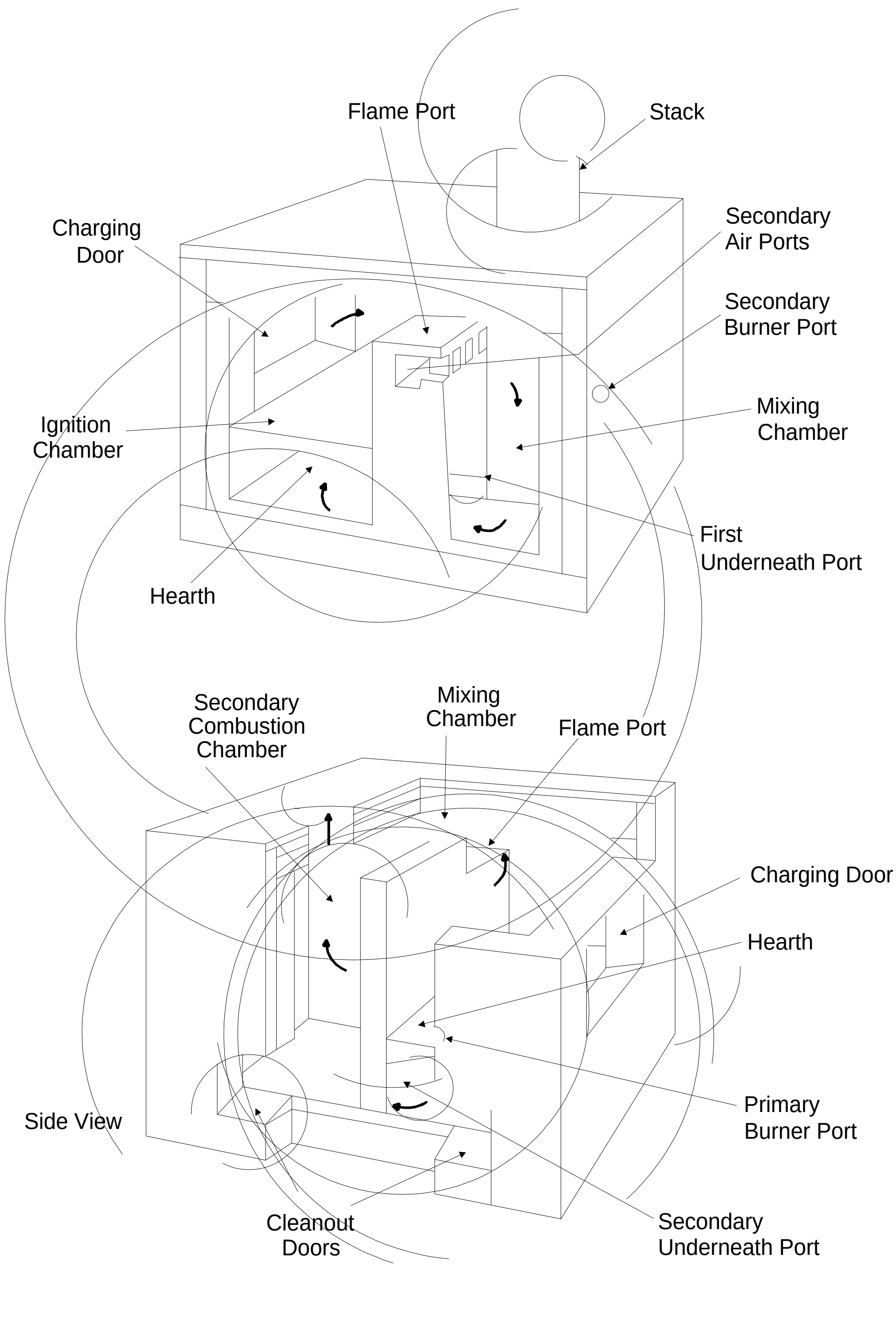


Figure 2.6-2. Excess Air Incinerator

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Figure 2.3-2 presents a schematic for an excess air unit. Typically, waste is manually fed into the combustion chamber. The charging door is then closed, and an afterburner is ignited to bring the secondary chamber to a target temperature (typically 870 to 980°C [1600 to 1800°F]). When the target temperature is reached, the primary chamber burner ignites. The waste is dried, ignited, and combusted by heat provided by the primary chamber burner, as well as by radiant heat from the chamber walls. Moisture and volatile components in the waste are vaporized, and pass (along with combustion gases) out of the primary chamber and through a flame port which connects the primary chamber to the secondary or mixing chamber. Secondary air is added through the flame port and is mixed with the volatile components in the secondary chamber. Burners are also installed in the secondary chamber to maintain adequate temperatures for combustion of volatile gases. Gases exiting the secondary chamber are directed to the incinerator stack or to an air pollution control device. When the waste is consumed, the primary burner shuts off. Typically, the afterburner shuts off after a set time. Once the chamber cools, ash is manually removed from the primary chamber floor and a new charge of waste can be added.

Incinerators designed to burn general hospital waste operate at excess air levels of up to 300 percent. If only pathological wastes are combusted, excess air levels near 100 percent are more common. The lower excess air helps maintain higher chamber temperature when burning high- moisture waste. Waste feed capacities for excess air incinerators are usually 3.8 kg/min (500 lb/hr) or less.

2.3.1.3 Rotary Kiln Incinerators -

Rotary kiln incinerators, like the other types, are designed with a primary chamber, where the waste is heated and volatilized, and a secondary chamber, where combustion of the volatile fraction is completed. The primary chamber consists of a slightly inclined, rotating kiln in which waste materials migrate from the feed end to the ash discharge end. The waste throughput rate is controlled by adjusting the rate of kiln rotation and the angle of inclination. Combustion air enters the primary chamber through a port. An auxiliary burner is generally used to start combustion and maintain desired combustion temperatures. Both the primary and secondary chambers are usually lined with acid-resistant refractory brick, as shown in the schematic drawing, Figure 2.3-3.

Volatiles and combustion gases pass from the primary chamber to the secondary chamber. The secondary chamber operates at excess air. Combustion of the volatiles is completed in the secondary chamber. Due to the turbulent motion of the waste in the primary chamber, solids burnout rates and particulate entrainment in the flue gas are higher for rotary kiln incinerators than for other incinerator designs. As a result, rotary kiln incinerators generally have add-on gas cleaning devices.

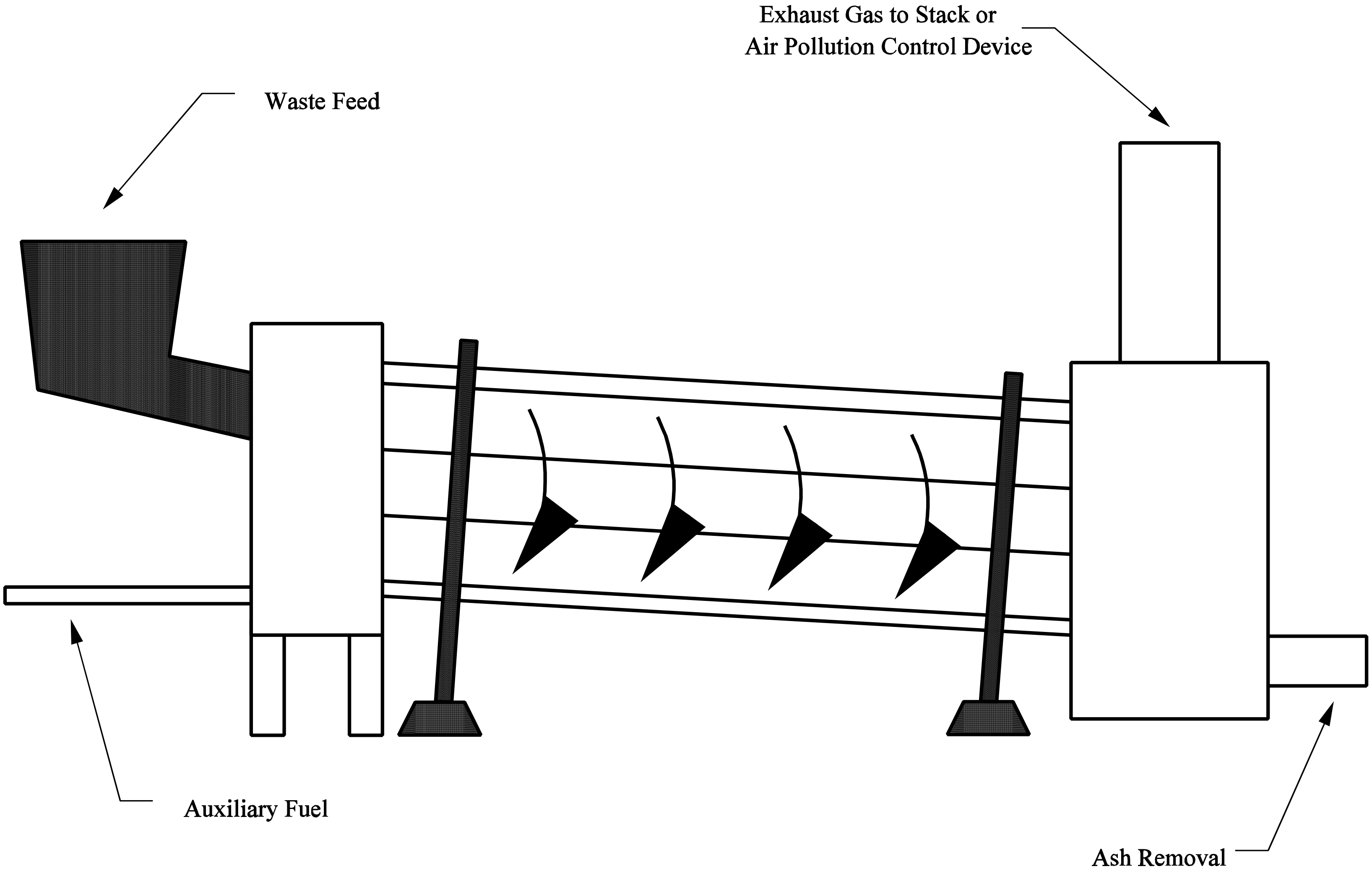

Figure 2.3-3. Rotary Kiln Incinerator

2.3.2 Emissions And Controls[2,4,7-43]

Medical waste incinerators can emit significant quantities of pollutants to the atmosphere. These pollutants include: (1) particulate matter (PM), (2) metals, (3) acid gases, (4) oxides of nitrogen (NO_x), (5) carbon monoxide (CO), (6) organics, and (7) various other materials present in medical wastes, such as pathogens, cytotoxins, and radioactive diagnostic materials.

Particulate matter is emitted as a result of incomplete combustion of organics (i. e., soot) and by the entrainment of noncombustible ash due to the turbulent movement of combustion gases. Particulate matter may exit as a solid or an aerosol, and may contain heavy metals, acids, and/or trace organics.

Uncontrolled particulate emission rates vary widely, depending on the type of incinerator, composition of the waste, and the operating practices employed. Entrainment of PM in the incinerator exhaust is primarily a function of the gas velocity within the combustion chamber containing the solid waste. Controlled air incinerators have the lowest turbulence and, consequently, the lowest PM emissions; rotary kiln incinerators have highly turbulent combustion, and thus have the highest PM emissions.

The type and amount of trace metals in the flue gas are directly related to the metals contained in the waste. Metal emissions are affected by the level of PM control and the flue gas temperature. Most metals (except mercury) exhibit fine-particle enrichment and are removed by maximizing small particle collection. Mercury, due to its high vapor pressure, does not show significant particle enrichment, and removal is not a function of small particle collection in gas streams at temperatures greater than 150°C (300°F).

Acid gas concentrations of hydrogen chloride (HCl) and sulfur dioxide (SO_2) in MWI flue gases are directly related to the chlorine and sulfur content of the waste. Most of the chlorine, which is chemically bound within the waste in the form of polyvinyl chloride (PVC) and other chlorinated compounds, will be converted to HCl. Sulfur is also chemically bound within the materials making up medical waste and is oxidized during combustion to form SO_2.

Oxides of nitrogen (NO_x) represent a mixture of mainly nitric oxide (NO) and nitrogen dioxide (NO_2). They are formed during combustion by: (1) oxidation of nitrogen chemically bound in the waste, and (2) reaction between molecular nitrogen and oxygen in the combustion air. The formation of NO_x is dependent on the quantity of fuel-bound nitrogen compounds, flame temperature, and air/fuel ratio.

Carbon monoxide is a product of incomplete combustion. Its presence can be related to insufficient oxygen, combustion (residence) time, temperature, and turbulence (fuel/air mixing) in the combustion zone.

Failure to achieve complete combustion of organic materials evolved from the waste can result in emissions of a variety of organic compounds. The products of incomplete combustion (PICs) range from low molecular weight hydrocarbon (e. g., methane or ethane) to high molecular weight compounds (e. g., polychlorinated dibenzo-p-dioxins and dibenzofurans [CDD/CDF]). In general, combustion conditions required for control of CO (i. e., adequate oxygen, temperature, residence time, and turbulence) will also minimize emissions of most organics.

Emissions of CDDs/CDFs from MWIs may occur as either a vapor or as a fine particulate. Many factors are believed to be involved in the formation of CDDs/CDFs and many theories exist concerning the formation of these compounds. In brief, the best supported theories involve four mechanisms of formation.[2] The first theory states that trace quantities of CDDs/CDFs present in the refuse feed are carried over, unburned, to the exhaust. The second theory involves formation of CDDs/CDFs from chlorinated precursors with similar structures. Conversion of precursor material to CDDs/CDFs can potentially occur either in the combustor at relatively high temperatures or at lower temperatures such as are present in wet scrubbing systems. The third theory involves synthesis of CDDs/CDFs compounds from a variety of organics and a chlorine donor. The fourth mechanism involves catalyzed reactions on fly ash particles at low temperatures.

To date, most MWIs have operated without add-on air pollution control devices (APCDs). A small percentage (approximately 2 percent) of MWIs do use APCDs. The most frequently used control devices are wet scrubbers and fabric filters (FFs). Fabric filters provide mainly PM control. Other PM control technologies include venturi scrubbers and electrostatic precipitators (ESPs). In addition to wet scrubbing, dry sorbent injection (DSI) and spray dryer (SD) absorbers have also been used for acid gas control.

Wet scrubbers use gas-liquid absorption to transfer pollutants from a gas to a liquid stream. Scrubber design and the type of liquid solution used largely determine contaminant removal efficiencies. With plain water, removal efficiencies for acid gases could be as high as 70 percent for HCl and 30 percent for SO_2. Addition of an alkaline reagent to the scrubber liquor for acid neutralization has been shown to result in removal efficiencies of 93 to 96 percent.

Wet scrubbers are generally classified according to the energy required to overcome the pressure drop through the system. Low-energy scrubbers (spray towers) are primarily used for acid gas control only, and are usually circular in cross section. The liquid is sprayed down the tower through the rising gas. Acid gases are absorbed/neutralized by the scrubbing liquid. Low-energy scrubbers mainly remove particles larger than 5-10 micrometers (μm) in diameter.

Medium-energy scrubbers can be used for particulate matter and/or acid gas control. Medium energy devices rely mostly on impingement to facilitate removal of PM. This can be accomplished through a variety of configurations, such as packed columns, baffle plates, and liquid impingement scrubbers.

Venturi scrubbers are high-energy systems that are used primarily for PM control. A typical venturi scrubber consists of a converging and a diverging section connected by a throat section. A liquid (usually water) is introduced into the gas stream upstream of the throat. The flue gas impinges on the liquid stream in the converging section. As the gas passes through the throat, the shearing action atomizes the liquid into fine droplets. The gas then decelerates through the diverging section, resulting in further contact between particles and liquid droplets. The droplets are then removed from the gas stream by a cyclone, demister, or swirl vanes.

A fabric filtration system (baghouse) consists of a number of filtering elements (bags) along with a bag cleaning system contained in a main shell structure with dust hoppers. Particulate-laden gas passes through the bags so that the particles are retained on the upstream side of the fabric, thus cleaning the gas. A FF is typically divided into several compartments or sections. In a FF, both the collection efficiency and the pressure drop across the bag surface increase as the dust layer on the bag builds up. Since the system cannot continue to operate with an increasing pressure drop, the bags are cleaned periodically. The cleaning processes include reverse flow with bag collapse, pulse jet cleaning, and mechanical shaking. When reverse flow and mechanical shaking are used, the particulate matter is collected on the inside of the bag; particulate matter is collected on the outside of the bag in pulse jet systems. Generally, reverse flow FFs operate with lower gas flow per unit area of bag surface (air-to-cloth ratio) than pulse jet systems and, thus, are larger and more costly for a given gas flow-rate or application. Fabric filters can achieve very high (>99.9 percent) PM removal efficiencies. These systems are also very effective in controlling fine particulate matter, which results in good control of metals and organics entrained on fine particulate.

Particulate collection in an ESP occurs in 3 steps: (1) suspended particles are given an electrical charge; (2) the charged particles migrate to a collecting electrode of opposite polarity; and (3) the collected PM is dislodged from the collecting electrodes and collected in hoppers for disposal.

Charging of the particles is usually caused by ions produced in a high voltage corona. The electric fields and the corona necessary for particle charging are provided by converting alternating current to direct current using high voltage transformers and rectifiers. Removal of the collected particulate matter is accomplished mechanically by rapping or vibrating the collecting electrode plates. ESPs have been used in many applications due to their high reliability and efficiency in controlling total PM emissions. Except for very large and carefully designed ESPs, however, they are less efficient than FFs at control of fine particulates and metals.

Dry sorbent injection (DSI) is another method for controlling acid gases. In the DSI process, a dry alkaline material is injected into the flue gas into a dry venturi within the ducting or into the duct ahead of a particulate control device. The alkaline material reacts with and neutralizes acids in the flue gas. Fabric filters are employed downstream of DSI to: (1) control the PM generated by the incinerator, (2) capture the DSI reaction products and unreacted sorbent, and (3) increase sorbent/acid gas contact time, thus enhancing acid gas removal efficiency and sorbent utilization. Fabric filters are commonly used with DSI because they provide high sorbent/acid gas contact. Fabric filters are less sensitive to PM loading changes or combustion upsets than other PM control devices since they operate with nearly constant efficiency. A potential disadvantage of ESPs used in conjunction with DSI is that the sorbent increases the electrical resistivity of the PM being collected. This phenomenon makes the PM more difficult to charge and, therefore, to collect. High resistivity can be compensated for by flue gas conditioning or by increasing the plate area and size of the ESP.

The major factors affecting DSI performance are flue gas temperature, acid gas dew point (temperature at which the acid gases condense), and sorbent-to-acid gas ratio. DSI performance improves as the difference between flue gas and acid dew point temperatures decreases and the sorbent-to-acid gas ratio increases. Acid gas removal efficiency with DSI also depends on sorbent type and the extent of sorbent mixing with the flue gas. Sorbents that have been successfully applied include hydrated lime ($Ca[OH]_2$), sodium hydroxide (NaOH), and sodium bicarbonate ($NaHCO_3$). For hydrated lime, DSI can achieve 80 to 95 percent of HCl removal and 40 to 70 percent removal of SO_2 under proper operating conditions.

The primary advantage of DSI compared to wet scrubbers is the relative simplicity of the sorbent preparation, handling, and injection systems as well as the easier handling and disposal of dry solid process wastes. The primary disadvantages are its lower sorbent utilization rate and correspondingly higher sorbent and waste disposal rates.

In the spray drying process, lime slurry is injected into the SD through either a rotary atomizer or dual-fluid nozzles. The water in the slurry evaporates to cool the flue gas, and the lime reacts with acid gases to form calcium salts that can be removed by a PM control device. The SD is designed to provide sufficient contact and residence time to produce a dry product before leaving the SD adsorber vessel. The residence time in the adsorber vessel is typically 10 to 15 seconds. The particulates leaving the SD (fly ash, calcium salts, and unreacted hydrated lime) are collected by an FF or ESP.

Emission factors and emission factor ratings for controlled air incinerators are presented in Tables 2.3-1, 2.3-2, 2.3-3, 2.3-4, 2.3-5, 2.3-6, 2.3-7, 2.3-8, 2.3-9, 2.3-10, 2.3-11, 2.3-12, 2.3-13, 2.13-14, and 2.3-15. For emissions controlled with wet scrubbers, emission factors are presented separately for low-, medium-, and high-energy wet scrubbers. Particle size distribution data for controlled air incinerators are presented in Table 2.3-15 for uncontrolled emissions and controlled emissions following a medium-energy wet scrubber/FF and a low-energy wet scrubber. Emission factors and emission factor ratings for rotary kiln incinerators are presented in Tables 2.3-16, 2.3-17, and 2.3-18. Emissions data are not available for pathogens because there is not an accepted methodology for measurement of these emissions. Refer to References 8, 9, 11, 12, and 19 for more information.

Table 2.3-1 (English And Metric Units). EMISSION FACTORS FOR NITROGEN OXIDES (NO_x), CARBON MONOXIDE (CO), AND SULFUR DIOXIDE (SO_2) FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	NO_x[c]			CO[c]			SO_2[c]		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	3.56 E+00	1.78 E+00	A	2.95 E+00	1.48 E+00	A	2.17 E+00	1.09 E+00	B
Low Energy Scrubber/FF									
Medium Energy Scrubber/FF							3.75 E-01	1.88 E-01	E
FF							8.45 E-01	4.22 E-01	E
Low Energy Scrubber							2.09 E+00	1.04 E+00	E
High Energy Scrubber							2.57 E-02	1.29 E-02	E
DSI/FF							3.83 E-01	1.92 E-01	E
DSI/Carbon Injection/FF							7.14 E-01	3.57 E-01	E
DSI/FF/Scrubber							1.51 E-02	7.57 E-03	E
DSI/ESP									

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.

[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator

[c] NO_x and CO emission factors for uncontrolled facilities are applicable for all add-on control devices shown.

Table 2.3-2 (English And Metric Units). EMISSION FACTORS FOR TOTAL PARTICULATE MATTER, LEAD, AND TOTAL ORGANIC COMPOUNDS (TOC) FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

	Total Particulate Matter			Lead[c]			TOC		
Control Level[b]	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	4.67 E+00	2.33 E+00	B	7.28 E-02	3.64 E-02	B	2.99 E-01	1.50 E-01	B
Low Energy Scrubber/FF	9.09 E-01	4.55 E-01	E						
Medium Energy Scrubber/FF	1.61 E-01	8.03 E-02	E	1.60 E-03	7.99 E-04	E			
FF	1.75 E-01	8.76 E-02	E	9.92 E-05	4.96 E-05	E	6.86 E-02	3.43 E-01	E
Low Energy Scrubber	2.90 E+00	1.45 E+00	E	7.94 E-02	3.97 E-02	E	1.40 E-01	7.01 E-02	E
High Energy Scrubber	1.48 E+00	7.41 E-01	E	6.98 E-02	3.49 E-02	E	1.40 E-01	7.01 E-02	E
DSI/FF	3.37 E-01	1.69 E-01	E	6.25 E-05	3.12 E+01	E	4.71 E-02	2.35 E-02	E
DSI/Carbon Injection/FF	7.23 E-02	3.61 E-02	E	9.27 E-05	4.64 E-05	E			
DSI/FF/Scrubber	2.68 E+00	1.34 E+00	E	5.17 E-05	2.58 E-05	E			
DSI/ESP	7.34 E-01	3.67 E-01	E	4.70 E-03	2.35 E-03	E			

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator
[c] Hazardous air pollutants listed in the *Clean Air Act.*

Table 2.3-3 (English And Metric Units). EMISSION FACTORS FOR HYDROGEN CHLORIDE (HCl) AND POLYCHLORINATED BIPHENYLS (PCBs) FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

	HCl[c]			Total PCBs[c]		
Control Level[b]	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	3.35 E+01	1.68 E+01	C	4.65 E-05	2.33 E-05	E
Low Energy Scrubber/FF	1.90 E+00	9.48 E-01	E			
Medium Energy Scrubber/FF	2.82 E+00	1.41 E+00	E			
FF	5.65 E+00	2.82 E+00	E			
Low Energy Scrubber	1.00 E+00	5.01 E-01	E			
High Energy Scrubber	1.39 E-01	6.97 E-02	E			
DSI/FF	1.27 E+01	6.37 E+00	D			
DSI/Carbon Injection/FF	9.01 E-01	4.50 E-01	E			
DSI/FF/Scrubber	9.43 E-02	4.71 E-02	E			
DSI/ESP	4.98 E-01	2.49 E-01	E			

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator
[c] Hazardous air pollutants listed in the *Clean Air Act*.

Table 2.3-4 (English And Metric Units). EMISSION FACTORS FOR ALUMINUM, ANTIMONY, AND ARSENIC CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	Aluminum			Antimony[c]			Arsenic[c]		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	1.05 E-02	5.24 E-03	E	1.28 E-02	6.39 E-03	D	2.42 E-04	1.21 E-04	B
Low Energy Scrubber/FF									
Medium Energy Scrubber/FF				3.09 E-04	1.55 E-04	E	3.27 E-05	1.53 E-02	E
FF							3.95 E-08	1.97 E-08	E
Low Energy Scrubber							1.42 E-04	7.12 E-05	E
High Energy Scrubber				4.08 E-04	2.04 E-04	E	3.27 E-05	1.64 E-05	E
DSI/FF	3.03 E-03	1.51 E-03	E	2.10 E-04	1.05 E-04	E	1.19 E-05	5.93 E-06	E
DSI/Carbon Injection/FF	2.99 E-03	1.50 E-03	E	1.51 E-04	7.53 E-05	E	1.46 E-05	7.32 E-06	E
DSI/FF/Scrubber									
DSI/ESP							5.01 E-05	2.51 E-05	E

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator
[c] Hazardous air pollutants listed in the *Clean Air Act*.

Table 2.3-5 (English And Metric Units). EMISSION FACTORS FOR BARIUM, BERYLLIUM, AND CADMIUM FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	Barium			Beryllium[c]			Cadmium[c]		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	3.24 E-03	1.62 E-03	D	6.25 E-06	3.12 E-06	D	5.48 E-03	2.74 E-03	B
Low Energy Scrubber/FF									
Medium Energy Scrubber/FF	2.07 E-04	1.03 E-04	E				1.78 E-04	8.89 E-05	E
FF									
Low Energy Scrubber							6.97 E-03	3.49 E-03	E
High Energy Scrubber							7.43 E-02	3.72 E-02	E
DSI/FF	7.39 E-05	3.70 E-05	E				2.46 E-05	1.23 E-05	E
DSI/Carbon Injection/FF	7.39 E-05	3.69 E-05	E	3.84 E-06	1.92 E-06	E	9.99 E-05	4.99 E-05	E
DSI/FF/Scrubber							1.30 E-05	6.48 E-06	E
DSI/ESP							5.93 E-04	2.97 E-04	E

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator
[c] Hazardous air pollutants listed in the *Clean Air Act*.

Table 2.3-6 (English And English Units). EMISSION FACTORS FOR CHROMIUM, COPPER, AND IRON FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	Chromium[c]			Copper			Iron		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	7.75 E-04	3.88 E-04	B	1.25 E-02	6.24 E-03	E	1.44 E-02	7.22 E-03	C
Low Energy Scrubber/FF									
Medium Energy Scrubber/FF	2.58 E-04	1.29 E-04	E						
FF	2.15 E-06	1.07 E-06	E						
Low Energy Scrubber	4.13 E-04	2.07 E-04	E				9.47 E-03	4.73E -03	E
High Energy Scrubber	1.03 E-03	5.15 E-04	E						
DSI/FF	3.06 E-04	1.53 E-04	E	1.25 E-03	6.25 E-04	E			
DSI/Carbon Injection/FF	1.92 E-04	9.58 E-05	E	2.75 E-04	1.37 E-04	E			
DSI/FF/Scrubber	3.96 E-05	1.98 E-05	E						
DSI/ESP	6.58 E-04	3.29 E-04	E						

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.

[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator

[c] Hazardous air pollutants listed in the *Clean Air Act*.

Table 2.3-7 (English and Metric Units). EMISSION FACTORS FOR MANGANESE, MERCURY, AND NICKEL FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	Manganese[c]			Mercury[c]			Nickel[c]		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	5.67 E-04	2.84 E-04	C	1.07 E-01	5.37 E-02	C	5.90 E-04	2.95 E-04	B
Low Energy Scrubber/FF									
Medium Energy Scrubber/FF				3.07 E-02	1.53 E-02	E	5.30 E-04	2.65 E-04	E
FF									
Low Energy Scrubber	4.66 E-04	2.33 E-04	E	1.55 E-02	7.75 E-03	E	3.28 E-04	1.64 E-02	E
High Energy Scrubber	6.12 E-04	3.06 E-04	E	1.73 E-02	8.65 E-03	E	2.54 E-03	1.27 E-03	E
DSI/FF				1.11 E-01	5.55 E-02	E	4.54 E-04	2.27 E-04	E
DSI/Carbon Injection/FF				9.74 E-03	4.87 E-03	E	2.84 E-04	1.42 E-04	E
DSI/FF/Scrubber				3.56 E-04	1.78 E-04	E			
DSI/ESP				1.81 E-02	9.05 E-03	E	4.84 E-04	2.42 E-04	E

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator
[c] Hazardous air pollutants listed in the *Clean Air Act*.

Table 2.3-8 (English And Metric Units). EMISSION FACTORS FOR SILVER AND THALLIUM FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	Silver			Thallium		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	2.26 E-04	1.13 E-04	D	1.10 E-03	5.51 E-04	D
Low Energy Scrubber/FF						
Medium Energy Scrubber/FF	1.71 E-04	8.57 E-05	E			
FF						
Low Energy Scrubber						
High Energy Scrubber	4.33 E-04	2.17 E-04	E			
DSI/FF	6.65 E-05	3.32 E-05	E			
DSI/Carbon Injection/FF	7.19 E-05	3.59 E-05	E			
DSI/FF/Scrubber						
DSI/ESP						

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator

Table 2.3-9 (English And Metric Units). EMISSION FACTORS FOR SULFUR TRIOXIDE (SO_3) AND HYDROGEN BROMIDE (HBr) FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	SO_3			HBr		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled				4.33 E-02	2.16 E-02	D
Low Energy Scrubber/FF						
Medium Energy Scrubber/FF				5.24 E-02	2.62 E-02	E
FF						
Low Energy Scrubber						
High Energy Scrubber						
DSI/FF						
DSI/Carbon Injection/FF				4.42 E-03	2.21 E-03	E
DSI/FF/Scrubber	9.07 E-03	4.53 E-03	E			
DSI/ESP						

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator

Table 2.3-10 (English And Metric Units). EMISSION FACTORS FOR HYDROGEN FLUORIDE AND CHLORINE FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Control Level[b]	Hydrogen Fluoride[c]			Chlorine[c]		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
Uncontrolled	1.49 E-01	7.43 E-02	D	1.05 E-01	5.23 E-02	E
Low Energy Scrubber/FF						
Medium Energy Scrubber/FF						
FF						
Low Energy Scrubber						
High Energy Scrubber						
DSI/FF						
DSI/Carbon Injection/FF	1.33 E-02	6.66 E-03	E			
DSI/FF/Scrubber						
DSI/ESP						

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] FF = Fabric Filter
DSI = Dry Sorbent Injection
ESP = Electrostatic Precipitator
[c] Hazardous air pollutants listed in the *Clean Air Act*.

Table 2.3-11 (English And Metric Units). CHLORINATED DIBENZO-P-DIOXIN EMISSION FACTORS FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Congener[b]	Uncontrolled			Fabric Filter			Wet Scrubber			DSI/FF[c]		
	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
TCDD												
2,3,7,8-	5.47 E-08	2.73 E-08	E	6.72 E-09	3.36 E-09	E	1.29 E-10	6.45 E-11	E	5.61 E-10	2.81 E-10	E
Total	1.00 E-06	5.01 E-07	B	1.23 E-07	6.17 E-08	E	2.67 E-08	1.34 E-08	E	6.50 E-09	3.25 E-09	E
PeCDD												
1,2,3,7,8-							6.08 E-10	3.04 E-10	E			
Total							5.53 E-10	2.77 E-10	E			
HxCDD												
1,2,3,6,7,8-	3.78 E-10	1.89 E-10	E				1.84 E-09	9.05 E-10	E			
1,2,3,7,8,9-	1.21 E-09	6.07 E-10	E				2.28 E-09	1.14 E-09	E			
1,2,3,4,7,8-							9.22 E-10	4.61 E-10	E			
Total							5.77 E-10	2.89 E-10	E			
HpCDD												
1,2,3,4,6,7,8-	5.23 E-09	2.62 E-09	E				6.94 E-09	3.47 E-09	E			
Total							1.98 E-09	9.91 E-10	E			
OCDD - total	2.21 E-08	1.11 E-08	E									
Total CDD	2.13 E-05	1.07 E-05	B	2.68 E-06	1.34 E-06	E	1.84 E-06	9.18 E-07	E	3.44 E-07	1.72 E-07	E

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] Hazardous air pollutants listed in *Clean Air Act*.
[c] FF = Fabric Filter
DSI = Dry Sorbent Injection

Table 2.3-12 (English And Metric Units). CHLORINATED DIBENZO-P-DIOXIN EMISSION FACTORS FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Congener[b]	DSI/Carbon Injection/FF[c] lb/ton	DSI/Carbon Injection/FF[c] kg/Mg	DSI/Carbon Injection/FF[c] EMISSION FACTOR RATING	DSI/ESP[d] lb/ton	DSI/ESP[d] kg/Mg	DSI/ESP[d] EMISSION FACTOR RATING
TCDD						
2,3,7,8-	8.23 E-10	4.11 E-10	E	1.73 E-10	8.65 E-11	E
Total						
PeCDD						
1,2,3,7,8-						
Total						
HxCDD						
1,2,3,6,7,8-						
1,2,3,7,8,9-						
1,2,3,4,7,8-						
Total						
HpCDD						
2,3,4,6,7,8-						
1,2,3,4,6,7,8-						
Total						
OCDD - Total						
Total CDD	5.38 E-08	2.69 E-08	E			

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] Hazardous air pollutants listed in the *Clean Air Act*.
[c] FF = Fabric Filter
DSI = Dry Sorbent Injection
[d] ESP = Electrostatic Precipitator

Table 2.3-13 (English And Metric Units). CHLORINATED DIBENZOFURAN EMISSION FACTORS FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

	Uncontrolled			Fabric Filter			Wet Scrubber			DSI/FF[c]		
Congener[b]	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING	lb/ton	kg/Mg	EMISSION FACTOR RATING
TCDF												
2,3,7,8-	2.40 E-07	1.20 E-07	E	3.85 E-08	1.97 E-08	E	1.26 E-08	6.30 E-09	E	4.93 E-09	2.47 E-09	E
Total	7.21 E-06	3.61 E-06	B	1.28 E-06	6.39 E-07	E	4.45 E-07	2.22 E-07	E	1.39 E-07	6.96 E-08	E
PeCDF												
1,2,3,7,8-	7.56 E-10	3.78 E-10	E				1.04 E-09	5.22 E-10	E			
2,3,4,7,8-	2.07 E-09	1.04 E-09	E				3.07 E-09	1.53 E-09	E			
Total							6.18 E-09	3.09 E-09	E			
HxCDF												
1,2,3,4,7,8-	7.55 E-09	3.77 E-09	E				8.96 E-09	4.48 E-09	E			
1,2,3,6,7,8-	2.53 E-09	1.26 E-09	E				3.53 E-09	1.76 E-09	E			
2,3,4,6,7,8-	7.18 E-09	3.59 E-09	E				9.59 E-09	4.80 E-09	E			
1,2,3,7,8,9-							3.51 E-10	1.76 E-10	E			
Total							5.10 E-09	2.55 E-09	E			
HpCDF												
1,2,3,4,6,7,8-	1.76 E-08	8.78 E-09	E				1.79 E-08	8.97 E-09	E			
1,2,3,4,7,8,9-	2.72 E-09	1.36 E-09	E				3.50 E-09	1.75 E-09	E			
Total							1.91 E-09	9.56 E-10	E			
OCDF - Total	7.42 E-08	3.71 E-08	E				4.91 E-10	2.45 E-10	E			
Total CDF	7.15 E-05	3.58 E-05	B	8.50 E-06	4.25 E-06	E	4.92 E-06	2.46 E-06	E	1.47 E-06	7.37 E-07	E

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] Hazardous air pollutants listed in the *Clean Air Act*.
[c] FF = Fabric Filter
DSI = Dry Sorbent Injection

Table 2.3-14 (English And Metric Units). CHLORINATED DIBENZOFURANS EMISSION FACTORS FOR CONTROLLED AIR MEDICAL WASTE INCINERATORS[a]

Rating (A-E) Follows Each Factor

Congener[b]	DSI/Carbon Injection/FF[c] lb/ton	DSI/Carbon Injection/FF[c] kg/Mg	DSI/Carbon Injection/FF[c] EMISSION FACTOR RATING	DSI/ESP[d] lb/ton	DSI/ESP[d] kg/Mg	DSI/ESP[d] EMISSION FACTOR RATING
TCDF						
2,3,7,8-	7.31 E-10	3.65 E-10	E	1.73 E-09	8.66 E-10	E
Total	1.01 E-08	5.07 E-09	E			
PeCDF						
1,2,3,7,8-						
2,3,4,7,8-						
Total						
HxCDF						
1,2,3,4,7,8-						
1,2,3,6,7,8-						
2,3,4,6,7,8-						
1,2,3,7,8,9-						
Total						
HpCDF						
1,2,3,4,6,7,8-						
1,2,3,4,7,8,9-						
Total						
OCDF - Total						
Total CDF	9.47 E-08	4.74 E-08	E			

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] Hazardous air pollutants listed in the *Clean Air Act*.
[c] FF = Fabric Filter
DSI = Dry Sorbent Injection
[d] ESP = Electrostatic Precipitator

Table 2.3-15. PARTICLE SIZE DISTRIBUTION FOR CONTROLLED AIR MEDICAL WASTE INCINERATOR PARTICULATE MATTER EMISSIONS[a]

EMISSION FACTOR RATING: E

Cut Diameter (µm)	Uncontrolled Cumulative Mass % Less Than Stated Size	Scrubber Cumulative Mass % Less Than Stated Size
0.625	31.1	0.1
1.0	35.4	0.2
2.5	43.3	2.7
5.0	52.0	28.1
10.0	65.0	71.9

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05.

Table 2.3-16 (English And Metric Units). ROTARY KILN MEDICAL WASTE INCINERATOR EMISSION FACTORS FOR CRITERIA POLLUTANTS AND ACID GASES[a]

EMISSION FACTOR RATING: E

Pollutant	Uncontrolled		SD/Fabric Filter[b]		SD/Carbon Injection/FF[c]		High Energy Scrubber	
	lb/ton	kg/Mg	lb/ton	kg/Mg	lb/ton	kg/Mg	lb/ton	kg/Mg
Carbon monoxide	3.82 E-01	1.91 E-01	3.89 E-02	1.94 E-02	4.99 E-02	2.50 E-02	5.99 E-02	3.00 E-02
Nitrogen oxides	4.63 E+00	2.31 E+00	5.25 E+00	2.63 E+00	4.91 E+00	2.45 E+00	4.08 E+00	2.04 E+00
Sulfur dioxide	1.09 E+00	5.43 E-01	6.47 E-01	3.24 E-01	3.00 E-01	1.50 E-01		
PM	3.45 E+01	1.73 E+01	3.09 E-01	1.54 E-01	7.56 E-02	3.78 E-02	8.53 E-01	4.27 E-01
TOC	6.66 E-02	3.33 E-02	4.11 E-02	2.05 E-02	5.05 E-02	2.53 E-02	2.17 E-02	1.08 E-02
HCl[d]	4.42 E+01	2.21 E+01	2.68 E-01	1.34 E-01	3.57 E-01	1.79 E-01	2.94 E+01	1.47 E+01
HF[d]	9.31 E-02	4.65 E-02	2.99 E-02	1.50 E-02				
HBr	1.05 E+00	5.25 E-01	6.01 E-02	3.00 E-02	1.90 E-02	9.48 E-03		
H_2SO_4							2.98 E+00	1.49 E+00

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. Blanks indicate no data.
[b] SD = Spray Dryer
[c] FF = Fabric Filter
[d] Hazardous air pollutant listed in the *Clean Air Act.*

Table 2.3-17 (English And Metric Units). ROTARY KILN MEDICAL WASTE INCINERATOR EMISSION FACTORS FOR METALS[a]

EMISSION FACTOR RATING: E

Pollutant	Uncontrolled		SD/Fabric Filter[b]		SD/Carbon Injection/FF[c]	
	lb/ton	kg/Mg	lb/ton	kg/Mg	lb/ton	kg/Mg
Aluminum	6.13 E-01	3.06 E-01	4.18 E-03	2.09 E-03	2.62 E-03	1.31 E-03
Antimony[d]	1.99 E-02	9.96 E-03	2.13 E-04	1.15 E-04	1.41 E-04	7.04 E-05
Arsenic[d]	3.32 E-04	1.66 E-04				
Barium	8.93 E-02	4.46 E-02	2.71 E-04	1.35 E-04	1.25 E-04	6.25 E-05
Beryllium[d]	4.81 E-05	2.41 E-05	5.81 E-06	2.91 E-06		
Cadmium[d]	1.51 E-02	7.53 E-03	5.36 E-05	2.68 E-05	2.42 E-05	1.21 E-05
Chromium[d]	4.43 E-03	2.21 E-03	9.85 E-05	4.92 E-05	7.73 E-05	3.86 E-05
Copper	1.95 E-01	9.77 E-02	6.23 E-04	3.12 E-04	4.11 E-04	2.06 E-04
Lead[d]	1.24 E-01	6.19 E-02	1.89 E-04	9.47 E-05	7.38 E-05	3.69 E-05
Mercury[d]	8.68 E-02	4.34 E-02	6.65 E-02	3.33 E-02	7.86 E-03	3.93 E-03
Nickel[d]	3.53 E-03	1.77 E-03	8.69 E-05	4.34 E-05	3.58 E-05	1.79 E-05
Silver	1.30 E-04	6.51 E-05	9.23 E-05	4.61 E-05	8.05 E-05	4.03 E-05
Thallium	7.58 E-04	3.79 E-04				

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05. ND = no data. Blanks indicate no data.
[b] SD = Spray Dryer.
[c] FF = Fabric Filter.
[d] Hazardous air pollutant listed in the *Clean Air Act*.

Table 2.3-18 (English And Metric Units). ROTARY KILN MEDICAL WASTE INCINERATOR EMISSION FACTORS FOR DIOXINS AND FURANS[a]

EMISSION FACTOR RATING: E

Congener[d]	Uncontrolled		SD/Fabric Filter[b]		SD/Carbon Injection/FF[c]	
	lb/ton	kg/Mg	lb/ton	kg/Mg	lb/ton	kg/Mg
2,3,7,8-TCDD	6.61 E-10	3.30 E-10	4.52 E-10	2.26 E-10	6.42 E-11	3.21 E-11
Total TCDD	7.23 E-09	3.61 E-09	4.16 E-09	2.08 E-09	1.55 E-10	7.77 E-11
Total CDD	7.49 E-07	3.75 E-07	5.79 E-08	2.90 E-08	2.01 E-08	1.01 E-08
2,3,7,8-TCDF	1.67 E-08	8.37 E-09	1.68 E-08	8.42 E-09	4.96 E-10	2.48 E-10
Total TCDF	2.55 E-07	1.27 E-07	1.92 E-07	9.58 E-08	1.15 E-08	5.74 E-09
Total CDF	5.20 E-06	2.60 E-06	7.91 E-07	3.96 E-07	7.57 E-08	3.78 E-08

[a] References 7-43. Source Classification Codes 5-01-005-05, 5-02-005-05.
[b] SD = Spray Dryer.
[c] FF = Fabric Filter.
[d] Hazardous air pollutants listed in the *Clean Air Act*.

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