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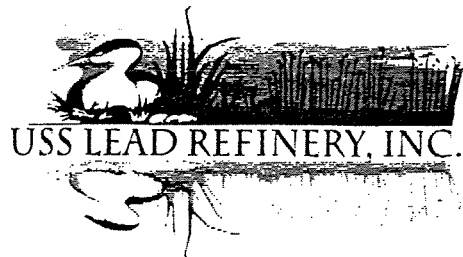


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Independent Assessment of the Impacts of
Historical Lead Air Emissions
in
East Chicago, Indiana

Project No. 52000-0-2240-02-906

Conducted for:



Prepared by:

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1. Introduction

Law Engineering and Environmental Services, Inc. (LAW) was contracted by U.S. Smelter and Lead Refinery, Inc. (USS Lead) to conduct an independent study of historical air emissions of lead in the East Chicago, Indiana area in the vicinity of its former smelting operation. USS Lead conducted this survey to fulfill its obligation under the requirements of the MRFI. This report presents the conclusions of that study.

2. Summary

The difficulty in conducting an assessment of historical emissions that occurred in some cases 50 years ago is the lack of documentation regarding the specific data of interest. Air pollution records historically have dealt primarily with the control of emissions of criteria pollutants which twenty years ago consisted only of Particulate, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide and Hydrocarbons. Significant air pollution records for lead emissions was not evaluated until lead itself became a criteria pollutant in the mid '80s. Also, since lead does not biodegrade in soils and could theoretically be retained for long periods of time, it is difficult to associate the lead content of particular soils to a specific air borne source after so many years of industrial activity. This is particularly evident in the area surrounding the USS Lead facility due to the heavy industrial activity that has been prevalent in the past 50 years. In addition, there is also the added difficulty of assessing non-industrial sources of lead. One such source is the heavy traffic patterns in the area, which caused considerable vehicle exhaust that prior to 1980 contained lead.

LAW studied this issue by reviewing previous state, federal and local company files to develop a listing of relative, potential lead emissions sources in the area. Upon review of these files we have found that USS Lead was only one of a large number of sources with potential air emissions of lead. Also the relative amounts of lead emitted from the USS Lead facility were not inordinately higher than other sources with potential air emissions in this heavily industrialized area.

In addition to developing a lead emissions inventory, LAW performed air dispersion modeling of lead emissions based on well-documented data on air emissions and stack parameters from the state of Indiana files, which predict theoretical depositions in the immediate area of the former facility. This modeling demonstrated the relative impact of the various documented lead emission sources in the area. USS Lead was only one of several contributors to lead emissions in the area, which may have impacted neighboring soils and in no way can be held solely accountable for remediation of the entire area.

3. Background

USS Lead formerly operated a lead smelting operation on a 79-acre tract of property at 5300 Kennedy Avenue in East Chicago, Indiana. From about 1906 to 1920, the property was used for copper smelting. Starting in 1920, among other activities, USS Lead operated a primary lead smelter on 25 acres of the property. In 1973, USS Lead converted to secondary smelting, recovering lead from scrap metal and old automobile batteries. Due to economic factors, USS Lead ceased operation in December 1985. [Indiana State Dept. of Health, 1994].

The general area surrounding the facility has had a long history of industrial activity. In fact, numerous smelting operations besides USS Lead co-existed in the immediate area and often times traded raw material and product. In addition, a chemical operations owned and operated by E. I. Dupont was located directly adjacent to the site which at times utilized lead in their operation. The entire geographical region has a history of steel and metal manufacturing. In fact, large steel mills located a few miles North of the site still have considerable metallic air emissions that likely have fallout that impact the soil quality in the area. Any one of these operations has had the potential of impacting soil composition in the surrounding neighborhood.

4. Literature Search and Data Reduction

This project was initiated to evaluate the possible impact of airborne lead emissions from the USS Lead facility on the soil in the surrounding area. LAW completed an evaluation that included review of the following databases and data sources:

- State of Indiana Proposed Lead State Implementation Plan (SIP), listing stationary lead sources and lead emission rates in 1982 for the State of Indiana
- United States EPA air pollution database (AIRS), listing sources of lead in the State of Indiana
- United States EPA Superfund NPL Assessment Program Database (SNAP), listing Superfund sites in the vicinity of USS Lead.
- National Technical Information Service, providing an August 24, 1994 public health assessment of USS lead performed by the Indiana State Department of Health
- Discussions with Mirtha Capiro at the Waste Pesticides and Toxics Division of the U.S. EPA Region V, providing an October 15, 1985 inspection report of Hammond Lead and USS Lead Refining Soil Survey in Hammond and East Chicago, Indiana.
- USS Lead, providing a file containing portions of the plant's environmental correspondence.
- A July 2, 1985 Air Pollution Control Board of the State of Indiana document providing lead sampling document containing ambient air quality data and soil sampling data in Lake County.
- A May, 1998 United States EPA Office of Air Quality Planning and Standards (OAQPS), document providing locating and estimating air emissions of lead compounds.

- United States EPA Technology Transfer Network (TTN), providing wind data, a windrose plotting program, and an Air Dispersion Model ISC (Industrial Source Complex).
- The Indiana Department of Environmental Management (IDEM), providing a 1993-1998 lead inventory for Lake County, and a listing of particulate matter sources in Lake County.
- Entact Environmental Tactics in Waste Management, providing a 1996 AutoCAD document containing soil sample information, and potential sources of lead data.

Lead in soil content in the vicinity of USS Lead was obtained from the Indiana State Department of Health public health assessment, the EPA Region V inspection report, and the Air Pollution Control Board lead sampling document. This data was compiled into a single spreadsheet and plotted on a base map included in Figures 1 and 2. This data was then input into a contouring program (Surfer 7.0) which estimated lines of equal lead soil concentrations. Inventoried sources of lead from the Lead State Implementation Plan, the current lead inventory from Lake County, and permitted sources of Particulate Matter in Lake County were plotted on the base map, which was created using data obtained from the United States Geological Survey. Caution should be taken when reviewing this plot of lead in soil samples, since these soil samples were taken during different time periods using different test methods. Also it should be noted that the data is approximately fifteen years old and may not be representative of current conditions.

A few aberrant data points were omitted from the plot. First, one point from 1980 [Indiana Dept. of Health, 1994] indicating an on-site soil concentration of 160,000 ppm could not be specifically located within the property lines of USS Lead. Seven soil samples taken in the vicinity of E.I. DuPont's property [Air Pollution Control Board, 1985], ranging from 4,052 ppm to 32,087 ppm could not be located on a map. Three samples taken onsite at USS Lead [Air Pollution Control Board, 1985] also could not be specifically located within the property lines, and possibly included samples taken from baghouse dust piles.

There is limited available data on the west side of USS Lead's property. The plot also shows limited data within E.I. DuPont's property, in areas directly east of the center of the highest concentration. More data potentially exists within these areas, but cannot be located on a map due

to limited and/or conflicting location data for each of these points. Additional data points indicate concentrations somewhere in E.I. DuPont's property in excess of 30,000 ppm.

From general inspection of the data, we conclude that a background soil concentration appears to be between 100 ppm to 1000 ppm. For the purposes of this report "background" means the more prevalent concentrations outside of the immediate property boundary of local industrial sites. This relatively elevated level is likely due to extensive industrial activity in the area.

Potential air emission sources of lead are compiled in Table 1, and subsequently located on the plot of the area surrounding USS Lead (Figures 1 and 2). This list was generated from several sources. The Indiana Department of Environmental Management (IDEM) compiled a list of stationary lead sources in 1982 for a proposed Lead State Implementation Plan (SIP) in their enforcement efforts of the lead ambient air quality standard. Also, IDEM was able to supply us with a current known lead inventory for Lake County. The United States EPA air pollution database provided a listing of the sources of lead in the State of Indiana. The United States EPA Superfund NPL Assessment Database lists Superfund sites in the vicinity of USS Lead. In addition, sources (listed in IDEM's Total Suspended Particulate and PM₁₀ SIP development) that emit particulate matter were added to the list. These sources are listed as "Not Inventoried" since they were not listed on any of lead inventories, but due to the nature of their business do emit lead to some degree.

Wind speed and direction data was obtained from a database on the EPA's Technology Transfer Network (TTN) site. Data was obtained for the nearest station in South Bend, Indiana. This data was compiled using a windrose plotting program, also obtained from the TTN site. Data from five years (1984-1988) were plotted on the windrose, which is included as Figure 3. Additional sets of data from later years were plotted separately and compared with data from 1984-1988 as a check for consistency in wind speed and direction frequencies. A visual inspection of this plot shows that the wind speed and frequency data in the windrose appears to be consistent on a year to year basis. The windrose shows a predominant wind direction from the southwest to the northeast.

The contouring program and plot of existing data indicate two potential areas of concern containing elevated levels of lead in soil compared to the background (Figure 1). The first area is

in the vicinity of Hammond Lead. The second area centers above an area east of the USS Lead property boundary (Figures 1 and 2). The windrose plot (Figure 3) indicates that wind most frequently blows from a southwestern direction, towards the northeast. Potential sources of lead other than Hammond Lead, E.I. DuPont, and Harbison Walker are, for the most part, located in areas where soil sample concentration data is below 1000 ppm. Based on emissions reporting data, IDEM inventories, and EPA inventories, E.I. DuPont and Harbison Walker do not currently use lead in their materials and products. An area in the vicinity of Hammond Lead contains elevated lead concentrations in soil, but contours indicate low local minimum data points between Hammond Lead and USS Lead. The blow-up of the area around USS Lead shown in Figure 2 indicates elevated soil concentrations east of USS Lead (near and on E.I. DuPont property). Lower levels of lead are found north and northeast of USS Lead. In addition, two former lead smelters, Eagle Pitcher, and Anaconda (facilities identified by Entact) were located within the contoured areas. Based upon currently available data, it does not appear that lead content of the soil is elevated (relatively) northeast of these locations.

A recent study (1993) was conducted on E. I. Dupont property which is located directly adjacent and due east of the USS Lead property. Soil samples taken for this study indicate that an increasing lead concentration gradient exists due east going away from the USS Lead property line indicating that the E.I. Dupont operation must have been a source of lead contamination as well. This was verified upon review of another study, which states that facility produced lead oxide and lead arsenate in the past. This information from these two studies is provided in Appendix C of this report.

Figure 1
 Concentrations of Lead in Soil in the
 Vicinity of U.S.S. Lead
 East Chicago, Indiana
 Law Engineering and Environmental Services, Inc.
 Project 52000-0-2240

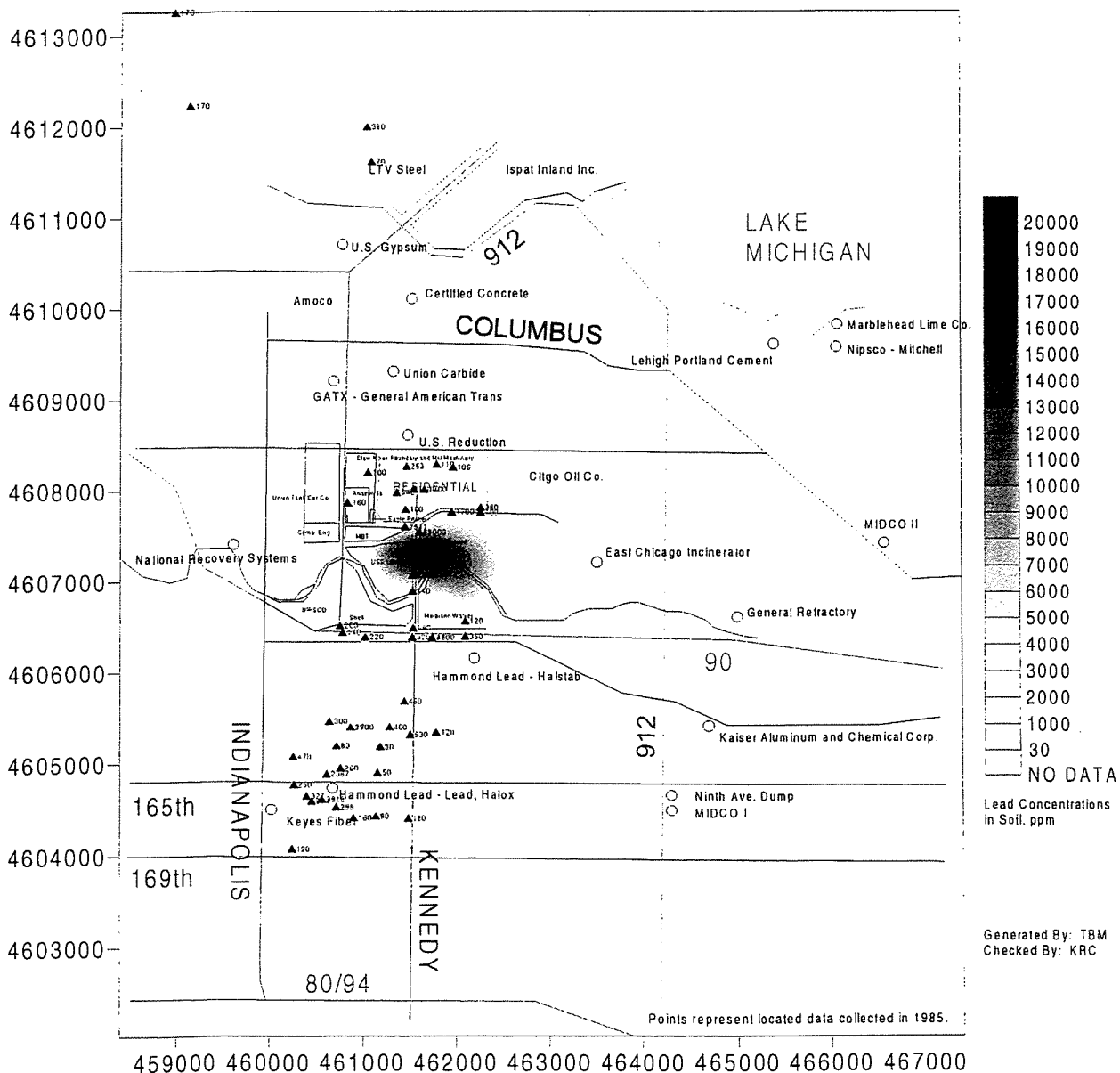


Figure 2
 Concentrations of Lead in Soil in the Vicinity of U.S.S. Lead
 East Chicago, Indiana
 Law Engineering and Environmental Services, Inc. Project 52000-0-2240

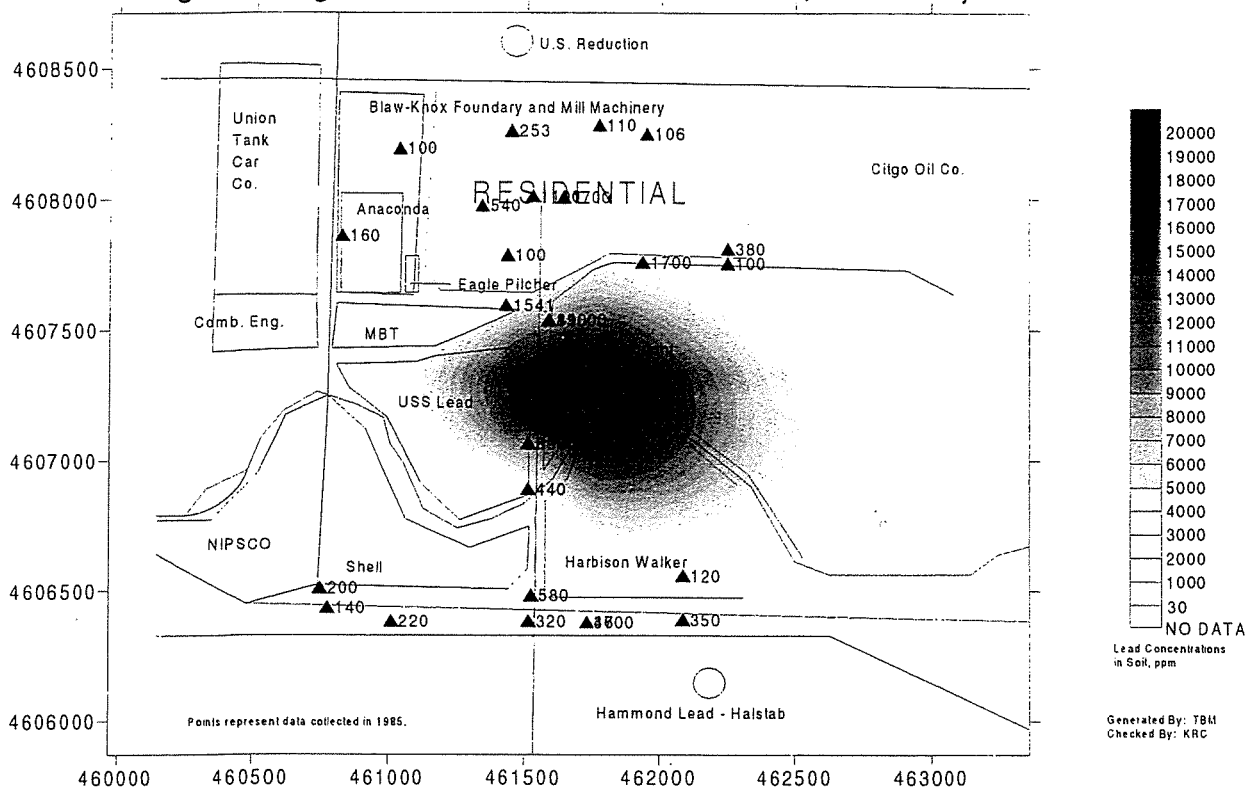


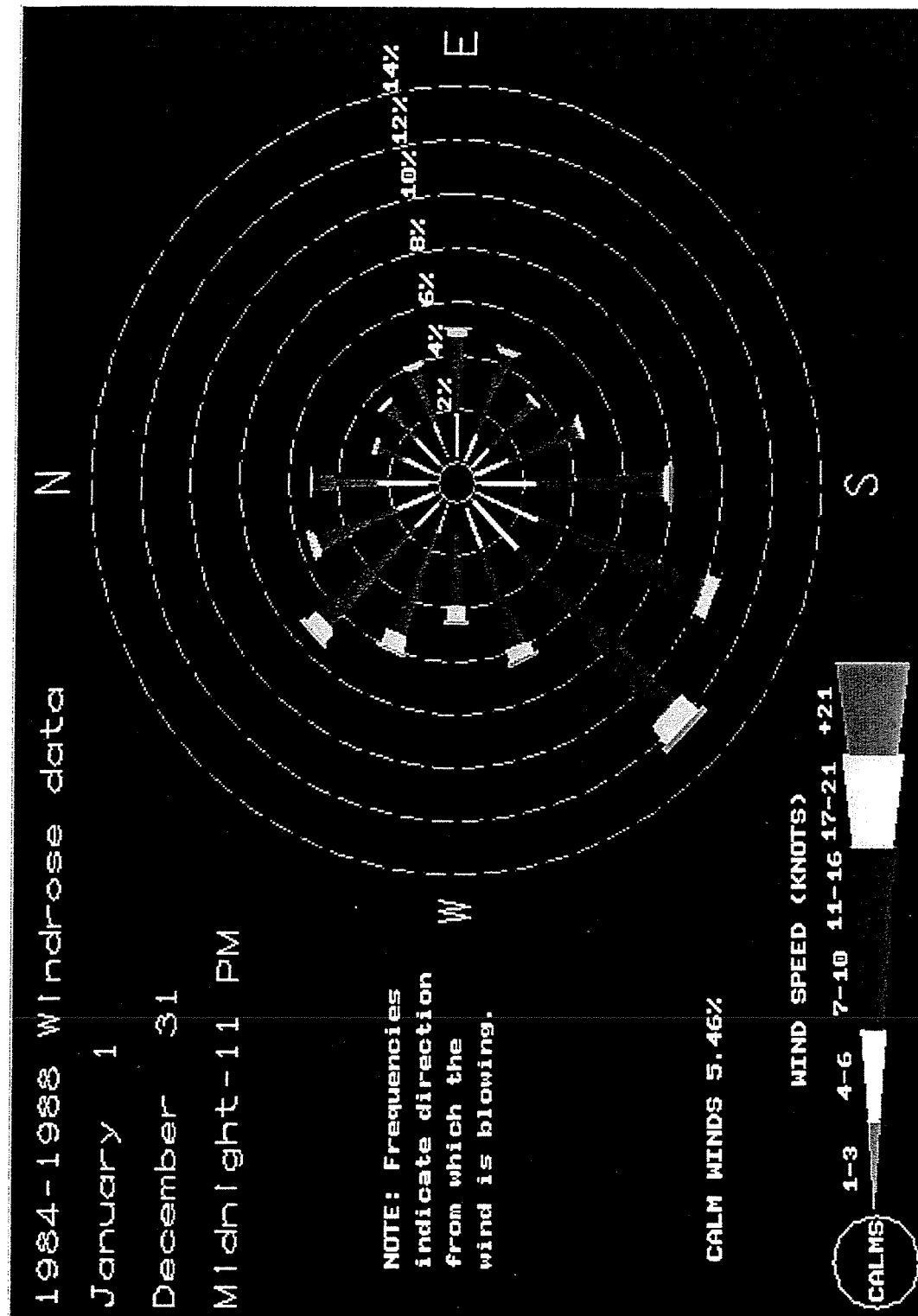
Table 1
Lead Emissions From Sources Identified in Figures 1 and 2

Source	Tons Pb per year	Largest Inventoried Year	
Anaconda	Not Inventoried		
Blaw Knox Foundry	0.00	1993-1998	IDEM Lead Inventory
BP Amoco Oil Company, Whiting Refinery	0.05	1995	IDEM Lead Inventory
Cerestar, USA, Inc.	0.02	1994	IDEM Lead Inventory
Certified Concrete	Not Inventoried		Not Inventoried
Citgo Oil Co.	Not Inventoried		Not Inventoried
Comb. Eng.	Not Inventoried		Not Inventoried
E.I. Dupont	Not Inventoried		Not Inventoried
Eagle Pitcher	Not Inventoried		Not Inventoried
East Chicago Municipal Incinerator	0.62	1982	IDEM Lead SIP
GATX - General American Trans	Not Inventoried		Not Inventoried
General Refractory	Not Inventoried		Not Inventoried
Hammond Lead - Halstab	0.27	1993	IDEM Lead Inventory
Hammond Lead - Lead, Halox	16.08	1982	IDEM Lead SIP
Harbison Walker Refractories	0.00	1993-1998	IDEM Lead Inventory
Indiana Harbor Coke Company	0.69	1998	IDEM Lead Inventory
Ispat Inland Inc.	8.44	1999	Ispat Emissions Inventory
Kaiser Aluminum and Chemical Corp.	Not Inventoried		Not Inventoried
Keyes Fiber	Not Inventoried		Not Inventoried
Lehigh Portland Cement	Not Inventoried		Not Inventoried
LTV Steel	13.27	1998	IDEM Lead Inventory
Marblehead Lime Company	0.12	1994	IDEM Lead Inventory
MBT	Not Inventoried		Not Inventoried
MIDCO I	Not Inventoried		Not Inventoried
MIDCO II	Not Inventoried		Not Inventoried
National Briquette	0.00	1993-1998	IDEM Lead Inventory
Ninth Ave. Dump	Not Inventoried		Not Inventoried
Nipsco - Mitchell	0.19	1993	IDEM Lead Inventory
Shell	Not Inventoried		Not Inventoried
U.S. Gypsum	Not Inventoried		Not Inventoried
Union Carbide	Not Inventoried		Not Inventoried
Union Tank Car Co.	Not Inventoried		Not Inventoried
US Reduction	<0.01	1994	IDEM Lead Inventory
USS Lead Refinery	16.07	1982	IDEM Lead SIP

Figure 3

Northwest Indiana Windrose Data, 1984-1988

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5. Ambient Air Dispersion Analysis

Dispersion modeling was initiated to evaluate the possible impact of airborne lead emissions on the soil from the USS Lead and facilities in the surrounding area. LAW completed the modeling by utilizing EPA's Industrial Source Complex (ISC) dispersion model to estimate lead deposition produced by all process lead emission sources in the vicinity of the USS Lead facility. The only definitive list of process emissions for the time frame being studied (mid-1980's) was created by IDEM for their work in developing the Lead State Implementation Plan (SIP). This stack emissions information was used without modification as direct input to the model but this time to calculate deposition of lead rather than predicting ambient air concentrations which was the objective of the IDEM modeling. This modeling included only the sources, which had documented emission rates and stack parameters, but did not include other known sources of lead (e.g. E.I. Dupont, Anaconda, Eagle Pitcher, and surrounding steel mills).

The ISC Short Term Model (ISCST3) was used in all model studies and was selected due to its applicability and regulatory acceptance. The latest version of the ISC model for determining short-term depositions and concentrations was used. After establishing a grid of receptor points to represent the area around the facility, the model uses stack conditions and meteorological data to predict the deposition of the pollutant. The model's output is the deposition rate in terms of grams per square meter - seconds (or other time period selected).

The model was set up to show the deposition of lead from the various exhaust gases. The model was run in the mode to neglect wet or dry depletion. This means that the model does not reduce the mass of the plume as it travels downwind while lead is being deposited. In other words, there was no conservation of mass in the plume, which results in an overestimation of the deposition (an appropriate assumption since lead does not biodegrade or chemically react in the atmosphere). The model was run in the no scavenging mode meaning no allowance was made for deposition due to liquid or frozen precipitation. Since lead is generally insoluble in water and a rain event is not a normal occurrence, this is an appropriate assumption. This leaves deposition being based solely on the settling characteristics of the lead particle and its predicted concentration in the ambient air. Under these assumptions the ISC model presents a good relative comparison between the various air emissions and the impacts on lead in soil content.

The Indiana Lead SIP report listed lead emission sources from three facilities listed below:

1. Hammond Lead Products, Inc. – Halstab Division, Hammond, Indiana.
2. Hammond Lead Products, Inc. – HLP and Halox Division, Hammond, Indiana.
3. U.S.S. Lead Refinery, Inc., East Chicago, Indiana.

The source listing provided two emission sources from the USS Lead facility; a point source (stack) and a volume source (roof vent). It is not known why roof vents were included for USS Lead, but not the other operations considering the facilities had very similar operations (lead smelting).

The stack heights, temperatures, diameters, exhaust gas velocities, and emission rates were taken from the Indiana Lead SIP information. The Universal Transverse Mercator (UTM) coordinates of each source were used in the model. All modeled sources were point sources except for the volume source from the USS Lead facility. Table 2 presents the location of each source and the stack parameters used in the modeling.

Yearly surface and mixing height meteorological data was obtained from the EPA's Support Center for Regulatory Air Models (SCRAM) web site. Mixing height data was obtained for the weather stations from Illinois (Indiana was not available). The closest weather station for the surface data was O'Hare International Airport in Chicago, Illinois (station # IL94846) and the mixing height data was from the Greater Peoria Airport in Peoria, Illinois (station # 14842). The meteorological data provides hourly determinations of wind direction, wind speed, ambient air temperature, Pasquill-Gifford stability category, mixing height, wind profile exponent, and vertical potential temperature gradient. The meteorological data was compiled using a meteorological compiling program, PCRAMMET, and was used in the ISCST3 model. Data was collected for the years 1984 through 1988 and were used to ensure a thorough evaluation of the dispersion analysis with the ISC model.

Table 2
Emission Parameters for Lead Sources Used in the ISCST Model

Emission Point		Source I.D. No.	Stack Location		Height ¹ (m)	Temperature (K)	Velocity (m/s)	Diameter (m)	Emission Rate (g/s)
Hammond Lead Products, Inc., Halstab Division (Hammond)			UTM East (km)	UTM North (km)					
Stack		S-1	461.870	4606.250	19.891	294.1	16.0	0.21	0.023
Stack		S-4	461.850	4606.280	22.86	377.4	22.1	0.52	0.012
Stack		S-5	461.850	4606.280	22.86	377.4	26.2	0.40	0.01536
Stack		S-6, S-7, S-8	461.860	4606.260	22.86	321.9	14.5	0.37	0.03803
Stack		S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16	461.840	4606.260	22.86	294.1	19.8	0.18	0.423
Stack		S-17	461.830	4606.270	22.86	294.1	17.0	0.16	0.009
Hammond Lead Products, Inc. -HLP and Halox Division (Hammond)									
Stack		1-S-1	460.670	4604.750	13.41	327.4	16.1	0.81	0.07056
Stack		4A-S-8	460.650	4604.730	17.68	338.6	11.5	0.38	0.002205
Stack		1-S-2	460.680	4604.740	17.68	339.7	14.5	0.38	0.002205
Stack		1-S-26	460.690	4604.740	16.76	365.2	13.6	0.38	0.002205
Stack		14-S-18	460.650	4604.720	17.68	306.3	19.2	0.38	0.00567
Stack		8-S-28	460.730	4604.740	15.85	294.1	7.3	0.29	0.00441
Stack		17-S-32	460.710	4604.790	15.24	294.1	6.5	0.30	0.00315
Stack		1-S-4	460.160	4604.770	9.14	294.1	10.2	0.17	0.00315
Stack		4-S-35	460.630	4604.730	17.68	308.0	21.7	0.38	0.02306
Stack ²		A01	460.650	4604.720	17.68	356.3	5.2	0.38	0.00945
Stack		4B-S-34	460.610	4604.730	17.68	291.3	13.8	0.46	0.004095
Stack		6-S-47	460.640	4604.720	17.68	359.1	14.1	0.38	0.000126
Stack		14-S-16	460.650	4604.730	17.68	346.6	11.15	0.38	0.002205
U.S.S. Lead Refinery, Inc. (East Chicago)									
Stack		USS-1	461.464	4607.12	35.58	338.72	15.94	1.524	0.0002414
Stack Volume ^{3,4}		USSFUG	461.44	4607.04	10.67	$\sigma_{yo} = 6.98$ m	$\sigma_{zo} = 4.96$	NA	0.462

¹ The modeled stack height is considered the stack height above ground level, including the height of a building or silo upon which a stack may be located.

² A01 includes stacks: 15-S-30, 16-S-23, 14-S-17

³ Building height = 10.67 m Building Width = 30.00 m

⁴ σ_{yo} = Bldg. width/ 4.3 σ_{zo} = Bldg. height/2.15

A grid pattern was set up to show where the lead was deposited in relation to the USS Lead property and the two Hammond Lead facilities. The grid ran horizontally 8.0 km from 459.000-km east and 10.0 km from 4603.000-km north with a receptor placed every 200 meters. The area surrounding the selected facilities is rural (for the purposes of modeling) and the terrain is relatively flat, which alleviates the need for elevated receptors in the model. Receptors were selected in order to compare the results with the Technical Support modeling for the Indiana Lead SIP Revision.

The characteristics of the modeled lead particle are an important aspect and can significantly affect the results of the predicted deposition. Researching this topic, it was found that the particle diameter, of lead particulate, could range from 0.001 μm to 100 μm from secondary lead smelting (*Perry's Chemical Engineers' Handbook*, Fifth Ed.). Further research revealed that 99% of emitted from lead smelters has a diameter of less than 10 μm (*Lead Smelters Pollution Abatement in Egypt*, Safar, Z.). Based on this information it was assumed that 95% of the flue gas particulate had a particle diameter of 10 μm , with the remaining percentage distributed evenly from 0.001 μm to 100 μm . To test this assumption, model sensitivity analysis was completed to determine the effect that the particle diameter plays on lead deposition. It was found through multiple runs that doubling the particle diameter increases predicted deposition by 140%. Therefore, deposition of lead (as indicated by the ISCST model) is sensitive to particle diameter.

The density of the particle is another variable that must be determined in order to run the ISCST model. The particle emitted from secondary lead smelters can be compared to that of dust or sand grains. Therefore it was assumed that the lead particle consisted of 99% silicon dioxide (2.3 g/cm^3) and 1% lead (11.34 g/cm^3). This yielded a particle density on the order of magnitude of 2 g/cm^3 . A sensitivity analysis on the impact of particle density on deposition characteristics showed that this property has a negligible effect.

6. Air Dispersion Modeling Results

The ISCST3 model was run and the output data in micrograms/m²*second was used to make a series of contour plots to show the effects that the USS Lead operations on the lead concentrations in the soil. The locations of the sources were also placed on the plot to give a better illustration of where the highly concentrated areas were in relation to the sources. Data from the 1984 model run (a typical year) was plotted using a plotting program, which is shown in Figure 4. Figure 5 shows the deposition profile for the same year for the same sources excluding the USS Lead fugitive source (roof vent). Additional data from later years were plotted separately and compared for consistency in deposition concentrations and locations. A simple visual check showed that predicted deposition deviated little from year to year and the contour seems to be consistent.

The model predicted deposition areas tended to match the soil profiles. Plotted on Figure 4 are the contour lines of deposition rates in terms of micrograms/m²*second. The outer contour of 2.5 µg/m²s appears to duplicate the contour of "elevated" lead soil concentrations depicted in Figures 1 and 2. The outer periphery of the soils with concentrations greater than background levels is illustrated on Figure 4 for comparison. From this inspection it would appear that the model is accurately depicting deposition. Figure 5 illustrates that the predicted deposition in the case that the USS Lead volume source (USSFUG) is not included in the model run. Based on discussions in IDEM's Lead SIP Inventory the volume source (USSFUG) depicts the roof vents of the blast furnace building. However, buildings can act to capture and reduce emissions (sometimes as much as 90%). The significance of this run excluding the volume source is two fold. First, the figure demonstrates that USS Lead is not the predominant source of lead modeled. Second if the other facilities had similar vents but were not reported these other sources would have more of an impact.

Figure 4

Modeled Deposition Profile of Lead Including All Sources 1984

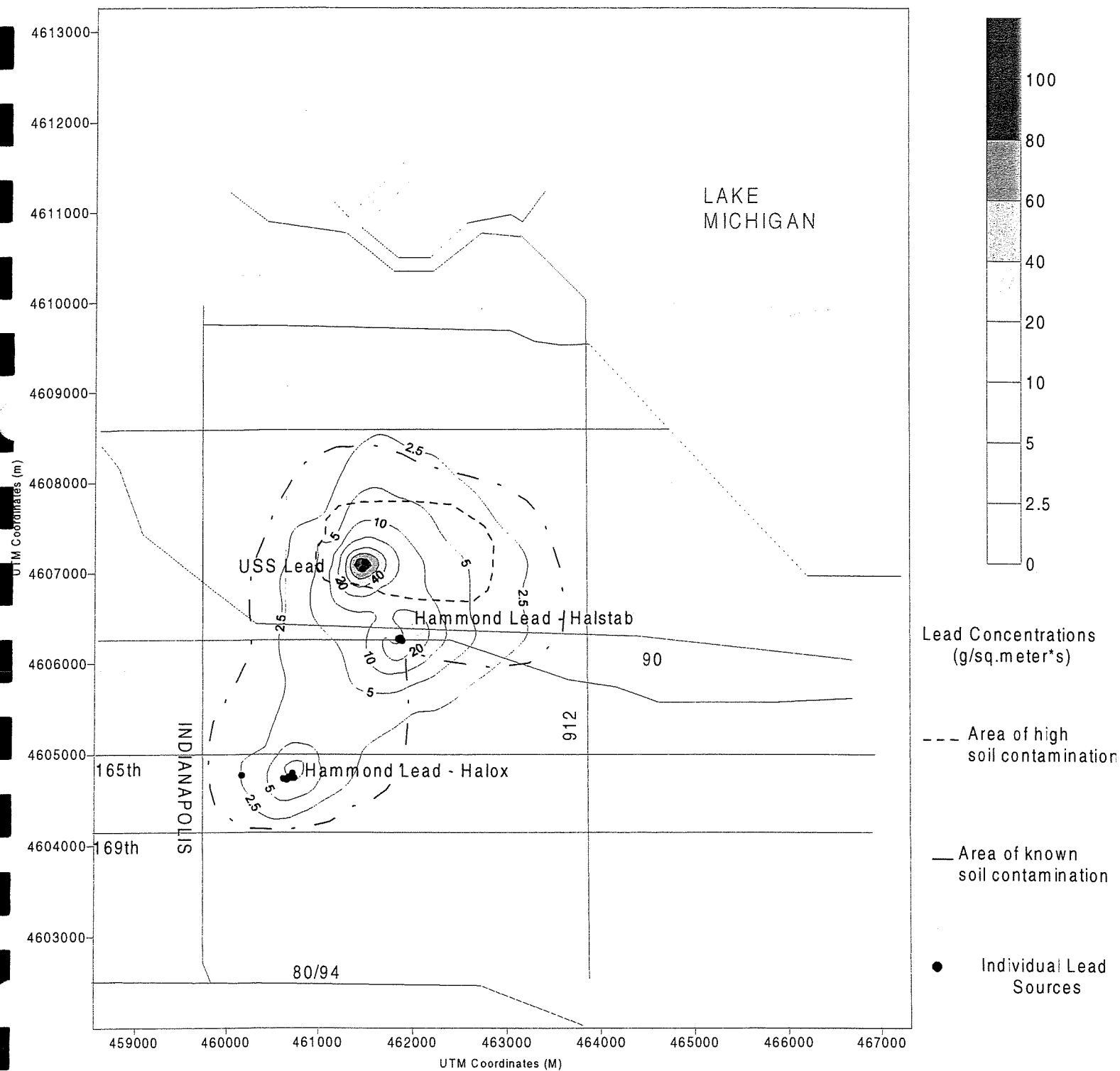
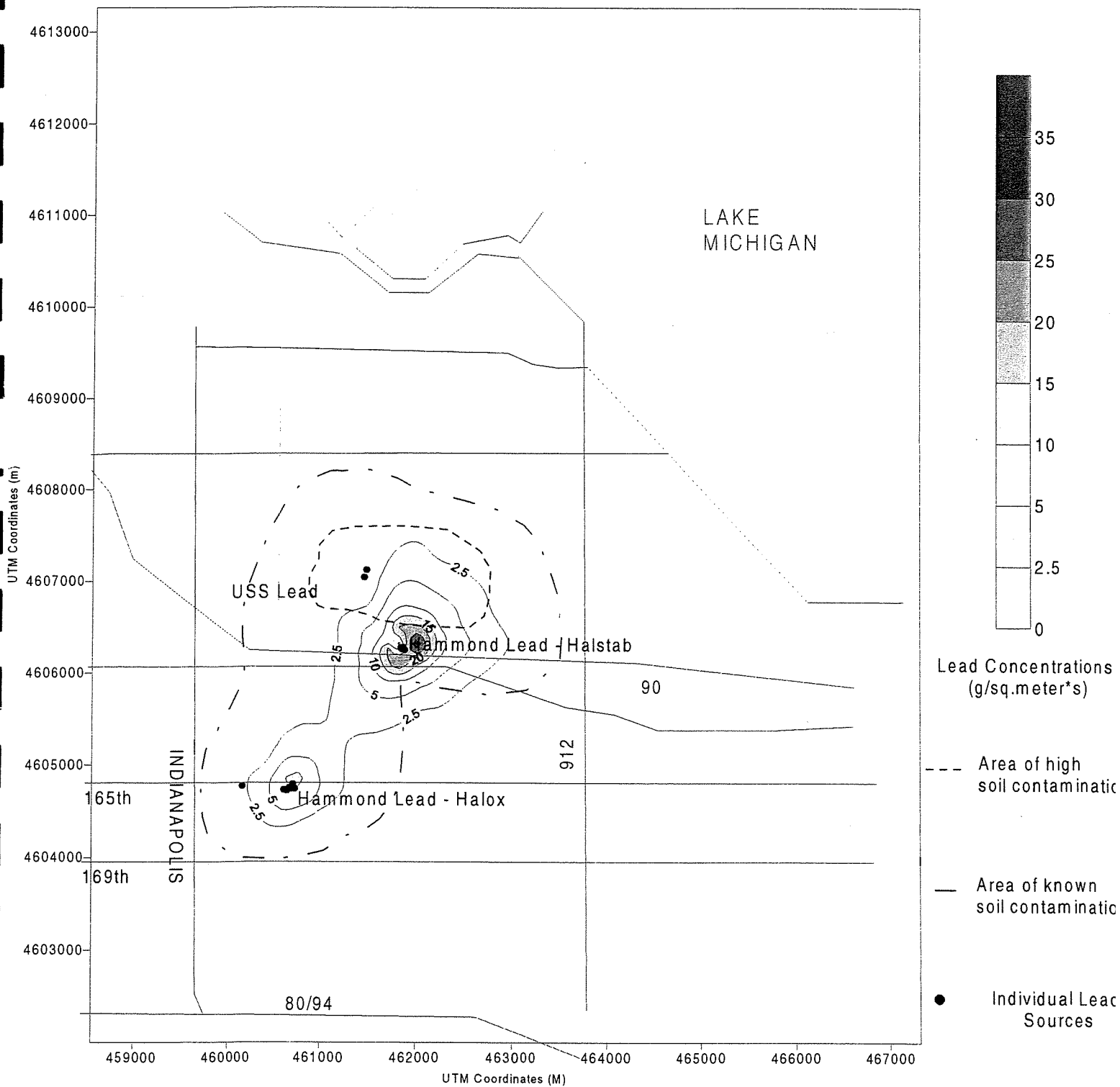


Figure 5
Modeled Deposition Profile of Lead Sources Only 1984
(Excluding the USS Lead Volume Source)



7. Conclusions

Our study verifies numerous sources of lead emissions in the East Chicago area of which USS Lead is proportionally a small contributor. When the relative amounts of documented lead emissions were modeled, it was found that USS Lead's impacts were small when compared to the Hammond Lead Halox and Halstab divisions which impacts two thirds of the study area plotted area in the figures. This modeling and review of soil data does indicate the USS Lead facility air emissions likely did impact surrounding soils, however, it is our conclusion that USS Lead's emission were only a small part of the overall impact that industrial activity had on the soils in the area. If it is EPA's position that USS Lead was the sole contributor of lead in the soil in the area, then we believe this is a premature conclusion. If any additional offsite corrective measures beyond the measures already completed by USS Lead, are deemed necessary, EPA should consider all sources of lead (past and present) in the region.

APPENDIX A – Model Runs and Calculations

Attachment 1: Background document confirming that 90% of lead particulate in the atmosphere produced by secondary lead smelting is 10 microns in diameter.

Attachment 2: An Example calculation for the lead particle density used in the ISCST3 modeling.

Attachment 3: A sample ISCST3 model report file, which contains the results of the dispersion modeling for 1984 including all sources.

Lead Smelters Pollution Abatement in Egypt

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Abstract

Secondary lead smelters are the main predominates source of lead particulate in the atmospheric air in Cairo. Lead is very harmful to the human health and affects the rate of growth in children. About 81% of the lead smelters in Egypt are located in the greater Cairo area, and their production represents about 86% of the total production of Egypt. Only 16% of the lead smelters are located in industrial zones, while 84% are located in agricultural, residential, and remote areas. The lead smelters in Egypt are using obsolete technologies, almost no pollution abatement measures are taken. A typical lead smelter emits about from 8000 to 10000 mg/m³ of lead particulate, while the Egyptian law allows a maximum of 20 mg/m³. The Egyptian Environmental law has been enforced since March 1998, and this forced many lead smelters to relocate to remote areas and 48% of them became unlicensed.

It was found that the lead particulate in Cairo ranges between less than 1 microgram/m³ and can go up to 20 microgram/m³ in near by areas of lead smelters. Relocation of lead smelters from residential areas in Cairo to industrial zones is the first step to reduce lead in the atmospheric air in Cairo. New technology which is economical feasible must be introduced to the lead smelting industry.

This paper addresses the technology management of lead smelters, including the suitable level of technology and optional technological management of the facilities to ensure its continuous compliance with the Egyptian environmental law. Some emission control devices are used now which comprises cyclones, wet scrubbers, and small bagfilters. The filtration efficiency of the existing systems ranges between 20 and 60 percent, thus the concentration of the lead is higher than the limits as specified by the environmental law. It was found from the distribution of the particle size of the emitted lead , that 99% of the particulates has a diameter less than 10 micrometer. Therefore the only efficient filtration system is the baghouse. It is proposed to use simple baghouses that may be manufactured locally in Egypt. In this case the lead smelters' owners can use economical feasible devices with filtration efficiency of more than 99%, thus complying with the Environmental law, hence maintaining this important industry which produces annually about 60 thousand metric tons of lead ingots.

Particle Density Determination

Value	Reference
Silicon Dioxide Density 2.3 g/cm ³	<i>Perry's Chemical Engineers' Handbook</i> , Fifth Ed.
Lead Density 11.34 g/cm ³	<i>Perry's Chemical Engineers' Handbook</i> , Fifth Ed.
Percentage SiO ₂ 99 %	Engineering Assumption
Percentage Lead 1 %	Engineering Assumption

Particle Density Calculation

$$\frac{2.30 \text{ g}}{\text{cm}^3} * 99\% + \frac{11.34 \text{ g}}{\text{cm}^3} * 1\% = \frac{2.39 \text{ g}}{\text{cm}^3}$$

Order of magnitude assumption

$$\frac{2.39 \text{ g}}{\text{cm}^3} \approx \frac{2.00 \text{ g}}{\text{cm}^3}$$

CO STARTING

TITLEONE Multiple Source
 TITLETWO USSLead Dry Deposition model
 MODELOPT DEFAULT URBAN DDEP
 AVERTIME PERIOD MONTH
 POLLUTID Other
 TERRHGTs FLAT
 RUNORNOT RUN
 ERRORFIL ERRORNEW.RPT
 CO FINISHED

SO STARTING

ELEVUNIT METERS

***Source Location Cards:

*** SRCID SRCTYP XS YS ZS

SO LOCATION S1	POINT	461870.0	4606250.0	0.
SO LOCATION S4	POINT	461850.0	4606280.0	0.
SO LOCATION S5	POINT	461850.0	4606280.0	0.
SO LOCATION S68	POINT	461860.0	4606260.0	0.
SO LOCATION S916	POINT	461840.0	4606260.0	0.
SO LOCATION S17	POINT	461830.0	4606270.0	0.

SO LOCATION 1S1	POINT	460670.0	4604750.0	0.
SO LOCATION 4AS8	POINT	460650.0	4604730.0	0.
SO LOCATION 1S2	POINT	460680.0	4604740.0	0.
SO LOCATION 1S26	POINT	460690.0	4604740.0	0.
SO LOCATION 14S18	POINT	460650.0	4604720.0	0.
SO LOCATION 8S28	POINT	460730.0	4604740.0	0.
SO LOCATION 17S32	POINT	460710.0	4604790.0	0.
SO LOCATION 1S4	POINT	460160.0	4604770.0	0.
SO LOCATION 4S35	POINT	460630.0	4604730.0	0.
SO LOCATION A01	POINT	460650.0	4604720.0	0.
SO LOCATION 4BS34	POINT	460610.0	4604730.0	0.
SO LOCATION 6S47	POINT	460640.0	4604720.0	0.
SO LOCATION 14S16	POINT	460650.0	4604730.0	0.

SO LOCATION USS1	POINT	461464.0	4607120.0	0.
SO LOCATION USSFUG	VOLUME	461440.0	4607040.0	0.

***Source Parameter Cards:

*** POINT: SRCID QS HS TS VS DS

SO SRCPARAM S1	0.023	19.81	294.1	16.0	0.21
SO SRCPARAM S4	0.012	22.86	377.4	22.1	0.52
SO SRCPARAM S5	0.01536	22.86	377.4	26.2	0.40

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SO SRCPARAM	S68	0.03803	22.86	321.9	14.5	0.37
SO SRCPARAM	S916	0.4227	22.86	294.1	19.8	0.18
SO SRCPARAM	S17	0.008694	22.86	294.1	17.0	0.16
SO SRCPARAM	1S1	0.07056	13.41	327.4	16.1	0.81
SO SRCPARAM	4AS8	0.002205	17.68	338.6	11.5	0.38
SO SRCPARAM	1S2	0.002205	17.68	339.7	14.5	0.38
SO SRCPARAM	1S26	0.002205	16.76	365.2	13.6	0.38
SO SRCPARAM	14S18	0.00567	17.68	306.3	19.2	0.38
SO SRCPARAM	8S28	0.00441	15.85	294.1	7.3	0.29
SO SRCPARAM	17S32	0.00315	15.24	294.1	6.5	0.30
SO SRCPARAM	1S4	0.00315	9.14	294.1	10.2	0.17
SO SRCPARAM	4S35	0.02306	17.68	308.0	21.7	0.38
SO SRCPARAM	AO1	0.00945	17.68	356.3	5.2	0.38
SO SRCPARAM	4BS34	0.004095	17.68	291.3	13.8	0.46
SO SRCPARAM	6S47	0.000126	17.68	359.1	14.1	0.38
SO SRCPARAM	14S16	0.002205	17.68	346.6	11.15	0.38
SO SRCPARAM	USS1	0.0002414	35.58	338.72	15.94	1.524

***Source Parameter Cards:

*** POINT:	SRCID	VLEMIS	RELHGT	SYNIT	SZINIT
------------	-------	--------	--------	-------	--------

SO SRCPARAM	USSFUG	0.462	10.68	6.98	4.96	
SO PARTDIAM	S1	100	80	40	10	0.001
SO PARTDIAM	S4	100	80	40	10	0.001
SO PARTDIAM	S5	100	80	40	10	0.001
SO PARTDIAM	S68	100	80	40	10	0.001
SO PARTDIAM	S916	100	80	40	10	0.001
SO PARTDIAM	S17	100	80	40	10	0.001
SO PARTDIAM	1S1	100	80	40	10	0.001
SO PARTDIAM	4AS8	100	80	40	10	0.001
SO PARTDIAM	1S2	100	80	40	10	0.001
SO PARTDIAM	1S26	100	80	40	10	0.001
SO PARTDIAM	14S18	100	80	40	10	0.001
SO PARTDIAM	8S28	100	80	40	10	0.001
SO PARTDIAM	17S32	100	80	40	10	0.001
SO PARTDIAM	1S4	100	80	40	10	0.001
SO PARTDIAM	4S35	100	80	40	10	0.001
SO PARTDIAM	AO1	100	80	40	10	0.001
SO PARTDIAM	4BS34	100	80	40	10	0.001
SO PARTDIAM	6S47	100	80	40	10	0.001
SO PARTDIAM	14S16	100	80	40	10	0.001
SO PARTDIAM	USS1	100	80	40	10	0.001

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SO PARTDIAM	USSFUG	100	80	60	40	10	0.001
SO MASSFRAX S1		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX S4		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX S5		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX S68		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX S916		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX S17		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 1S1		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 4AS8		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 1S2		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 1S26		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 14S18		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 8S28		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 17S32		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 1S4		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 4S35		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX AO1		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 4BS34		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 6S47		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX 14S16		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX USS1		0.01	0.01	0.01	0.01	0.95	0.01
SO MASSFRAX USSFUG		0.01	0.01	0.01	0.01	0.95	0.01
SO PARTDENS S1		2.	2.	2.	2.	2.	
SO PARTDENS S4		2.	2.	2.	2.	2.	
SO PARTDENS S5		2.	2.	2.	2.	2.	
SO PARTDENS S68		2.	2.	2.	2.	2.	
SO PARTDENS S916		2.	2.	2.	2.	2.	
SO PARTDENS S17		2.	2.	2.	2.	2.	
SO PARTDENS 1S1		2.	2.	2.	2.	2.	
SO PARTDENS 4AS8		2.	2.	2.	2.	2.	
SO PARTDENS 1S2		2.	2.	2.	2.	2.	
SO PARTDENS 1S26		2.	2.	2.	2.	2.	
SO PARTDENS 14S18		2.	2.	2.	2.	2.	
SO PARTDENS 8S28		2.	2.	2.	2.	2.	
SO PARTDENS 17S32		2.	2.	2.	2.	2.	
SO PARTDENS 1S4		2.	2.	2.	2.	2.	
SO PARTDENS 4S35		2.	2.	2.	2.	2.	
SO PARTDENS AO1		2.	2.	2.	2.	2.	
SO PARTDENS 4BS34		2.	2.	2.	2.	2.	
SO PARTDENS 6S47		2.	2.	2.	2.	2.	
SO PARTDENS 14S16		2.	2.	2.	2.	2.	

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SO PARTDENS USS1 2. 2. 2. 2. 2. 2.
SO PARTDENS USSFUG 2. 2. 2. 2. 2. 2.

SO SRCGROUP HAMMOND 1S1 4AS8 1S2 14S18 8S28 17S32 1S4 4S35 AO1 4BS34 6S47 14S16 S1 S4 S5 S68 S916 S17
SO SRCGROUP ALL
SO FINISHED

RE STARTING
RE ELEVUNIT METERS

RE GRIDCART CAR1 STA
RE GRIDCART XYINC 459000 30 200 4603500 28 200
RE GRIDCART CAR1 END

RE DISCCART 461577 4607100
RE DISCCART 460635 4604870
RE DISCCART 461700 4606250
RE FINISHED

ME STARTING
ME INPUTFIL 1484284.asc
ME ANEMHGHT 10.000 METERS
ME SURFDATA 94846 1984
ME UAIRDATA 14842 1984
ME FINISHED

OU STARTING
OU RECTABLE ALLAVE FIRST SECOND
OU MAXTABLE ALLAVE 50
OU PLOTFILE PERIOD ALL 84.PLT
OU FINISHED

*** SETUP Finishes Successfully ***

**Model Set To Continue RUNNING After the Setup Testing.

**Output Options Selected:

Model Outputs Tables of PERIOD Averages by Receptor
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs Tables of Overall Maximum Short Term Values (MAXTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)

**NOTE: The Following Flags May Appear Following DEPO Values:

	c	for Calm Hours
	m	for Missing Hours
	b	for Both Calm and Missing Hours

**Misc. Inputs:

Anem. Hgt. (m)	=	10.00	;	Decay Coef.	=	0.000	;	Rot. Angle	=	0.0
Emission Units	=	GRAMS/SEC								
3600.0										
Output Units	=	GRAMS/M**2								

;

Emission Rate Unit Factor	=	
---------------------------	---	--

**Approximate Storage Requirements of Model = 1.3 MB of RAM.

**Input Runstream File: lead84.txt
**Output Print File: lead84.rpt
**Detailed Error/Message File: ERRORNEW.RPT

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*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** POINT SOURCE DATA ***

SOURCE		NUMBER EMISSION RATE		BASE		STACK		STACK		STACK		BUILDING	
SCALAR VARY	EMISSION RATE	PART.	(GRAMS/SEC)	X	Y	ELEV.	HEIGHT	TEMP.	EXIT VEL.	DIAMETER	EXISTS		
ID	CATS.	(METERS)	(METERS)	(METERS)	(METERS)	(DEG.K)	(M/SEC)	(METERS)	(M/SEC)	(METERS)			
BY													
S1	6	0.23000E-01	461870.0	4606250.0	0.0	19.81	294.10	16.00	0.21	NO			
S4	6	0.12000E-01	461850.0	4606280.0	0.0	22.86	377.40	22.10	0.52	NO			
S5	6	0.15360E-01	461850.0	4606280.0	0.0	22.86	377.40	26.20	0.40	NO			
S68	6	0.38030E-01	461860.0	4606260.0	0.0	22.86	321.90	14.50	0.37	NO			
S916	6	0.42270E+00	461840.0	4606260.0	0.0	22.86	294.10	19.80	0.18	NO			
S17	6	0.86940E-02	461830.0	4606270.0	0.0	22.86	294.10	17.00	0.16	NO			
1S1	6	0.70560E-01	460670.0	4604750.0	0.0	13.41	327.40	16.10	0.81	NO			
4AS8	6	0.22050E-02	460650.0	4604730.0	0.0	17.68	338.60	11.50	0.38	NO			
1S2	6	0.22050E-02	460680.0	4604740.0	0.0	17.68	339.70	14.50	0.38	NO			
1S26	6	0.22050E-02	460690.0	4604740.0	0.0	16.76	365.20	13.60	0.38	NO			
14S18	6	0.56700E-02	460650.0	4604720.0	0.0	17.68	306.30	19.20	0.38	NO			
8S28	6	0.44100E-02	460730.0	4604740.0	0.0	15.85	294.10	7.30	0.29	NO			
17S32	6	0.31500E-02	460710.0	4604790.0	0.0	15.24	294.10	6.50	0.30	NO			
1S4	6	0.31500E-02	460160.0	4604770.0	0.0	9.14	294.10	10.20	0.17	NO			
4S35	6	0.23060E-01	460630.0	4604730.0	0.0	17.68	308.00	21.70	0.38	NO			
AO1	6	0.94500E-02	460650.0	4604720.0	0.0	17.68	356.30	5.20	0.38	NO			
4BS34	6	0.40950E-02	460610.0	4604730.0	0.0	17.68	291.30	13.80	0.46	NO			
6S47	6	0.12600E-03	460640.0	4604720.0	0.0	17.68	359.10	14.10	0.38	NO			
14S16	6	0.22050E-02	460650.0	4604730.0	0.0	17.68	346.60	11.15	0.38	NO			
USS1	6	0.24140E-03	461464.0	4607120.0	0.0	35.58	338.72	15.94	1.52	NO			

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*** ISCST3 - VERSION 00101 ***
*** 11/07/00 ***
*** Multiple Source ***
*** USSLead Dry Deposition model ***
*** 17:58:15 ***

**MODELOPTs:
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DDEP URBAN FLAT DFAULT

*** VOLUME SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC)	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	INIT. SY (METERS)	INIT. SZ (METERS)	EMISSION RATE SCALAR VARY BY
USSFUG	6	0.46200E+00	461440.0	4607040.0	0.0	10.68	6.98	4.96	

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*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:

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DDEP URBAN FLAT DFAULT

*** SOURCE IDs DEFINING SOURCE GROUPS ***

GROUP ID

SOURCE IDS

HAMMOND , 8S28	S1 , 17S32	S4 ,	S5 ,	S68 ,	S916 ,	S17 ,	1S1 ,	4AS8 ,	1S2 ,	14S18 ,
	1S4 ,	4S35 ,	AO1 ,	4BS34 ,	6S47 ,	14S16 ,				
ALL , 14S18	S1 , 8S28	S4 ,	S5 ,	S68 ,	S916 ,	S17 ,	1S1 ,	4AS8 ,	1S2 ,	1S26 ,
	17S32 ,	1S4 ,	4S35 ,	AO1 ,	4BS34 ,	6S47 ,	14S16 ,	USS1 ,	USSFUG ,	

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*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = S1 ; SOURCE TYPE = POINT ***

MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,

PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = S4 ; SOURCE TYPE = POINT ***

MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,

PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = S5 ; SOURCE TYPE = POINT ***

MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,

PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:

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DDEP URBAN FLAT DFAULT

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = S68 ; SOURCE TYPE = POINT ***

MASS FRACTION =

0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,

PARTICLE DIAMETER (MICRONS) =

100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =

2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = S916 ; SOURCE TYPE = POINT ***

MASS FRACTION =

0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,

PARTICLE DIAMETER (MICRONS) =

100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =

2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = S17 ; SOURCE TYPE = POINT ***

MASS FRACTION =

0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,

PARTICLE DIAMETER (MICRONS) =

100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =

2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

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*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTs:
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DDEP URBAN FLAT DFAULT

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = 1S1 ; SOURCE TYPE = POINT ***

MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 4AS8 ; SOURCE TYPE = POINT ***

MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 1S2 ; SOURCE TYPE = POINT ***

MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:

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DDEP URBAN FLAT DFAULT

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = 1S26 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 14S18 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 8S28 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:

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DDEP URBAN FLAT DFAULT

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = 17S32 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 1S4 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 4S35 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,

PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTs:
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DDEP URBAN FLAT DFAULT

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = A01 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 4BS34 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = 6S47 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP URBAN FLAT DEFAULT

*** SOURCE PARTICULATE/GAS DATA ***

*** SOURCE ID = 14S16 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = USS1 ; SOURCE TYPE = POINT ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

*** SOURCE ID = USSFUG ; SOURCE TYPE = VOLUME ***
MASS FRACTION =
0.01000, 0.01000, 0.01000, 0.01000, 0.95000, 0.01000,
PARTICLE DIAMETER (MICRONS) =
100.00000, 80.00000, 60.00000, 40.00000, 10.00000, 0.00100,
PARTICLE DENSITY (G/CM**3) =
2.00000, 2.00000, 2.00000, 2.00000, 2.00000, 2.00000,

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*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00
*** USSLead Dry Deposition model
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**MODELOPTS:
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DDEP URBAN FLAT DFAULT

*** GRIDDED RECEPTOR NETWORK SUMMARY ***

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

*** X-COORDINATES OF GRID ***
(METERS)

459000.0,	459200.0,	459400.0,	459600.0,	459800.0,	460000.0,	460200.0,	460400.0,	460600.0,
460800.0,								
461000.0,	461200.0,	461400.0,	461600.0,	461800.0,	462000.0,	462200.0,	462400.0,	462600.0,
462800.0,								
463000.0,	463200.0,	463400.0,	463600.0,	463800.0,	464000.0,	464200.0,	464400.0,	464600.0,
464800.0,								

*** Y-COORDINATES OF GRID ***
(METERS)

4603500.0,	4603700.0,	4603900.0,	4604100.0,	4604300.0,	4604500.0,	4604700.0,	4604900.0,	4605100.0,
4605300.0,								
4605500.0,	4605700.0,	4605900.0,	4606100.0,	4606300.0,	4606500.0,	4606700.0,	4606900.0,	4607100.0,
4607300.0,								
4607500.0,	4607700.0,	4607900.0,	4608100.0,	4608300.0,	4608500.0,	4608700.0,	4608900.0,	

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*** ISCST3 - VERSION 00101 ***
 *** 11/07/00 *** Multiple Source

*** USSLead Dry Deposition model
 *** 17:58:15 ***

**MODELOPTs:
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DDEP URBAN FLAT DFAULT

*** DISCRETE CARTESIAN RECEPTORS ***
 (X-COORD, Y-COORD, ZELEV, ZFLAG)
 (METERS)

(461577.0, 4607100.0,	0.0,	0.0);	(460635.0, 4604870.0,	0.0,	0.0);

(461700.0, 4606250.0,	0.0,	0.0);			

11/7/00

*** Multiple Source

```
*** USSLead Dry Deposition model
*** 17:58:15
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DDEP	URBAN	FLAT	DEFAULT
------	-------	------	---------

[illegible]

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** WIND PROFILE EXPONENTS ***

STABILITY CATEGORY	1	2	3	4	5	6
A	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	
B	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00	.15000E+00

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.15000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00	.20000E+00
C .20000E+00					
D .25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00	.25000E+00
E .30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00
F .30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00	.30000E+00

*** VERTICAL POTENTIAL TEMPERATURE GRADIENTS ***
(DEGREES KELVIN PER METER)

STABILITY CATEGORY	1	2	3	4	5	6
A .00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
B .00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
C .00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
D .00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00	.00000E+00
E .20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01	.20000E-01
F .35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01	.35000E-01

*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

FILE: 1484284.asc

FORMAT: (4I2,2F9.4,F6.1,I2,2F7.1,f9.4,f10.1,f8.4,i4,f7.2)

SURFACE STATION NO.: 94846

UPPER AIR STATION NO.: 14842

NAME: UNKNOWN

NAME: UNKNOWN

YEAR: 1984

YEAR: 1984

YR	MN	DY	HR	VECTOR	FLOW	SPEED (M/S)	TEMP (K)	STAB CLASS	MIXING HEIGHT RURAL URBAN	USTAR (M/S)	M-O LENGTH (M)	Z-0 (M)	IPCODE	PRATE (mm/HR)	
84	01	01	01	1.0		2.06	263.7	6	228.0	262.0	0.2563	50.0	1.0000	0	0.00
84	01	01	02	348.0		2.06	264.3	5	228.0	262.0	0.2945	95.5	1.0000	0	0.00
84	01	01	03	324.0		3.09	263.7	5	228.0	262.0	0.5094	387.6	1.0000	0	0.00
84	01	01	04	323.0		2.57	263.7	5	228.0	262.0	0.4138	255.8	1.0000	0	0.00
84	01	01	05	333.0		2.57	264.3	5	228.0	262.0	0.4139	256.5	1.0000	0	0.00
84	01	01	06	352.0		3.09	264.3	5	228.0	262.0	0.5094	388.5	1.0000	0	0.00
84	01	01	07	15.0		2.57	264.3	5	228.0	262.0	0.4139	256.5	1.0000	0	0.00
84	01	01	08	3.0		4.12	265.4	4	18.6	259.2	0.7258	-987.6	1.0000	0	0.00
84	01	01	09	347.0		3.60	265.9	4	53.5	254.0	0.6432	-514.8	1.0000	0	0.00
84	01	01	10	351.0		3.60	265.9	4	88.4	248.8	0.6462	-436.1	1.0000	0	0.00
84	01	01	11	4.0		2.57	265.9	4	123.3	243.6	0.4819	-166.5	1.0000	0	0.00
84	01	01	12	16.0		3.09	266.5	4	158.2	238.4	0.5642	-265.0	1.0000	0	0.00
84	01	01	13	23.0		3.09	267.6	4	193.1	233.2	0.5628	-280.8	1.0000	0	0.00
84	01	01	14	39.0		3.09	268.1	4	228.0	228.0	0.5598	-320.4	1.0000	0	0.00
84	01	01	15	2.0		3.60	268.1	4	228.0	228.0	0.6405	-615.4	1.0000	0	0.00
84	01	01	16	4.0		4.12	268.1	4	228.0	228.0	0.7246	-999.0	1.0000	0	0.00
84	01	01	17	1.0		3.09	268.7	4	224.6	224.6	0.5510	-527.9	1.0000	0	0.00
84	01	01	18	7.0		3.60	268.7	4	216.1	216.1	0.6033	554.1	1.0000	0	0.00
84	01	01	19	34.0		3.09	268.7	4	207.5	207.5	0.5099	395.8	1.0000	0	0.00
84	01	01	20	37.0		4.63	268.7	4	199.0	199.0	0.7873	943.5	1.0000	0	0.00
84	01	01	21	50.0		4.12	267.6	4	190.4	190.4	0.6956	733.5	1.0000	0	0.00
84	01	01	22	62.0		3.60	265.4	4	181.8	181.8	0.6031	546.7	1.0000	0	0.00
84	01	01	23	50.0		3.09	265.4	5	173.3	120.8	0.4847	191.9	1.0000	0	0.00
84	01	01	24	70.0		4.12	265.9	4	164.7	164.7	0.6955	728.6	1.0000	0	0.00

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*** NOTES: STABILITY CLASS 1=A, 2=B, 3=C, 4=D, 5=E AND 6=F.
FLOW VECTOR IS DIRECTION TOWARD WHICH WIND IS BLOWING.

*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00
*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTs:
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DDEP	URBAN	FLAT	DEFAULT
*** THE PERIOD (8784 HRS)			
HAMMOND ***			
INCLUDING SOURCE(S):			
S17	1S1		
4AS8	1S2	8S28	17S32
14S16		1S4	4S35
		AO1	4BS34
			6S47

VALUES FOR SOURCE GROUP:

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	459000.00	459200.00	459400.00	459600.00	459800.00	460000.00	460200.00
460400.00							
4608900.00	0.14129	0.15127	0.16744	0.18625	0.20371	0.22038	0.24054
0.26463	0.28875						
4608700.00	0.15493	0.15952	0.17248	0.19264	0.21443	0.23418	0.25517
0.28132	0.30980						
4608500.00	0.17700	0.17679	0.18317	0.19985	0.22410	0.24908	0.27297
0.30027	0.33289						
4608300.00	0.20433	0.20429	0.20548	0.21445	0.23493	0.26342	0.29345
0.32350	0.35850						
4608100.00	0.23082	0.23705	0.24014	0.24427	0.25595	0.27975	0.31440
0.35185	0.38931						
4607900.00	0.25076	0.26672	0.27924	0.28876	0.29759	0.31093	0.33876
0.38287	0.42862						
4607700.00	0.25973	0.28589	0.31125	0.33509	0.35622	0.37124	0.38574
0.41985	0.47509						
4607500.00	0.25620	0.28949	0.32657	0.36701	0.41058	0.45036	0.47517
0.49290	0.53257						
4607300.00	0.24409	0.27903	0.32167	0.37323	0.43732	0.51226	0.58190
0.62898	0.65128						
4607100.00	0.22874	0.26147	0.30346	0.35668	0.42766	0.52550	0.64472
0.76814	0.86385						
4606900.00	0.21784	0.24621	0.28346	0.33233	0.39802	0.49538	0.63317
0.81111	1.02576						

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4606700.00	0.21718	0.24346	0.27627	0.31992	0.37730	0.46175	0.59094
0.76803	1.01152						
4606500.00	0.22732	0.25502	0.28789	0.33056	0.38724	0.46546	0.58892
0.75885	0.97838						
4606300.00	0.24977	0.27911	0.31712	0.36405	0.42780	0.51400	0.64921
0.84865	1.09988						
4606100.00	0.27909	0.30523	0.34521	0.39846	0.46831	0.56579	0.71205
0.94918	1.25138						
4605900.00	0.30620	0.33041	0.36135	0.41147	0.48147	0.57961	0.72375
0.98058	1.33036						
4605700.00	0.32121	0.35614	0.38810	0.42512	0.49194	0.59703	0.75509
1.04411	1.51515						
4605500.00	0.32002	0.37333	0.43218	0.48776	0.54205	0.64844	0.82827
1.15390	1.88346						
4605300.00	0.30777	0.36873	0.44970	0.55234	0.66633	0.77398	0.98219
1.35623	2.55479						
4605100.00	0.29500	0.34940	0.42851	0.55036	0.73807	1.04058	1.42603
1.73537	3.88250						
4604900.00	0.29687	0.34924	0.42392	0.53798	0.73579	1.12514	2.33511
3.16740	6.50974						
4604700.00	0.31512	0.37520	0.46038	0.58744	0.79730	1.28534	2.43267
3.84877	7.74242						
4604500.00	0.32518	0.38598	0.46825	0.58485	0.77337	1.10564	1.67412
3.36818	4.86008						
4604300.00	0.32434	0.38202	0.45864	0.56659	0.73172	1.01813	1.49873
1.99176	2.16457						
4604100.00	0.32564	0.37996	0.45195	0.55660	0.71435	0.92584	1.13760
1.26194	1.30563						
4603900.00	0.32533	0.37841	0.45062	0.54631	0.65921	0.77463	0.86179
0.91998	0.91577						
4603700.00	0.32624	0.37803	0.44075	0.51060	0.58035	0.64219	0.67795
0.72144	0.69754						
4603500.00	0.32494	0.36875	0.41607	0.46266	0.50480	0.53909	0.56046
0.58721	0.55988						

*** ISCST3 - VERSION 00101 *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:
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DDEP	URBAN	FLAT	DEFAULT
*** THE PERIOD (8784 HRS)			
HAMMOND ***			
INCLUDING SOURCE(S):			
S17 , 1S1			
4AS8 , 1S2	14S18 , 8S28	17S32	S1 , S4 , S5 , S68 , S916 ,
14S16 ,			1S4 , 4S35 , AO1 , 4BS34 , 6S47 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2 **

Y-COORD (METERS)	460800.00	461000.00	461200.00	461400.00	461600.00	461800.00	462000.00
462200.00							
4608900.00	0.31855	0.37236	0.45078	0.52984	0.60627	0.66980	0.71091
0.71478	0.65786		0.47837	0.57476	0.66853	0.74856	0.79909
4608700.00	0.34069	0.39216					
0.79639	0.71690	0.41720	0.50800	0.62588	0.74351	0.84647	0.90935
4608500.00	0.36810						
0.89474	0.78442	0.45010	0.54102	0.68384	0.83515	0.97084	1.04998
4608300.00	0.40034	0.49289	0.58063	0.74911	0.94898	1.13292	1.23350
1.01423	0.86298	0.54561	0.63271	0.82235	1.09273	1.35051	1.47925
4608100.00	0.43670	0.60753	0.70459	0.90617	1.27710	1.65327	1.81828
1.16045	0.95828	0.68529	0.80013	1.01042	1.51623	2.09341	2.30268
4607900.00	0.47902	0.79320	0.92112	1.16020	1.82659	2.77012	3.02408
1.34086	1.08388	0.94709	1.09592	1.38817	2.22638	3.89093	4.15165
4607700.00	0.53370						
1.56670	1.27037	1.33210	1.38583	1.73530	2.77159	5.94895	6.02325
4607500.00	0.60399						
1.86127	1.57584						
4607300.00	0.69584						
2.29177	2.07165						
4607100.00	0.90028						
3.07000	2.76945						
4606900.00	1.23412						
4.66326	3.67901						

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4606700.00	1.35489	1.81793	2.23487	2.44420	3.72500	10.30368	9.69026
7.35771	5.02336						
4606500.00	1.27485	1.73765	2.68379	4.71273	6.27014	20.54844	21.69008
11.15531	5.80270						
4606300.00	1.40947	1.82814	2.64500	4.74346	11.73481	6.16081	35.21615
14.60868	7.60705						
4606100.00	1.59266	1.99629	2.82004	4.96346	12.80429	25.23012	15.52400
8.07524	5.04738						
4605900.00	1.66783	1.98146	2.82292	5.00641	8.18641	9.08532	6.57100
4.70621	3.14431						
4605700.00	1.89100	2.16277	2.95378	3.94257	4.51187	4.53098	3.30114
3.01583	2.31398						
4605500.00	2.31782	2.38803	2.74316	2.97437	3.04969	2.84548	2.09950
2.02643	1.74003						
4605300.00	2.96102	2.74706	2.59950	2.43035	2.33422	2.04563	1.55249
1.46397	1.37058						
4605100.00	4.41081	3.48281	2.62254	2.09884	1.92051	1.64520	1.28805
1.16710	1.12417						
4604900.00	10.26677	4.19908	2.63141	2.05650	1.77183	1.46972	1.16021
1.00744	0.96142						
4604700.00	9.08745	4.22198	2.56599	1.91702	1.56987	1.27883	1.01682
0.86369	0.81457						
4604500.00	3.52634	2.24677	1.66475	1.40168	1.19874	1.00424	0.82040
0.70026	0.66193						
4604300.00	1.69753	1.48579	1.20637	1.05668	0.94092	0.81634	0.68489
0.58728	0.55102						
4604100.00	1.06045	1.03841	0.95008	0.85470	0.75696	0.66420	0.57109
0.49895	0.46988						
4603900.00	0.77141	0.77013	0.76255	0.71265	0.63976	0.55987	0.48387
0.42418	0.39884						
4603700.00	0.60937	0.60834	0.62645	0.59802	0.54949	0.48777	0.42186
0.36936	0.34412						
4603500.00	0.50669	0.50497	0.52404	0.51103	0.47334	0.42901	0.37665
0.32901	0.30332						

*** ISCST3 - VERSION 00101 *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** THE PERIOD (8784 HRS)
HAMMOND *** DRY DEPOSITION VALUES FOR SOURCE GROUP:

INCLUDING SOURCE(S):
S17 , 1S1

S1 , S4 , S5 , S68 , S916

4AS8 , 1S2
14S16 ,

14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 , 6S47

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER

IN GRAMS/M**2

**

Y-COORD (METERS)		462600.00	462800.00	463000.00	463200.00	463400.00	463600.00	463800.00
464000.00		464200.00						

4608900.00	0.56890	0.50120	0.48126	0.48562	0.48094	0.45966	0.43116
0.40366	0.38047						
4608700.00	0.61149	0.54956	0.54190	0.54321	0.52429	0.49114	0.45692
0.42780	0.40530						
4608500.00	0.66480	0.61670	0.61720	0.60465	0.56774	0.52468	0.48731
-0.45862	0.43641						
4608300.00	0.73703	0.70915	0.70481	0.66752	0.61324	0.56398	0.52640
0.49764	0.47060						
4608100.00	0.84182	0.83056	0.79981	0.73257	0.66586	0.61496	0.57657
0.54042	0.50157						
4607900.00	0.99762	0.97756	0.89918	0.80639	0.73462	0.68139	0.63134
0.57834	0.52571						
4607700.00	1.21971	1.14085	1.00949	0.90319	0.82588	0.75345	0.67835
0.60624	0.54105						
4607500.00	1.50462	1.32079	1.15370	1.03449	0.92361	0.81215	0.70985
0.62209	0.55050						
4607300.00	1.83511	1.55297	1.35413	1.17163	0.99672	0.84680	0.72787
0.63709	0.56734						
4607100.00	2.25425	1.88423	1.55343	1.26098	1.03598	0.87392	0.75633
0.66758	0.59823						
4606900.00	2.86707	2.18248	1.66115	1.31771	1.09105	0.93200	0.81415
0.72275	0.64894						

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4606700.00	3.32033	2.33758	1.79228	1.45216	1.21671	1.04155	0.90515
0.79597	0.70714						
4606500.00	3.78370	2.75569	2.12220	1.69582	1.39366	1.17129	1.00268
0.87177	0.76807						
4606300.00	4.69500	3.22548	2.37911	1.84461	1.48387	1.22811	1.03976
0.89664	0.78495						
4606100.00	3.42743	2.50259	1.92594	1.54036	1.26901	1.07030	0.91993
0.80297	0.70993						
4605900.00	2.38115	1.89224	1.52575	1.25160	1.04869	0.89680	0.78057
0.68948	0.61648						
4605700.00	1.74700	1.41757	1.20470	1.04553	0.91271	0.79912	0.70354
0.62439	0.55921						
4605500.00	1.43360	1.16138	0.98281	0.86152	0.77111	0.69830	0.63469
0.57686	0.52432						
4605300.00	1.18494	1.02091	0.86328	0.74969	0.66934	0.60734	0.55768
0.51620	0.47944						
4605100.00	1.01541	0.89525	0.79042	0.68580	0.60551	0.54740	0.50185
0.46458	0.43363						
4604900.00	0.89323	0.79813	0.71639	0.64242	0.56718	0.50670	0.46197
0.42672	0.39738						
4604700.00	0.76738	0.70329	0.63298	0.57784	0.52502	0.47006	0.42426
0.38976	0.36260						
4604500.00	0.63523	0.59799	0.54898	0.50245	0.46656	0.42949	0.38955
0.35514	0.32881						
4604300.00	0.53376	0.50986	0.47816	0.44079	0.40952	0.38501	0.35793
0.32795	0.30141						
4604100.00	0.46037	0.44498	0.42373	0.39599	0.36721	0.34502	0.32686
0.30579	0.28211						
4603900.00	0.39523	0.38898	0.37659	0.35872	0.33603	0.31463	0.29865
0.28459	0.26750						
4603700.00	0.34030	0.33868	0.33205	0.32182	0.30686	0.28932	0.27409
0.26282	0.25196						
4603500.00	0.29785	0.29790	0.29396	0.28735	0.27790	0.26520	0.25193
0.24138	0.23359						

LEAD84.RPT

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*** ISCST3 - VERSION 00101 ***      *** Multiple Source  
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*** USSLead Dry Deposition model
*** 17:58:15
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****MODELOPTS:**

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DEED

URBAN FLAT

DEFAULT

*** THE PERIOD (8784 HRS) DRY DEPOSITION VALUES FOR SOURCE GROUP:
HAMMOND ***

INCLUDING SOURCE(S) :
S17 , 1S1

4AS8 , 1S2 , 14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 , 6S47 , 14S16

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*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***
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** DEPO OF OTHER IN GRAMS/M**2

*
*

X-COORD (METERS)

Y-COORD	464400.00	464600.00	464800.00
(METERS)			

4608900.00	0.36240	0.34818	0.33496
4608700.00	0.38771	0.37128	0.35325
4608500.00	0.41558	0.39280	0.36841
4608300.00	0.44122	0.41046	0.38053
4608100.00	0.46189	0.42398	0.38875
4607900.00	0.47654	0.43201	0.39304
4607700.00	0.48453	0.43749	0.39924
4607500.00	0.49375	0.44850	0.41142
4607300.00	0.51210	0.46709	0.42973
4607100.00	0.54254	0.49667	0.45793
4606900.00	0.58742	0.53513	0.49018
4606700.00	0.63405	0.57332	0.52234
4606500.00	0.68439	0.61572	0.55849
4606300.00	0.69579	0.62323	0.56325
4606100.00	0.63450	0.57240	0.52055
4605900.00	0.55680	0.50713	0.46515
4605700.00	0.50534	0.46045	0.42262
4605500.00	0.47732	0.43592	0.39982
4605300.00	0.44541	0.41350	0.38375
4605100.00	0.40725	0.38370	0.36176
4604900.00	0.37254	0.35142	0.33318
4604700.00	0.33986	0.32025	0.30327
4604500.00	0.30813	0.29081	0.27571

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4604300.00	0.28083	0.26473	0.25132
4604100.00	0.26073	0.24395	0.23089
4603900.00	0.24806	0.23016	0.21589
4603700.00	0.23802	0.22186	0.20665
4603500.00	0.22529	0.21399	0.20056

11/7/00

*** Multiple Source

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*** USSLead Dry Deposition model
*** 17:58:15
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****MODELOPTS:**

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DDEP	URBAN	FLAT	DEFAULT
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*** THE PERIOD (8784 HRS) DRY DEPOSITION VALUES FOR SOURCE GROUP: HAMMOND ***

INCLUDING SOURCE
S17, 1S1

15

[illegible]

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** DEPO OF OTHER IN GRAMS/M**2
 **

X-COORD (M)	Y-COORD (M)	DEPO	X-COORD (M)	Y-COORD (M)	DEPO
461577.00	4607100.00	2.06717	460635.00	4604870.00	10.46356
461700.00	4606250.00	22.25932			

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 *** 11/07/00 ***

*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP	URBAN	FLAT	DEFAULT	VALUES FOR SOURCE GROUP:
*** THE PERIOD (8784 HRS)				
ALL ***				
INCLUDING SOURCE(S):				
4AS8	1S2	1S26	1S1	S1 , S4 , S5 , S68 , S916
6S47	14S16	14S18	8S28	17S32 , 1S4 , 4S35 , A01 , 4BS34
USS1	USSFUG			

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD
(METERS)

X-COORD (METERS)

460400.00

459000.00

459200.00

459400.00

459600.00

459800.00

460000.00

460200.00

460400.00

4608900.00	0.34832	0.35362	0.37058	0.40297	0.44496	0.48815	0.53855
0.60710	0.68820						
4608700.00	0.40277	0.40751	0.41573	0.43597	0.47450	0.52642	0.58343
0.65648	0.75367						
4608500.00	0.45851	0.47406	0.48662	0.50011	0.52365	0.56996	0.63806
0.71822	0.82918						
4608300.00	0.50108	0.53585	0.56733	0.59496	0.61800	0.64553	0.70398
0.79883	0.92030						
4608100.00	0.51952	0.57394	0.63139	0.69043	0.74615	0.78910	0.82564
0.90357	1.04502						
4607900.00	0.51509	0.58115	0.65793	0.74814	0.85168	0.95975	1.05183
1.11404	1.22387						
4607700.00	0.49637	0.56646	0.65090	0.75570	0.88893	1.05668	1.26231
1.48181	1.62892						
4607500.00	0.47737	0.54687	0.63219	0.73921	0.87849	1.06174	1.30999
1.67937	2.21791						
4607300.00	0.46848	0.53714	0.62337	0.73299	0.87722	1.06807	1.31576
1.66025	2.23806						
4607100.00	0.47404	0.54367	0.63316	0.74909	0.90550	1.12441	1.42361
1.83243	2.42359						
4606900.00	0.48462	0.55394	0.64395	0.76257	0.92328	1.15513	1.49245

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1.98488	2.73909
4606700.00	0.48610
1.86060	2.59850
4606500.00	0.48362
1.83029	2.59959
4606300.00	0.49843
1.97082	2.69604
4606100.00	0.52743
2.03859	2.63639
4605900.00	0.55432
1.95544	2.47668
4605700.00	0.57420
1.88625	2.46271
4605500.00	0.58375
1.87731	2.67085
4605300.00	0.58167
1.98173	3.21615
4605100.00	0.57250
2.27865	4.45742
4604900.00	0.57070
3.65779	7.03631
4604700.00	0.58108
4.28538	8.31705
4604500.00	0.58121
3.75497	5.29637
4604300.00	0.56875
2.32703	2.52495
4604100.00	0.55684
1.55982	1.62444
4603900.00	0.54236
1.19167	1.20450
4603700.00	0.52954
0.97274	0.96184
4603500.00	0.51600
0.82127	0.80333

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*** ISCST3 - VERSION 00101 ***
 *** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
 *** 17:58:15

**MODELOPTS:

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DDEP	URBAN	FLAT	DFAULT	*** THE PERIOD (8784 HRS)	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
ALL	1S26	14S18	8S28	1S17	1S1	S1 , S4 , S5 , S68 , S916 ,
4AS8	1S2	14S16	8S28	1S17	17S32	1S4 , 4S35 , AO1 , 4BS34 ,
6S47	14S16					
USS1	USSFUG					

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD
(METERS)

X-COORD (METERS)

462200.00	460800.00	461000.00	461200.00	461400.00	461600.00	461800.00	462000.00
4608900.00	0.81905	1.06558	1.37227	1.65915	1.84618	1.82984	1.65464
1.53079	1.46032	1.15964	1.55072	1.93201	2.16220	2.09210	1.86872
4608700.00	0.88726	1.66981	1.77533	2.30043	2.58708	2.42129	2.16749
1.76895	0.98035	1.27111	2.06390	2.82056	3.17943	2.85073	2.61792
4608500.00	1.90570	1.41253	2.44163	3.59998	4.04266	3.46250	3.30678
2.09307	1.10290	1.61107	2.94523	4.86885	5.37126	4.48516	4.27500
4608300.00	2.16940	1.90362	3.65996	7.19975	7.57734	6.41953	5.56415
2.50576	1.25571	2.33208	4.89466	12.35491	11.95171	9.71191	7.52623
4608100.00	1.46633	3.15034	7.99513	27.85205	25.94278	15.11415	9.36757
2.99486	2.50222	5.78235	16.24135	102.73390	62.31953	21.65888	12.74403
4607900.00	1.81018	5.96243	17.12216	55.00655	26.69869	16.51015	12.01590
2.97447	3.50310	6.66201					
4607700.00	2.72860						
4.48455	3.99727						
4607500.00	3.44902						
5.34544	4.93025						
4607300.00	3.44556						
6.29686	6.21755						
4607100.00	3.99951						
8.19690							
4606900.00							

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8.53513	6.41916	7.05386	12.16348	14.15464	11.91530	15.67891	13.15444
4606700.00	3.96599						
9.93594	7.02373						
4606500.00	3.89566	5.71036	7.62407	9.73718	9.87713	23.79110	24.09046
12.93010	7.23232						
4606300.00	3.57474	4.50744	5.58290	7.56512	13.79256	8.19227	36.94510
16.00117	8.71500						
4606100.00	3.26208	3.83312	4.80937	6.79451	14.17723	26.57222	16.79669
9.16920	5.97445						
4605900.00	2.95489	3.32247	4.26593	6.30665	9.19045	10.03317	7.52346
5.57534	3.91153						
4605700.00	2.89308	3.21146	4.05291	4.92459	5.29041	5.24124	4.03000
3.71863	2.94988						
4605500.00	3.12584	3.24634	3.61447	3.75058	3.67879	3.40449	2.67340
2.59812	2.27809						
4605300.00	3.64796	3.47383	3.31422	3.06634	2.85791	2.50294	2.01663
1.93515	1.82884						
4605100.00	5.03252	4.12025	3.22713	2.63325	2.36648	2.03148	1.67300
1.56235	1.51616						
4604900.00	10.93402	4.77279	3.15297	2.51739	2.16072	1.80492	1.48707
1.34444	1.29968						
4604700.00	9.69211	4.73287	3.02281	2.31945	1.91219	1.57362	1.29882
1.15407	1.10906						
4604500.00	3.96786	2.66675	2.05329	1.75008	1.49957	1.26464	1.06623
0.95223	0.92012						
4604300.00	2.06567	1.84893	1.54544	1.36293	1.20854	1.04943	0.90267
0.80848	0.77938						
4604100.00	1.38552	1.35819	1.25077	1.12803	0.99760	0.87476	0.76628
0.69515	0.67330						
4603900.00	1.06381	1.05579	1.03200	0.95899	0.85835	0.75193	0.66077
0.59991	0.58104						
4603700.00	0.87496	0.86640	0.87006	0.82176	0.74943	0.66434	0.58375
0.52836	0.50832						
4603500.00	0.74962	0.74011	0.74601	0.71569	0.65727	0.59227	0.52599
0.47420	0.45226						

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*** ISCST3 - VERSION 00101 *** *** Multiple Source
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*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP URBAN FLAT DFAULT

*** THE PERIOD (8784 HRS)
ALL *** DRY DEPOSITION VALUES FOR SOURCE GROUP:

INCLUDING SOURCE(S): S1 S4 S5 S68 S916
S17 S18 S19 S20 S21 S22 S23 S24 S25 S26 S27 S28 S29 S30 S31 S32 S33 S34 S35 S36 S37 S38 S39 S40 S41 S42 S43 S44 S45 S46 S47 S48 S49 S50 S51 S52 S53 S54 S55 S56 S57 S58 S59 S60 S61 S62 S63 S64 S65 S66 S67 S68 S69 S70 S71 S72 S73 S74 S75 S76 S77 S78 S79 S80 S81 S82 S83 S84 S85 S86 S87 S88 S89 S90 S91 S92 S93 S94 S95 S96 S97 S98 S99 S100 S101 S102 S103 S104 S105 S106 S107 S108 S109 S110 S111 S112 S113 S114 S115 S116 S117 S118 S119 S120 S121 S122 S123 S124 S125 S126 S127 S128 S129 S130 S131 S132 S133 S134 S135 S136 S137 S138 S139 S140 S141 S142 S143 S144 S145 S146 S147 S148 S149 S150 S151 S152 S153 S154 S155 S156 S157 S158 S159 S160 S161 S162 S163 S164 S165 S166 S167 S168 S169 S170 S171 S172 S173 S174 S175 S176 S177 S178 S179 S180 S181 S182 S183 S184 S185 S186 S187 S188 S189 S190 S191 S192 S193 S194 S195 S196 S197 S198 S199 S200 S201 S202 S203 S204 S205 S206 S207 S208 S209 S210 S211 S212 S213 S214 S215 S216 S217 S218 S219 S220 S221 S222 S223 S224 S225 S226 S227 S228 S229 S230 S231 S232 S233 S234 S235 S236 S237 S238 S239 S240 S241 S242 S243 S244 S245 S246 S247 S248 S249 S250 S251 S252 S253 S254 S255 S256 S257 S258 S259 S260 S261 S262 S263 S264 S265 S266 S267 S268 S269 S270 S271 S272 S273 S274 S275 S276 S277 S278 S279 S280 S281 S282 S283 S284 S285 S286 S287 S288 S289 S290 S291 S292 S293 S294 S295 S296 S297 S298 S299 S300 S301 S302 S303 S304 S305 S306 S307 S308 S309 S310 S311 S312 S313 S314 S315 S316 S317 S318 S319 S320 S321 S322 S323 S324 S325 S326 S327 S328 S329 S330 S331 S332 S333 S334 S335 S336 S337 S338 S339 S340 S341 S342 S343 S344 S345 S346 S347 S348 S349 S350 S351 S352 S353 S354 S355 S356 S357 S358 S359 S360 S361 S362 S363 S364 S365 S366 S367 S368 S369 S370 S371 S372 S373 S374 S375 S376 S377 S378 S379 S380 S381 S382 S383 S384 S385 S386 S387 S388 S389 S390 S391 S392 S393 S394 S395 S396 S397 S398 S399 S400 S401 S402 S403 S404 S405 S406 S407 S408 S409 S410 S411 S412 S413 S414 S415 S416 S417 S418 S419 S420 S421 S422 S423 S424 S425 S426 S427 S428 S429 S430 S431 S432 S433 S434 S435 S436 S437 S438 S439 S440 S441 S442 S443 S444 S445 S446 S447 S448 S449 S450 S451 S452 S453 S454 S455 S456 S457 S458 S459 S460 S461 S462 S463 S464 S465 S466 S467 S468 S469 S470 S471 S472 S473 S474 S475 S476 S477 S478 S479 S480 S481 S482 S483 S484 S485 S486 S487 S488 S489 S490 S491 S492 S493 S494 S495 S496 S497 S498 S499 S500 S501 S502 S503 S504 S505 S506 S507 S508 S509 S510 S511 S512 S513 S514 S515 S516 S517 S518 S519 S520 S521 S522 S523 S524 S525 S526 S527 S528 S529 S530 S531 S532 S533 S534 S535 S536 S537 S538 S539 S540 S541 S542 S543 S544 S545 S546 S547 S548 S549 S550 S551 S552 S553 S554 S555 S556 S557 S558 S559 S560 S561 S562 S563 S564 S565 S566 S567 S568 S569 S570 S571 S572 S573 S574 S575 S576 S577 S578 S579 S580 S581 S582 S583 S584 S585 S586 S587 S588 S589 S590 S591 S592 S593 S594 S595 S596 S597 S598 S599 S600 S601 S602 S603 S604 S605 S606 S607 S608 S609 S610 S611 S612 S613 S614 S615 S616 S617 S618 S619 S620 S621 S622 S623 S624 S625 S626 S627 S628 S629 S630 S631 S632 S633 S634 S635 S636 S637 S638 S639 S640 S641 S642 S643 S644 S645 S646 S647 S648 S649 S650 S651 S652 S653 S654 S655 S656 S657 S658 S659 S660 S661 S662 S663 S664 S665 S666 S667 S668 S669 S670 S671 S672 S673 S674 S675 S676 S677 S678 S679 S680 S681 S682 S683 S684 S685 S686 S687 S688 S689 S690 S691 S692 S693 S694 S695 S696 S697 S698 S699 S700 S701 S702 S703 S704 S705 S706 S707 S708 S709 S710 S711 S712 S713 S714 S715 S716 S717 S718 S719 S720 S721 S722 S723 S724 S725 S726 S727 S728 S729 S730 S731 S732 S733 S734 S735 S736 S737 S738 S739 S740 S741 S742 S743 S744 S745 S746 S747 S748 S749 S750 S751 S752 S753 S754 S755 S756 S757 S758 S759 S760 S761 S762 S763 S764 S765 S766 S767 S768 S769 S770 S771 S772 S773 S774 S775 S776 S777 S778 S779 S780 S781 S782 S783 S784 S785 S786 S787 S788 S789 S790 S791 S792 S793 S794 S795 S796 S797 S798 S799 S800 S801 S802 S803 S804 S805 S806 S807 S808 S809 S810 S811 S812 S813 S814 S815 S816 S817 S818 S819 S820 S821 S822 S823 S824 S825 S826 S827 S828 S829 S830 S831 S832 S833 S834 S835 S836 S837 S838 S839 S840 S841 S842 S843 S844 S845 S846 S847 S848 S849 S850 S851 S852 S853 S854 S855 S856 S857 S858 S859 S860 S861 S862 S863 S864 S865 S866 S867 S868 S869 S870 S871 S872 S873 S874 S875 S876 S877 S878 S879 S880 S881 S882 S883 S884 S885 S886 S887 S888 S889 S890 S891 S892 S893 S894 S895 S896 S897 S898 S899 S900 S901 S902 S903 S904 S905 S906 S907 S908 S909 S910 S911 S912 S913 S914 S915 S916 S917 S918 S919 S920 S921 S922 S923 S924 S925 S926 S927 S928 S929 S930 S931 S932 S933 S934 S935 S936 S937 S938 S939 S940 S941 S942 S943 S944 S945 S946 S947 S948 S949 S950 S951 S952 S953 S954 S955 S956 S957 S958 S959 S960 S961 S962 S963 S964 S965 S966 S967 S968 S969 S970 S971 S972 S973 S974 S975 S976 S977 S978 S979 S980 S981 S982 S983 S984 S985 S986 S987 S988 S989 S990 S991 S992 S993 S994 S995 S996 S997 S998 S999 S1000 S1001 S1002 S1003 S1004 S1005 S1006 S1007 S1008 S1009 S1010 S1011 S1012 S1013 S1014 S1015 S1016 S1017 S1018 S1019 S1020 S1021 S1022 S1023 S1024 S1025 S1026 S1027 S1028 S1029 S1030 S1031 S1032 S1033 S1034 S1035 S1036 S1037 S1038 S1039 S1040 S1041 S1042 S1043 S1044 S1045 S1046 S1047 S1048 S1049 S1050 S1051 S1052 S1053 S1054 S1055 S1056 S1057 S1058 S1059 S1060 S1061 S1062 S1063 S1064 S1065 S1066 S1067 S1068 S1069 S1070 S1071 S1072 S1073 S1074 S1075 S1076 S1077 S1078 S1079 S1080 S1081 S1082 S1083 S1084 S1085 S1086 S1087 S1088 S1089 S1090 S1091 S1092 S1093 S1094 S1095 S1096 S1097 S1098 S1099 S1100 S1101 S1102 S1103 S1104 S1105 S1106 S1107 S1108 S1109 S1110 S1111 S1112 S1113 S1114 S1115 S1116 S1117 S1118 S1119 S1120 S1121 S1122 S1123 S1124 S1125 S1126 S1127 S1128 S1129 S1130 S1131 S1132 S1133 S1134 S1135 S1136 S1137 S1138 S1139 S1140 S1141 S1142 S1143 S1144 S1145 S1146 S1147 S1148 S1149 S1150 S1151 S1152 S1153 S1154 S1155 S1156 S1157 S1158 S1159 S1160 S1161 S1162 S1163 S1164 S1165 S1166 S1167 S1168 S1169 S1170 S1171 S1172 S1173 S1174 S1175 S1176 S1177 S1178 S1179 S1180 S1181 S1182 S1183 S1184 S1185 S1186 S1187 S1188 S1189 S1190 S1191 S1192 S1193 S1194 S1195 S1196 S1197 S1198 S1199 S1200 S1201 S1202 S1203 S1204 S1205 S1206 S1207 S1208 S1209 S1210 S1211 S1212 S1213 S1214 S1215 S1216 S1217 S1218 S1219 S1220 S1221 S1222 S1223 S1224 S1225 S1226 S1227 S1228 S1229 S1230 S1231 S1232 S1233 S1234 S1235 S1236 S1237 S1238 S1239 S1240 S1241 S1242 S1243 S1244 S1245 S1246 S1247 S1248 S1249 S1250 S1251 S1252 S1253 S1254 S1255 S1256 S1257 S1258 S1259 S1260 S1261 S1262 S1263 S1264 S1265 S1266 S1267 S1268 S1269 S1270 S1271 S1272 S1273 S1274 S1275 S1276 S1277 S1278 S1279 S1280 S1281 S1282 S1283 S1284 S1285 S1286 S1287 S1288 S1289 S1290 S1291 S1292 S1293 S1294 S1295 S1296 S1297 S1298 S1299 S1300 S1301 S1302 S1303 S1304 S1305 S1306 S1307 S1308 S1309 S1310 S1311 S1312 S1313 S1314 S1315 S1316 S1317 S1318 S1319 S1320 S1321 S1322 S1323 S1324 S1325 S1326 S1327 S1328 S1329 S1330 S1331 S1332 S1333 S1334 S1335 S1336 S1337 S1338 S1339 S1340 S1341 S1342 S1343 S1344 S1345 S1346 S1347 S1348 S1349 S1350 S1351 S1352 S1353 S1354 S1355 S1356 S1357 S1358 S1359 S1360 S1361 S1362 S1363 S1364 S1365 S1366 S1367 S1368 S1369 S1370 S1371 S1372 S1373 S1374 S1375 S1376 S1377 S1378 S1379 S1380 S1381 S1382 S1383 S1384 S1385 S1386 S1387 S1388 S1389 S1390 S1391 S1392 S1393 S1394 S1395 S1396 S1397 S1398 S1399 S1400 S1401 S1402 S1403 S1404 S1405 S1406 S1407 S1408 S1409 S1410 S1411 S1412 S1413 S1414 S1415 S1416 S1417 S1418 S1419 S1420 S1421 S1422 S1423 S1424 S1425 S1426 S1427 S1428 S1429 S1430 S1431 S1432 S1433 S1434 S1435 S1436 S1437 S1438 S1439 S1440 S1441 S1442 S1443 S1444 S1445 S1446 S1447 S1448 S1449 S1450 S1451 S1452 S1453 S1454 S1455 S1456 S1457 S1458 S1459 S1460 S1461 S1462 S1463

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1.34974	1.21035	3.61370	2.84857	2.34612	1.98759	1.71660	1.50382
4606700.00	4.90015						
1.33250	1.19222	3.79232	3.01577	2.46854	2.06636	1.76240	1.52748
4606500.00	4.99069						
1.34242	1.19408	4.03708	3.10293	2.49679	2.07259	1.75910	1.51868
4606300.00	5.62510						
1.32952	1.17775	3.16799	2.51856	2.07816	1.76345	1.52821	1.34478
4606100.00	4.19904						
1.19664	1.07401	2.46835	2.03212	1.70937	1.46924	1.28745	1.14669
4605900.00	3.05272						
1.03456	0.94232	1.93274	1.65635	1.44818	1.28077	1.14065	1.02330
4605700.00	2.32256						
0.92598	0.84554	1.61447	1.39490	1.22870	1.10207	1.00332	0.91993
4605500.00	1.92430						
0.84577	0.77926	1.41545	1.23300	1.08995	0.97629	0.88640	0.81645
4605300.00	1.61161						
0.75964	0.71027	1.24420	1.11774	0.99585	0.89343	0.80967	0.74196
4605100.00	1.39050						
0.68830	0.64506	1.11114	1.00925	0.92060	0.83279	0.75511	0.69001
4604900.00	1.22368						
0.63670	0.59376	0.98480	0.89867	0.82863	0.76577	0.70133	0.64178
4604700.00	1.05877						
0.59075	0.54857	0.85088	0.79138	0.73157	0.68495	0.64094	0.59364
4604500.00	0.89306						
0.54801	0.50799	0.73746	0.69958	0.65209	0.61014	0.57803	0.54607
4604300.00	0.76365						
0.51019	0.47430	0.65081	0.62616	0.59157	0.55366	0.52313	0.49962
4604100.00	0.66697						
0.47503	0.44649	0.57606	0.56193	0.53985	0.51024	0.48096	0.45863
4603900.00	0.58193						
0.44085	0.42118	0.50959	0.50216	0.48950	0.46980	0.44571	0.42394
4603700.00	0.50978						
0.40795	0.39455	0.45482	0.45072	0.44273	0.43024	0.41259	0.39341
4603500.00	0.45234						
0.37756	0.36635						

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*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	1S26	14S18
6S47	14S16	1S17	14S18
USS1	USSFUG		

*** THE PERIOD (8784 HRS)
ALL
INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916 ,
17S32 , 1S4 , 4S35 , AO1 , 4BS34 ,

VALUES FOR SOURCE GROUP:

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

X-COORD (METERS)

Y-COORD
(METERS)

464400.00 464600.00 464800.00

4608900.00	0.72665	0.68065	0.63956
4608700.00	0.75585	0.70671	0.66181
4608500.00	0.78929	0.73559	0.68558
4608300.00	0.82708	0.76589	0.71020
4608100.00	0.86682	0.79841	0.73745
4607900.00	0.91135	0.83456	0.76737
4607700.00	0.95488	0.86955	0.79782
4607500.00	0.99889	0.91004	0.83562
4607300.00	1.05606	0.96195	0.88280
4607100.00	1.09513	0.99725	0.91457
4606900.00	1.09439	0.99633	0.91243
4606700.00	1.07591	0.97844	0.89587
4606500.00	1.07317	0.97307	0.88899
4606300.00	1.05403	0.95180	0.86633
4606100.00	0.97090	0.88331	0.80835
4605900.00	0.86419	0.79651	0.73701
4605700.00	0.77845	0.72143	0.67190
4605500.00	0.72033	0.66874	0.62375
4605300.00	0.66533	0.62385	0.58578
4605100.00	0.60866	0.57645	0.54678
4604900.00	0.55877	0.52950	0.50423
4604700.00	0.51433	0.48617	0.46238

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4604500.00	0.47461	0.44741	0.42495
4604300.00	0.44218	0.41518	0.39315
4604100.00	0.41718	0.39052	0.36798
4603900.00	0.39764	0.37291	0.35007
4603700.00	0.37867	0.35899	0.33781
4603500.00	0.35636	0.34357	0.32707

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*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTs:
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DDEP	URBAN	FLAT	DEFAULT	THE PERIOD (8784 HRS)	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
ALL				***		
				INCLUDING SOURCE(S):		
4AS8	1S2	1S26		S17 , 1S1	S1 , S4 , S5 , S68 , S916	
6S47	14S16	14S18 , 8S28			17S32 , 1S4 , 4S35 , AO1 , 4BS34	
USS1	USSFUG					

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** DEPO OF OTHER IN GRAMS/M**2 **

X-COORD (M)	Y-COORD (M)	DEPO	X-COORD (M)	Y-COORD (M)	DEPO
461577.00	4607100.00	76.85254	460635.00	4604870.00	11.02470
461700.00	4606250.00	24.07521			

*** ISCST3 - VERSION 00101 ***
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*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP	URBAN	FLAT	DEFAULT	*** THE 1ST HIGHEST MONTH HAMMOND ***	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
				INCLUDING SOURCE(S):		
				S17, S18, 1S1	S1, S4, S5, S68, S916	
4AS8, 14S16	1S2	14S18	8S28, 17S32	1S4	4S35, AO1, 4BS34, 6S47	

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

Y-COORD (METERS)	459000.00	459200.00	X-COORD (METERS) 459400.00	459600.00
4608900.0	0.02850c(84103124)	0.02970c(84103124)	0.03223c(84103124)	0.03573c(84103124)
0.03879c(84103124)				
4608700.0	0.03164c(84103124)	0.03157c(84103124)	0.03295c(84103124)	0.03616c(84103124)
0.04046c(84103124)				
4608500.0	0.03718c(84103124)	0.03575c(84103124)	0.03541c(84103124)	0.03712c(84103124)
0.04126c(84103124)				
4608300.0	0.04491c(84103124)	0.04300c(84103124)	0.04103c(84103124)	0.04046c(84103124)
0.04267c(84103124)				
4608100.0	0.05259c(84103124)	0.05246c(84103124)	0.05057c(84103124)	0.04813c(84103124)
0.04736c(84103124)				
4607900.0	0.05734c(84103124)	0.06061c(84103124)	0.06192c(84103124)	0.06065c(84103124)
0.05810c(84103124)				
4607700.0	0.05840c(84103124)	0.06429c(84103124)	0.06994c(84103124)	0.07377c(84103124)
0.07451c(84103124)				
4607500.0	0.05762c(84103124)	0.06406c(84103124)	0.07193c(84103124)	0.08058c(84103124)
0.08866c(84103124)				
4607300.0	0.05694c(84103124)	0.06300c(84103124)	0.07071c(84103124)	0.08052c(84103124)
0.09275c(84103124)				
4607100.0	0.05556c(84103124)	0.06183c(84103124)	0.06936c(84103124)	0.07884c(84103124)
0.09087c(84103124)				
4606900.0	0.05254c(84103124)	0.05900c(84103124)	0.06641c(84103124)	0.07595c(84103124)
0.08806c(84103124)				

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4606700.0	0.04935c(84103124)	0.05582c(84103124)	0.06255c(84103124)	0.07080c(84103124)
0.08191c(84103124)				
4606500.0	0.04630c(84103124)	0.05278c(84103124)	0.05965c(84103124)	0.06667c(84103124)
0.07577c(84103124)				
4606300.0	0.04798c(84043024)	0.05330c(84043024)	0.05983c(84043024)	0.06806c(84043024)
0.07915c(84043024)				
4606100.0	0.05627c(84043024)	0.06258c(84043024)	0.07055c(84043024)	0.08062c(84043024)
0.09393c(84043024)				
4605900.0	0.05941c(84043024)	0.06514c(84043024)	0.07273c(84043024)	0.08263c(84043024)
0.09541c(84043024)				
4605700.0	0.06273c(84043024)	0.06859c(84043024)	0.07481c(84043024)	0.08257c(84043024)
0.09239c(84043024)				
4605500.0	0.06302c(84043024)	0.06996c(84043024)	0.07596c(84043024)	0.08017c(84043024)
0.08414c(84043024)				
4605300.0	0.05690c(84043024)	0.06388c(84043024)	0.07285c(84103124)	0.09205c(84103124)
0.11294c(84103124)				
4605100.0	0.05621c(84033124)	0.06398c(84033124)	0.07397c(84033124)	0.09315c(84103124)
0.12927c(84103124)				
4604900.0	0.05986c(84033124)	0.06821c(84033124)	0.07922c(84033124)	0.09484c(84033124)
0.12890c(84103124)				
4604700.0	0.06543c(84043024)	0.07898c(84043024)	0.09757c(84043024)	0.12439c(84043024)
0.16986c(84043024)				
4604500.0	0.06853c(84043024)	0.08136c(84043024)	0.09756c(84043024)	0.11971c(84043024)
0.15368c(84043024)				
4604300.0	0.06493c(84043024)	0.07325c(84043024)	0.08526c(84033124)	0.10708c(84033124)
0.13837c(84033124)				
4604100.0	0.06102c(84033124)	0.07167c(84033124)	0.08617c(84033124)	0.10447c(84033124)
0.12928c(84033124)				
4603900.0	0.06214c(84033124)	0.07231c(84033124)	0.08478c(84033124)	0.10146c(84033124)
0.12353c(84033124)				
4603700.0	0.06259c(84033124)	0.07203c(84033124)	0.08401c(84033124)	0.09757c(84033124)
0.10466c(84033124)				
4603500.0	0.06303c(84033124)	0.07201c(84033124)	0.08102c(84033124)	0.08553c(84033124)
0.08308c(84033124)				

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*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP	URBAN	FLAT	DEFAULT
	*** THE 1ST HIGHEST MONTH	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
	HAMMOND ***		
	INCLUDING SOURCE(S):	S1 , S4 , S5 , S68 , S916 ,	
	S17 , 1S1 ,		
4AS8 , 1S2 ,	14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 , 6S47 ,		
14S16 ,			

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2 **

Y-COORD (METERS)	460000.00	460200.00	X-COORD (METERS) 460400.00	460600.00
460800.00				
4608900.0	0.03984c(84103124)	0.04237c(84113024)	0.04651c(84113024)	0.04955c(84113024)
0.05393c(84113024)				
4608700.0	0.04362c(84103124)	0.04385c(84103124)	0.04910c(84113024)	0.05336c(84113024)
0.05716c(84113024)				
4608500.0	0.04633c(84103124)	0.04912c(84103124)	0.05106c(84113024)	0.05729c(84113024)
0.06166c(84113024)				
4608300.0	0.04786c(84103124)	0.05344c(84103124)	0.05537c(84103124)	0.06079c(84113024)
0.06714c(84113024)				
4608100.0	0.05008c(84103124)	0.05620c(84103124)	0.06205c(84103124)	0.06306c(84103124)
0.07283c(84113024)				
4607900.0	0.05701c(84103124)	0.05980c(84103124)	0.06679c(84103124)	0.07327c(84103124)
0.07734c(84113024)				
4607700.0	0.07259c(84103124)	0.07052c(84103124)	0.07256c(84103124)	0.08141c(84103124)
0.08963c(84103124)				
4607500.0	0.09397c(84103124)	0.09385c(84103124)	0.08961c(84103124)	0.09075c(84103124)
0.10428c(84103124)				
4607300.0	0.10747c(84103124)	0.12105c(84103124)	0.12518c(84103124)	0.11901c(84103124)
0.12057c(84103124)				
4607100.0	0.10763c(84103124)	0.13117c(84103124)	0.15706c(84103124)	0.17343c(84103124)
0.17122c(84103124)				
4606900.0	0.10412c(84103124)	0.12788c(84103124)	0.16069c(84103124)	0.20367c(84103124)
0.25319c(84103124)				

4606700.0 0.09686c(84103124)	0.12003c(84103124)	0.15378c(84103124)	0.19898c(84103124)
0.27013c(84103124)			
4606500.0 0.08778c(84103124)	0.10644c(84103124)	0.13663c(84103124)	0.17786c(84103124)
0.24680c(84103124)			
4606300.0 0.09458c(84043024)	0.11783c(84043024)	0.15125c(84043024)	0.19342c(84043024)
0.25230c(84043024)			
4606100.0 0.11264c(84043024)	0.14079c(84043024)	0.18429c(84043024)	0.24103c(84043024)
0.31960c(84043024)			
4605900.0 0.11288c(84043024)	0.13841c(84043024)	0.17955c(84043024)	0.22862c(84043024)
0.27625c(84043024)			
4605700.0 0.10428c(84043024)	0.11993c(84043024)	0.14955c(84043024)	0.19271c(84043024)
0.23006c(84043024)			
4605500.0 0.09119c(84033124)	0.11271c(84033124)	0.14466c(84033124)	0.22684c(84113024)
0.22274c(84043024)			
4605300.0 0.12112c(84103124)	0.14355c(84103124)	0.16691c(84103124)	0.35550c(84113024)
0.29983c(84063024)			
4605100.0 0.18883c(84103124)	0.24161c(84103124)	0.28559c(84103124)	0.59880c(84113024)
0.49466c(84063024)			
4604900.0 0.21759c(84103124)	0.37220c(84103124)	0.62679c(84103124)	0.94857c(84113024)
1.48604c(84013124)			
4604700.0 0.27341c(84043024)	0.42791c(84043024)	0.91871c(84043024)	1.09298c(84043024)
1.16050c(84053124)			
4604500.0 0.20785c(84033124)	0.30380c(84033124)	0.62605c(84033124)	0.89894c(84043024)
0.52018c(84013124)			
4604300.0 0.18066c(84033124)	0.27494c(84033124)	0.31547c(84033124)	0.40331c(84043024)
0.20720c(84013124)			
4604100.0 0.17049c(84033124)	0.19372c(84033124)	0.16909c(84083124)	0.22358c(84043024)
0.12376c(84043024)			
4603900.0 0.13623c(84033124)	0.12872c(84033124)	0.12575c(84043024)	0.14529c(84043024)
0.09746c(84043024)			
4603700.0 0.10154c(84033124)	0.09455c(84083124)	0.10074c(84043024)	0.10554c(84043024)
0.08163c(84043024)			
4603500.0 0.07792c(84033124)	0.07953c(84083124)	0.08200c(84043024)	0.08332c(84043024)
0.07142c(84043024)			

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*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:

PAGE 28

DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	14S18	8S28
14S16		S17	1S1
			17S32
			1S4
			4S35
			AO1
			4BS34
			6S47

VALUES FOR SOURCE GROUP:

*** THE 1ST HIGHEST MONTH
HAMMOND ***

INCLUDING SOURCE(S):

S17 , 1S1 , S1 , S4 , S5 , S68 , S916

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	461000.00	461200.00	X-COORD (METERS) 461400.00	461600.00
461800.00				

4608900.0	0.06689c (84113024)	0.08897c (84113024)	0.10686c (84113024)	0.11618c (84113024)
0.12198c (84113024)				
4608700.0	0.06797c (84113024)	0.09223c (84113024)	0.11627c (84113024)	0.12898c (84113024)
0.13650c (84113024)				
4608500.0	0.06999c (84113024)	0.09479c (84113024)	0.12653c (84113024)	0.14460c (84113024)
0.15464c (84113024)				
4608300.0	0.07374c (84113024)	0.09674c (84113024)	0.13730c (84113024)	0.16393c (84113024)
0.17782c (84113024)				
4608100.0	0.07979c (84113024)	0.09883c (84113024)	0.14782c (84113024)	0.18813c (84113024)
0.20816c (84113024)				
4607900.0	0.08786c (84113024)	0.10272c (84113024)	0.15697c (84113024)	0.21872c (84113024)
0.24906c (84113024)				
4607700.0	0.09614c (84113024)	0.11070c (84113024)	0.16376c (84113024)	0.25740c (84113024)
0.30612c (84113024)				
4607500.0	0.11394c (84103124)	0.12336c (84113024)	0.16935c (84113024)	0.30523c (84113024)
0.38922c (84113024)				
4607300.0	0.14156c (84103124)	0.14913c (84103124)	0.18049c (84113024)	0.36012c (84113024)
0.51715c (84113024)				
4607100.0	0.17258c (84103124)	0.20356c (84103124)	0.20543c (84113024)	0.41207c (84113024)
0.72930c (84113024)				
4606900.0	0.27283c (84103124)	0.27026c (84103124)	0.32178c (84103124)	0.45217c (84113024)
1.11855c (84113024)				

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4606700.0	0.38328c (84103124)	0.49505c (84103124)	0.50574c (84103124)	0.59969c (84103124)
1.93259c (84113024)				
4606500.0	0.36874c (84103124)	0.59914c (84103124)	1.07403c (84103124)	1.37324c (84103124)
3.69058c (84113024)				
4606300.0	0.34528c (84043024)	0.51860c (84043024)	0.90486c (84043024)	2.40812c (84103124)
1.13734c (84103124)				
4606100.0	0.44284c (84043024)	0.67129c (84043024)	1.10257c (84043024)	2.22376c (84033124)
4.71063c (84043024)				
4605900.0	0.32737c (84043024)	0.44561c (84043024)	0.80438c (84033124)	1.31665c (84033124)
1.86501c (84043024)				
4605700.0	0.26904c (84043024)	0.42183c (84033124)	0.61423c (84033124)	0.65250c (84083124)
0.87277c (84043024)				
4605500.0	0.27639c (84033124)	0.36158c (84033124)	0.37528c (84083124)	0.41280c (84043024)
0.51337c (84043024)				
4605300.0	0.28767c (84063024)	0.27076c (84063024)	0.32410c (84083124)	0.34068c (84043024)
0.35054c (84043024)				
4605100.0	0.40457c (84013124)	0.28531c (84083124)	0.24645c (84083124)	0.28124c (84043024)
0.25798c (84043024)				
4604900.0	0.45743c (84013124)	0.28891c (84053124)	0.22449c (84123124)	0.22369c (84043024)
0.19515c (84043024)				
4604700.0	0.61856c (84123124)	0.34141c (84123124)	0.23638c (84123124)	0.18314c (84123124)
0.15409c (84043024)				
4604500.0	0.24820c (84063024)	0.18670c (84063024)	0.15362c (84013124)	0.14017c (84043024)
0.12085c (84043024)				
4604300.0	0.19840c (84013124)	0.13703c (84063024)	0.11887c (84063024)	0.11432c (84043024)
0.09933c (84043024)				
4604100.0	0.11721c (84013124)	0.11136c (84013124)	0.09554c (84043024)	0.09438c (84043024)
0.08164c (84043024)				
4603900.0	0.08519c (84113024)	0.08557c (84043024)	0.08941c (84043024)	0.08311c (84043024)
0.06982c (84043024)				
4603700.0	0.07407c (84043024)	0.07905c (84043024)	0.08198c (84043024)	0.07564c (84043024)
0.06247c (84043024)				
4603500.0	0.06864c (84043024)	0.07280c (84043024)	0.07460c (84043024)	0.06849c (84043024)
0.05727c (84043024)				

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*** ISCST3 - VERSION 00101 *** Multiple Source
*** 11/07/00
*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTs:

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DDEP	URBAN	FLAT	DEFAULT
*** THE 1ST HIGHEST MONTH			
HAMMOND ***			
INCLUDING SOURCE(S):	S1	S4	S5
S17	1S1		
4AS8	1S2	8S28	17S32
14S16		1S4	4S35
		AO1	4BS34
			6S47

VALUES FOR SOURCE GROUP:

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	X-COORD (METERS)
462000.00	462200.00
462800.00	462400.00
462600.00	

4608900.0	0.12077c (84113024)	0.10835c (84113024)	0.08704c (84113024)	0.06659c (84013124)
0.06759c (84013124)				
4608700.0	0.13503c (84113024)	0.11877c (84113024)	0.09142c (84113024)	0.07508c (84013124)
0.07471c (84013124)				
4608500.0	0.15273c (84113024)	0.13079c (84113024)	0.09538c (84113024)	0.08529c (84013124)
0.08297c (84013124)				
4608300.0	0.17505c (84113024)	0.14450c (84113024)	0.09860c (84113024)	0.09740c (84013124)
0.09341c (84013124)				
4608100.0	0.20373c (84113024)	0.15982c (84113024)	0.11389c (84013124)	0.11191c (84013124)
0.10972c (84022924)				
4607900.0	0.24129c (84113024)	0.17628c (84113024)	0.13678c (84013124)	0.13072c (84013124)
0.13307c (84022924)				
4607700.0	0.29155c (84113024)	0.19275c (84113024)	0.16660c (84013124)	0.15848c (84013124)
0.15918c (84013124)				
4607500.0	0.36019c (84113024)	0.21554c (84013124)	0.20747c (84013124)	0.20211c (84013124)
0.19391c (84013124)				
4607300.0	0.45533c (84113024)	0.28997c (84013124)	0.27286c (84013124)	0.26369c (84013124)
0.22493c (84013124)				
4607100.0	0.58602c (84113024)	0.40732c (84013124)	0.38724c (84013124)	0.32703c (84013124)
0.26043c (84013124)				
4606900.0	0.75040c (84113024)	0.63290c (84013124)	0.53797c (84013124)	0.39469c (84013124)
0.29997c (84013124)				

4606700.0 1.24454c (84013124)	1.09160c (84013124)	0.68765c (84013124)	0.44583c (84013124)
0.32065c (84013124)			
4606500.0 3.23565c (84013124)	1.49271c (84013124)	0.77614c (84013124)	0.55695c (84013124)
0.42488c (84013124)			
4606300.0 5.06279c (84123124)	2.63374c (84123124)	1.36786c (84123124)	0.83081c (84123124)
0.56232c (84123124)			
4606100.0 2.41701c (84013124)	1.13118c (84013124)	0.80117c (84013124)	0.54353c (84013124)
0.38657c (84013124)			
4605900.0 1.02828c (84013124)	0.75757c (84013124)	0.39363c (84013124)	0.35942c (84013124)
0.32205c (84013124)			
4605700.0 0.52249c (84013124)	0.52573c (84013124)	0.38128c (84013124)	0.22685c (84013124)
0.19414c (84013124)			
4605500.0 0.30335c (84013124)	0.31775c (84013124)	0.32347c (84013124)	0.24441c (84013124)
0.16390c (84013124)			
4605300.0 0.20445c (84013124)	0.24066c (84013124)	0.23682c (84013124)	0.23136c (84013124)
0.18251c (84013124)			
4605100.0 0.16659c (84013124)	0.20220c (84013124)	0.18344c (84013124)	0.18846c (84013124)
0.17601c (84013124)			
4604900.0 0.14202c (84123124)	0.16434c (84013124)	0.15249c (84013124)	0.14847c (84013124)
0.15048c (84013124)			
4604700.0 0.12455c (84123124)	0.13310c (84013124)	0.13277c (84013124)	0.12082c (84013124)
0.12401c (84013124)			
4604500.0 0.10301c (84013124)	0.11289c (84013124)	0.11826c (84013124)	0.10517c (84013124)
0.10327c (84013124)			
4604300.0 0.08985c (84013124)	0.09820c (84013124)	0.10678c (84013124)	0.09821c (84013124)
0.09103c (84013124)			
4604100.0 0.06857c (84013124)	0.07931c (84013124)	0.09097c (84013124)	0.08970c (84013124)
0.08162c (84013124)			
4603900.0 0.05270c (84043024)	0.06060c (84013124)	0.07332c (84013124)	0.07832c (84013124)
0.07284c (84013124)			
4603700.0 0.04692c (84043024)	0.04885c (84013124)	0.05846c (84013124)	0.06588c (84013124)
0.06406c (84013124)			
4603500.0 0.04446c (84013124)	0.04416c (84013124)	0.04948c (84013124)	0.05600c (84013124)
0.05631c (84013124)			

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*** ISCST3 - VERSION 00101 *** Multiple Source
 *** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP	URBAN	FLAT	DEFAULT	VALUES FOR SOURCE GROUP:
	*** THE 1ST HIGHEST MONTH			
	HAMMOND ***			
	INCLUDING SOURCE(S):			
	S17 , 1S1			
4AS8 , 1S2	14S18 , 8S28 , 17S32			S1 , S4 , S5 , S68 , S916
14S16 ,				1S4 , 4S35 , AO1 , 4BS34 , 6S47

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	X-COORD (METERS)	IN GRAMS/M**2	VALUES FOR SOURCE GROUP:
463800.00	463200.00	463400.00	463600.00
4608900.0	0.06553c(84013124)	0.06656c(84022924)	0.06946c(84013124)
0.07054c(84013124)			
4608700.0	0.07215c(84013124)	0.07638c(84022924)	0.07743c(84013124)
0.07576c(84013124)			
4608500.0	0.08327c(84022924)	0.08621c(84022924)	0.08585c(84013124)
0.07901c(84013124)			
4608300.0	0.09781c(84022924)	0.09645c(84013124)	0.08972c(84013124)
0.08092c(84013124)			
4608100.0	0.11208c(84022924)	0.11066c(84013124)	0.09299c(84013124)
0.08417c(84013124)			
4607900.0	0.13069c(84013124)	0.12323c(84013124)	0.09795c(84013124)
0.09073c(84013124)			
4607700.0	0.15119c(84013124)	0.13267c(84013124)	0.10716c(84013124)
0.09876c(84013124)			
4607500.0	0.16784c(84013124)	0.14496c(84013124)	0.11717c(84013124)
0.10421c(84013124)			
4607300.0	0.18818c(84013124)	0.16413c(84013124)	0.12219c(84013124)
0.10631c(84013124)			
4607100.0	0.21611c(84013124)	0.17710c(84013124)	0.12668c(84013124)
0.11394c(84013124)			
4606900.0	0.22850c(84013124)	0.18569c(84013124)	0.14689c(84013124)
0.13549c(84013124)			

4606700.0 0.26410c(84013124)	0.22989c(84013124)	0.20192c(84013124)	0.17690c(84013124)
0.15478c(84013124)			
4606500.0 0.32909c(84013124)	0.26687c(84123124)	0.22588c(84123124)	0.19383c(84123124)
0.16832c(84123124)			
4606300.0 0.40984c(84123124)	0.31474c(84123124)	0.25126c(84123124)	0.20676c(84123124)
0.17441c(84123124)			
4606100.0 0.29038c(84013124)	0.22841c(84013124)	0.18642c(84013124)	0.15669c(84013124)
0.13482c(84013124)			
4605900.0 0.27265c(84013124)	0.22776c(84013124)	0.19105c(84013124)	0.16200c(84013124)
0.13923c(84013124)			
4605700.0 0.19240c(84013124)	0.18494c(84013124)	0.17065c(84013124)	0.15439c(84013124)
0.13872c(84013124)			
4605500.0 0.13465c(84013124)	0.13095c(84013124)	0.13186c(84013124)	0.12953c(84013124)
0.12341c(84013124)			
4605300.0 0.13210c(84013124)	0.10655c(84013124)	0.09866c(84013124)	0.09781c(84013124)
0.09809c(84013124)			
4605100.0 0.14218c(84013124)	0.10750c(84013124)	0.08664c(84013124)	0.07802c(84013124)
0.07580c(84013124)			
4604900.0 0.13902c(84013124)	0.11520c(84013124)	0.09043c(84013124)	0.07370c(84013124)
0.06543c(84013124)			
4604700.0 0.12326c(84013124)	0.11351c(84013124)	0.09583c(84013124)	0.07721c(84013124)
0.06356c(84013124)			
4604500.0 0.10549c(84013124)	0.10340c(84013124)	0.09507c(84013124)	0.08133c(84013124)
0.06677c(84013124)			
4604300.0 0.09242c(84013124)	0.09285c(84013124)	0.09008c(84013124)	0.08270c(84013124)
0.07147c(84013124)			
4604100.0 0.08122c(84013124)	0.08288c(84013124)	0.08273c(84013124)	0.08001c(84013124)
0.07363c(84013124)			
4603900.0 0.07059c(84013124)	0.07268c(84013124)	0.07400c(84013124)	0.07384c(84013124)
0.07149c(84013124)			
4603700.0 0.06107c(84013124)	0.06277c(84013124)	0.06515c(84013124)	0.06625c(84013124)
0.06618c(84013124)			
4603500.0 0.05301c(84013124)	0.05346c(84013124)	0.05640c(84013124)	0.05852c(84013124)
0.05963c(84013124)			

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*** ISCST3 - VERSION 00101 ***
 *** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
 *** 17:58:15

**MODELOPTS:

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DDEP	URBAN	FLAT	DEFAULT	*** THE 1ST HIGHEST MONTH HAMMOND ***	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
				INCLUDING SOURCE(S):		
				S17 , 1S1	S1 , S4 , S5 , S68 , S916	
4AS8 , 1S2	14S18 , 8S28	17S32	1S4	4S35	AO1 , 4BS34 , 6S47	
14S16						

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	464000.00	464200.00	X-COORD (METERS)	464400.00	464600.00
464800.00					

4608900.0	0.06856c(84013124)	0.06384c(84013124)	0.05839c(84013124)	0.05404c(84013124)
0.05116c(84013124)				
4608700.0	0.07061c(84013124)	0.06434c(84013124)	0.05932c(84013124)	0.05604c(84013124)
0.05376c(84013124)				
4608500.0	0.07167c(84013124)	0.06577c(84013124)	0.06196c(84013124)	0.05925c(84013124)
0.05678c(84013124)				
4608300.0	0.07382c(84013124)	0.06928c(84013124)	0.06595c(84013124)	0.06281c(84013124)
0.05958c(84013124)				
4608100.0	0.07858c(84013124)	0.07431c(84013124)	0.07012c(84013124)	0.06579c(84013124)
0.06134c(84013124)				
4607900.0	0.08493c(84013124)	0.07910c(84013124)	0.07310c(84013124)	0.06719c(84013124)
0.06177c(84013124)				
4607700.0	0.09023c(84013124)	0.08180c(84013124)	0.07412c(84013124)	0.06771c(84013124)
0.06269c(84013124)				
4607500.0	0.09244c(84013124)	0.08284c(84013124)	0.07562c(84013124)	0.07030c(84013124)
0.06629c(84013124)				
4607300.0	0.09498c(84013124)	0.08714c(84013124)	0.08152c(84013124)	0.07726c(84013124)
0.07383c(84013124)				
4607100.0	0.10538c(84013124)	0.09904c(84013124)	0.09378c(84013124)	0.08893c(84013124)
0.08417c(84013124)				
4606900.0	0.12533c(84013124)	0.11561c(84013124)	0.10622c(84013124)	0.09731c(84013124)
0.08907c(84013124)				

4606700.0	0.13576c (84013124)	0.11976c (84013124)	0.10649c (84013124)	0.09553c (84013124)
0.08648c (84013124)				
4606500.0	0.14785c (84123124)	0.13128c (84123124)	0.11776c (84123124)	0.10659c (84123124)
0.09723c (84123124)				
4606300.0	0.15017c (84123124)	0.13150c (84123124)	0.11674c (84123124)	0.10479c (84123124)
0.09495c (84123124)				
4606100.0	0.11820c (84013124)	0.10543c (84123124)	0.09527c (84123124)	0.08677c (84123124)
0.07958c (84123124)				
4605900.0	0.12134c (84013124)	0.10717c (84013124)	0.09577c (84013124)	0.08647c (84013124)
0.07876c (84013124)				
4605700.0	0.12445c (84013124)	0.11173c (84013124)	0.10054c (84013124)	0.09076c (84013124)
0.08224c (84013124)				
4605500.0	0.11527c (84013124)	0.10661c (84013124)	0.09815c (84013124)	0.09021c (84013124)
0.08286c (84013124)				
4605300.0	0.09687c (84013124)	0.09370c (84013124)	0.08918c (84013124)	0.08408c (84013124)
0.07890c (84013124)				
4605100.0	0.07611c (84013124)	0.07673c (84013124)	0.07648c (84013124)	0.07502c (84013124)
0.07255c (84013124)				
4604900.0	0.06242c (84013124)	0.06198c (84013124)	0.06257c (84013124)	0.06322c (84013124)
0.06331c (84013124)				
4604700.0	0.05591c (84013124)	0.05255c (84013124)	0.05155c (84013124)	0.05172c (84013124)
0.05237c (84013124)				
4604500.0	0.05542c (84013124)	0.04844c (84013124)	0.04497c (84013124)	0.04364c (84013124)
0.04345c (84013124)				
4604300.0	0.05954c (84013124)	0.04980c (84013124)	0.04334c (84013124)	0.03977c (84013124)
0.03815c (84013124)				
4604100.0	0.06432c (84013124)	0.05435c (84013124)	0.04588c (84013124)	0.03989c (84013124)
0.03627c (84013124)				
4603900.0	0.06613c (84013124)	0.05841c (84013124)	0.05005c (84013124)	0.04271c (84013124)
0.03723c (84013124)				
4603700.0	0.06417c (84013124)	0.05966c (84013124)	0.05323c (84013124)	0.04619c (84013124)
0.03984c (84013124)				
4603500.0	0.05969c (84013124)	0.05796c (84013124)	0.05412c (84013124)	0.04869c (84013124)
0.04270c (84013124)				

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*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00
*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:
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	DDEP	URBAN	FLAT	DFAULT	*** THE 1ST HIGHEST MONTH HAMMOND ***	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
					INCLUDING SOURCE(S):		
					S17 , 1S1	S1 , S4 , S5 , S68 , S916 ,	
4AS8 , 1S2 ,					14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 , 6S47 ,		
14S16 ,							

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

	X-COORD (M) (YYMMDDHH)	Y-COORD (M)	DEPO	(YYMMDDHH)	IN GRAMS/M**2	X-COORD (M)	Y-COORD (M)	DEPO
461577.00	4607100.00	0.36823C (84113024)			460635.00	4604870.00		
1.66771C (84113024)								
461700.00	4606250.00	5.52584C (84043024)						

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*** ISCST3 - VERSION 00101 *** Multiple Source
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*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** THE 1ST HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
ALL ***

INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916 ,
S17 , 1S1 ,
4AS8 , 1S2 , 14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 ,
6S47 , 14S16 ,
USS1 , USSFUG ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

Y-COORD | 459000.00 X-COORD (METERS) 459400.00 459600.00
(METERS) |
459800.00

4608900.0 | 0.07650c(84103124) 0.07523c(84103124) 0.07672c(84103124) 0.08256c(84103124)
0.09171c(84103124) 0.09152c(84103124) 0.08826c(84103124) 0.08951c(84103124)
0.09635c(84103124) 0.10823c(84103124) 0.10805c(84103124) 0.10632c(84103124)
0.10719c(84103124) 0.12290c(84103124) 0.12940c(84103124) 0.13272c(84103124)
0.13236c(84103124) 0.13135c(84103124) 0.14348c(84103124) 0.15616c(84103124)
0.16696c(84103124) 0.13582c(84103124) 0.15123c(84103124) 0.16867c(84103124)
0.19008c(84103124) 0.13474c(84103124) 0.15424c(84103124) 0.17614c(84103124)
0.20141c(84103124) 0.12705c(84103124) 0.14780c(84103124) 0.17384c(84103124)
0.4607500.0 | 0.11085c(84103124) 0.11865c(84103124) 0.13716c(84103124) 0.16157c(84103124)
0.20589c(84103124) 0.11065c(84103124) 0.12704c(84103124) 0.14830c(84103124)
0.4607300.0 | 0.10436c(84103124) 0.11865c(84103124) 0.13716c(84103124) 0.16157c(84103124)
0.19423c(84103124) 0.11065c(84103124) 0.12704c(84103124) 0.14830c(84103124)
0.4607100.0 | 0.09755c(84103124) 0.11065c(84103124) 0.12704c(84103124) 0.14830c(84103124)
0.17651c(84103124) 0.10562c(84043024) 0.12291c(84043024) 0.14624c(84043024)
0.4606900.0 | 0.09248c(84043024) 0.10562c(84043024) 0.12291c(84043024) 0.14624c(84043024)

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0.17872c(84043024)	0.11128c(84043024)	0.12814c(84043024)	0.15020c(84043024)
4606700.0 0.09803c(84043024)	0.11793c(84043024)	0.13332c(84043024)	0.15167c(84043024)
0.17956c(84043024)	0.12230c(84043024)	0.13545c(84043024)	0.15144c(84043024)
4606500.0 0.10491c(84043024)	0.11926c(84043024)	0.13328c(84043024)	0.15326c(84043024)
0.17364c(84043024)	0.11631c(84043024)	0.13288c(84043024)	0.15441c(84043024)
4606300.0 0.11087c(84043024)	0.12017c(84043024)	0.13445c(84043024)	0.14929c(84043024)
0.17355c(84043024)	0.12017c(84043024)	0.13048c(84043024)	0.15109c(84033124)
4606100.0 0.10885c(84043024)	0.11654c(84033124)	0.13616c(84033124)	0.16020c(84033124)
0.18204c(84043024)	0.12276c(84033124)	0.14274c(84033124)	0.16430c(84033124)
4605900.0 0.10466c(84043024)	0.12873c(84033124)	0.14620c(84033124)	0.16459c(84033124)
0.17910c(84043024)	0.13333c(84033124)	0.14967c(84033124)	0.17090c(84033124)
4605700.0 0.10686c(84043024)	0.12882c(84033124)	0.14205c(84033124)	0.16103c(84033124)
0.16522c(84043024)	0.11965c(84033124)	0.13157c(84033124)	0.15064c(84033124)
4605500.0 0.10784c(84043024)	0.11402c(84033124)	0.12584c(84033124)	0.14216c(84033124)
0.17600c(84033124)	0.10889c(84033124)	0.11914c(84033124)	0.13468c(84033124)
4605300.0 0.10197c(84033124)	0.10379c(84033124)	0.11435c(84033124)	0.12717c(84033124)
0.18542c(84033124)	0.10002c(84033124)	0.10822c(84033124)	0.11177c(84033124)
4605100.0 0.10626c(84033124)			
0.18480c(84033124)			
4604900.0 0.11251c(84033124)			
0.18847c(84033124)			
4604700.0 0.11837c(84033124)			
0.21493c(84043024)			
4604500.0 0.11726c(84033124)			
0.19464c(84033124)			
4604300.0 0.11060c(84033124)			
0.18034c(84033124)			
4604100.0 0.10536c(84033124)			
0.16598c(84033124)			
4603900.0 0.10119c(84033124)			
0.15575c(84033124)			
4603700.0 0.09662c(84033124)			
0.13260c(84033124)			
4603500.0 0.09269c(84033124)			
0.10706c(84033124)			

*** ISCST3 - VERSION 00101 ***
 *** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP	URBAN	FLAT	DFAULT	VALUES FOR SOURCE GROUP:
4AS8	1S2	1S26	1S1	S1, S4, S5, S68, S916
6S47	14S16	14S18	8S28	17S32, 1S4, 4S35, AO1, 4BS34
USS1	USSFUG			

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	460000.00	460200.00	X-COORD (METERS) 460400.00	460600.00
460800.00				
4608900.0	0.09886c(84103124)	0.09893c(84103124)	0.10215c(84113024)	0.11436c(84113024)
0.14396c(84113024)				
4608700.0	0.10725c(84103124)	0.11436c(84103124)	0.11242c(84103124)	0.12495c(84113024)
0.15008c(84113024)				
4608500.0	0.11494c(84103124)	0.12792c(84103124)	0.13450c(84103124)	0.13600c(84113024)
0.16148c(84113024)				
4608300.0	0.13253c(84103124)	0.14085c(84103124)	0.15679c(84103124)	0.16251c(84103124)
0.17909c(84113024)				
4608100.0	0.17135c(84103124)	0.17073c(84103124)	0.17914c(84103124)	0.20051c(84103124)
0.20504c(84103124)				
4607900.0	0.21450c(84103124)	0.23195c(84103124)	0.23319c(84103124)	0.24163c(84103124)
0.27378c(84103124)				
4607700.0	0.23418c(84103124)	0.27962c(84103124)	0.32980c(84103124)	0.34929c(84103124)
0.35894c(84103124)				
4607500.0	0.24513c(84103124)	0.29510c(84103124)	0.36969c(84103124)	0.49243c(84103124)
0.60737c(84103124)				
4607300.0	0.23879c(84103124)	0.29828c(84103124)	0.37757c(84103124)	0.50459c(84103124)
0.77115c(84103124)				
4607100.0	0.21641c(84103124)	0.27485c(84103124)	0.35711c(84103124)	0.47394c(84103124)
0.67961c(84103124)				
4606900.0	0.22572c(84043024)	0.29488c(84043024)	0.39833c(84043024)	0.56093c(84043024)

0.84389c(84043024)	0.27520c(84043024)	0.34912c(84043024)	0.45060c(84043024)
4606700.0 0.21978c(84043024)	0.23920c(84043024)	0.30040c(84043024)	0.39639c(84043024)
0.63057c(84043024)	0.26149c(84043024)	0.33257c(84043024)	0.42711c(84033124)
4606500.0 0.20086c(84043024)	0.26760c(84043024)	0.33388c(84033124)	0.42470c(84033124)
0.59164c(84033124)	0.25732c(84033124)	0.31462c(84033124)	0.37160c(84043024)
4606300.0 0.20766c(84043024)	0.24657c(84033124)	0.27975c(84033124)	0.30230c(84033124)
0.58237c(84033124)	0.22703c(84033124)	0.25576c(84033124)	0.27788c(84113024)
4606100.0 0.22046c(84043024)	0.20758c(84033124)	0.24431c(84033124)	0.40501c(84113024)
0.51589c(84043024)	0.26793c(84103124)	0.31143c(84103124)	0.64734c(84113024)
4605900.0 0.20685c(84043024)	0.39626c(84103124)	0.65286c(84103124)	0.99532c(84113024)
0.40797c(84043024)	0.46948c(84043024)	0.97204c(84043024)	1.18324c(84043024)
4605700.0 0.20240c(84033124)	0.34950c(84033124)	0.67044c(84033124)	0.96315c(84043024)
0.33296c(84043024)	0.31307c(84033124)	0.35002c(84033124)	0.46088c(84043024)
4605500.0 0.20019c(84033124)	0.22501c(84033124)	0.21306c(84083124)	0.27684c(84043024)
0.32298c(84063024)	0.15453c(84033124)	0.16591c(84043024)	0.19562c(84043024)
4605300.0 0.20142c(84033124)	0.13031c(84083124)	0.14017c(84043024)	0.15350c(84043024)
0.39671c(84063024)	0.11121c(84083124)	0.12064c(84043024)	0.12916c(84043024)
4605100.0 0.21442c(84103124)			
0.58135c(84063024)			
4604900.0 0.23928c(84103124)			
1.53284c(84013124)			
4604700.0 0.31573c(84043024)			
1.21726c(84053124)			
4604500.0 0.25532c(84033124)			
0.54601c(84013124)			
4604300.0 0.22142c(84033124)			
0.23555c(84043024)			
4604100.0 0.20545c(84033124)			
0.18488c(84043024)			
4603900.0 0.16575c(84033124)			
0.15442c(84043024)			
4603700.0 0.12632c(84033124)			
0.13490c(84043024)			
4603500.0 0.10400c(84083124)			
0.12136c(84043024)			

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*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTS:
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DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	1S26	1S18
6S47	14S16	14S18	8S28
USS1	USSFUG	17S32	1S4

*** THE 1ST HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
ALL ***
INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916
S17 , 1S1 , 17S32 , 4S35 , AO1 , 4BS34

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	461000.00	461200.00	X-COORD (METERS) 461400.00	461600.00
461800.00				

4608900.0	0.21381c(84113024)	0.28200c(84113024)	0.32402c(84113024)	0.32978c(84113024)
0.28865c(84113024)				
4608700.0	0.22577c(84113024)	0.31918c(84113024)	0.37786c(84113024)	0.38268c(84113024)
0.32038c(84113024)				
4608500.0	0.23664c(84113024)	0.36512c(84113024)	0.45003c(84113024)	0.45178c(84113024)
0.35579c(84113024)				
4608300.0	0.24797c(84113024)	0.42191c(84113024)	0.55099c(84113024)	0.54409c(84113024)
0.39476c(84113024)				
4608100.0	0.26638c(84113024)	0.49014c(84113024)	0.70097c(84113024)	0.66985c(84113024)
0.44052c(84113024)				
4607900.0	0.30136c(84113024)	0.56485c(84113024)	0.94407c(84113024)	0.84225c(84113024)
0.53116c(84013124)				
4607700.0	0.41157c(84103124)	0.63878c(84113024)	1.39240c(84113024)	1.07021c(84113024)
0.77879c(84013124)				
4607500.0	0.63081c(84103124)	0.75596c(84113024)	2.39702c(84113024)	1.41568c(84013124)
1.26830c(84013124)				
4607300.0	1.32513c(84103124)	1.62183c(84103124)	5.42525c(84113024)	3.46124c(84013124)
1.92949c(84013124)				
4607100.0	1.23249c(84103124)	3.65720c(84103124)	17.53056c(84103124)	8.40823c(84013124)
3.24084c(84123124)				
4606900.0	1.40409c(84043024)	2.87970c(84043024)	8.75211c(84043024)	3.59706c(84013124)

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2.26068c(84113024)	1.82129c(84033124)	2.40086c(84043024)	1.58847c(84113024)
4606700.0 1.03612c(84033124)	0.92422c(84033124)	1.42615c(84043024)	1.49943c(84103124)
2.43730c(84113024)	0.95546c(84043024)	1.44857c(84043024)	2.48640c(84103124)
4606500.0 0.88568c(84033124)	1.00363c(84043024)	1.45189c(84043024)	2.35475c(84033124)
4.07541c(84113024)	0.70111c(84043024)	0.97781c(84033124)	1.41832c(84033124)
4606300.0 0.67949c(84033124)	0.54640c(84033124)	0.74508c(84033124)	0.73250c(84083124)
1.20917c(84103124)	0.46323c(84033124)	0.46563c(84033124)	0.50982c(84043024)
4606100.0 0.64270c(84043024)	0.35161c(84043024)	0.38840c(84083124)	0.42258c(84043024)
4.81608c(84043024)	0.34339c(84083124)	0.32058c(84043024)	0.35172c(84043024)
4605900.0 0.49676c(84043024)	0.32193c(84053124)	0.28509c(84043024)	0.28507c(84043024)
1.95184c(84043024)	0.37585c(84123124)	0.26897c(84123124)	0.23308c(84043024)
4605700.0 0.41961c(84043024)	0.21552c(84063024)	0.19556c(84043024)	0.18840c(84043024)
0.94609c(84043024)	0.16110c(84063024)	0.16412c(84043024)	0.15776c(84043024)
4605500.0 0.35962c(84033124)	0.14976c(84043024)	0.14629c(84043024)	0.13386c(84043024)
0.57631c(84043024)	0.13944c(84043024)	0.13553c(84043024)	0.11933c(84043024)
4605300.0 0.37979c(84063024)	0.12820c(84043024)	0.12415c(84043024)	0.10910c(84043024)
0.40531c(84043024)	0.11790c(84043024)	0.11339c(84043024)	0.09955c(84043024)
4605100.0 0.43602c(84013124)			
0.30611c(84043024)			
4604900.0 0.48864c(84013124)			
0.23779c(84043024)			
4604700.0 0.65898c(84123124)			
0.19230c(84043024)			
4604500.0 0.28944c(84063024)			
0.15533c(84043024)			
4604300.0 0.22008c(84013124)			
0.13078c(84043024)			
4604100.0 0.15368c(84043024)			
0.11051c(84043024)			
4603900.0 0.13915c(84043024)			
0.09656c(84043024)			
4603700.0 0.12762c(84043024)			
0.08740c(84043024)			
4603500.0 0.11807c(84043024)			
0.08065c(84043024)			

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*** ISCST3 - VERSION 00101 ***
 *** 11/07/00 ***

*** Multiple Source

*** USSLead Dry Deposition model
 *** 17:58:15 ***

**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** THE 1ST HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
 ALL ***

INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916 ,
 S17 , S1

4AS8 , 1S2 , 1S26 , 14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 ,
 6S47 , 14S16 ,
 USS1 , USSFUG ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	462000.00	462200.00	462400.00	462600.00
462800.00				

4608900.0	0.22426c(84113024)	0.17470c(84113024)	0.17335c(84022924)	0.17005c(84013124)
0.17128c(84013124)				
4608700.0	0.24047c(84113024)	0.19901c(84013124)	0.20353c(84022924)	0.19848c(84013124)
0.19123c(84013124)				
4608500.0	0.26266c(84113024)	0.24617c(84022924)	0.23473c(84013124)	0.22944c(84013124)
0.20965c(84013124)				
4608300.0	0.29944c(84113024)	0.30241c(84022924)	0.28279c(84013124)	0.25936c(84013124)
0.23336c(84013124)				
4608100.0	0.38736c(84022924)	0.36662c(84013124)	0.33332c(84013124)	0.29598c(84013124)
0.26939c(84013124)				
4607900.0	0.51223c(84022924)	0.45610c(84013124)	0.39536c(84013124)	0.34692c(84013124)
0.30711c(84013124)				
4607700.0	0.69711c(84013124)	0.56567c(84013124)	0.47390c(84013124)	0.39249c(84013124)
0.34679c(84013124)				
4607500.0	0.92539c(84013124)	0.68916c(84013124)	0.54397c(84013124)	0.47441c(84013124)
0.42871c(84013124)				
4607300.0	1.16160c(84013124)	0.89828c(84013124)	0.73184c(84013124)	0.61644c(84013124)
0.50165c(84013124)				
4607100.0	1.80914c(84123124)	1.19051c(84123124)	0.93655c(84123124)	0.71782c(84123124)
0.52049c(84013124)				
4606900.0	1.65027c(84013124)	1.25011c(84013124)	0.96031c(84013124)	0.70455c(84013124)

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0.53957c(84013124)					
4606700.0 1.69228c(84013124)					
0.55800c(84013124)	1.50135c(84013124)	1.04154c(84013124)	0.73685c(84013124)		
4606500.0 3.62237c(84013124)	1.71939c(84013124)	0.97731c(84013124)	0.75657c(84013124)		
0.61376c(84013124)	2.73204c(84123124)	1.46153c(84123124)	0.91560c(84123124)		
4606300.0 5.15816c(84123124)	1.34911c(84013124)	0.96314c(84013124)	0.65444c(84013124)		
0.63848c(84123124)	0.92674c(84013124)	0.55104c(84013124)	0.48131c(84013124)		
4606100.0 2.64340c(84013124)	0.65145c(84013124)	0.51349c(84013124)	0.34820c(84013124)		
0.47511c(84013124)	0.41448c(84013124)	0.42866c(84013124)	0.35166c(84013124)		
4605900.0 1.18522c(84013124)	0.32092c(84013124)	0.32049c(84013124)	0.32112c(84013124)		
0.40991c(84013124)	0.27331c(84013124)	0.25199c(84013124)	0.26267c(84013124)		
4605700.0 0.64460c(84013124)	0.27331c(84013124)	0.21145c(84013124)	0.21022c(84013124)		
0.29102c(84013124)	0.22894c(84013124)	0.18604c(84013124)	0.17331c(84013124)		
4605500.0 0.40623c(84013124)	0.19175c(84013124)	0.16788c(84013124)	0.15141c(84013124)		
0.26191c(84013124)	0.16568c(84013124)	0.15345c(84013124)	0.14058c(84013124)		
4605300.0 0.29271c(84013124)	0.14526c(84013124)	0.13457c(84013124)	0.12958c(84013124)		
0.27223c(84013124)	0.12089c(84013124)	0.11361c(84013124)	0.11634c(84013124)		
4605100.0 0.24194c(84013124)	0.09724c(84013124)	0.09536c(84013124)	0.10216c(84013124)		
0.25375c(84013124)	0.08128c(84013124)	0.08311c(84013124)	0.09046c(84013124)		
4604900.0 0.20236c(84013124)					
0.21673c(84013124)					
4604700.0 0.16893c(84013124)					
0.18051c(84013124)					
4604500.0 0.14869c(84013124)					
0.15183c(84013124)					
4604300.0 0.12899c(84013124)					
0.13348c(84013124)					
4604100.0 0.10230c(84013124)					
0.11964c(84013124)					
4603900.0 0.08082c(84013124)					
0.10787c(84013124)					
4603700.0 0.07111c(84013124)					
0.09714c(84013124)					
4603500.0 0.06796c(84013124)					
0.08806c(84013124)					

*** ISCST3 - VERSION 00101 *** Multiple Source
 *** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP	URBAN	FLAT	DEFAULT	*** THE 1ST HIGHEST MONTH ALL ***	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
				INCLUDING SOURCE(S):	S1 , S4 , S5 , S68 , S916 ,	
				S17 , 1S1		
4AS8 , 1S2 , 1S26 , 14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 ,						
6S47 , 14S16 ,						
USS1 , USSFUG ,						

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	463000.00	463200.00	X-COORD (METERS) 463400.00	463600.00
463800.00				

4608900.0	0.16295c(84013124)	0.15185c(84013124)	0.14561c(84013124)	0.14331c(84013124)
0.14065c(84013124)				
4608700.0	0.17557c(84013124)	0.16539c(84013124)	0.16172c(84013124)	0.15826c(84013124)
0.15106c(84013124)				
4608500.0	0.19286c(84013124)	0.18608c(84013124)	0.18079c(84013124)	0.17132c(84013124)
0.15718c(84013124)				
4608300.0	0.21984c(84013124)	0.21041c(84013124)	0.19705c(84013124)	0.17876c(84013124)
0.15994c(84013124)				
4608100.0	0.25056c(84013124)	0.23062c(84013124)	0.20717c(84013124)	0.18430c(84013124)
0.16725c(84013124)				
4607900.0	0.27672c(84013124)	0.24769c(84013124)	0.22018c(84013124)	0.19983c(84013124)
0.18623c(84013124)				
4607700.0	0.31262c(84013124)	0.27806c(84013124)	0.25069c(84013124)	0.23067c(84013124)
0.21278c(84013124)				
4607500.0	0.37328c(84013124)	0.32463c(84013124)	0.28718c(84013124)	0.25445c(84013124)
0.22486c(84013124)				
4607300.0	0.41066c(84013124)	0.34750c(84013124)	0.29680c(84013124)	0.25509c(84013124)
0.22248c(84013124)				
4607100.0	0.42537c(84013124)	0.35070c(84013124)	0.29426c(84013124)	0.25439c(84013124)
0.22622c(84013124)				
4606900.0	0.42127c(84013124)	0.34560c(84013124)	0.29774c(84013124)	0.26456c(84013124)

0.23897c(84013124)	0.39230c(84013124)	0.29466c(84013124)
4606700.0 0.45915c(84013124)	0.33919c(84013124)	
0.25723c(84013124)	0.34704c(84013124)	0.29611c(84013124)
4606500.0 0.50040c(84013124)	0.31626c(84013124)	0.27621c(84013124)
0.25630c(84013124)	0.27505c(84013124)	0.24524c(84013124)
4606300.0 0.47920c(84123124)	0.25478c(84013124)	0.22798c(84013124)
0.24399c(84013124)	0.22180c(84013124)	0.20436c(84013124)
4606100.0 0.37468c(84013124)	0.18120c(84013124)	0.17261c(84013124)
0.22091c(84013124)	0.15257c(84013124)	0.14116c(84013124)
4605900.0 0.34208c(84013124)	0.14584c(84013124)	0.12575c(84013124)
0.20720c(84013124)	0.15164c(84013124)	0.12602c(84013124)
4605700.0 0.26501c(84013124)	0.15504c(84013124)	0.13149c(84013124)
0.18990c(84013124)	0.14971c(84013124)	0.13440c(84013124)
4605500.0 0.21476c(84013124)	0.12690c(84013124)	0.12534c(84013124)
0.16451c(84013124)	0.11372c(84013124)	0.11486c(84013124)
4605300.0 0.21399c(84013124)	0.10101c(84013124)	0.10344c(84013124)
0.13549c(84013124)	0.08883c(84013124)	0.09241c(84013124)
4605100.0 0.21894c(84013124)		
0.11455c(84013124)		
4604900.0 0.20729c(84013124)		
0.10830c(84013124)		
4604700.0 0.18280c(84013124)		
0.11043c(84013124)		
4604500.0 0.15736c(84013124)		
0.11552c(84013124)		
4604300.0 0.13784c(84013124)		
0.11956c(84013124)		
4604100.0 0.12120c(84013124)		
0.11913c(84013124)		
4603900.0 0.10615c(84013124)		
0.11344c(84013124)		
4603700.0 0.09325c(84013124)		
0.10445c(84013124)		
4603500.0 0.08280c(84013124)		
0.09454c(84013124)		

*** ISCST3 - VERSION 00101 *** Multiple Source
 *** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP	URBAN	FLAT	DEFAULT	VALUES FOR SOURCE GROUP:
4AS8	1S2	1S26	14S18	8S28
6S47	14S16	1S1	17S32	1S4
USS1	USSFUG			

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2 **

Y-COORD (METERS)	464000.00	464200.00	464400.00	464600.00
464800.00				

4608900.0	0.13478c (84013124)	0.12581c (84013124)	0.11590c (84013124)	0.10710c (84013124)
0.10011c (84013124)				
4608700.0	0.13995c (84013124)	0.12768c (84013124)	0.11710c (84013124)	0.10910c (84013124)
0.10304c (84013124)				
4608500.0	0.14192c (84013124)	0.12937c (84013124)	0.12038c (84013124)	0.11376c (84013124)
0.10829c (84013124)				
4608300.0	0.14528c (84013124)	0.13526c (84013124)	0.12791c (84013124)	0.12172c (84013124)
0.11611c (84013124)				
4608100.0	0.15594c (84013124)	0.14748c (84013124)	0.14005c (84013124)	0.13302c (84013124)
0.12616c (84013124)				
4607900.0	0.17532c (84013124)	0.16494c (84013124)	0.15456c (84013124)	0.14426c (84013124)
0.13440c (84013124)				
4607700.0	0.19511c (84013124)	0.17796c (84013124)	0.16210c (84013124)	0.14818c (84013124)
0.13637c (84013124)				
4607500.0	0.19918c (84013124)	0.17802c (84013124)	0.16117c (84013124)	0.14780c (84013124)
0.13702c (84013124)				
4607300.0	0.19795c (84013124)	0.17948c (84013124)	0.16514c (84013124)	0.15362c (84013124)
0.14406c (84013124)				
4607100.0	0.20536c (84013124)	0.18900c (84013124)	0.17543c (84013124)	0.16360c (84013124)
0.15292c (84013124)				
4606900.0	0.21750c (84013124)	0.19857c (84013124)	0.18155c (84013124)	0.16623c (84013124)

0.15255c (84013124)	0.20019c (84013124)	0.17886c (84013124)	0.16123c (84013124)
4606700.0 0.22602c (84013124)	0.19923c (84013124)	0.17846c (84013124)	0.16130c (84013124)
0.14657c (84013124)	0.19573c (84013124)	0.17725c (84013124)	0.16148c (84013124)
4606500.0 0.22469c (84013124)	0.18264c (84013124)	0.16743c (84013124)	0.15423c (84013124)
0.14696c (84013124)	0.17488c (84013124)	0.16143c (84013124)	0.14940c (84013124)
4606300.0 0.21763c (84013124)	0.16657c (84013124)	0.15621c (84013124)	0.14625c (84013124)
0.14792c (84013124)	0.14933c (84013124)	0.14252c (84013124)	0.13600c (84013124)
4606100.0 0.20030c (84013124)	0.12835c (84013124)	0.12457c (84013124)	0.12070c (84013124)
0.14267c (84013124)	0.10730c (84013124)	0.10631c (84013124)	0.10514c (84013124)
4605900.0 0.18994c (84013124)	0.09197c (84013124)	0.08983c (84013124)	0.08945c (84013124)
0.13864c (84013124)	0.08473c (84013124)	0.07898c (84013124)	0.07640c (84013124)
4605700.0 0.17760c (84013124)	0.08412c (84013124)	0.07471c (84013124)	0.06900c (84013124)
0.13667c (84013124)	0.08865c (84013124)	0.07630c (84013124)	0.06746c (84013124)
4605500.0 0.15667c (84013124)	0.09491c (84013124)	0.08170c (84013124)	0.07055c (84013124)
0.12951c (84013124)	0.09891c (84013124)	0.08750c (84013124)	0.07597c (84013124)
4605300.0 0.13186c (84013124)	0.09861c (84013124)	0.09077c (84013124)	0.08097c (84013124)
0.11689c (84013124)	0.09448c (84013124)	0.09046c (84013124)	0.08367c (84013124)
4605100.0 0.10931c (84013124)			
0.10350c (84013124)			
4604900.0 0.09754c (84013124)			
0.08953c (84013124)			
4604700.0 0.09484c (84013124)			
0.07582c (84013124)			
4604500.0 0.09788c (84013124)			
0.06608c (84013124)			
4604300.0 0.10381c (84013124)			
0.06178c (84013124)			
4604100.0 0.10828c (84013124)			
0.06221c (84013124)			
4603900.0 0.10810c (84013124)			
0.06592c (84013124)			
4603700.0 0.10322c (84013124)			
0.07089c (84013124)			
4603500.0 0.09556c (84013124)			
0.07517c (84013124)			

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*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTS:
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DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	1S26	1S1
6S47	14S16	14S18	8S28
USS1	USSFUG	17S32	1S4

*** THE 1ST HIGHEST MONTH
ALL ***
INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916 ,
S17 , 1S1 , 17S32 , 4S35 , AO1 , 4BS34 ,
VALUES FOR SOURCE GROUP:

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

X-COORD (M) (YYMMDDHH)	Y-COORD (M)	DEPO (YYMMDDHH)	** DEPO OF OTHER IN GRAMS/M**2	X-COORD (M)	Y-COORD (M)	DEPO
461577.00	4607100.00	10.29068C (84013124)		460635.00	4604870.00	
1.72154C (84113024)						
461700.00	4606250.00	5.69151C (84043024)				

*** ISCST3 - VERSION 00101 *** Multiple Source
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*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP	URBAN	FLAT	DEFAULT
	*** THE 2ND HIGHEST MONTH	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
	HAMMOND ***		
	INCLUDING SOURCE(S):	S1 , S4 , S5 , S68 , S916 ,	
	S17 , S1		
4AS8 , 1S2 ,	14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 , 6S47 ,		
14S16 ,			

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

Y-COORD (METERS)	459000.00	459200.00	X-COORD (METERS) 459400.00	459600.00
459800.00				

4608900.0	0.01822c(84123124)	0.01836c(84123124)	0.01970c(84093024)	0.02464c(84113024)
0.03091c(84113024)				
4608700.0	0.02075c(84123124)	0.02029c(84123124)	0.02042c(84123124)	0.02342c(84113024)
0.02959c(84113024)				
4608500.0	0.02444c(84123124)	0.02346c(84123124)	0.02283c(84123124)	0.02289c(84123124)
0.02839c(84113024)				
4608300.0	0.02885c(84123124)	0.02806c(84123124)	0.02691c(84123124)	0.02599c(84123124)
0.02758c(84113024)				
4608100.0	0.03230c(84123124)	0.03317c(84123124)	0.03273c(84123124)	0.03136c(84123124)
0.02996c(84123124)				
4607900.0	0.03274c(84123124)	0.03622c(84123124)	0.03850c(84123124)	0.03877c(84123124)
0.03719c(84123124)				
4607700.0	0.03051c(84123124)	0.03521c(84123124)	0.04049c(84123124)	0.04490c(84123124)
0.04662c(84123124)				
4607500.0	0.02843c(84123124)	0.03228c(84123124)	0.03777c(84123124)	0.04494c(84123124)
0.05226c(84123124)				
4607300.0	0.02667c(84123124)	0.03018c(84123124)	0.03458c(84123124)	0.04080c(84123124)
0.04954c(84123124)				
4607100.0	0.02675c(84033124)	0.02968c(84033124)	0.03307c(84033124)	0.03704c(84033124)
0.04459c(84123124)				
4606900.0	0.02760c(84033124)	0.03095c(84033124)	0.03508c(84033124)	0.04010c(84033124)
0.04578c(84033124)				

4606700.0 0.02950c (84033124)	0.03282c (84033124)	0.03725c (84033124)	0.04286c (84033124)
0.04985c (84033124)			
4606500.0 0.03563c (84043024)	0.03893c (84043024)	0.04284c (84043024)	0.04898c (84033124)
0.05722c (84033124)			
4606300.0 0.04458c (84103124)	0.04986c (84103124)	0.05706c (84103124)	0.06411c (84103124)
0.07142c (84103124)			
4606100.0 0.04849c (84033124)	0.05252c (84033124)	0.05801c (84033124)	0.06633c (84033124)
0.07853c (84033124)			
4605900.0 0.05226c (84033124)	0.05713c (84033124)	0.06186c (84033124)	0.06816c (84033124)
0.07830c (84033124)			
4605700.0 0.05442c (84103124)	0.05981c (84103124)	0.06384c (84033124)	0.06875c (84033124)
0.07531c (84033124)			
4605500.0 0.05193c (84033124)	0.06101c (84103124)	0.07115c (84103124)	0.07823c (84103124)
0.08222c (84033124)			
4605300.0 0.05374c (84033124)	0.06082c (84033124)	0.07219c (84043024)	0.08103c (84043024)
0.09483c (84033124)			
4605100.0 0.05120c (84043024)	0.05690c (84043024)	0.06943c (84103124)	0.08718c (84033124)
0.10430c (84033124)			
4604900.0 0.05475c (84043024)	0.06315c (84043024)	0.07503c (84043024)	0.09148c (84043024)
0.12018c (84033124)			
4604700.0 0.06438c (84033124)	0.07420c (84033124)	0.08821c (84033124)	0.11048c (84033124)
0.15075c (84033124)			
4604500.0 0.06446c (84033124)	0.07409c (84033124)	0.08810c (84033124)	0.10979c (84033124)
0.14601c (84033124)			
4604300.0 0.06136c (84033124)	0.07098c (84033124)	0.08284c (84043024)	0.09538c (84043024)
0.11640c (84043024)			
4604100.0 0.05579c (84043024)	0.06095c (84043024)	0.06917c (84043024)	0.08303c (84043024)
0.09955c (84043024)			
4603900.0 0.04882c (84043024)	0.05534c (84043024)	0.06426c (84043024)	0.07353c (84043024)
0.08518c (84043024)			
4603700.0 0.04615c (84043024)	0.05188c (84043024)	0.05790c (84043024)	0.06565c (84043024)
0.07491c (84043024)			
4603500.0 0.04317c (84043024)	0.04752c (84043024)	0.05328c (84043024)	0.05991c (84043024)
0.06265c (84063024)			

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*** ISCST3 - VERSION 00101 *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTS:
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DDEP	URBAN	FLAT	DFAULT	*** THE 2ND HIGHEST MONTH HAMMOND ***	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
				INCLUDING SOURCE(S):		
				S17 , 1S1	S1 , S4 , S5	S916 ,
4AS8 , 1S2	14S18 , 8S28 , 17S32				1S4 , 4S35 , AO1	4BS34 , 6S47 ,
14S16						

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2 **

Y-COORD (METERS)	460000.00	460200.00	X-COORD (METERS) 460400.00	460600.00
460800.00				
4608900.0	0.03711c(84113024)	0.03878c(84103124)	0.03693c(84103124)	0.03525c(84103124)
0.03570c(84093024)				
4608700.0	0.03649c(84113024)	0.04332c(84113024)	0.04197c(84103124)	0.04004c(84103124)
0.03835c(84103124)				
4608500.0	0.03527c(84113024)	0.04317c(84113024)	0.04820c(84103124)	0.04595c(84103124)
0.04434c(84103124)				
4608300.0	0.03414c(84113024)	0.04202c(84113024)	0.05171c(84113024)	0.05352c(84103124)
0.05170c(84103124)				
4608100.0	0.03358c(84113024)	0.04078c(84113024)	0.05075c(84113024)	0.06288c(84113024)
0.06116c(84103124)				
4607900.0	0.03508c(84123124)	0.04037c(84113024)	0.04919c(84113024)	0.06255c(84113024)
0.07387c(84103124)				
4607700.0	0.04504c(84123124)	0.04220c(84123124)	0.04865c(84113024)	0.06053c(84113024)
0.07851c(84113024)				
4607500.0	0.05672c(84123124)	0.05620c(84123124)	0.05283c(84123124)	0.05954c(84113024)
0.07578c(84113024)				
4607300.0	0.06018c(84123124)	0.06958c(84123124)	0.07303c(84123124)	0.06934c(84123124)
0.07336c(84113024)				
4607100.0	0.05462c(84123124)	0.06831c(84123124)	0.08568c(84123124)	0.09870c(84123124)
0.09594c(84123124)				
4606900.0	0.05174c(84033124)	0.06341c(84043024)	0.08098c(84022924)	0.10454c(84123124)
0.13585c(84123124)				

4606700.0	0.05754c (84033124)	0.06751c (84033124)	0.07975c (84033124)	0.10201c (84043024)
0.13543c (84043024)				
4606500.0	0.06684c (84033124)	0.07855c (84033124)	0.09585c (84043024)	0.11639c (84043024)
0.14485c (84033124)				
4606300.0	0.08319c (84033124)	0.09946c (84033124)	0.12182c (84033124)	0.15077c (84033124)
0.20084c (84103124)				
4606100.0	0.09514c (84033124)	0.11524c (84033124)	0.14181c (84033124)	0.17521c (84033124)
0.22885c (84033124)				
4605900.0	0.09374c (84033124)	0.11328c (84033124)	0.13618c (84033124)	0.16206c (84033124)
0.20453c (84033124)				
4605700.0	0.08851c (84033124)	0.11034c (84033124)	0.13650c (84033124)	0.16317c (84033124)
0.19970c (84033124)				
4605500.0	0.09097c (84043024)	0.10389c (84103124)	0.13154c (84043024)	0.19898c (84043024)
0.21188c (84063024)				
4605300.0	0.10673c (84033124)	0.11585c (84033124)	0.15592c (84033124)	0.25308c (84093024)
0.29814c (84093024)				
4605100.0	0.13028c (84033124)	0.15655c (84033124)	0.18347c (84123124)	0.43243c (84093024)
0.48772c (84013124)				
4604900.0	0.16652c (84033124)	0.24765c (84033124)	0.36592c (84033124)	0.79375c (84093024)
1.17685c (84123124)				
4604700.0	0.24762c (84033124)	0.41092c (84033124)	0.76741c (84033124)	1.04583c (84033124)
1.12952c (84123124)				
4604500.0	0.20444c (84043024)	0.28578c (84043024)	0.40397c (84043024)	0.61166c (84033124)
0.38290c (84113024)				
4604300.0	0.15220c (84043024)	0.19219c (84043024)	0.23793c (84083124)	0.27333c (84033124)
0.18669c (84113024)				
4604100.0	0.12063c (84043024)	0.13788c (84043024)	0.16607c (84033124)	0.16831c (84033124)
0.11676c (84083124)				
4603900.0	0.09870c (84043024)	0.11013c (84083124)	0.11955c (84083124)	0.11817c (84033124)
0.09481c (84083124)				
4603700.0	0.07915c (84063024)	0.09112c (84033124)	0.09401c (84083124)	0.08849c (84033124)
0.07813c (84083124)				
4603500.0	0.07012c (84083124)	0.07130c (84063024)	0.07850c (84083124)	0.07335c (84083124)
0.06529c (84083124)				

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*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTs:
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DDEP	URBAN	FLAT	DFAULT
4AS8	1S2	14S18	8S28
14S16			17S32
			1S4
			4S35
			AO1
			4BS34
			6S47

VALUES FOR SOURCE GROUP:

*** THE 2ND HIGHEST MONTH
HAMMOND ***

INCLUDING SOURCE(S):
S17 , 1S1

S1 , S4 , S5 , S68 , S916

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	461000.00	461200.00	X-COORD (METERS) 461400.00	461600.00
461800.00				

4608900.0	0.04167c (84093024)	0.04933c (84093024)	0.05659c (84093024)	0.06467c (84022924)
0.07409c (84022924)				
4608700.0	0.04453c (84093024)	0.05309c (84093024)	0.06216c (84093024)	0.07011c (84022924)
0.08175c (84022924)				
4608500.0	0.04787c (84093024)	0.05730c (84093024)	0.06857c (84093024)	0.07753c (84093024)
0.09122c (84022924)				
4608300.0	0.05144c (84093024)	0.06218c (84093024)	0.07596c (84093024)	0.08832c (84093024)
0.10325c (84022924)				
4608100.0	0.05954c (84103124)	0.06800c (84093024)	0.08452c (84093024)	0.10176c (84093024)
0.11898c (84022924)				
4607900.0	0.07218c (84103124)	0.07477c (84093024)	0.09459c (84093024)	0.11880c (84093024)
0.14019c (84022924)				
4607700.0	0.08951c (84103124)	0.08593c (84103124)	0.10682c (84093024)	0.14079c (84093024)
0.16981c (84022924)				
4607500.0	0.10061c (84113024)	0.11106c (84103124)	0.12211c (84093024)	0.16977c (84093024)
0.21283c (84022924)				
4607300.0	0.09695c (84113024)	0.13545c (84113024)	0.13981c (84103124)	0.20886c (84093024)
0.27851c (84022924)				
4607100.0	0.10011c (84093024)	0.13330c (84113024)	0.20492c (84103124)	0.26335c (84093024)
0.39514c (84093024)				
4606900.0	0.14414c (84123124)	0.14571c (84093024)	0.22257c (84113024)	0.33938c (84093024)
0.62242c (84093024)				

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4606700.0	0.18404c (84123124)	0.24772c (84123124)	0.24770c (84053124)	0.53207c (84113024)
1.13546c (84093024)				
4606500.0	0.19755c (84033124)	0.28798c (84033124)	0.48357c (84123124)	0.63597c (84123124)
2.50853c (84093024)				
4606300.0	0.28734c (84103124)	0.45476c (84103124)	0.87733c (84103124)	1.97189c (84033124)
0.83021c (84053124)				
4606100.0	0.32191c (84033124)	0.49253c (84033124)	0.88959c (84033124)	1.93956c (84043024)
2.99954c (84033124)				
4605900.0	0.28427c (84033124)	0.43014c (84033124)	0.64591c (84043024)	0.95586c (84063024)
1.07136c (84033124)				
4605700.0	0.26530c (84033124)	0.33477c (84043024)	0.44367c (84063024)	0.55419c (84063024)
0.53828c (84033124)				
4605500.0	0.22479c (84053124)	0.29253c (84063024)	0.36262c (84033124)	0.38739c (84083124)
0.32970c (84033124)				
4605300.0	0.25666c (84033124)	0.26624c (84083124)	0.28116c (84063024)	0.25892c (84063024)
0.22880c (84033124)				
4605100.0	0.32797c (84063024)	0.28001c (84053124)	0.23165c (84063024)	0.18391c (84083124)
0.17466c (84033124)				
4604900.0	0.44331c (84053124)	0.27319c (84123124)	0.21401c (84053124)	0.19526c (84123124)
0.16709c (84123124)				
4604700.0	0.48177c (84113024)	0.28870c (84113024)	0.20689c (84113024)	0.17893c (84043024)
0.14900c (84123124)				
4604500.0	0.23530c (84053124)	0.17964c (84013124)	0.13819c (84063024)	0.13105c (84033124)
0.11705c (84033124)				
4604300.0	0.15671c (84083124)	0.11563c (84083124)	0.10772c (84043024)	0.09656c (84033124)
0.09132c (84033124)				
4604100.0	0.11467c (84083124)	0.09877c (84083124)	0.08463c (84063024)	0.07871c (84033124)
0.07156c (84033124)				
4603900.0	0.08194c (84083124)	0.08389c (84013124)	0.07882c (84013124)	0.06863c (84033124)
0.06143c (84033124)				
4603700.0	0.06511c (84113024)	0.06675c (84113024)	0.06650c (84013124)	0.06059c (84013124)
0.05410c (84033124)				
4603500.0	0.05375c (84083124)	0.05587c (84113024)	0.05397c (84033124)	0.05384c (84013124)
0.04934c (84013124)				

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*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTS:

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DDEP

URBAN FLAT

DEFAULT

*** THE 2ND HIGHEST MONTH
HAMMOND ***

VALUES FOR SOURCE GROUP:

INCLUDING SOURCE(S):

S17 , 1S1

S1 , S4 , S5 , S68 , S916 ,

4AS8 , 1S2 ,

14S16 ,

14S18 , 8S28 ,

17S32 ,

1S4 ,

4S35 ,

AO1 ,

4BS34 ,

6S47 ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER

IN GRAMS/M**2

**

Y-COORD

(METERS)

462800.00

462000.00

462200.00

X-COORD (METERS)

462400.00

462600.00

4608900.0		0.07823c (84022924)	0.07560c (84022924)	0.07036c (84063024)	0.06319c (84083124)
0.05796c (84083124)					
4608700.0		0.08678c (84022924)	0.08491c (84063024)	0.07599c (84063024)	0.06959c (84083124)
0.06264c (84083124)					
4608500.0		0.09805c (84083124)	0.09690c (84063024)	0.08425c (84083124)	0.07699c (84083124)
0.07286c (84022924)					
4608300.0		0.11271c (84083124)	0.11114c (84063024)	0.09639c (84013124)	0.08532c (84083124)
0.08896c (84022924)					
4608100.0		0.13144c (84083124)	0.12788c (84063024)	0.10896c (84083124)	0.09438c (84083124)
0.10805c (84013124)					
4607900.0		0.15606c (84083124)	0.14723c (84063024)	0.12559c (84083124)	0.12005c (84022924)
0.12948c (84013124)					
4607700.0		0.19230c (84063024)	0.16945c (84063024)	0.14531c (84083124)	0.15658c (84022924)
0.15495c (84022924)					
4607500.0		0.24845c (84063024)	0.20796c (84083124)	0.17852c (84022924)	0.19886c (84022924)
0.16879c (84022924)					
4607300.0		0.33254c (84063024)	0.26134c (84083124)	0.25574c (84022924)	0.23376c (84022924)
0.19065c (84123124)					
4607100.0		0.46271c (84063024)	0.33297c (84083124)	0.34774c (84022924)	0.27711c (84123124)
0.21323c (84093024)					
4606900.0		0.66921c (84063024)	0.54665c (84022924)	0.45290c (84123124)	0.31672c (84093024)
0.22445c (84053124)					

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4606700.0	0.21167c (84123124)	0.18551c (84123124)	0.16212c (84123124)	0.14328c (84123124)
0.12837c (84123124)				
4606500.0	0.32080c (84123124)	0.26085c (84013124)	0.21228c (84013124)	0.17709c (84013124)
0.15096c (84013124)				
4606300.0	0.30948c (84013124)	0.24457c (84013124)	0.20011c (84013124)	0.16824c (84013124)
0.14460c (84013124)				
4606100.0	0.26301c (84123124)	0.21372c (84123124)	0.17863c (84123124)	0.15280c (84123124)
0.13317c (84123124)				
4605900.0	0.17354c (84123124)	0.14766c (84123124)	0.12644c (84123124)	0.10996c (84123124)
0.09719c (84123124)				
4605700.0	0.13152c (84113024)	0.11338c (84113024)	0.10047c (84123124)	0.09166c (84123124)
0.08266c (84123124)				
4605500.0	0.10817c (84022924)	0.09692c (84113024)	0.08716c (84113024)	0.07798c (84113024)
0.07073c (84113024)				
4605300.0	0.10410c (84022924)	0.08698c (84022924)	0.07555c (84113024)	0.07108c (84113024)
0.06495c (84113024)				
4605100.0	0.08017c (84022924)	0.08092c (84022924)	0.07147c (84022924)	0.06266c (84113024)
0.06097c (84113024)				
4604900.0	0.07529c (84113024)	0.06773c (84113024)	0.06454c (84022924)	0.05912c (84022924)
0.05475c (84113024)				
4604700.0	0.07370c (84113024)	0.06266c (84113024)	0.05752c (84113024)	0.05227c (84022924)
0.04920c (84022924)				
4604500.0	0.06855c (84113024)	0.05577c (84113024)	0.04964c (84113024)	0.04656c (84113024)
0.04309c (84022924)				
4604300.0	0.06179c (84113024)	0.05242c (84113024)	0.04372c (84113024)	0.04033c (84113024)
0.03844c (84113024)				
4604100.0	0.05486c (84113024)	0.04986c (84113024)	0.04171c (84113024)	0.03590c (84113024)
0.03401c (84113024)				
4603900.0	0.04847c (84113024)	0.04601c (84113024)	0.04084c (84113024)	0.03426c (84113024)
0.03050c (84113024)				
4603700.0	0.04334c (84113024)	0.04148c (84113024)	0.03881c (84113024)	0.03375c (84113024)
0.02872c (84113024)				
4603500.0	0.03955c (84113024)	0.03778c (84113024)	0.03606c (84113024)	0.03294c (84113024)
0.02822c (84113024)				

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tion model

DEFINITION

DRY DEPOSITION VALUES

51 54 55

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; NETWORK TYPE: GRIDCART ***

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IN GRAMS/M**2

Y-COORD (METERS)

0 04389C (84033924)

LEAD84.RPT

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4606700.0	0.11633c (84123124)	0.10635c (84123124)	0.09795c (84123124)	0.09080c (84123124)
0.08462c (84123124)				
4606500.0	0.13112c (84013124)	0.11572c (84013124)	0.10352c (84013124)	0.09365c (84013124)
0.08553c (84013124)				
4606300.0	0.12655c (84013124)	0.11241c (84013124)	0.10107c (84013124)	0.09181c (84013124)
0.08412c (84013124)				
4606100.0	0.11779c (84123124)	0.10522c (84013124)	0.09484c (84013124)	0.08639c (84013124)
0.07937c (84013124)				
4605900.0	0.08713c (84123124)	0.07903c (84123124)	0.07239c (84123124)	0.06685c (84123124)
0.06216c (84123124)				
4605700.0	0.07434c (84123124)	0.06714c (84123124)	0.06113c (84123124)	0.05617c (84123124)
0.05210c (84123124)				
4605500.0	0.06507c (84123124)	0.06109c (84123124)	0.05696c (84123124)	0.05296c (84123124)
0.04926c (84123124)				
4605300.0	0.05922c (84113024)	0.05461c (84113024)	0.05175c (84123124)	0.04968c (84123124)
0.04736c (84123124)				
4605100.0	0.05742c (84113024)	0.05306c (84113024)	0.04900c (84113024)	0.04566c (84113024)
0.04299c (84113024)				
4604900.0	0.05390c (84113024)	0.05191c (84113024)	0.04879c (84113024)	0.04531c (84113024)
0.04209c (84113024)				
4604700.0	0.04657c (84113024)	0.04611c (84113024)	0.04523c (84113024)	0.04338c (84113024)
0.04082c (84113024)				
4604500.0	0.04143c (84022924)	0.03839c (84113024)	0.03823c (84113024)	0.03812c (84113024)
0.03735c (84113024)				
4604300.0	0.03602c (84022924)	0.03524c (84022924)	0.03277c (84022924)	0.03202c (84113024)
0.03225c (84113024)				
4604100.0	0.03276c (84113024)	0.03067c (84113024)	0.03034c (84022924)	0.02871c (84022924)
0.02744c (84113024)				
4603900.0	0.02951c (84113024)	0.02864c (84113024)	0.02697c (84113024)	0.02657c (84022924)
0.02547c (84022924)				
4603700.0	0.02645c (84113024)	0.02604c (84113024)	0.02546c (84113024)	0.02413c (84113024)
0.02368c (84022924)				
4603500.0	0.02449c (84113024)	0.02320c (84113024)	0.02317c (84113024)	0.02282c (84113024)
0.02177c (84113024)				

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*** ISCST3 - VERSION 00101 *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	14S18	8S28
14S16			17S32
			1S4
			4S35
			AO1
			4BS34
			6S47

*** THE 2ND HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
HAMMOND ***
INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916
S17 , 1S1
S17 , 1S1

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** DEPO OF OTHER IN GRAMS/M**2 **

X-COORD (M) (YYMMDDHH)	Y-COORD (M)	DEPO (YYMMDDHH)	X-COORD (M)	Y-COORD (M)	DEPO
461577.00	4607100.00	0.24799C (84093024)	460635.00	4604870.00	
1.36249C (84093024)					
461700.00	4606250.00	4.45750C (84033124)			

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*** ISCST3 - VERSION 00101 ***
 *** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
 *** 17:58:15

**MODELOPTS:

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DDEP	URBAN	FLAT	DEFAULT	*** THE 2ND HIGHEST MONTH ***	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
ALL				INCLUDING SOURCE(S):	S1 , S4 , S5 , S68 , S916 ,	
				S17 , 1S1 ,	17S32 , 1S4 , 4S35 , AO1 , 4BS34 ,	
4AS8 ,	1S2 ,			14S18 , 8S28 ,		
6S47 ,	14S16 ,					
USS1 ,	USSFUG ,					

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	459000.00	459200.00	X-COORD (METERS)	459400.00	459600.00
459800.00					

4608900.0	0.04732c(84123124)	0.04516c(84123124)	0.04390c(84123124)	0.04587c(84093024)
0.05500c(84113024)				
4608700.0	0.05629c(84123124)	0.05492c(84123124)	0.05239c(84123124)	0.05055c(84123124)
0.05360c(84093024)				
4608500.0	0.06268c(84123124)	0.06509c(84123124)	0.06480c(84123124)	0.06208c(84123124)
0.05940c(84123124)				
4608300.0	0.06425c(84123124)	0.07034c(84123124)	0.07559c(84123124)	0.07774c(84123124)
0.07552c(84123124)				
4608100.0	0.06354c(84123124)	0.07062c(84123124)	0.07878c(84123124)	0.08771c(84123124)
0.09454c(84123124)				
4607900.0	0.05984c(84123124)	0.06883c(84123124)	0.07819c(84123124)	0.08848c(84123124)
0.10124c(84123124)				
4607700.0	0.05386c(84033124)	0.06008c(84123124)	0.07238c(84123124)	0.08590c(84123124)
0.09994c(84123124)				
4607500.0	0.05769c(84033124)	0.06424c(84033124)	0.07249c(84033124)	0.08269c(84033124)
0.09543c(84033124)				
4607300.0	0.06482c(84033124)	0.07326c(84043024)	0.08389c(84043024)	0.09654c(84043024)
0.11158c(84043024)				
4607100.0	0.07988c(84043024)	0.09166c(84043024)	0.10702c(84043024)	0.12717c(84043024)
0.15405c(84043024)				
4606900.0	0.09097c(84103124)	0.10322c(84103124)	0.11801c(84103124)	0.13711c(84103124)

0.16199c(84103124)	0.09735c(84033124)	0.12935c(84033124)
4606700.0 0.08626c(84033124)	0.11145c(84033124)	
0.15235c(84033124)	0.11104c(84033124)	0.12819c(84033124)
4606500.0 0.08816c(84033124)	0.11748c(84033124)	0.13664c(84033124)
0.15122c(84033124)	0.11086c(84033124)	0.14289c(84033124)
4606300.0 0.09302c(84033124)	0.12457c(84033124)	0.14114c(84033124)
0.16222c(84033124)	0.12641c(84033124)	0.14113c(84033124)
4606100.0 0.10013c(84033124)	0.12591c(84033124)	0.13870c(84043024)
0.16737c(84033124)	0.11358c(84033124)	0.13438c(84043024)
4605900.0 0.10403c(84033124)	0.11227c(84033124)	0.13106c(84043024)
0.16404c(84033124)	0.10925c(84043024)	0.13994c(84043024)
4605700.0 0.10278c(84033124)	0.09760c(84043024)	0.16941c(84043024)
0.16488c(84033124)	0.10141c(84043024)	0.15961c(84043024)
4605500.0 0.10054c(84033124)	0.11630c(84043024)	0.12951c(84043024)
0.14903c(84043024)	0.11769c(84043024)	0.11195c(84043024)
4605300.0 0.09952c(84043024)	0.09264c(84043024)	0.09814c(84043024)
0.15034c(84103124)	0.08377c(84043024)	0.08695c(84043024)
4605100.0 0.08960c(84043024)	0.07699c(84043024)	0.07894c(84043024)
0.15924c(84043024)	0.06947c(84043024)	
4604900.0 0.08977c(84043024)		
0.16679c(84043024)		
4604700.0 0.09878c(84043024)		
0.20822c(84033124)		
4604500.0 0.10111c(84043024)		
0.19156c(84043024)		
4604300.0 0.09681c(84043024)		
0.14772c(84043024)		
4604100.0 0.08637c(84043024)		
0.12609c(84043024)		
4603900.0 0.07739c(84043024)		
0.10844c(84043024)		
4603700.0 0.07224c(84043024)		
0.09707c(84063024)		
4603500.0 0.06660c(84043024)		
0.08894c(84063024)		

*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:
PAGE 48

DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	1S26	14S18
6S47	14S16	14S18	8S28
USS1	USSFUG	17S32	1S4

*** THE 2ND HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
ALL ***
INCLUDING SOURCE(S): S1 S4 S5 S68 S916
S17 S1 S17 S18 S28 S32 S35 S34

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	460000.00	460200.00	X-COORD (METERS)	460400.00	460600.00
460800.00					

4608900.0	0.07062c(84113024)	0.08767c(84113024)	0.09486c(84103124)	0.09043c(84103124)
0.09604c(84093024)				
4608700.0	0.06644c(84113024)	0.08649c(84113024)	0.10775c(84113024)	0.10773c(84103124)
0.10435c(84093024)				
4608500.0	0.06377c(84093024)	0.08182c(84113024)	0.10900c(84113024)	0.13070c(84103124)
0.12462c(84103124)				
4608300.0	0.07181c(84123124)	0.07780c(84093024)	0.10421c(84113024)	0.14282c(84113024)
0.15732c(84103124)				
4608100.0	0.09500c(84123124)	0.09057c(84123124)	0.09816c(84093024)	0.13954c(84113024)
0.19761c(84113024)				
4607900.0	0.11576c(84123124)	0.12463c(84123124)	0.12160c(84123124)	0.13045c(84093024)
0.20184c(84113024)				
4607700.0	0.11660c(84123124)	0.14135c(84123124)	0.17081c(84123124)	0.17937c(84123124)
0.19015c(84093024)				
4607500.0	0.11186c(84033124)	0.13398c(84123124)	0.17126c(84123124)	0.23986c(84123124)
0.30599c(84123124)				
4607300.0	0.12935c(84043024)	0.15644c(84033124)	0.19359c(84033124)	0.24474c(84033124)
0.35527c(84043024)				
4607100.0	0.19020c(84043024)	0.23824c(84043024)	0.30304c(84043024)	0.39892c(84043024)
0.57164c(84043024)				
4606900.0	0.19560c(84103124)	0.24445c(84103124)	0.31484c(84103124)	0.41958c(84033124)

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0.63585c(84033124)	0.22327c(84033124)	0.28563c(84033124)	0.38934c(84033124)
4606700.0 0.18180c(84033124)	0.22549c(84033124)	0.28829c(84033124)	0.38449c(84033124)
0.58111c(84033124)	0.23804c(84033124)	0.30536c(84033124)	0.41393c(84043024)
4606500.0 0.18215c(84033124)	0.25203c(84033124)	0.33198c(84043024)	0.42351c(84043024)
0.51671c(84103124)	0.24521c(84043024)	0.30815c(84043024)	0.34976c(84033124)
4606300.0 0.19537c(84033124)	0.21609c(84043024)	0.25799c(84043024)	0.29578c(84043024)
0.53513c(84043024)	0.18679c(84043024)	0.21579c(84043024)	0.27631c(84033124)
4606100.0 0.20113c(84033124)	0.17863c(84043024)	0.19663c(84103124)	0.28764c(84093024)
0.49075c(84033124)	0.23160c(84033124)	0.25398c(84033124)	0.46584c(84093024)
4605900.0 0.20214c(84033124)	0.31105c(84033124)	0.42666c(84033124)	0.82736c(84093024)
0.38528c(84033124)	0.46585c(84033124)	0.82228c(84033124)	1.11441c(84033124)
4605700.0 0.18583c(84043024)	0.32185c(84043024)	0.44940c(84043024)	0.65406c(84033124)
0.32682c(84033124)	0.22522c(84043024)	0.28910c(84083124)	0.30565c(84033124)
4605500.0 0.16625c(84043024)	0.17467c(84063024)	0.19997c(84063024)	0.19619c(84033124)
0.31501c(84043024)	0.15086c(84083124)	0.15756c(84083124)	0.14324c(84033124)
4605300.0 0.16395c(84043024)	0.11843c(84063024)	0.12742c(84083124)	0.11848c(84083124)
0.35644c(84083124)	0.10240c(84063024)	0.10821c(84083124)	0.10012c(84083124)
4605100.0 0.20877c(84033124)			
0.51519c(84013124)			
4604900.0 0.23159c(84033124)			
1.22606c(84123124)			
4604700.0 0.30312c(84033124)			
1.17500c(84123124)			
4604500.0 0.23945c(84043024)			
0.42358c(84113024)			
4604300.0 0.18193c(84043024)			
0.22683c(84013124)			
4604100.0 0.14734c(84043024)			
0.15151c(84083124)			
4603900.0 0.12519c(84063024)			
0.12497c(84083124)			
4603700.0 0.10962c(84083124)			
0.10462c(84083124)			
4603500.0 0.09896c(84033124)			
0.08878c(84083124)			

*** ISCST3 - VERSION 00101 *** Multiple Source
 *** 11/07/00

*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP	URBAN	FLAT	DEFAULT	VALUES FOR SOURCE GROUP:
4AS8	1S2	1S26	14S18	8S28
6S47	14S16	1S1	17S32	1S4
USS1	USSFUG			

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

Y-COORD (METERS)	461000.00	461200.00	461400.00	461600.00
461800.00				

Y-COORD (METERS)	461000.00	461200.00	461400.00	461600.00
4608900.0	0.11985c (84093024)	0.14649c (84093024)	0.17533c (84022924)	0.19501c (84022924)
0.19109c (84063024)				
4608700.0	0.13255c (84093024)	0.16762c (84093024)	0.20162c (84022924)	0.22445c (84022924)
0.22135c (84083124)				
4608500.0	0.14803c (84093024)	0.19443c (84093024)	0.23731c (84022924)	0.26355c (84022924)
0.26121c (84083124)				
4608300.0	0.16718c (84093024)	0.22934c (84093024)	0.28790c (84022924)	0.32570c (84063024)
0.31470c (84083124)				
4608100.0	0.19529c (84103124)	0.27617c (84093024)	0.36371c (84022924)	0.42140c (84063024)
0.39075c (84013124)				
4607900.0	0.27481c (84103124)	0.34127c (84093024)	0.49495c (84093024)	0.56749c (84063024)
0.51393c (84113024)				
4607700.0	0.33531c (84113024)	0.43420c (84093024)	0.74270c (84093024)	0.79941c (84063024)
0.74624c (84022924)				
4607500.0	0.32726c (84093024)	0.72509c (84103124)	1.30566c (84093024)	1.35861c (84113024)
1.09740c (84022924)				
4607300.0	0.63215c (84123124)	0.81526c (84093024)	3.08156c (84093024)	2.97444c (84022924)
1.48682c (84113024)				
4607100.0	0.95794c (84043024)	2.21308c (84033124)	12.83439c (84113024)	7.58618c (84123124)
2.80580c (84013124)				
4606900.0	1.11885c (84033124)	2.86721c (84033124)	6.61529c (84033124)	2.96499c (84022924)

2.15196c(84013124)	1.35778c(84043024)	1.63526c(84033124)	1.49551c(84013124)
4606700.0 0.95760c(84043024)	0.90024c(84083124)	1.36046c(84103124)	0.98680c(84093024)
1.73458c(84013124)	0.76654c(84033124)	1.19407c(84033124)	2.15512c(84033124)
4606500.0 0.69701c(84043024)	0.70360c(84033124)	1.13303c(84033124)	2.13037c(84043024)
2.84614c(84093024)	0.58775c(84033124)	0.89146c(84043024)	1.02402c(84043024)
4606300.0 0.63621c(84043024)	0.53574c(84043024)	0.61925c(84043024)	0.62892c(84043024)
0.92946c(84053124)	0.43387c(84043024)	0.45373c(84083124)	0.45402c(84083124)
4606100.0 0.55896c(84033124)	0.35044c(84033124)	0.33713c(84043024)	0.31140c(84083124)
3.12613c(84033124)	0.32271c(84063024)	0.30022c(84083124)	0.23245c(84083124)
4605900.0 0.43484c(84033124)	0.31005c(84123124)	0.26071c(84123124)	0.23032c(84123124)
1.15088c(84033124)	0.32903c(84113024)	0.24333c(84113024)	0.21443c(84123124)
4605700.0 0.37179c(84033124)	0.20287c(84013124)	0.17918c(84033124)	0.16596c(84033124)
0.59447c(84033124)	0.15550c(84043024)	0.13587c(84063024)	0.12762c(84033124)
4605500.0 0.35420c(84043024)	0.13019c(84013124)	0.11433c(84033124)	0.10677c(84033124)
0.37405c(84033124)	0.10616c(84033124)	0.10115c(84033124)	0.09423c(84033124)
4605300.0 0.32842c(84043024)	0.09135c(84033124)	0.08987c(84033124)	0.08399c(84033124)
0.26631c(84033124)	0.07866c(84033124)	0.08040c(84033124)	0.07531c(84033124)
4605100.0 0.40229c(84063024)			
0.20760c(84033124)			
4604900.0 0.48466c(84053124)			
0.19926c(84123124)			
4604700.0 0.52752c(84113024)			
0.17778c(84123124)			
4604500.0 0.26267c(84053124)			
0.14335c(84013124)			
4604300.0 0.19162c(84083124)			
0.11953c(84013124)			
4604100.0 0.14465c(84083124)			
0.09219c(84033124)			
4603900.0 0.11087c(84113024)			
0.08055c(84033124)			
4603700.0 0.08839c(84113024)			
0.07191c(84033124)			
4603500.0 0.07458c(84083124)			
0.06845c(84013124)			

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*** ISCST3 - VERSION 00101 *** Multiple Source
*** 11/07/00
*** USSLead Dry Deposition model
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**MODELOPTs:
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DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	1S26	14S18
6S47	14S16	8S28	17S32
USS1	USSFUG		

*** THE 2ND HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
ALL ***
INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916 ,
S17 , 1S1 ,
S17 , 1S1 , 14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 ,

*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	462000.00	462200.00	462400.00	X-COORD (METERS)	462600.00
4608900.0	0.18731c (84083124)	0.17304c (84013124)	0.16743c (84013124)	0.16795c (84022924)	
0.15304c (84022924)					
4608700.0	0.21436c (84083124)	0.19895c (84022924)	0.19574c (84013124)	0.18466c (84022924)	
0.16239c (84022924)					
4608500.0	0.24691c (84083124)	0.23526c (84013124)	0.23320c (84022924)	0.19655c (84022924)	
0.17025c (84022924)					
4608300.0	0.29783c (84013124)	0.28956c (84013124)	0.25547c (84022924)	0.20516c (84123124)	
0.18141c (84093024)					
4608100.0	0.37786c (84013124)	0.35387c (84022924)	0.26926c (84123124)	0.23747c (84093024)	
0.19919c (84022924)					
4607900.0	0.51043c (84013124)	0.38350c (84123124)	0.32988c (84093024)	0.25130c (84093024)	
0.22802c (84022924)					
4607700.0	0.61557c (84113024)	0.49169c (84093024)	0.33778c (84093024)	0.28533c (84022924)	
0.26876c (84123124)					
4607500.0	0.79112c (84093024)	0.49435c (84053124)	0.40030c (84123124)	0.38995c (84123124)	
0.35825c (84123124)					
4607300.0	0.92993c (84113024)	0.71412c (84123124)	0.63009c (84123124)	0.55675c (84123124)	
0.46364c (84123124)					
4607100.0	1.57008c (84013124)	1.08975c (84013124)	0.84723c (84013124)	0.66345c (84013124)	
0.51839c (84123124)					
4606900.0	1.43452c (84113024)	1.03180c (84123124)	0.83312c (84123124)	0.55850c (84123124)	

0.41527c(84123124)	1.17095c(84123124)	0.66395c(84123124)	0.51302c(84053124)
4606700.0 1.43889c(84063024)	1.22484c(84073124)	0.75123c(84123124)	0.61603c(84123124)
0.39137c(84123124)	1.91154c(84013124)	1.06427c(84013124)	0.70594c(84013124)
4606500.0 2.73276c(84123124)	0.96389c(84113024)	0.68409c(84123124)	0.51013c(84123124)
0.50265c(84123124)	0.55237c(84022924)	0.41048c(84022924)	0.31915c(84113024)
4606300.0 4.00682c(84013124)	0.44051c(84113024)	0.28414c(84022924)	0.25973c(84022924)
0.53328c(84013124)	0.32811c(84113024)	0.24874c(84113024)	0.18341c(84113024)
4606100.0 1.66940c(84022924)	0.24020c(84113024)	0.22396c(84113024)	0.16862c(84113024)
0.39423c(84123124)	0.18870c(84113024)	0.19008c(84113024)	0.16575c(84113024)
4605900.0 0.97629c(84113024)	0.16455c(84113024)	0.16953c(84113024)	0.15848c(84113024)
0.25864c(84113024)	0.14439c(84113024)	0.14938c(84113024)	0.14193c(84113024)
4605700.0 0.48577c(84113024)	0.11362c(84113024)	0.12109c(84113024)	0.11898c(84113024)
0.20191c(84113024)	0.09251c(84113024)	0.09967c(84113024)	0.10137c(84113024)
4605500.0 0.30081c(84043024)	0.07784c(84113024)	0.08388c(84113024)	0.08807c(84113024)
0.18019c(84022924)	0.06715c(84113024)	0.07186c(84113024)	0.07693c(84113024)
4605300.0 0.23978c(84043024)	0.05722c(84113024)	0.06202c(84113024)	0.06785c(84113024)
0.13575c(84113024)	0.04942c(84113024)	0.05289c(84113024)	0.05917c(84113024)
4605100.0 0.19501c(84043024)			
0.12846c(84113024)			
4604900.0 0.17237c(84123124)			
0.13272c(84113024)			
4604700.0 0.15154c(84123124)			
0.12898c(84113024)			
4604500.0 0.11417c(84113024)			
0.11252c(84113024)			
4604300.0 0.09700c(84043024)			
0.09706c(84113024)			
4604100.0 0.08417c(84043024)			
0.08557c(84113024)			
4603900.0 0.07353c(84043024)			
0.07636c(84113024)			
4603700.0 0.06631c(84043024)			
0.06904c(84113024)			
4603500.0 0.06134c(84043024)			
0.06251c(84113024)			

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*** USSLead Dry Deposition model
*** 17:58:15
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DDEP	URBAN	FLAT	DEFAULT
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*** THE ALL	2ND HIGHEST MONTH ***	DRY DEPOSITION	VALUES FOR SOURCE GROUP:
	INCLUDING SOURCE(S):	S1	
	S17		
	1S1		
4AS8	1S26	S1	S5
6S47	14S18	S4	S68
USS1	8S28	17S32	4S35
	14S16	1S4	AO1
	USSFUG		4BS34

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*** NETWORK ID: CARL ; NETWORK TYPE: GRIDCART ***
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** DEPO OF OTHER IN GRAMS/M**2

*
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Y-COORD (METERS)	X-COORD (METERS)
46300.00	463200.00
463800.00	463400.00
	463600.00

4608900.0		0.14162c (84022924)	0.13312c (84022924)	0.12310c (84022924)	0.11183c (84022924)
0.10084c (84022924)					
4608700.0		0.14930c (84022924)	0.13890c (84022924)	0.12671c (84022924)	0.11429c (84022924)
0.10218c (84022924)					
4608500.0		0.15774c (84022924)	0.14544c (84022924)	0.13164c (84022924)	0.11736c (84022924)
0.10621c (84123124)					
4608300.0		0.16915c (84022924)	0.15460c (84022924)	0.13733c (84022924)	0.12454c (84123124)
0.11093c (84123124)					
4608100.0		0.18563c (84022924)	0.16423c (84022924)	0.15005c (84123124)	0.13421c (84123124)
0.11755c (84123124)					
4607900.0		0.20268c (84123124)	0.18893c (84123124)	0.16983c (84123124)	0.14724c (84123124)
0.12810c (84123124)					
4607700.0		0.25263c (84123124)	0.22414c (84123124)	0.18848c (84123124)	0.15962c (84123124)
0.14189c (84053124)					
4607500.0		0.30735c (84123124)	0.25013c (84123124)	0.20857c (84123124)	0.18321c (84123124)
0.16540c (84123124)					
4607300.0		0.36488c (84123124)	0.29666c (84123124)	0.25420c (84123124)	0.22281c (84123124)
0.19845c (84123124)					
4607100.0		0.39678c (84123124)	0.32501c (84123124)	0.27561c (84123124)	0.24147c (84123124)
0.21686c (84123124)					
4606900.0		0.33966c (84123124)	0.29313c (84123124)	0.26102c (84123124)	0.23430c (84123124)

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0.21063c(84123124)	0.29550c(84123124)	0.25809c(84123124)	0.22845c(84123124)
4606700.0 0.34021c(84123124)	0.35426c(84123124)	0.30334c(84123124)	0.26251c(84123124)
0.20500c(84123124)	0.36703c(84013124)	0.31248c(84123124)	0.26415c(84123124)
4606500.0 0.41862c(84123124)	0.26359c(84123124)	0.22490c(84123124)	0.19676c(84123124)
0.22966c(84123124)	0.19404c(84113024)	0.17310c(84113024)	0.15463c(84113024)
4606300.0 0.43428c(84013124)	0.15527c(84113024)	0.14207c(84113024)	0.13180c(84113024)
0.22761c(84123124)	0.13337c(84113024)	0.12128c(84113024)	0.11216c(84113024)
4606100.0 0.31743c(84123124)	0.12443c(84022924)	0.10725c(84022924)	0.09969c(84113024)
0.17557c(84123124)	0.10799c(84022924)	0.10307c(84022924)	0.09211c(84022924)
4605900.0 0.22003c(84113024)	0.09454c(84113024)	0.08804c(84022924)	0.08632c(84022924)
0.13865c(84113024)	0.08859c(84113024)	0.08034c(84113024)	0.07450c(84113024)
4605700.0 0.17609c(84113024)	0.08217c(84113024)	0.07123c(84113024)	0.06636c(84113024)
0.12174c(84113024)	0.07901c(84113024)	0.06563c(84113024)	0.05874c(84113024)
4605500.0 0.15371c(84022924)	0.07564c(84113024)	0.06423c(84113024)	0.05435c(84113024)
0.10573c(84113024)	0.07025c(84113024)	0.06334c(84113024)	0.05341c(84113024)
4605300.0 0.13587c(84022924)	0.06401c(84113024)	0.06051c(84113024)	0.05333c(84113024)
0.09338c(84113024)	0.05879c(84113024)	0.05655c(84113024)	0.05232c(84113024)
4605100.0 0.10935c(84113024)			
0.08555c(84113024)			
4604900.0 0.10710c(84113024)			
0.07946c(84022924)			
4604700.0 0.10592c(84113024)			
0.07299c(84022924)			
4604500.0 0.10000c(84113024)			
0.06257c(84113024)			
4604300.0 0.09127c(84113024)			
0.05591c(84113024)			
4604100.0 0.08195c(84113024)			
0.05003c(84113024)			
4603900.0 0.07339c(84113024)			
0.04631c(84113024)			
4603700.0 0.06648c(84113024)			
0.04511c(84113024)			
4603500.0 0.06126c(84113024)			
0.04525c(84113024)			

*** ISCST3 - VERSION 00101 *** Multiple Source
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**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** THE 2ND HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
ALL ***

INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916 ,
S17 , 1S1
4AS8 , 1S2 , 1S26 , 14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 ,
6S47 , 14S16 ,
USS1 , USSFUG ,

*** NETWORK ID: CAR1 ; NETWORK TYPE: GRIDCART ***

** DEPO OF OTHER IN GRAMS/M**2

**

Y-COORD (METERS)	464000.00	464200.00	X-COORD (METERS) 464400.00	464600.00
464800.00				

4608900.0	0.09038c (84022924)	0.08101c (84123124)	0.07364c (84123124)	0.06526c (84123124)
0.06348c (84053124)				
4608700.0	0.09216c (84123124)	0.08303c (84123124)	0.07289c (84123124)	0.07203c (84053124)
0.07229c (84053124)				
4608500.0	0.09491c (84123124)	0.08293c (84123124)	0.08197c (84053124)	0.08112c (84053124)
0.07847c (84053124)				
4608300.0	0.09700c (84123124)	0.09352c (84053124)	0.09128c (84053124)	0.08729c (84053124)
0.08258c (84053124)				
4608100.0	0.10739c (84053124)	0.10366c (84053124)	0.09819c (84053124)	0.09227c (84053124)
0.08679c (84053124)				
4607900.0	0.11980c (84053124)	0.11229c (84053124)	0.10470c (84053124)	0.09791c (84053124)
0.09190c (84053124)				
4607700.0	0.13118c (84053124)	0.12113c (84053124)	0.11232c (84053124)	0.10437c (84053124)
0.09756c (84123124)				
4607500.0	0.15087c (84123124)	0.13929c (84123124)	0.13059c (84123124)	0.12393c (84123124)
0.11829c (84123124)				
4607300.0	0.18033c (84123124)	0.16658c (84123124)	0.15515c (84123124)	0.14481c (84123124)
0.13513c (84123124)				
4607100.0	0.19704c (84123124)	0.17972c (84123124)	0.16425c (84123124)	0.15056c (84123124)
0.13864c (84123124)				
4606900.0	0.19004c (84123124)	0.17256c (84123124)	0.15793c (84123124)	0.14573c (84123124)

0.13552c(84123124)	0.17038c(84123124)	0.15719c(84123124)	0.14596c(84123124)
4606700.0 0.18605c(84123124)	0.18170c(84123124)	0.16419c(84123124)	0.14973c(84123124)
0.13627c(84123124)	0.17635c(84123124)	0.15791c(84123124)	0.14275c(84123124)
4606500.0 0.20316c(84123124)	0.14457c(84123124)	0.13237c(84123124)	0.12168c(84123124)
0.13762c(84123124)	0.11448c(84113024)	0.10549c(84113024)	0.09789c(84113024)
4606300.0 0.19909c(84123124)	0.10232c(84113024)	0.09414c(84113024)	0.08721c(84113024)
0.13014c(84123124)	0.09377c(84113024)	0.08734c(84113024)	0.08112c(84113024)
4606100.0 0.15870c(84123124)	0.08448c(84113024)	0.08057c(84113024)	0.07636c(84113024)
0.11228c(84123124)	0.07791c(84113024)	0.07468c(84113024)	0.07167c(84113024)
4605900.0 0.12536c(84113024)	0.07292c(84113024)	0.07023c(84113024)	0.06756c(84113024)
0.09139c(84123124)	0.06519c(84113024)	0.06372c(84113024)	0.06211c(84113024)
4605700.0 0.11169c(84113024)	0.06016c(84022924)	0.05565c(84022924)	0.05458c(84113024)
0.08139c(84113024)	0.05418c(84022924)	0.05296c(84022924)	0.04982c(84022924)
4605500.0 0.09994c(84113024)	0.04667c(84113024)	0.04750c(84022924)	0.04701c(84022924)
0.07550c(84113024)	0.04283c(84113024)	0.04157c(84113024)	0.04225c(84022924)
4605300.0 0.08847c(84113024)	0.03878c(84113024)	0.03845c(84113024)	0.03755c(84113024)
0.07197c(84113024)	0.03533c(84113024)	0.03476c(84113024)	0.03480c(84113024)
4605100.0 0.08162c(84113024)			
0.06858c(84113024)			
4604900.0 0.07543c(84113024)			
0.06497c(84113024)			
4604700.0 0.06884c(84022924)			
0.06027c(84113024)			
4604500.0 0.06254c(84022924)			
0.05390c(84113024)			
4604300.0 0.05340c(84113024)			
0.04707c(84113024)			
4604100.0 0.04841c(84113024)			
0.04485c(84022924)			
4603900.0 0.04369c(84113024)			
0.04219c(84022924)			
4603700.0 0.04019c(84113024)			
0.03812c(84022924)			
4603500.0 0.03863c(84113024)			
0.03420c(84113024)			

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**MODELOPTs:
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DDEP	URBAN	FLAT	DEFAULT
4AS8	1S2	1S26	1S18
6S47	14S16	8S28	1S1
USS1	USSFUG	17S32	1S4

*** THE 2ND HIGHEST MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
ALL ***
INCLUDING SOURCE(S): S1 S4 S5 S68 S916
S17 1S1

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

X-COORD (M) (YYMMDDHH)	Y-COORD (M)	DEPO	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	DEPO
461577.00	4607100.00	8.56946c	(84123124)	460635.00	4604870.00	
1.40367c	(84093024)					
461700.00	4606250.00	4.61787c	(84033124)			

*** ISCST3 - VERSION 00101 *** Multiple Source
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*** USSLead Dry Deposition model
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**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** THE MAXIMUM 50 MONTH DRY DEPOSITION VALUES FOR SOURCE GROUP:
 HAMMOND ***
 INCLUDING SOURCE(S): S1 , S4 , S5 , S68 , S916 ,
 S17 , 1S1 ,
 4AS8 , 1S2 , 14S18 , 8S28 , 17S32 , 1S4 , 4S35 , AO1 , 4BS34 , 6S47 ,
 14S16 ,

** DEPO OF OTHER IN GRAMS/M**2 **

RANK RECEPTOR	DEPO (XR,YR) OF TYPE	(YYMMDDHH) AT	RECEPTOR (XR,YR) OF TYPE	RANK	DEPO (YYMMDDHH) AT
1.	5.52584c(84043024)	AT (461700.00, 4606250.00)	DC	26.	2.22376c(84033124) AT (
461600.00, 4606100.00)	GC				
2.	5.06279c(84123124)	AT (462000.00, 4606300.00)	GC	27.	2.20369c(84063024) AT (
462000.00, 4606500.00)	GC				
3.	4.71063c(84043024)	AT (461800.00, 4606100.00)	GC	28.	2.18687c(84063024) AT (
461800.00, 4606100.00)	GC				
4.	4.45750c(84033124)	AT (461700.00, 4606250.00)	DC	29.	2.04080c(84103124) AT (
462000.00, 4606300.00)	GC				
5.	3.70364c(84053124)	AT (462000.00, 4606300.00)	GC	30.	2.02542c(84073124) AT (
462000.00, 4606500.00)	GC				
6.	3.69058c(84113024)	AT (461800.00, 4606500.00)	GC	31.	1.97189c(84033124) AT (
461600.00, 4606300.00)	GC				
7.	3.67454c(84013124)	AT (462000.00, 4606300.00)	GC	32.	1.94437c(84022924) AT (
461800.00, 4606500.00)	GC				
8.	3.25550c(84113024)	AT (462000.00, 4606300.00)	GC	33.	1.93956c(84043024) AT (
461600.00, 4606100.00)	GC				
9.	3.25206c(84073124)	AT (462000.00, 4606300.00)	GC	34.	1.93259c(84113024) AT (
461800.00, 4606700.00)	GC				
10.	3.23565c(84013124)	AT (462000.00, 4606500.00)	GC	35.	1.91971c(84123124) AT (
461800.00, 4606500.00)	GC				
11.	3.13428c(84022924)	AT (462000.00, 4606300.00)	GC	36.	1.88275c(84073124) AT (
461800.00, 4606100.00)	GC				
12.	2.99954c(84033124)	AT (461800.00, 4606100.00)	GC	37.	1.87834c(84043024) AT (
461600.00, 4606300.00)	GC				
13.	2.87979c(84103124)	AT (461700.00, 4606250.00)	DC	38.	1.86501c(84043024) AT (
461800.00, 4605900.00)	GC				

14.	2.63374c(84123124)	AT (462200.00, 4606300.00)	GC	39.	1.85270c(84083124)	AT (
462000.00, 4606500.00)	GC					
15.	2.56210c(84123124)	AT (462000.00, 4606500.00)	GC	40.	1.83842c(84113024)	AT (
462000.00, 4606500.00)	GC					
16.	2.55393c(84053124)	AT (461800.00, 4606100.00)	GC	41.	1.83675c(84093024)	AT (
461800.00, 4606100.00)	GC					
17.	2.52469c(84083124)	AT (462000.00, 4606300.00)	GC	42.	1.76025c(84022924)	AT (
461800.00, 4606100.00)	GC					
18.	2.50853c(84093024)	AT (461800.00, 4606500.00)	GC	43.	1.69880c(84123124)	AT (
461800.00, 4606100.00)	GC					
19.	2.41701c(84013124)	AT (462000.00, 4606100.00)	GC	44.	1.69731c(84103124)	AT (
461800.00, 4606500.00)	GC					
20.	2.40812c(84103124)	AT (461600.00, 4606300.00)	GC	45.	1.69357c(84013124)	AT (
461800.00, 4606500.00)	GC					
21.	2.40481c(84083124)	AT (461800.00, 4606100.00)	GC	46.	1.67778c(84013124)	AT (
462200.00, 4606300.00)	GC					
22.	2.39469c(84093024)	AT (462000.00, 4606300.00)	GC	47.	1.66771c(84113024)	AT (
460635.00, 4604870.00)	DC					
23.	2.35336c(84043024)	AT (462000.00, 4606300.00)	GC	48.	1.66195c(84113024)	AT (
462200.00, 4606300.00)	GC					
24.	2.30129c(84063024)	AT (462000.00, 4606300.00)	GC	49.	1.65609c(84093024)	AT (
462000.00, 4606500.00)	GC					
25.	2.24399c(84022924)	AT (462000.00, 4606500.00)	GC	50.	1.63496c(84053124)	AT (
461700.00, 4606250.00)	DC					

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR
 BD = BOUNDARY

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*** ISCST3 - VERSION 00101 *** Multiple Source
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*** USSLead Dry Deposition model
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**MODELOPTS:
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DDEP	URBAN	FLAT	DEFAULT	VALUES FOR SOURCE GROUP:
	*** THE MAXIMUM 50 MONTH			
	ALL			
	INCLUDING SOURCE(S):	S1	S4	S5
	S17	1S1		S68
4AS8	1S2			S916
6S47	14S16			
USS1	USSFUG			
		17S32	1S4	4S35
				AO1
				4BS34

** DEPO OF OTHER IN GRAMS/M**2 **

RANK RECEPTOR	DEPO (XR,YR) OF TYPE	(YMMDDHH) AT	RECEPTOR (XR,YR) OF TYPE	RANK	DEPO (YMMDDHH) AT
1.	17.53056c(84103124)	AT (461400.00, 4607100.00)	GC	26.	5.43010c(84043024) AT (
	461400.00, 4607100.00)				
2.	12.83439c(84113024)	AT (461400.00, 4607100.00)	GC	27.	5.42525c(84113024) AT (
	461400.00, 4607300.00)				
3.	10.78661c(84093024)	AT (461400.00, 4607100.00)	GC	28.	5.34187c(84043024) AT (
	461577.00, 4607100.00)				
4.	10.57195c(84123124)	AT (461400.00, 4607100.00)	GC	29.	5.25056c(84073124) AT (
	461600.00, 4607100.00)				
5.	10.29068c(84013124)	AT (461577.00, 4607100.00)	DC	30.	5.21192c(84113024) AT (
	461600.00, 4607100.00)				
6.	9.26365c(84022924)	AT (461400.00, 4607100.00)	GC	31.	5.21048c(84022924) AT (
	461600.00, 4607100.00)				
7.	8.75211c(84043024)	AT (461400.00, 4606900.00)	GC	32.	5.15816c(84123124) AT (
	462000.00, 4606300.00)				
8.	8.56946c(84123124)	AT (461577.00, 4607100.00)	DC	33.	5.14267c(84103124) AT (
	461577.00, 4607100.00)				
9.	8.40823c(84013124)	AT (461600.00, 4607100.00)	GC	34.	5.03995c(84073124) AT (
	461400.00, 4607100.00)				
10.	7.92356c(84033124)	AT (461400.00, 4607100.00)	GC	35.	4.98381c(84053124) AT (
	461400.00, 4606900.00)				
11.	7.63789c(84053124)	AT (461577.00, 4607100.00)	DC	36.	4.81608c(84043024) AT (
	461800.00, 4606100.00)				
12.	7.58618c(84123124)	AT (461600.00, 4607100.00)	GC	37.	4.80312c(84083124) AT (
	461400.00, 4607100.00)				
13.	7.44699c(84053124)	AT (461400.00, 4607100.00)	GC	38.	4.61787c(84033124) AT (

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461700.00, 4606250.00) DC				
14. 6.74962c(84063024) AT (	461400.00, 4607100.00)	GC	39.	4.57416c(84093024) AT (
461600.00, 4607100.00) GC				
15. 6.74356c(84073124) AT (	461577.00, 4607100.00)	DC	40.	4.35765c(84013124) AT (
461400.00, 4607100.00) GC				
16. 6.61529c(84033124) AT (	461400.00, 4606900.00)	GC	41.	4.32651c(84083124) AT (
461600.00, 4607100.00) GC				
17. 6.46264c(84022924) AT (	461577.00, 4607100.00)	DC	42.	4.30296c(84043024) AT (
461600.00, 4607100.00) GC				
18. 6.42968c(84083124) AT (	461400.00, 4606900.00)	GC	43.	4.23601c(84063024) AT (
461600.00, 4607100.00) GC				
19. 6.27114c(84053124) AT (	461600.00, 4607100.00)	GC	44.	4.07541c(84113024) AT (
461800.00, 4606500.00) GC				
20. 6.17106c(84113024) AT (	461577.00, 4607100.00)	DC	45.	4.04492c(84093024) AT (
461400.00, 4606900.00) GC				
21. 5.99397c(84063024) AT (	461400.00, 4606900.00)	GC	46.	4.00682c(84013124) AT (
462000.00, 4606300.00) GC				
22. 5.92023c(84093024) AT (	461577.00, 4607100.00)	DC	47.	3.99549c(84103124) AT (
461600.00, 4607100.00) GC				
23. 5.69151c(84043024) AT (	461700.00, 4606250.00)	DC	48.	3.95061c(84073124) AT (
461400.00, 4606900.00) GC				
24. 5.59876c(84063024) AT (	461577.00, 4607100.00)	DC	49.	3.80877c(84053124) AT (
462000.00, 4606300.00) GC				
25. 5.53766c(84083124) AT (	461577.00, 4607100.00)	DC	50.	3.65720c(84103124) AT (
461200.00, 4607100.00) GC				

*** RECEPTOR TYPES: GC = GRIDCART
 GP = GRIDPOLR
 DC = DISCCART
 DP = DISCPOLR
 BD = BOUNDARY

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*** ISCST3 - VERSION 00101 ***
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*** Multiple Source

*** USSLead Dry Deposition model
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**MODELOPTS:
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DDEP

URBAN FLAT

DFAULT

*** THE SUMMARY OF MAXIMUM PERIOD (8784 HRS) RESULTS ***

** DEPO OF OTHER IN GRAMS/M**2

**

GROUP ID ID	DRY DEPO	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK K GRID-
HAMMOND	1ST HIGHEST VALUE IS	35.21615 AT (462000.00, 4606300.00,	0.00,	CAR1
	2ND HIGHEST VALUE IS	25.23012 AT (461800.00, 4606100.00,	0.00,	CAR1
	3RD HIGHEST VALUE IS	22.25932 AT (461700.00, 4606250.00,	0.00,	DC NA
	4TH HIGHEST VALUE IS	21.69008 AT (462000.00, 4606500.00,	0.00,	CAR1
	5TH HIGHEST VALUE IS	20.54844 AT (461800.00, 4606500.00,	0.00,	CAR1
	6TH HIGHEST VALUE IS	15.52400 AT (462000.00, 4606100.00,	0.00,	CAR1
	7TH HIGHEST VALUE IS	14.60868 AT (462200.00, 4606300.00,	0.00,	CAR1
	8TH HIGHEST VALUE IS	12.80429 AT (461600.00, 4606100.00,	0.00,	CAR1
	9TH HIGHEST VALUE IS	11.73481 AT (461600.00, 4606300.00,	0.00,	CAR1
	10TH HIGHEST VALUE IS	11.15531 AT (462200.00, 4606500.00,	0.00,	CAR1
ALL	1ST HIGHEST VALUE IS	102.73390 AT (461400.00, 4607100.00,	0.00,	CAR1
	2ND HIGHEST VALUE IS	76.85254 AT (461577.00, 4607100.00,	0.00,	DC NA
	3RD HIGHEST VALUE IS	62.31953 AT (461600.00, 4607100.00,	0.00,	CAR1
	4TH HIGHEST VALUE IS	55.00655 AT (461400.00, 4606900.00,	0.00,	CAR1
	5TH HIGHEST VALUE IS	36.94510 AT (462000.00, 4606300.00,	0.00,	CAR1
	6TH HIGHEST VALUE IS	27.85205 AT (461400.00, 4607300.00,	0.00,	CAR1
	7TH HIGHEST VALUE IS	26.69869 AT (461600.00, 4606900.00,	0.00,	CAR1
	8TH HIGHEST VALUE IS	26.57222 AT (461800.00, 4606100.00,	0.00,	CAR1
	9TH HIGHEST VALUE IS	25.94278 AT (461600.00, 4607300.00,	0.00,	CAR1
	10TH HIGHEST VALUE IS	24.09046 AT (462000.00, 4606500.00,	0.00,	CAR1

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART

LEAD84.RPT

DP = DISCPOLR
BD = BOUNDARY

11/7/00

LEAD84.RPT

11/7/00

*** ISCST3 - VERSION 00101 ***
*** 11/07/00

*** Multiple Source

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTs:

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DDEP URBAN FLAT DFAULT

*** THE SUMMARY OF HIGHEST MONTH RESULTS ***

** DEPO OF OTHER IN GRAMS/M**2 **

GROUP ID OF TYPE	GRID-ID	DRY DEPO	DATE NETWORK (YYMMDDHH)	RECEPTOR (XR, YR, ZELEV, ZFLAG)	
HAMMOND	HIGH 1ST HIGH VALUE IS	5.52584c	ON 84043024: AT (	461700.00,	4606250.00,
0.00)	DC NA				0.00,
	HIGH 2ND HIGH VALUE IS	4.45750c	ON 84033124: AT (	461700.00,	4606250.00,
	0.00) DC NA				0.00,
ALL	HIGH 1ST HIGH VALUE IS	17.53056c	ON 84103124: AT (	461400.00,	4607100.00,
0.00)	GC CAR1				0.00,
	HIGH 2ND HIGH VALUE IS	12.83439c	ON 84113024: AT (	461400.00,	4607100.00,
	0.00) GC CAR1				0.00,

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

11/7/00

*** ISCST3 - VERSION 00101 *** *** Multiple Source
*** 11/07/00

*** USSLead Dry Deposition model
*** 17:58:15

**MODELOPTS:

PAGE 58

DDEP URBAN FLAT DFAULT

*** Message Summary : ISCST3 Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 189 Informational Message(s)

A Total of 189 Calm Hours Identified

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
*** NONE ***

*** ISCST3 Finishes Successfully ***

APPENDIX B – Figures

- Figure B-1 Modeled Deposition Profile of Lead Including All Sources for 1985
- Figure B-2 Modeled Deposition Profile of Lead for Point Sources Only 1985
- Figure B-3 Modeled Deposition Profile of Lead Including All Sources for 1986
- Figure B-4 Modeled Deposition Profile of Lead for Point Sources Only 1986
- Figure B-5 Modeled Deposition Profile of Lead Including All Sources for 1987
- Figure B-6 Modeled Deposition Profile of Lead for Point Sources Only 1987
- Figure B-7 Modeled Deposition Profile of Lead Including All Sources for 1988
- Figure B-8 Modeled Deposition Profile of Lead for Point Sources Only 1988

Figure B-1
Modeled Deposition Profile of Lead Including All Sources 1985

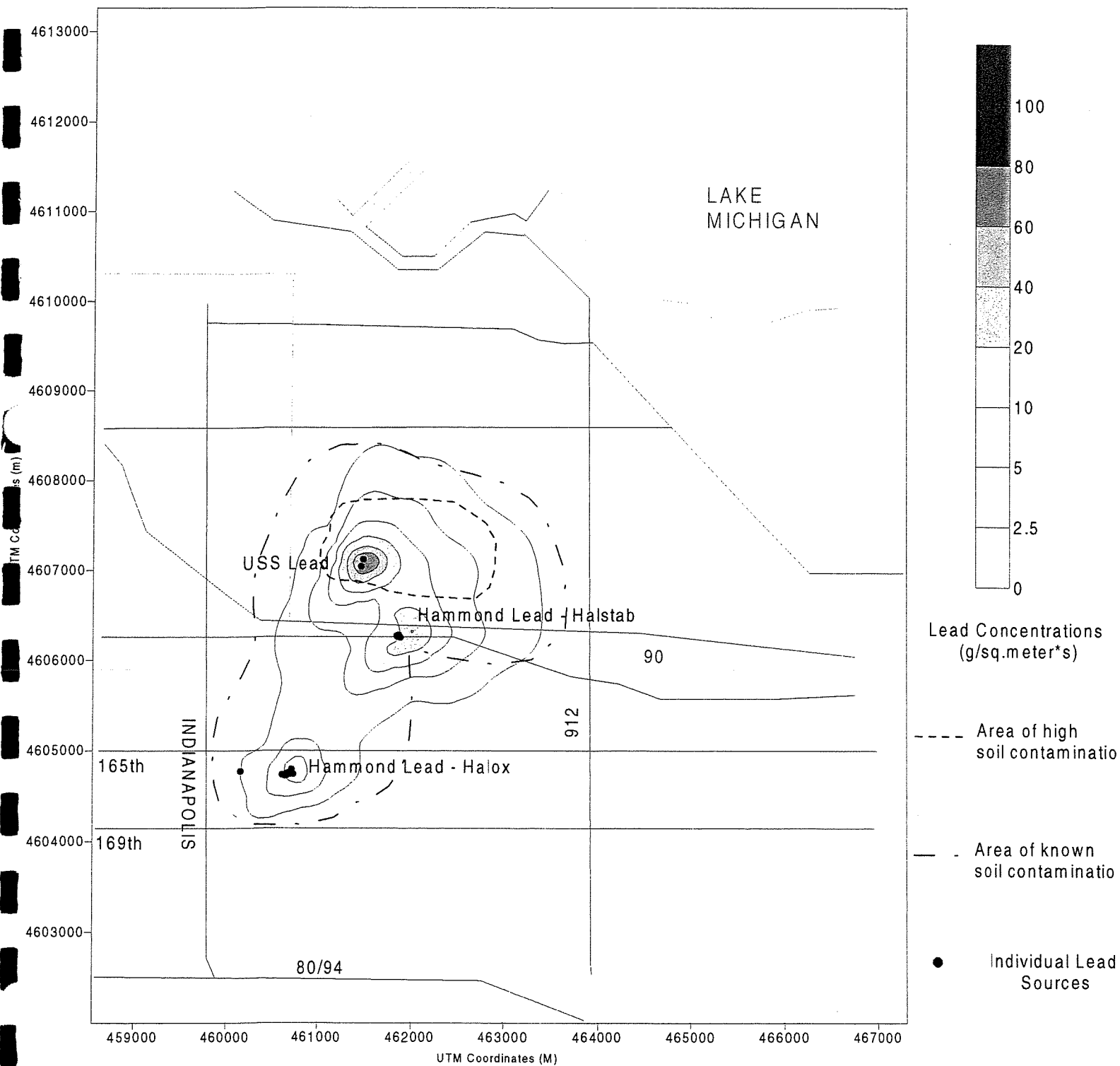


Figure B-2
Modeled Deposition Profile of Lead Sources Only 1985
(Excluding the USS Lead Volume Source)

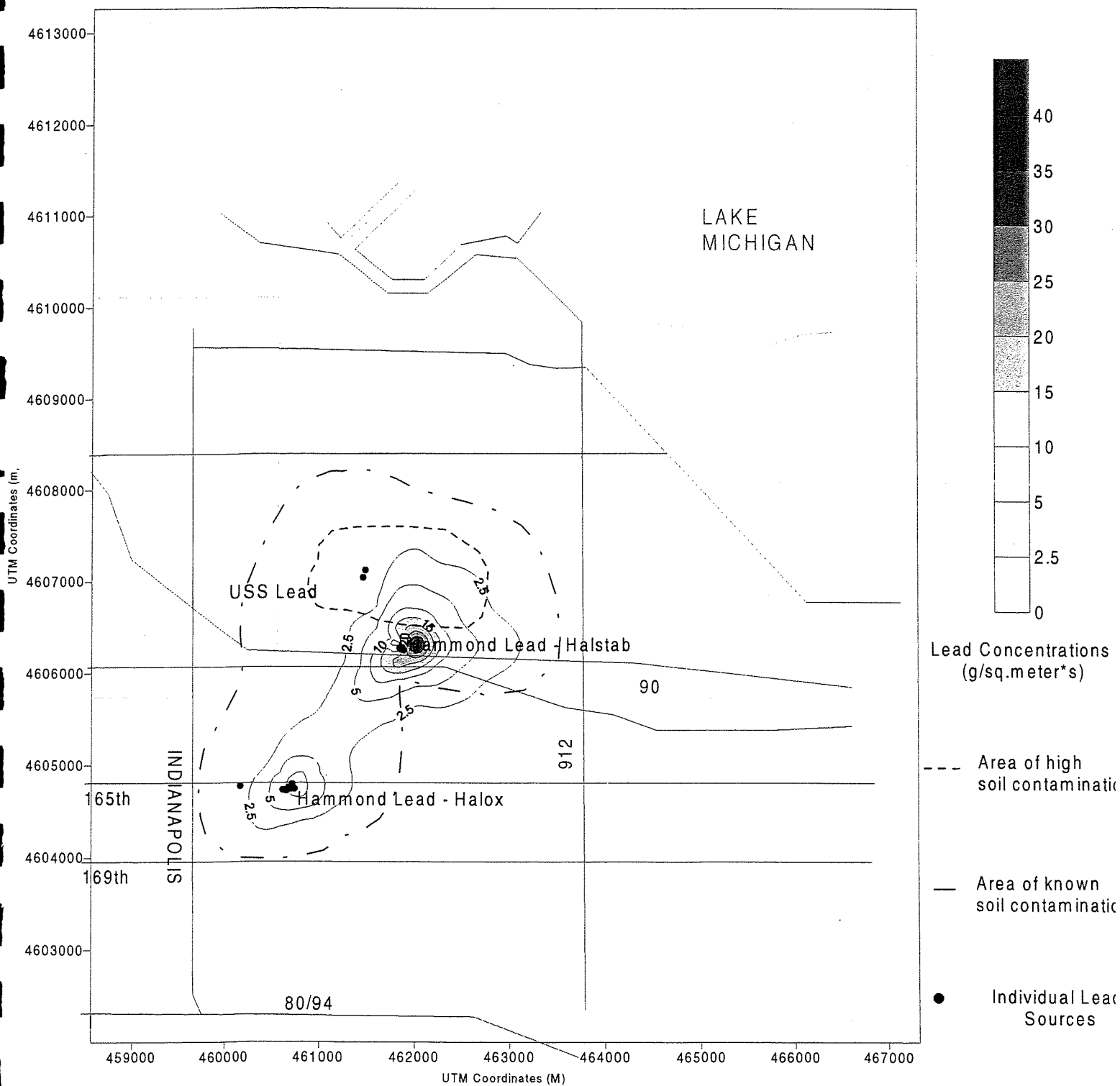


Figure B-3
Modeled Deposition Profile of Lead Including All Sources 1986

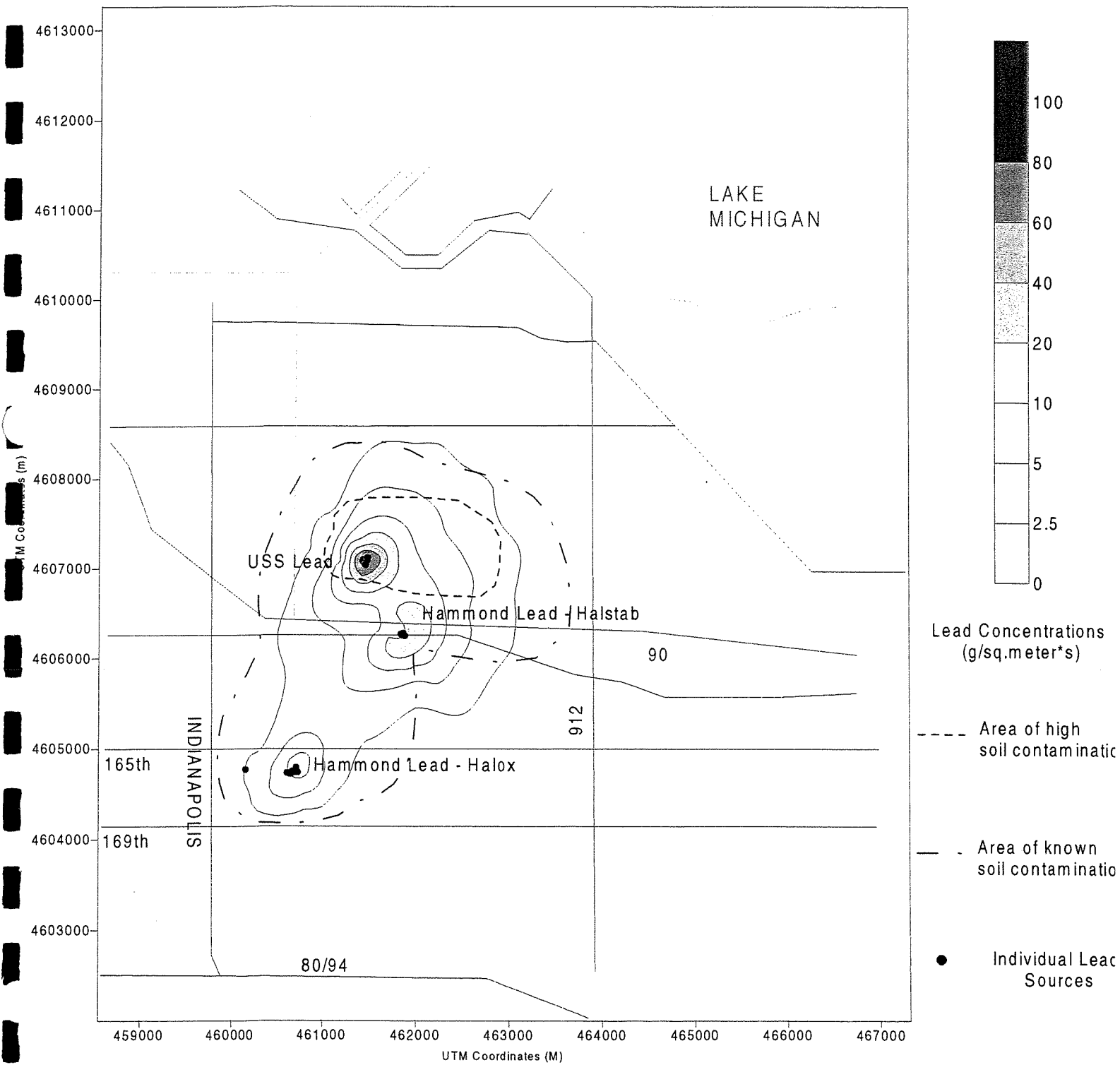


Figure B-4
Modeled Deposition Profile of Lead Sources Only 1986
(Excluding the USS Lead Volume Source)

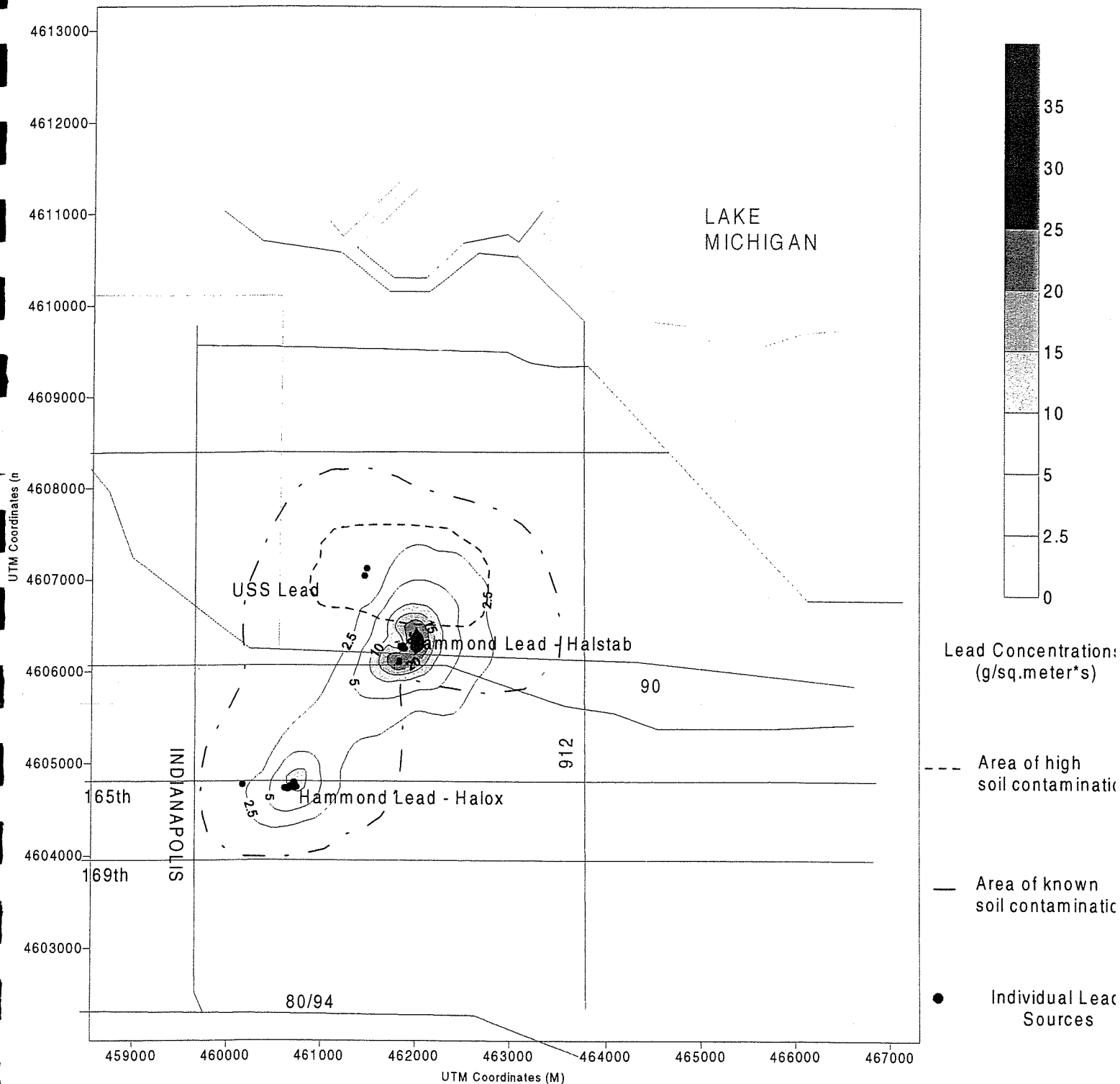


Figure B-5
Modeled Deposition Profile of Lead Including All Sources 1987

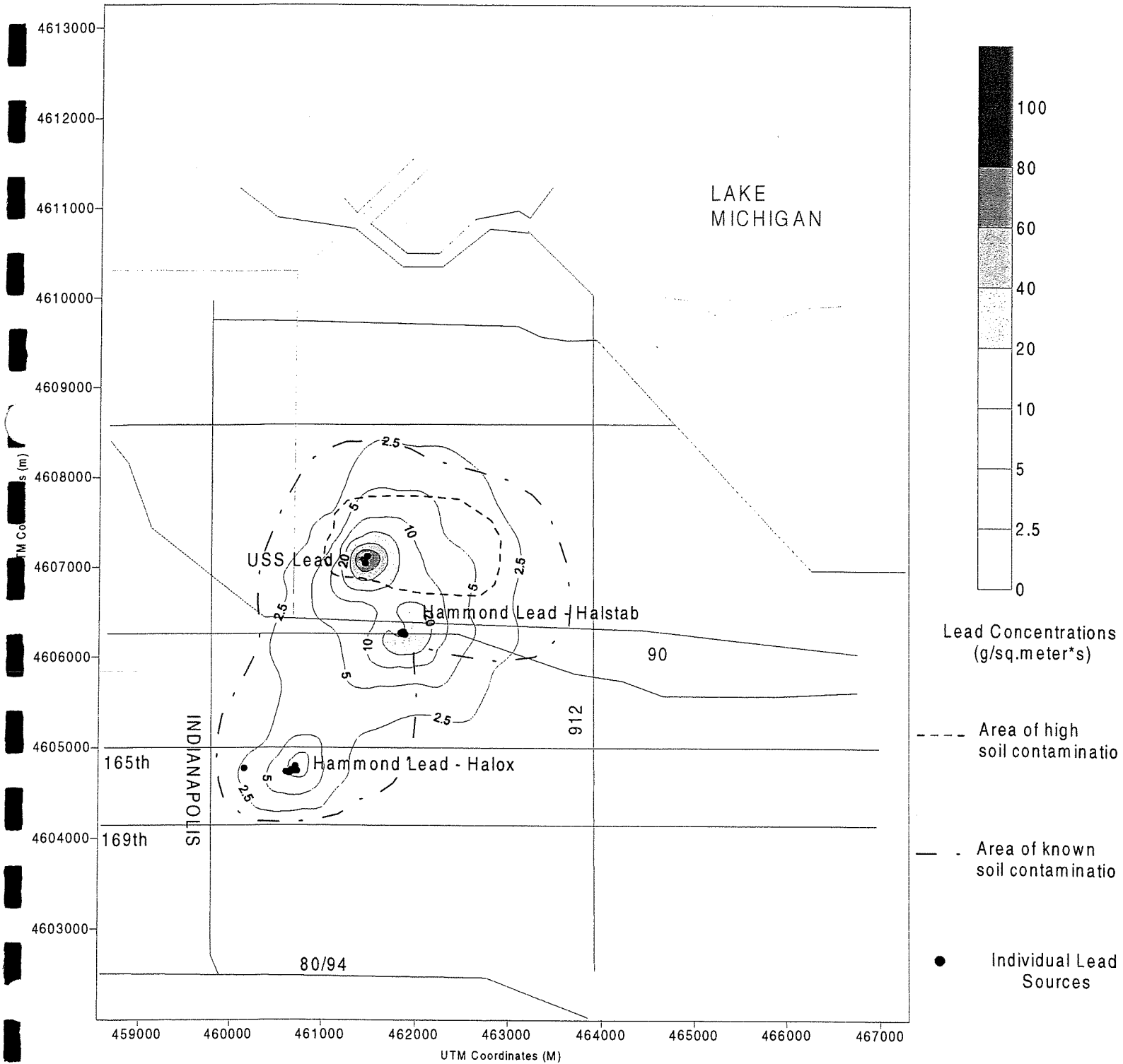


Figure B-6
Modeled Deposition Profile of Lead Sources Only 1987
(Excluding the USS Lead Volume Source)

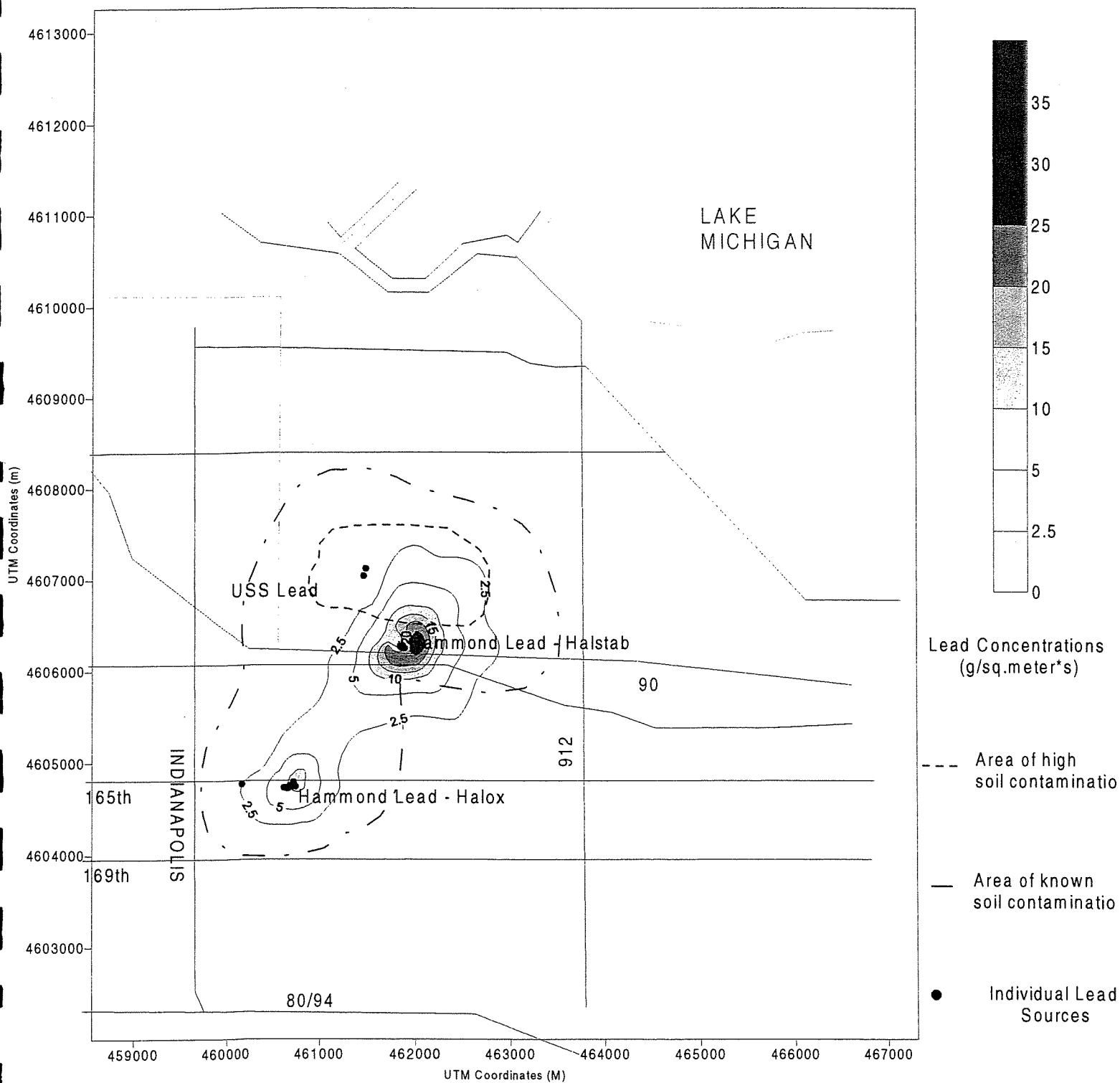


Figure B-7
Modeled Deposition Profile of Lead Including All Sources 1988

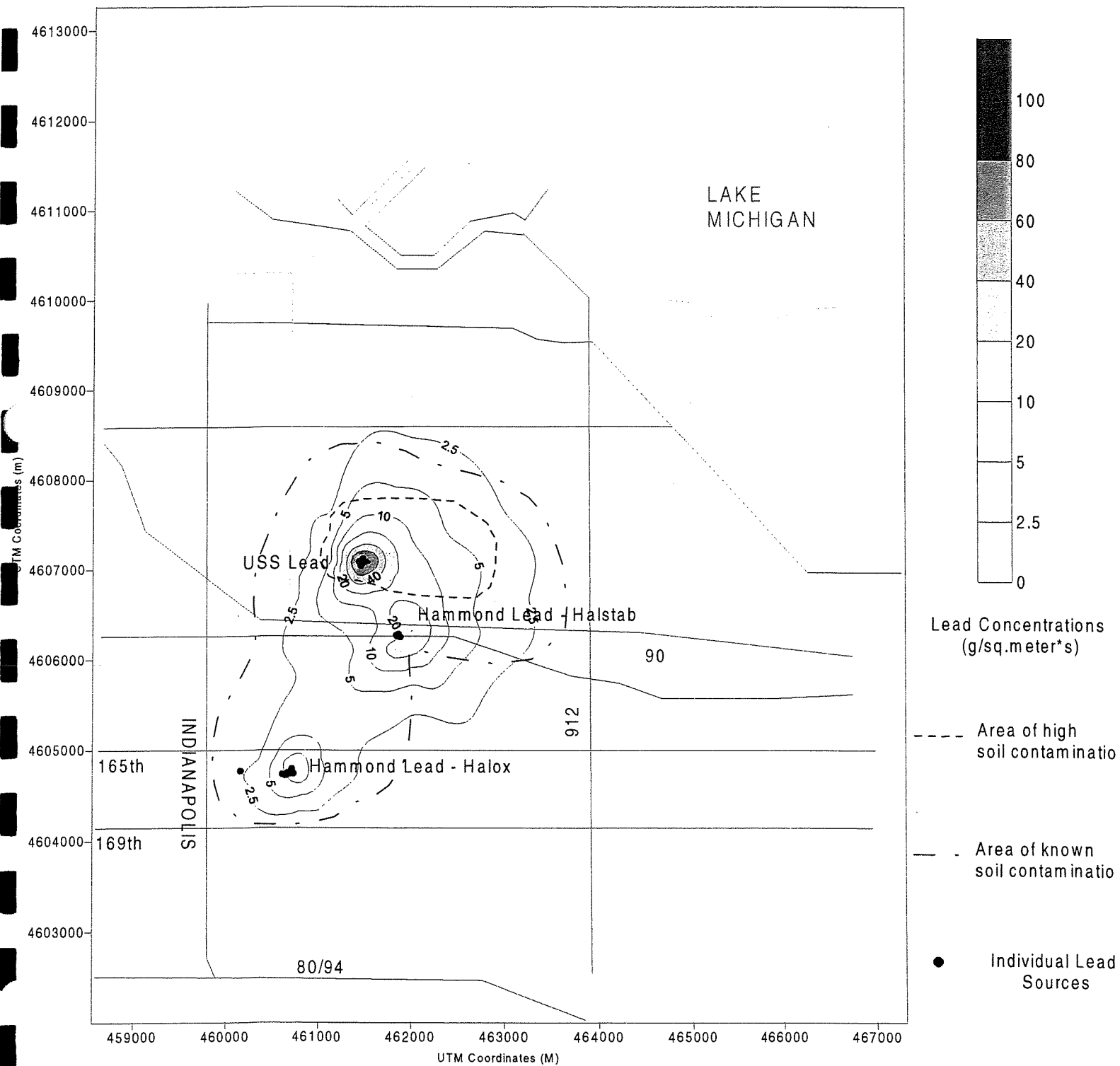
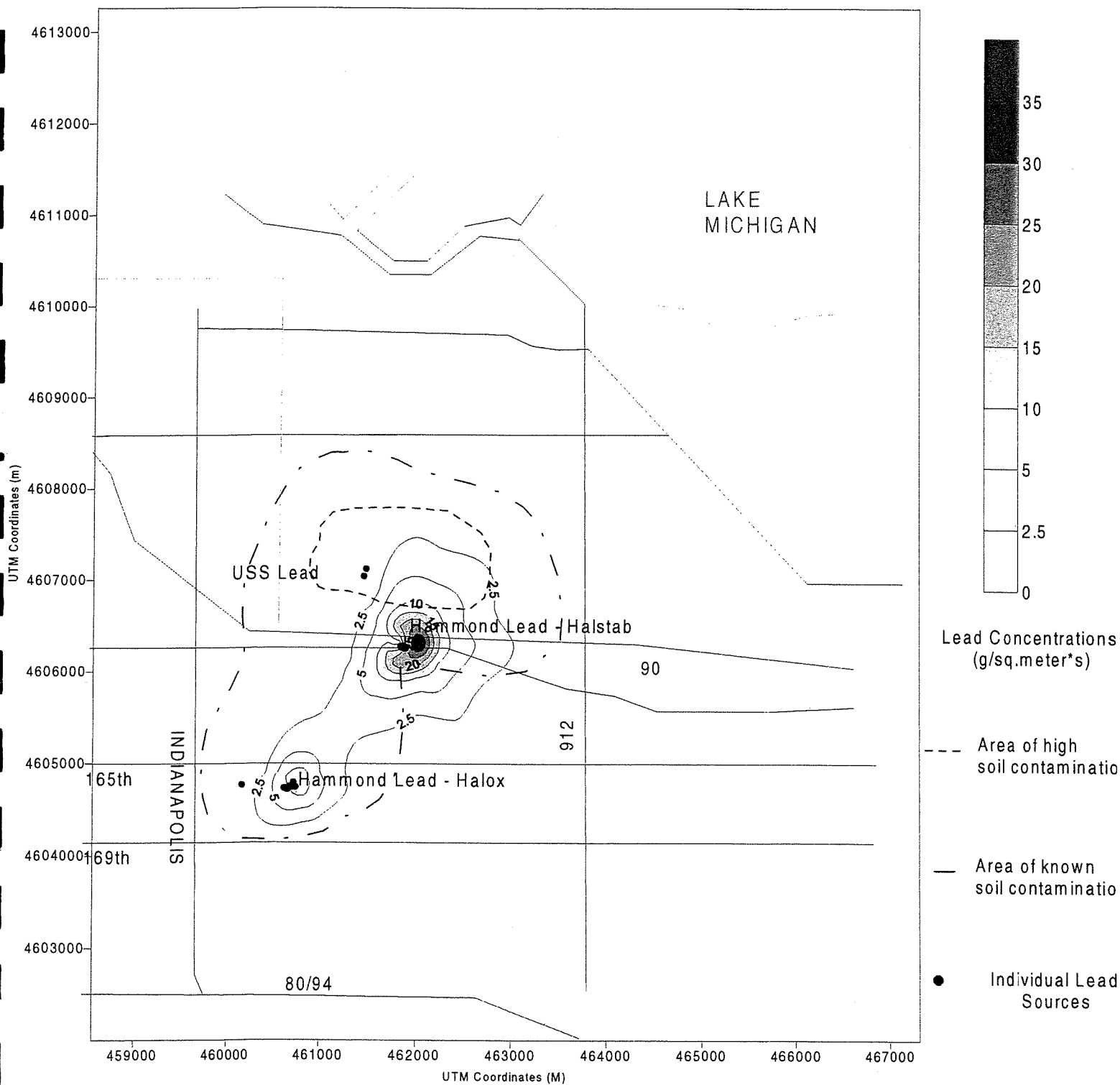


Figure B-8
Modeled Deposition Profile of Lead Sources Only 1988
(Excluding the USS Lead Volume Source)



APPENDIX C – Background Data Support Information

- Attachment 1: This information contains all the parameters used in developing the Indiana Lead SIP. This data was used to reproduce air dispersion modeling.
- Attachment 2: This document contains an emissions inventory used in the development of the parameters by which the USS Lead facility was modeled in the Indiana Lead SIP and were presumably completed by the State of Indiana.
- Attachment 3: A memo from the State of Indiana Air Pollution Control Board with detailed results from Lead Sampling and Ambient Air Monitoring in Lake County, Indiana.
- Attachment 3: These pages are a detailed production history taken as an excerpt from a process history summary completed by an independent consulting firm for E.I. Dupont. This indicates that there was lead products and waste material produced and stored on E.I. Dupont's property in the past.
- Attachment 4: A memo regarding the purchase of scrap lead by USS Lead from the adjacent E.I. Du Pont facility. This again proves that the E.I. Dupont facility has produced and stored lead on site.
- Attachment 5: This figure shows lead concentrations and concentration profiles of the soil on the E.I. Dupont property.
- Attachment 6: This data was obtained from the EPA's AIRS website and is a listing of all the plants in the state of Indiana that are currently

P

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June 3, 1986

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Copy to T. Scott
orig to JN

Mr. Richard Liscum
Chief Accountant
U.S.S. Lead Refinery, Inc.
5300 Kennedy Avenue
E. Chicago, IN 46312

Re: Indiana Lead SIP

Dear Dick:

Please find enclosed a copy of the technical support documentation which has been developed by the State of Indiana in support of its upcoming rulemaking process proposing lead emission limits for U.S.S. Lead. In reviewing the enclosed documentation, please note that the State intends to propose a reduction in emissions ("rollback") for the U.S.S. Lead facility.

As I have previously informed you, I expect that the State will initiate the rulemaking process in the next several weeks through the publication of a proposed rule. U.S.S. Lead will then be provided with an opportunity to comment on the proposed limits, as well as participating in the public hearing process. In the event that the proposed limits for U.S.S. Lead either are presently infeasible or, in the future, will unnecessarily restrict the ability to expand production, it is important that the Company raise its concerns now. Upon completion of the rulemaking process, the State will adopt the proposed emission limits and incorporate them into operating permits issued to U.S.S. Lead. These operating permits will be enforceable as a matter of state law. Thereafter, the limits will be submitted to federal EPA as part of a proposed lead SIP and, upon approval by federal EPA, the limits will become enforceable as a matter of federal law.

RECEIVED
SHARON STEEL CORP
MINING DIVISION

JUN 05 1986

SENIOR V.P. OFFICE

Mr. Richard Liscum
June 3, 1986
Page 2

Collier, Shannon, Rill & Scott

After you have reviewed the enclosed technical documentation, please call me if I can answer any question you may have.

Best regards.

Sincerely,



Robert N. Steinwurtzel

RNS:msd
Enclosures

cc: Mr. James Newcomb

Technical Support Documentation of
the Lead Emissions Inventory and
Modeling for the 1986 Indiana Lead SIP Revision

In partial fulfillment of the requirement to develop revisions to the Indiana lead SIP, this report is an account of the compilation of the lead emissions inventory for major (or significant) lead emission sources and the dispersion modeling thereof. The proposed emission limits for these sources developed as a result of the modeling are also reported.

It was initially proposed to model lead emissions from eight facilities as follows:

1. Navistar International (formerly International Harvester) foundry, Indianapolis.
2. Chrysler Corporation foundry, Indianapolis.
3. Refined Metals, Indianapolis.
4. Delco-Remy Division-General Motors Corporation, Muncie.
5. Oxide and Chemicals Corporation, Brazil.
6. Hammond Lead Products, Inc.-Halstab Division, Hammond, Indiana.
7. Hammond Lead Products, Inc.,-HLP and Halox Divisions, Hammond, Indiana.
8. U.S.S. Lead Refinery, Inc., East Chicago.

The ISC Long Term Model was used in all model studies. Meteorological data was supplied in STAR form by calendar quarters, and the model was run to obtain quarterly average concentrations.

The following procedure was used to generate the receptor network:

1. Receptors were located at 100 m intervals along the plant boundary (fence line).
2. The next row of receptors was located at 100 m away from the fence line and at 100 m intervals.
3. Next, there was a row of receptors at 250 m from the fence line at 250 m intervals; then a row at 500 m and at 500 m intervals; then, one row at 1 Km and at 1 Km intervals.
4. Additional receptors were filled in at the corners of each row.

Plot plans of these receptor networks are appended to this report.

Meteorological data was supplied in STAR form with frequency functions given in terms of calendar quarters:

1. Navistar International, Chrysler, Refined Metals and Delco-Remy used Indianapolis (surface)-Dayton (OH) (aloft) data from 1980 through 1984.
2. Oxide and Chemical Corporation was modeled with Terre Haute (surface) and Salem (Ill) (aloft) data for 1974 through 1978.
3. Hammond Lead and U.S.S. Lead Refinery were modeled with Midway Airport (Ill) (surface) and Peoria (Ill) (aloft) data from 1975 through 1979.

In all instances these dates were the latest consecutive years of STAR data available to the Division.

The urban dispersion coefficient option (Urban Option #3 in the ISCLT model) was used to model the Chrysler Foundry, Hammond Lead Products (both plants) and the U.S.S. Lead Refinery. Rural dispersion coefficients were used in the modeling of Refined Metals, Oxide and Chemical Corporation, and the Delco-Remy Division of General Motors Corporation.

The following emission inventory was used to model the lead emission from each of the above-listed facilities.

1. Navistar International. (International Harvester, Indianapolis)

In this instance, the company proved that their main process involving lead emission was sufficiently controlled to bring the maximum actual lead emissions to below the criteria value of 5 tons/year. The requirement to model this source was cancelled.

2. Refined Metals-(Indianapolis).

Pt. No.	Type	Descript.	UTM, Km E	N.	Stack Ht, m.	Stack gas temp, °K	Stack gas Velocity, m/sec	Stack Dia., m	Lead Emission rate, g/sec
1.	Stack	Blast furnace stack	580.200	4935.800	46.940	338.90	14.01	1.22	0.139
2.	Stack	Refinery Kettle	580.200	4395.800	24.384	294.40	26.62	0.823	0.0015
3.	Volume.	Blast furnace fugitive	580.200	4395.800	6.909	σ_{yo} 39.69m Bldg. width. 85.33m	σ_{zo} 3.119m Bldg. ht. 6.705m	_____	0.3776
4.	Volume	Casting fugitive	580.200	4395.800	6.909	σ_{yo} 19.847m Bldg. width. 42.67m	σ_{zo} 3.119m Bldg. ht. 6.705m	_____	0.0562

3. Chrysler Corporation-Foundry (Indianapolis)

Pt. No.	Type	Descript.	UTM, Km E	N.	Stack Ht, m.	Stack gas temp °K	Stack gas Velocity m/sec	Stack Dia., m	Lead Emission Rate, g/sec
1.	Pt.	Cupola Stack	566.960	4490.355	39.624	310.94	7.62	1.524	0.06934
2.	Vol.	Cupola Fugitive Stack	566.980	4400.355	37.490	σ_{yo} 2.019m Bldg. width. 8.68m	σ_{zo} 17.440m Bldg. ht. 37.49m	_____	0.3769

4. Delco-Remy Division, General Motors Corporation (Muncie)

Pt. No.	Type	Descript.	UTM, Km E	N.	Stack Ht, m.	Stack gas temp °K	Stack gas Velocity m/sec	Stack Dia., m	Lead Emission rate, g/sec
1.	Stack	Lead Oxide	635.000	4445.500	36.58	366.50	17.53	1.189	0.2772
2.	Stack	Other	635.000	4445.500	12.19	310.94	1.48	1.372	0.0122

5. Oxide and Chemical Corporation (Brazil)

Pt. No.	Type	Descript.	UTM, Km E N.	Stack Ht, m.	Stack gas temp, °K	Stack gas Velocity m/sec	Stack Dia., m	Lead Emission rate, g/sec
1.	Stack	Barton #1 Reactor	488.993 4376.819	12.19	388.70	8.62	0.457	0.027113
2.	Stack	Barton #2 Reactor	489.003 4376.819	12.19	388.70	8.62	0.457	0.027113
3.	Stack	Barton #3 Reactor	489.013 4376.819	12.19	388.70	8.62	0.457	0.027113
4.	Stack	Barton #4 Reactor	489.023 4376.819	12.19	388.70	8.62	0.457	0.027113
5.	Stack	Barton _____ dismantled and permanently shut down #5 Reactor						
6.	Stack	Rake Furnace	489.030 4376.878	12.19	422.00	8.62	0.457	7.047X10 ⁻⁴
7.	Stack	Kiln #2	489.044 4376.878	12.19	422.00	8.62	0.457	2.013X10 ⁻⁴
8.	Stack	Franklin Reactor	489.016 4376.818	9.14	477.80	8.62	0.457	0.07595
9.	Area	Fugitive Lead in Road Dust	488.900 4376.800	1.00				3.45X10 ⁻⁵

6. Hammond Lead Products, Inc., Halstab Division (Hammond)

Pt. No.	Type	Descript.	UTM, Km E N.	Stack Ht, m.	Stack gas temp, °K	Stack gas Velocity m/sec	Stack Dia., m	Lead Emission rate, g/sec
1.	Stack	Stack #S-1	461.870 4606.250	19.81	294.1	16.0	0.21	0.023
2.	Stack	#S-4	461.850 4606.280	22.86	377.4	22.1	0.52	0.012
3.	Stack	#S-5	461.850 4606.260	22.86	377.4	26.2	0.40	0.01536
4.	Stack	#S-6, S-7, S-8	461.860 4606.260	22.86	321.9	14.5	0.37	0.03203

5.	Stack	#S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16	461.840	4606.260	22.86	294.1	19.8	0.18	0.4227
----	-------	---	---------	----------	-------	-------	------	------	--------

6.	Stack	#S-17	461.830	4606.270	22.86	294.1	17.0	0.16	0.008694
----	-------	-------	---------	----------	-------	-------	------	------	----------

7. Hammond Lead Products, Inc.-HLP and Halox Division (Hammond)

Pt. No.	Type	Descript.	UTM, Km E	N.	Stack Ht, m.	Stack gas temp, °K	Stack gas Velocity m/sec	Stack Dia., m	Lead Emission rate, g/sec	Pre-improvement Control Emission Rate, g/sec
7.	Stack	Stack #1-S-1	460.670	4604.750	13.41	327.4	16.1	0.81	0.07056	
8.	Stack	#4A-S-8	460.650	4604.730	17.68	338.6	11.5	0.38	0.002205	0.018130
9.	Stack	#1-S-2	460.680	4604.740	17.68	339.7	14.5	0.38	0.002205	0.018130
10.	Stack	#1-S-26	460.690	4604.740	16.76	365.2	13.6	0.38	0.002205	0.018130
11.	Stack	#14-S-18	460.650	4604.720	17.68	306.30	19.2	0.38	0.00567	0.04662
12.	Stack	#8-S-28	460.730	4604.740	15.85	294.10	7.3	0.29	0.0041	
13.	Stack	#17-S-32	460.710	4604.790	15.24	294.10	6.5	0.30	0.00315	
14.	Stack	#1-S-4	460.160	4604.770	9.14	294.10	10.2	0.17	0.00315	
15.	Stack	#4-S-35	460.630	4604.730	17.68	308.00	21.7	0.38	0.02306	
16.	Stack	#A01 (15-S-30, 16-S-23, 14-S-17)	460.650	4604.720	17.68	356.30	5.2	0.38	0.00945	
17.	Stack	4B-S-34	460.610	4604.730	17.68	291.30	13.8	0.46	0.004095	
18.	Stack	6-S-47	460.640	4604.720	17.68	359.10	14.1	0.38	0.000126	
28.	Stack	14-S-16	460.650	4604.730	17.68	346.60	11.15	0.38	0.002205	0.010360

8. U.S.S. Lead Refinery, Inc. (East Chicago)

Pt. No.	Type	Descript.	UTM, Km E N.	Stack Ht, m.	Stack gas temp °K	Stack gas Velocity m/sec	Stack Dia., m	Lead Emission rate, g/sec
1.	Stack	Stack Emission	461.464 4607.120	35.58	338.72	15.94	1.524	0.0002414
2.	Stack Volume	Fugitive	461.440 4607.040	10.67	$\sigma_{yo} = 6.98m$ Bldg. width 30.00m	$\sigma_{zo} = 4.96m$ Bldg. ht. 10.67m	0.462	

Peak concentrations modeled on a quarterly basis are as follows:

1. Navistar International (International Harvester) Indianapolis.
(Not required to be modeled)
2. Chrysler Corporation:
2.323502 ug/m³ average during the 4th quarter of 1982 at the receptor located at UTM 556.900, 440.440.
3. Refined Metals Corporation:
13.885411 ug/m³ average during the 3rd quarter of 1980 at the receptor located at UTM 580.200, 4396.030.
4. Delco-Remy Division, General Motors Corporation, (Muncie):
0.137796 ug/m³ quarterly average at receptor at UTM (634.900, 4445.500) during Season 1, 1984.
5. Oxide and Chemical Corporation, (Brazil)
1.899558 ug/m average during the 1st quarter of 1976 at the receptor located at UTM (489.200, 4377.000)
6. Hammond Lead Products, Inc. Halstab Division, (Hammond)
4.142629 ug/m³ average during the 3rd quarter of 1978 at the receptor located at UTM (461.700, 4606.250).
7. Hammond Lead Products, Inc., HLP and Halox Division, (Hammond)
0.882857 ug/m³ average during the 3rd quarter of 1978 at the receptor located at UTM (460.635, 4604.870).
(2.003718 ug/m³ average before installation of improved controls.)
8. U.S.S. Lead Refinery, Inc. (East Chicago)
8.709450 ug/m³ average during the 1st quarter of 1978 at the receptor located at UTM (461.577, 4607.100).

The receptor locations of the peak concentrations around each of the modeled facilities are indicated on the attached plot plans.

Emission Limits

As a result of the modeling of the sources identified in the above manner, the following limits on emissions from emission points and processes are recommended:

1. International Harvester--the company has established that the fugitive emissions from their inductive furnaces are controlled bringing the total maximum actual lead emission to below the criterion value of 5 tons/year. Inasmuch as lead standard exceedances have not been monitored in the vicinity of the facility, the establishment of emission limitations is not required.

2. Refined Metals--Indianapolis

Modeling showed that exceedances of the standard would occur in the vicinity of the source requiring overall reduction in lead emission to the following values:

- | | | |
|----|------------------------------|-----------------------------------|
| a. | Blast furnace stack emission | 0.5219 t/yr or 260.9 lb/qtr |
| b. | Refinery kettles | 0.0056 t/yr or 2.8 lb/qtr |
| c. | Blast furnace process | |
| | fugitive emission | 1.4176 t/yr or 708.8 lb/qtr |
| d. | Casting | 0.2100 t/yr or 105.5 lb/qtr |
| | | <u>2.1551 t/yr or 1078 lb/qtr</u> |

3. Chrysler Corporation Foundry--Indianapolis

Modeling demonstrated that exceedances of the air quality standard would occur in the vicinity of the source.

In this case reduction of process fugitive emission as indicated would/should be required:

- | | | | |
|----|--------|------------------|--------------------------------------|
| a. | Cupola | Stack Emissions | 2.4104 t/yr or 120.520 lb/qtr |
| b. | Cupola | Fugitive Process | |
| | | Emissions | 8.2934 t/yr or 4146.72 lb/qtr |
| | | Total | <u>10.7038 t/yr or 5351.9 lb/qtr</u> |

4. Delco-Remy Division of General Motors Corporation--Muncie

Modeling showed that there were no exceedances of the air quality standard in the vicinity of the source. The values modeled should be set as emission limits for this source.

- | | | | |
|----|-----------------|-----------|---------------------------------------|
| a. | Lead oxide | Stack | |
| | | emissions | 9.6360 t/yr or 4818.00 lb/qtr |
| b. | Other operation | Stack | |
| | | emissions | <u>0.4241 t/yr or 212.05 lb/qtr</u> |
| | | Total | <u>10.0601 t/yr or 5030.05 lb/qtr</u> |

5. Oxide and Chemical Corporation--Brazil

Modeling demonstrated that exceedances of the air quality standard for lead would occur in the vicinity of the source. Reduction of allowable emissions to the following values should be required:

a.	Barton #1 Reactor	0.72715 t/yr or	363.575 lb/qtr
b.	Barton #2 Reactor	0.72715 t/yr or	363.575 lb/qtr
c.	Barton #3 Reactor	0.72715 t/yr or	363.575 lb/qtr
d.	Barton #4 Reactor	0.72715 t/yr or	363.575 lb/qtr
e.	Rake furnace	0.0245 t/yr or	12.25 lb/qtr
f.	Kiln #2	0.007 t/yr or	3.50 lb/qtr
g.	Franklin Reactor	1.7111 t/yr or	855.5 lb/qtr
h.	Area Sources (roads)	0.0012 t/yr or	0.6 lb/qtr
	Total	4.6524 t/yr or	2326.15 lb/qtr

6. U.S.S. Lead Refinery

Modeling demonstrated that exceedances of the lead air quality standard for lead would occur in the vicinity of the source. Reduction of allowable emissions to the following values should be required:

a.	Stack emissions	.00128 t/yr or	0.64 lb/qtr
b.	Fugitive process emissions	2.45 t/yr or	1225.00 lb/qtr
	Total	2.4513 t/yr or	1225.64 lb/qtr

Additionally,

1. Total removal of outside storage piles should be required.
2. Enclosure of material conveyors should be required.

7. Hammond Lead Products, Inc.

a. HLP-Halox Division--Hammond

The company presented stack parameters and emission rates as obtained by them through stack tests. Using these values, the model study showed no exceedances of the lead standard. Installation and maintenance of stipulated control efficiencies should be required.

i.	Stack No. 1-S-1	2.4528 t/yr	1226.40 lb/qtr
ii.	Stack No. 4A-S-8	0.0766 t/yr	38.32 lb/qtr
iii.	Stack No. 14-S-16	0.0766 t/yr	38.32 lb/qtr
iv.	Stack No. 1-S-2	0.0766 t/yr	38.32 lb/qtr
v.	Stack No. 1-S-26	0.0766 t/yr	38.32 lb/qtr
vi.	Stack No. 14-S-18	0.1971 t/yr	98.55 lb/qtr
vii.	Stack No. 8-S-28	0.1533 t/yr	76.65 lb/qtr
viii.	Stack No. 17-S-32	0.1095 t/yr	54.75 lb/qtr
ix.	Stack No. 1-S-4	0.1095 t/yr	54.75 lb/qtr

x.	Stack No. 4-S-35	0.0802 t/yr	40.08 lb/qtr
xi.	Stack Nos. [A01.(15-S-30, 16-S-23,14-S-17)]	0.3285 t/yr	164.25 lb/qtr
xii.	Stack No. 4B-S-34	0.1424 t/yr	71.17 lb/qtr
xiii.	Stack No. 6-S-47	0.0438 t/yr	21.90 lb/qtr
	Total	3.92435 t/yr	1961.75 lb/qtr

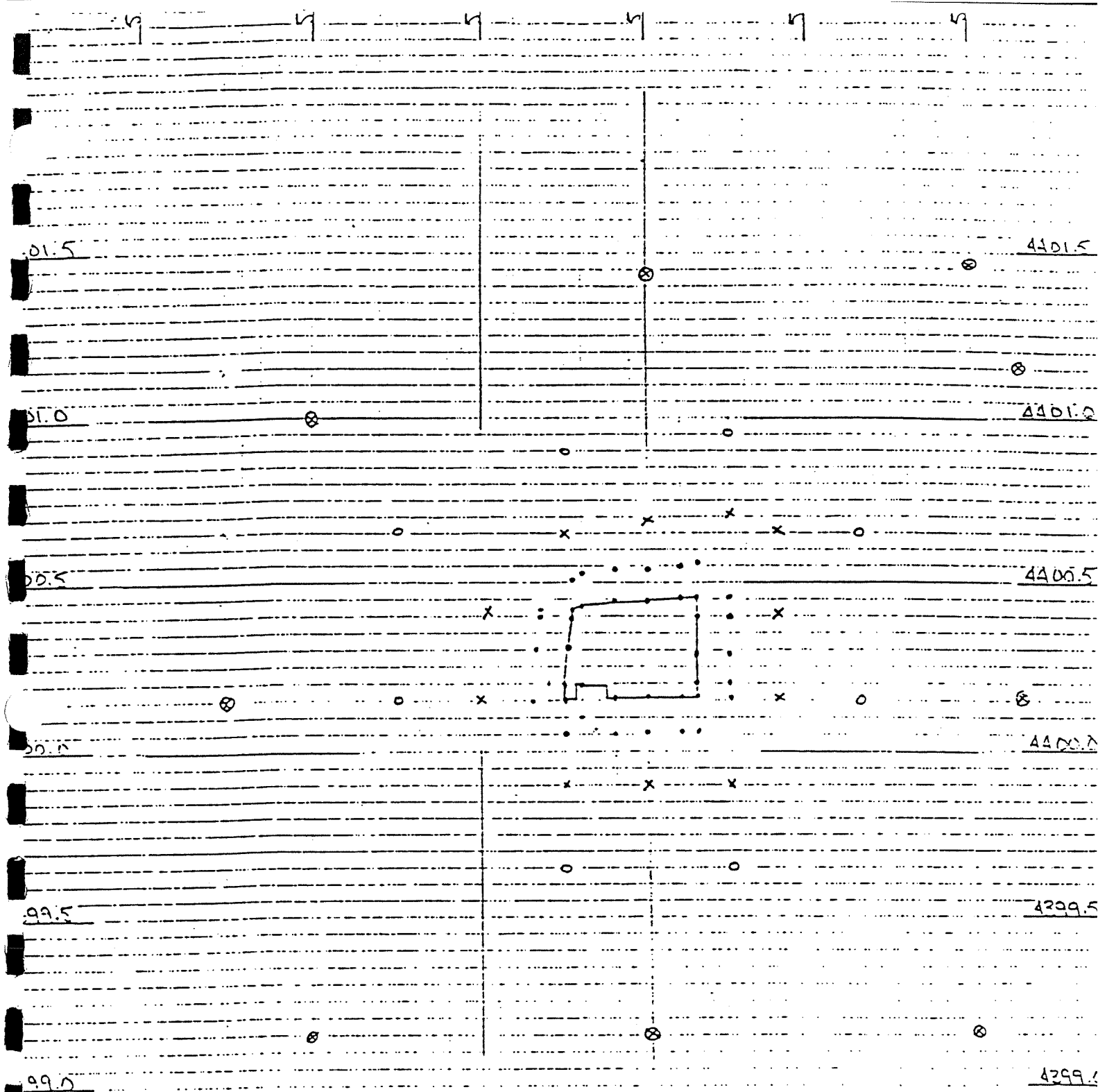
b. Halstab Division

Modeling showed exceedances of the lead standard in the vicinity of the source. Emission limits proposed are those values supplied by the company, with the exception of emitting point #v, which should be limited to total emissions governed by limitations in the individual processes that it exhausts. The company should be required to verify the stack emission rates through stack testing as soon as possible.

Maximum emission rates proposed for this source are:

i.	Stack No. S-1	0.7994 t/yr or	399.73 lb/qtr
ii.	Stack No. S-4	0.4171 t/yr or	208.57 lb/qtr
iii.	Stack No. S-5	0.5338 t/yr or	266.90 lb/qtr
iv.	Stack Nos. S-6,S-7,S-8	1.3220 t/yr or	661.01 lb/qtr
v.	Stack Nos. S-9 through S-16	1.8025 t/yr or	901.24 lb/qtr
vi.	Stack No. S-17	0.3022 t/yr or	151.11 lb/qtr
	Total	5.1770 t/yr or	2588.56 lb/qtr

Emissions through Stacks S-9 through S-16 can be combined as long as the total does not exceed the stated limit. The company should supply data as to the location and parameters of these individual stacks to insure that they can be used in a "bubble" of this type.



5165.5

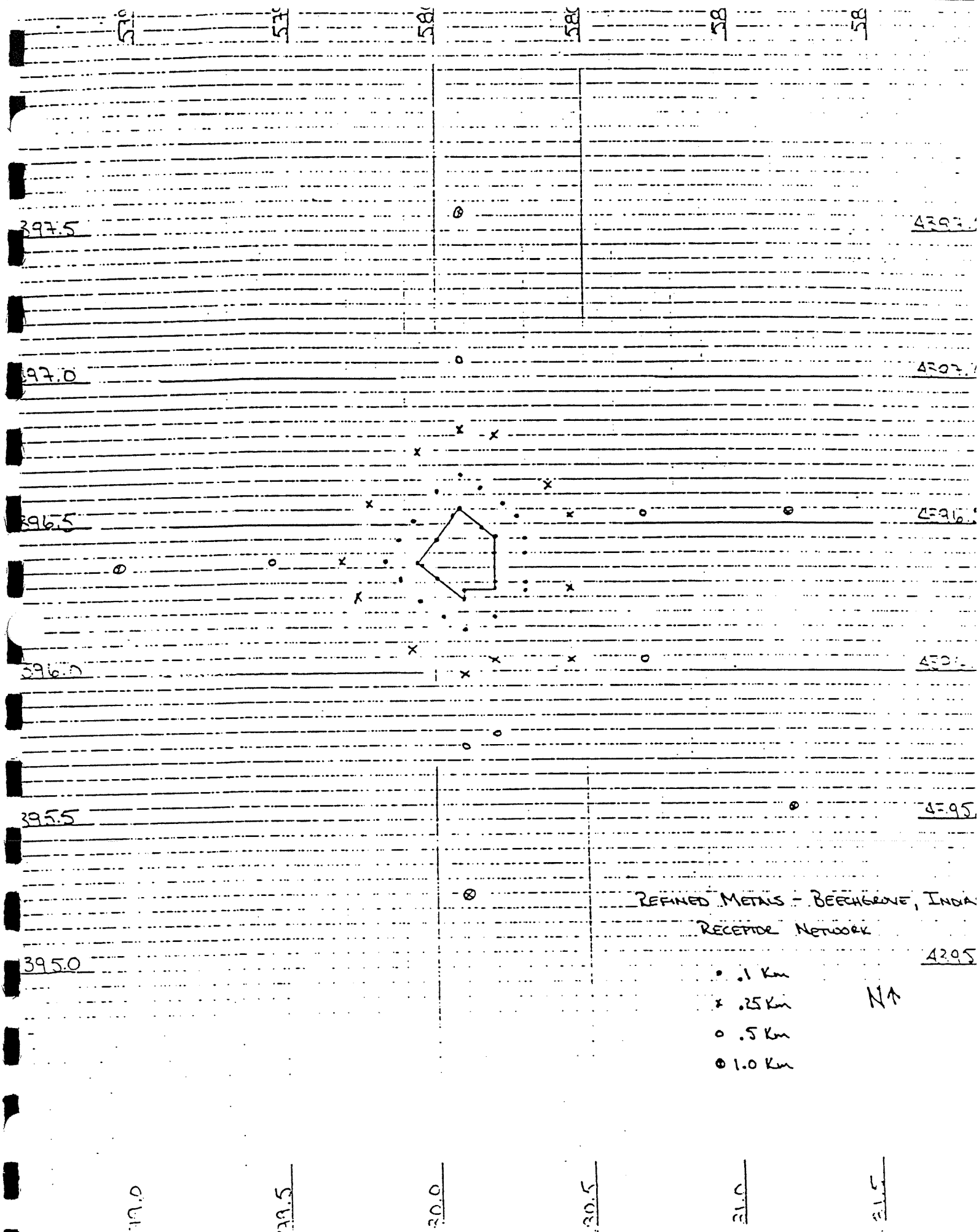
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5166.5

5167.0

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5168.0



377.0

4377

376.5

4376

376.0

4375

375.5

4375

ONDE & CHEMICAL CORP. - BEAZIL, INDIANA
RECEPTOR NETWORK

- .1 Km
- x .25 Km
- o .5 Km
- ⊗ 1.0 Km

N↑

188.0

189.5

191.0

192.5

DELCO REMY - MUNCIE INDIANA RECEPTOR NETWORK

N ↑

447.0

4443.0

446.0

4446.0

445.0

4445.0

444.0

4444.0

- .1 Km
- x .25 Km
- o .5 Km
- ⊙ 1.0 Km

434.0

435.0

436.0

437.0

605.5

4605

1605.0

4605

604.5

4604

604.0

4604

HAMMOND LEAD PRODUCTS
RECEIVER NETWORK

- .1 Km
- x .25 Km
- o .5 Km
- ⊙ 1.0 Km

1600.0

1600.5

1601.0

1601.5

1607.0

41.0

1606.5

41.0

1606.0

41.0

1605.5

4605

HAMMOND LEAD

HALSTAB

RECEPTOR NETWORK

41.0

41.5

42.0

42.5

USS LEAD CORP - 2. CHICAGO RECEPTOR NETWORK

461 461 461 461 461 461 461 461

609.5 460.7

608.0 460.8

607.5 460.7

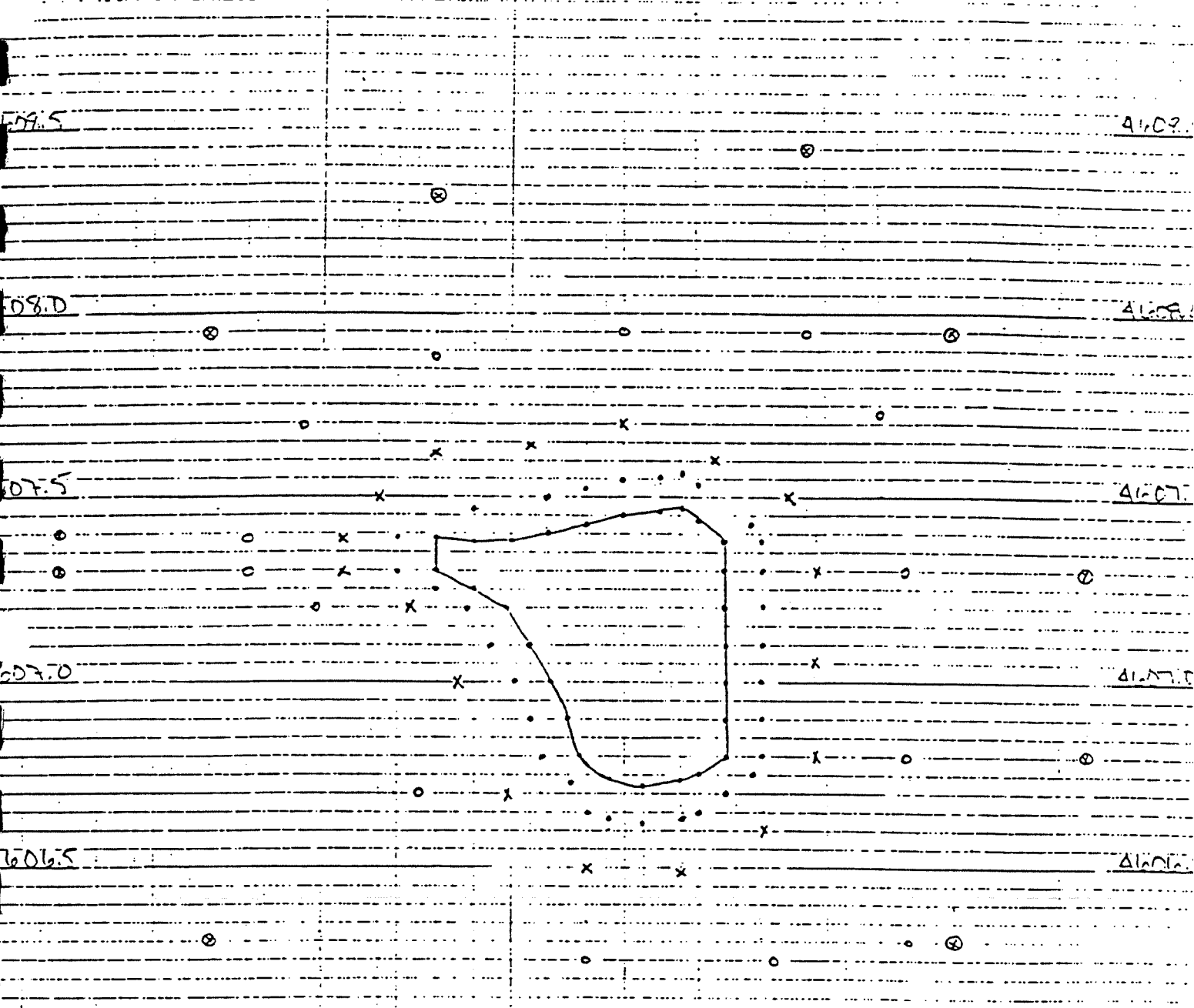
607.0 460.7

606.5 460.6

606.0 460.6

- = .1 km
- x = .25 km
- o = .5 km
- ⊙ = 1.0 km

602.0 602.5 601.0 601.5 602.0 602.5



3

3

3

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Attorneys-at-Law

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Washington, D. C. 20007

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May 22, 1986

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Frederick D. Baker
Joel M. Mitnick
K. Michael O'Connell
B. Michael Hodge

Mr. Richard Liscum
Chief Accountant
U.S.S. Lead Refinery, Inc.
5300 Kennedy Avenue
E. Chicago, Indiana 46312

RECEIVED
SHARON STEEL CORP.
TRAINING DIVISION

MAY 27 1986

Re: State of Indiana Lead SIP

SENIOR V.P. OFFICE

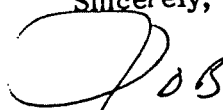
Dear Dick:

Please find enclosed a copy of the materials we received in response to a Freedom of Information Act request that we submitted on behalf of U.S.S. Lead Refinery, Inc.

The State of Indiana intends to propose emissions for the U.S.S. Lead Refinery facility in June, 1986. The State will then conduct a rulemaking on the proposed emission limitations.

We will keep you apprised of the status of this rulemaking.

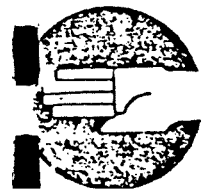
Sincerely,



Robert N. Steinwurtzel

RNS:msd
Enclosure

cc: Mr. James M. Newcomb
Vice President, Natural Resources
Division
Sharon Steel Corporation



STORAGE UNITS

OPERATION CERTIFICATE INFORMATION

COMPLETED BY Anthony Tralcoff
TELEPHONE NUMBER (219) 397-1012
DATE January 24, 1985

NAME OF COMPANY IL. S. S. LEAD REFINERY, INC.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PERMIT NO.	EIS POINT ID	TANK NO.	DIAMETER (FT.)	HEIGHT (FT.)	ROOF TYPE*	MATERIAL STORED**	REED VAPOR PRESSURE (PSI)	ACTUAL PRESSURE VAPOR (PSI)	CAPACITY (10s GLNS.)	THROUGH-PUT (10s GLNS.)	A-P-42 CODE	EMISSION FACTOR	EMISSION LIMITATION (TONS/YR.)	FEE \$	REMARKS
		EAST	8	8		No. 2 Fuel Oil	ATM	ATM	.254					\$10.00	
		WEST	8	8		No. 2 Fuel Oil	ATM	ATM	.254					\$10.00	
THESE TANKS ARE EMPTY, BUT WE WANT TO BE ABLE TO USE IF NECESSARY IN THE FUTURE.															

*Roof Types: FR = Fixed Roof
FLR = Floating Roof
IFR = Internal Floating Roof
VR = Vapor Recovery System
**Material Stored: 2 FO = #2 Fuel Oil
5 FO = #5 Fuel Oil
8 FO = #8 Fuel Oil
GO = Gas Oil
UG = Unleaded Gasoline
LG = Leaded Gasoline
CS = Crude Oil Sweet
CR = Crude Oil Sour
J4 = Jet Fuel JP4
JA = Jet Fuel Kerosine
O = Other Type, Please Specify

EQUIPMENT OTHER THAN STORAGE UNITS OPERATION CERTIFICATE INFORMATION

PERSON COMPLETING FORM Anthony Traicoff

NAME OF COMPANY U. S. S. LEAD REFINERY, INC.

TELEPHONE NUMBER (219) 397-1012

DATE January 24, 1985

1	2	3	4	5	6	7	8	9	10	11	12
PERMIT NO.	EIS POINT ID	NAME OF UNIT	CONTROL EFF. (IF CONTROL UNIT) %	FUEL (a) MATERIAL POLLUTANT	DESIGN (b) CAPACITY	OPERATION HOURS/YR.	POLLUTANT	EMISSION RATE (c) LB/HR	ANNUAL (d) EMISSION TON/YR	FEE (e)	REMARKS
		BLAST FURNACE		COKE LEAD OXIDE FLUXES	4 TN/HR.	7500				\$20.00	
		SLAG FURNACE		NAT. GAS FLUE DUST	.58 TN/HR.	7500				10.00	
		BLAST FURNACE AFTERBURNER - MAIN STACK		NAT. GAS FLUE GASES	7.0 x 10 ⁶ BTU/HR	7500				10.00	
		BLAST FURNACE KETTLE		NAT. GAS LEAD	2.6 x 10 ⁶ BTU/HR	300				10.00	PREVIOUSLY NO. 2 MIXED METAL KETTLE
		METAL ALLOYING KETTLE NO. 1		NAT. GAS LEAD	5.0 x 10 ⁶ BTU/HR	1400				10.00	PREVIOUSLY WEST BAR KETTLE
		METAL ALLOYING KETTLE NO. 2		NAT. GAS LEAD	5.0 x 10 ⁶ BTU/HR	1600				10.00	PREVIOUSLY BAR KETTLE
		METAL ALLOYING KETTLE NO. 3		NAT. GAS LEAD	5.0 x 10 ⁶ BTU/HR	1100				10.00	PREVIOUSLY EAST BAR KETTLE
		METAL ALLOYING KETTLE NO. 4		NAT. GAS LEAD	2.6 x 10 ⁶ BTU/HR	1200				10.00	PREVIOUSLY METAL KETTLE #1
		METAL ALLOYING KETTLE NO. 5		NAT. GAS LEAD	2.6 x 10 ⁶ BTU/HR	900				10.00	PREVIOUSLY MIX- METAL KETTLE #4
		METAL ALLOYING CAULKING LEAD KETTLE		NAT. GAS LEAD	1.25 x 10 ⁶ BTU/HR	500				10.00	

NOTES:

- a Type of
- b Capacity Units
- c Other Units

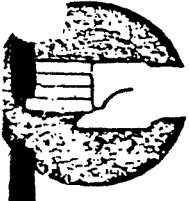
SPECIAL CONDITIONS

Fuel Burning
Fuel
MMBTU
LB/MMBTU

Process
Material Charged
TON/HR
LB/TON

Control Equipment
Pollutant Emitted
ACFM
GR/DSCF

d Annual Emissions (TON/YR.) = Emission Rate, LB/HR. x Operating Hours HRS./YR. + 2000
e Refer Section 5.2 of Air Quality Control Ordinance



EQUIPMENT OTHER THAN STORAGE UNITS OPERATION CERTIFICATE INFORMATION

PERSON COMPLETING FORM A. Trailcoff
TELEPHONE NUMBER (219) 397-1012
DATE January 28, 1985

NAME OF COMPANY U. S. S. LEAD REFINERY, INC.

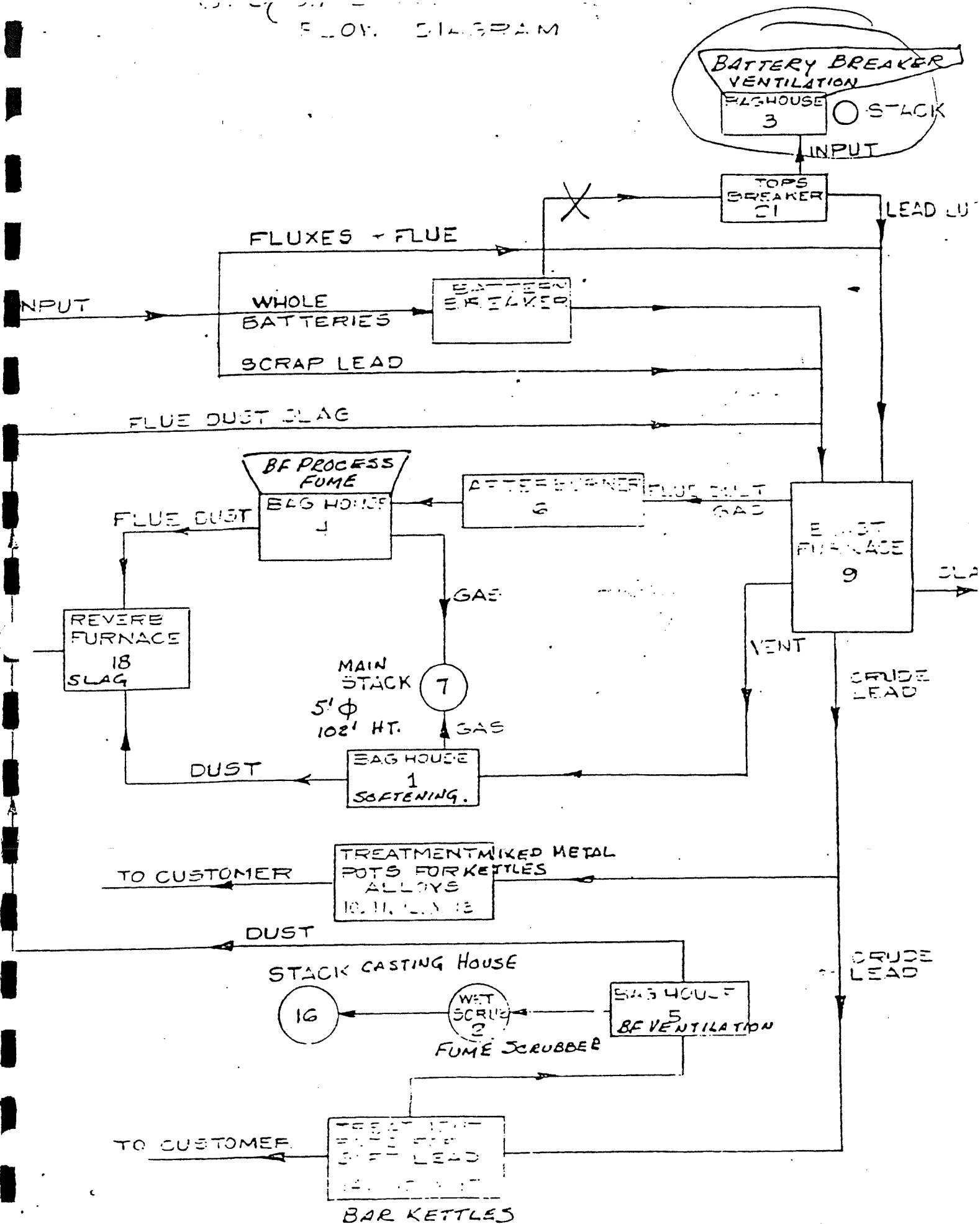
1	2	3	4	5	6	7	8	9	10	11	12
PERMIT NO.	EIS POINT ID	NAME OF UNIT	CONTROL EFF. (IF CONTROL UNIT) %	FUEL (a) MATERIAL POLLUTANT	DESIGN (b) CAPACITY	OPERATION HOURS/YR.	EMISSION LIMITATION		ANNUAL (d) EMISSION TON/YR	FEE (e)	REMARKS
							POLLUTANT	EMISSION RATE (c) LB/HR			
		BLAST FURNACE PROCESS FUME BAGHOUSE WHEELABRATOR MODEL 210	99.99	LEAD OXIDE DUST	46,000	7500				\$20.00	
		BLAST FURNACE VENTILATION BAGHOUSE WHEELABRATOR A-102345	99.99	LEAD OXIDE DUST	21,000	7500				20.00	
		SLAG FURNACE BAGHOUSE E.V.O. MODEL (2 COMPS)	99.99	LEAD OXIDE DUST	7,700 ACFM	7500				40.00	
		METAL ALLOYING PACKED TOWER FUME SCRUBBER	95	NO _x	5,000 ACFM					20.00	
		METAL ALLOYING BAGHOUSE NO. 1	99.99	LEAD OXIDE DUST	5,000 ACFM					20.00	PREVIOUSLY SORTENING VENT. BAGHOUSE
		METAL ALLOYING BAGHOUSE NO. 2	99.99	LEAD OXIDE DUST	5,000 ACFM					20.00	PREVIOUSLY BATTERY BREAKFk VENT. BAGHOUSE
		METAL ALLOYING BAGHOUSE NO. 3	99.99	LEAD OXIDE DUST	1,000 ACFM					20.00	PREVIOUSLY SLAG FURNACE VENT. BAGHOUSE

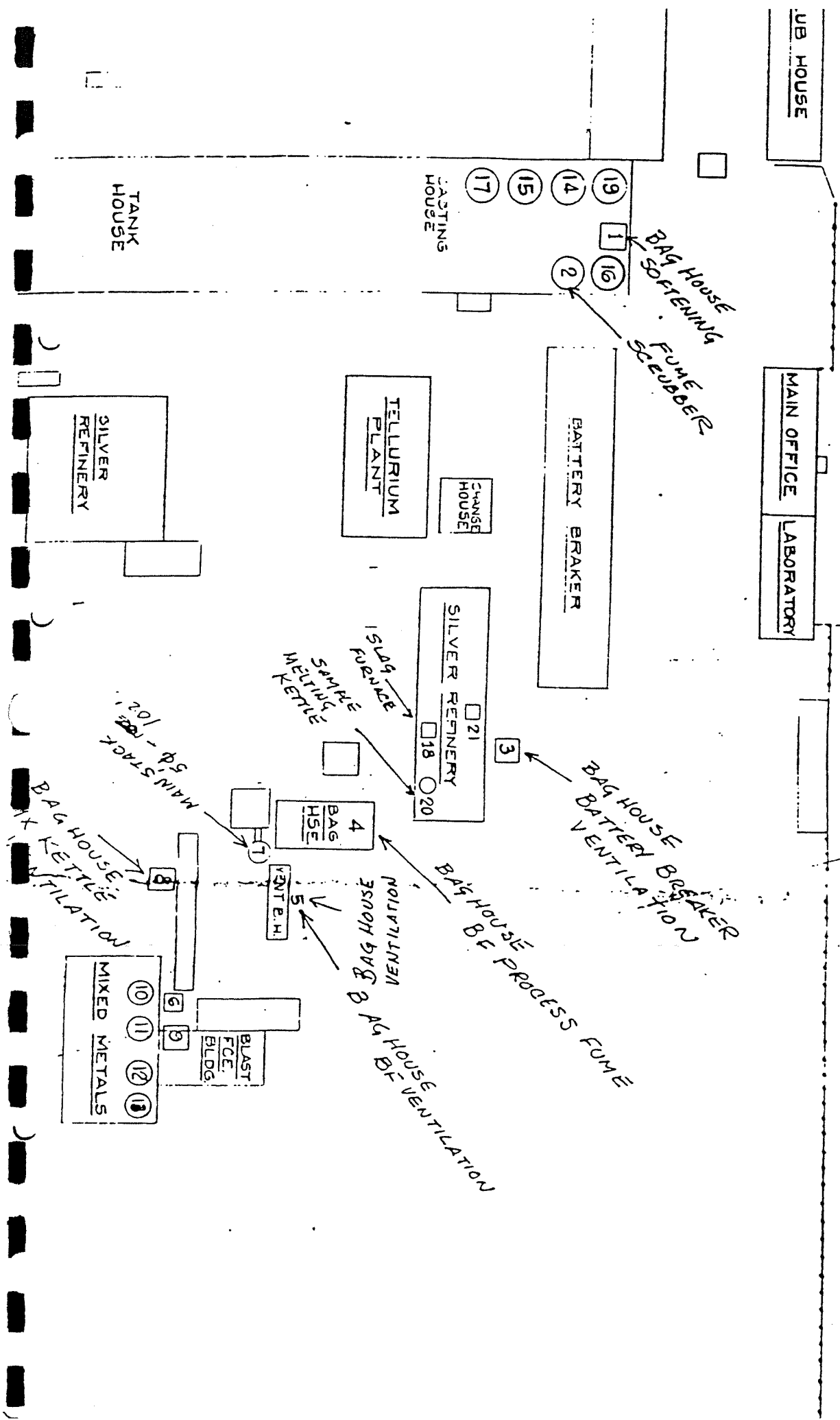
NOTES:
a Type of Capacity Units
b Capacity Units
c Other Units
SPECIAL CONDITIONS

Fuel Burning: Fuel MMBTU LB/MMBTU
Process: Material Charged TON/HR LB/TON
Control Equipment: Pollutant Emitted ACFM GR/DSCF

d Annual Emissions (TON/YR.) = Emission Rate, LB/HR. x Operating Hours HRS./YR. + 20
e Refer Section 5.2 of Air Quality Control Ordinance

Flow Diagram





U.S.S. Lead Refinery Inc
East Chicago

Summary of Emission Inventory

tons/year

	1985	1987 [*]
Blot Furnace	13.20	13.99
Refining Kettle	0.0018	0.0019
Casting	1.60	1.70
Residuary Furnace (Kettle)	0 [*]	0.37
Total	14.80	16.06

* Furnace presently shut down

** 2% yearly growth

Indrana Lead SIP
Calculation of Lead Emissions
For U.S.S. Lead Refinery Inc

1. Blast Furnace

Annual throughput - 14,000 - 18,000 tons/year

Type of control & efficiency - baghouse (99.9%)

Emission Rate (1975. Slag incl) - $0.17 \frac{\text{lb}}{\text{hr}}$

Emission Factor (fugitive) = $0.6 - 3.6 \frac{\text{lb}}{\text{tn}}$ (For charging, slag tapping, & Lead tapping)
= 2.1 (avg)

Stack height - 102 ft

Stack dia - 60"

Stack gas temp - 150°F

Flows - 81,610 ACFM

Operating schedule - 24 hrs/day
- 7500 hrs/year

Slag tapping emission factor - $0.41 \frac{\text{lb}}{\text{tn}}$ Pb

Lead tapping emission factor - $0.20 \frac{\text{lb}}{\text{tn}}$ Pb

charging " " - $1.49 \frac{\text{lb}}{\text{tn}}$ Pb

$$\begin{aligned} \text{Slag tapping emission} &= 0.41 \frac{\text{lb}}{\text{tn}} \times 16,000 \frac{\text{tons}}{\text{year}} \times \frac{1 \text{ tn}}{2000 \text{ lb}} \\ &\quad \times (1 - 0.999) \\ &= 0.003 \frac{\text{tons}}{\text{year}} \text{ Pb} \end{aligned}$$

$$\begin{aligned} \text{Lead tapping emission} &= 0.20 \frac{\text{lb}}{\text{tn}} \times 16,000 \frac{\text{tons}}{\text{year}} \times \frac{1 \text{ tn}}{2000 \text{ lb}} \\ &\quad \times (1 - 0.999) \\ &= 0.0016 \frac{\text{tons}}{\text{year}} \text{ Pb} \end{aligned}$$

Summary of Lead Emissions for U.S. Lead Refining Plant East Chicago				
Process Equipment	Annual Production Tons/Year	E.F. Type of Control Efficiency	Stack Lead Emission Tons/Year	Fugitive Lead Type of Control Emissions Tons/Year
Blast Furnace	14,000 - 18,000	0.17 $\frac{lb}{Tm}$ (Stack test)	baghouse (99.99%) 0.64	no control on charging direct (slag & lead lipping are controlled by baghouse 99.99%) 1.49 (emanating) 0.20 (lead lipping) 0.41 (slag lipping) 12.56
Refining Kettles	14,000	0.21 $\frac{lb}{Tm}$ (AP-42)	baghouse (99.99%) 0.0017	baghouse 99.99% 0.01 0.0008 (neglig)
Castings	14,000	—	—	uncontrolled 0.20 1.60
Reverberatory Furnace (Refining)	4,350	34 $\frac{lb}{Tm}$	baghouse (99.99%) 0.07	disturbance control eff of 50% 0.21 0.30
* Possibly Shutdown				
			total 0.71	

2 -

$$\begin{aligned} \text{Pb emission during charging} &= 1.49 \frac{\text{lb}}{\text{ton}} \times 16,000 \frac{\text{ton}}{\text{year}} \\ &\times \frac{1 \text{ ton}}{2000 \text{ lb}} = \underline{11.92} \frac{\text{tons}}{\text{year}} \text{ Pb} \end{aligned}$$

$$\begin{aligned} \text{Total lead fugitive emissions} &= 0.003 + 0.0016 + 11.92 \\ &= \underline{11.92} \frac{\text{tons}}{\text{year}} \end{aligned}$$

$$\begin{aligned} \text{Slack emission} &= 0.17 \frac{\text{lb}}{\text{hr}} \times 7500 \frac{\text{hrs}}{\text{year}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \\ &= \underline{0.64} \frac{\text{tons}}{\text{year}} \end{aligned}$$

$$\begin{aligned} \text{Total Blast furnace lead emission} &= 11.92 + 0.64 \\ &= \underline{12.56} \end{aligned}$$

2. Kettle Refining

Annual Throughput for 5 Refinery Kettles - 16,000 $\frac{\text{ton}}{\text{year}}$
Type of control & efficiency - baghouse (99.9%)
Emission Factor (Slack) - 0.21 $\frac{\text{lb}}{\text{ton}}$ (AP-42)

Emission Factor (Fugitive) - 0.01 $\frac{\text{lb}}{\text{ton}}$ (AP-42)

Slack lead emission (E_s)

$$\begin{aligned} E_s &= 16,000 \frac{\text{tons}}{\text{year}} \times 0.21 \frac{\text{lb}}{\text{ton}} \times (1 - 0.999) \times \frac{1 \text{ ton}}{2000 \text{ lb}} \\ &= \underline{0.0017} \frac{\text{tons}}{\text{year}} \end{aligned}$$

Fugitive lead emission (E_f)

$$\begin{aligned} E_f &= 16,000 \frac{\text{tons}}{\text{year}} \times 0.01 \times \frac{1 \text{ ton}}{2000 \text{ lb}} \times (1 - 0.999) \\ &= \underline{0.0008} \frac{\text{tons}}{\text{year}} \end{aligned}$$

$$\text{Total emission} = 0.0017 + 0.0008 = \underline{0.00178} \frac{\text{tons}}{\text{year}}$$

3. Casting

Annual Throughput - 16,000 tons/year

Type of control and efficiency - uncontrolled (vented to roof vent)

Emission Factor (E_f)
(Fugitive) - 0.2 $\frac{lb}{ton}$ (AP-42)

$$E_f = 16,000 \frac{tons}{year} \times 0.2 \frac{lb}{ton} \times \frac{1 ton}{2000 lb}$$

$$= 1.6 \frac{tons}{year}$$

4. Reverberating furnace (Rotary)

Note: This equipment has been shutdown for a long time. The company indicated that they reserve the right to use it in the future

capacity = 0.58 tons/hr

operating time = 7500 $\frac{hours}{year}$

Emission Factor - 34 $\frac{lb}{ton}$

$$\text{Load stack Emission} = 0.58 \frac{tons}{hr} \times 7500 \frac{hours}{year} \times 34 \frac{lb}{ton}$$

$$> \frac{1 lb}{2000 lb} \times (1 - 0.999)$$

$$= 0.07 \frac{tons}{year}$$

- 4 -

$$\begin{aligned}\text{Lead Fugitive emission} &= 0.58 \frac{\text{ton}}{\text{hr}} \times 7500 \frac{\text{hrs}}{\text{year}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \\ &\quad 0.21 \frac{\text{lb}}{\text{ton}} \times 0.5 \\ &= 0.23 \frac{\text{ton}}{\text{year}}\end{aligned}$$

$$\begin{aligned}\text{Lead fugitive emission} &= 0.58 \frac{\text{ton}}{\text{hr}} \times 7500 \frac{\text{hrs}}{\text{year}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} \\ &\quad \times 0.21 \times 0.5 (1 - 0.999) \\ &= 0.0002 \frac{\text{ton}}{\text{year}}\end{aligned}$$

$$\begin{aligned}\text{Total emission from the} & \\ \text{reverberatory furnace} &= 0.07 + 0.23 + 0.0002 \\ &= 0.30 \frac{\text{ton}}{\text{year}}\end{aligned}$$

USS-200

SUMMARY
AIR POLLUTION CONTROL BOARD

January 2, 1985

Public Hearing - Lead Emission Limits - Lake County

The Board submitted a State Implementation Plan (SIP) for maintaining the lead (Pb) emission standards to EPA on March 1, 1984. EPA has requested that the Board establish enforceable limits for lead emissions on the more significant sources impacting the hot spot.

In Lake County these sources are:

1. LTV Steel, East Chicago
2. Inland Steel, East Chicago
3. USS Lead Company, East Chicago
4. East Chicago Municipal Incinerator, East Chicago
5. Hammond Lead Products, Hammond

The local agencies having jurisdiction have amended permits making the limits enforceable by them. The Board is being asked to approve these limits, making them enforceable by the State and submitting them to EPA as a SIP revision.

RECOMMENDATION: That following a public hearing, and if no persuasive adverse comments are received, the Board adopt this revision to the SIP and authorize the Technical Secretary to submit the same to EPA.

12/17/84

Indiana Lead SIP Short Term Limits

Short term limits applied to the sources modeled in the Lake County portion of the Lead SIP. These limits are based upon 8,760 hours of operation per year.

<u>Company</u>	<u>Source</u>	<u>Emission Limits</u>	
		<u>Tons of Lead/Yr.</u>	<u>Pounds of Lead/Hr.</u>
East Chicago Incinerator	Incinerator	0.62	0.142
Hammond Lead Halstab Plant	Sulfate Hopper	0.03065	0.007
	Phtalate Hopper	0.01045	0.002
	White Lead Hopper	0.00195	0.0004
	Bulk Bag Dumping Station	0.01112	0.0025
	Raw Material Handling		
	Blended Scale Hopper	0.0053	0.0012
	Blender	0.0581	0.0133
	Blended Product Storage		
	Hopper	0.10554	0.0241
	Product Packing Operation	0.00007	0.00002
	Area Source	0.0611	0.01395
	Plant Total	0.2842	0.06447
Hammond Lead Lead Division	#1 Barton	0.8523	0.1946
	#2 Barton	0.0265	0.0061
	#7 Litharge Furnace		
	#3 Barton	0.0156	0.0036
	#4 Barton	0.0156	0.0036
	#5 Barton	0.0156	0.0036
	Bulk Loading N-S-Tanks	0.0389	0.0089
	100 Y Bulk Loading System	0.1556	0.0355
	Red Lead Bulk Loading		
	System	0.1556	0.0355
	Area Source	0.2409	0.056
		1.5166	0.3464
Inland Steel	Coke Ovens	0.0708	0.0162
	#3 Open Hearth	4.2924	0.98
	Blast Furnace A	0.3883	0.089
	Blast Furnace B	0.3883	0.089
	Blast Furnace 1	0.2362	0.054
	Blast Furnace 2	0.2362	0.054
	Blast Furnace 3	0.2362	0.054
	Blast Furnace 4	0.2362	0.054
	Blast Furnace 5	0.3883	0.089
	Blast Furnace 6	0.3883	0.089
	Blast Furnace 7	1.1324	0.259

<u>Company</u>	<u>Source</u>	<u>Emission Limits</u>	
		<u>Tons of Lead/Yr.</u>	<u>Pound of Lead/Hr.</u>
Inland Steel (cont.)	Blast Furnace Casthouse A	0.1725	0.039
	Blast Furnace Casthouse B	0.1725	0.039
	Blast Furnace Casthouse 1	0.1049	0.024
	Blast Furnace Casthouse 2	0.1049	0.024
	Blast Furnace Casthouse 3	0.1049	0.024
	Blast Furnace Casthouse 4	0.1049	0.024
	Blast Furnace Casthouse 5	0.1725	0.039
	Blast Furnace Casthouse 6	0.1725	0.039
	Blast Furnace Casthouse 7	0.2071	0.047
	#2 Basic Oxygen Furnace #10 and 20	0.2234	0.051
	#2 Basic Oxygen Furnace Secondary Vent	0.2234	0.051
	#4 Basic Oxygen Furnace	5.5188	1.26
	Sinter Plant WB	0.0095	0.002
	Sinter Plant Disc	0.0095	0.002
	Electric Arc Furnace	0.1831	0.042
	4 AC Boilers #401, 402, 403, 404	0.046	0.011
	4 AC Boilers #405	0.017	0.004
	Residual Oil Plant Wide	0.1365	0.031
	#2 BOF Roof Monitors	3.0	0.685
	#4 BOF Roof Monitors	1.43	0.326
	#3 OH Roof Monitors	4.758	1.086
	Waste Oil	0	0
		24.8655	5.677
Jones & Laughlin	Sinter Plant Windbox	0.433	0.099
	Sinter Plant Discharge	0.983	0.224
	Basic Oxygen Furnace	1.955	0.446
	Blast Furnace Stove #1	0.266	0.061
	Blast Furnace Stove #2	0	0
	Blast Furnace Stove #3	0.2569	0.059
	Blast Furnace Stove #4	0.3893	0.089
	Blast Furnace Casthouse #1	1.1966	0.273
	Blast Furnace Casthouse #3	1.8666	0.426
	Blast Furnace Casthouse #4	2.005	0.458
	Coke Oven	0.016	0.004
	Residual Oil (1)	0.0315	0.007
	Waste Oil (1)	0.0055	0.001
	Chem. Fuel (1)	0.213	0.049
	Residual Oil in Boiler House	0.022	0.005
	BOF Roof Monitors	5.626	1.284
		15.265	3.485
U.S.S. Lead Refinery		1.24	0.283

(1) Burned throughout plant, modeled as area source

The short term limits in the foregoing table will be enforceable on a calendar month basis by multiplying the appropriate emission factor by the number of hours of operation during the month. Emission factors shall be derived by stack test to be performed once a year for all sources permitted to emit more than 0.1 pounds per hour of lead and every other year for all other listed sources. The test shall comply to the extent practicable with EPA test Method 12. If such method is not found to be practicable, the company may petition the Board to approve another method. Once established the emission factor shall apply from the month of test until a new emission test is performed and accepted. During the interim between the approval of these limits and the time a test is performed, if there is no prior approved test, emission factors published by the U.S. EPA shall be used.

Appendix B. Detailed Production History



DUPONT EAST CHICAGO, INDIANA PRODUCTION HISTORY

PRODUCTS	BEGAN OPERATION	DISCONTINUED OPERATION
2,4-D Sodium weed killer - 83 %	1946	1946
4-All Drain Solvent	1924	1926
Acetic Acid - Gray Lime acetate	1902	1930
Acetic Acid - Purchased and rehandled	1930	1982
Adhesive # 60 (Weather Proof)	1954	1963
Adhesive # 71 (Weather Proof)	1949	1951
Adhesive # 72 (Weather Proof)	1949	1951
Adhesive # 73 (Weather Proof)	1946	1952
Adhesive # 77 (Weather Proof)	1944	1963
Adhesive # 78 (Weather Proof)	1944	1963
Adhesive # 78X (Weather Proof)	1958	1963
Aluminum Chloride Solution	1947	1975
Aluminum Chloride - HCl	1954	1975
Ammate Solution	1959	1978
Ammate X	1959	1978
Ammonium Chloride	1909	1928
Ammonium Chloride from new leaved crystal	1928	1963
Ammonium Chloride - new facilities	1963	1969
Ammonium Hydroxide Reagent	1899	1906
Ammonium Hydroxide Reagent - new facilities	1958	1984
Anisole	1948	1949
Arsenate Green	1926	1926
Arsenic Acid	1914	1949
Barium Fluorosilicate (Insecticide)	1930	1943
Benlate	1968	1971
Benomyl	1968	1970
Bordeaux Mixture Insecticide	1910	1940
C & C Mixture (Zn Cl ₂ and Muriatic)	1944	1964
Calcium Arsenate	1919	1948
Calcium Arsenite	1927	1931
Chlorosulfonic Acid	1966	1984
Chromated Zinc Chloride Dry	1940	1969
Chromated Zinc Chloride Solution	1947	1969
Colloidal Silica 1A	1955	1957
Colloidal Silica # 17	1956	1956
Copperized Chromated Zinc Chloride Dry	1950	1964
Copperized Chromated Zinc Chloride Solution	1951	1951
Deenate 25W (Insecticide)	1945	1946
Deenate 50W (Insecticide)	1946	1947
Detergents	1932	1951
Disodium Phosphate Crystal	1926	1937
Duclean # 1 Inhibited Sulfuric Acid	1929	1984
Duclean # 2 Inhibited Hydrochloric Acid	1931	1977
EPN 300 Insecticide	1950	1952
EPN 45 % Emulsified	1952	1953
EPN Miticide	1950	1952
Fenuron	1964	1964
Ferric Sulfate (Copperous)	1909	1920
Fluorosulfonic Acid	1975	Present
Freon - Kinetics Operation	1948	1977
Garden and Potato Dust	1944	1944
Glattite	1909	1910
Glauber's Salt (Sodium Sulfate)	1898	1948
Hydrochloric Acid and Salt Cake - Mechanical furnace	1936	1959
Hydrochloric Acid and Salt Cake - # 1 & # 2	1897	1934
Hydrochloric Acid and Salt Cake - # 3	1897	1938
Hydrochloric Acid and Salt Cake - # 4	1897	1937
Hydrochloric Acid and Salt Cake - # 5 & # 6	1897	1934
Hydrochloric Acid and Salt Cake - # 7 & # 8	1897	1944
Hydrochloric Acid and Salt Cake - # 9 & # 10	1897	1935
Hydrochloric Acid Reagent	1899	1924
Hydrochloric Acid Reagent - Distillation - electrical	1924	1937
Hydrochloric Acid Reagent - Distillation - steam	1937	1958
Hydrochloric Acid Reagent - Modernized Process	1958	1982

DUPONT EAST CHICAGO, INDIANA PRODUCTION HISTORY

PRODUCTS -----	BEGAN OPERATION -----	DISCONTINUED OPERATION -----
Hydrochloric Acid Transloading	1979	1979
Hydrochloric Acid (Anhydrous) - for Vaporization System	1977	1984
Insecticide Department Ferguson Packers	1949	1949
Insecticide Department Triangle Packers	1936	1936
Iron Agglomerates (Pyrites Cinder)	1910	1911
Lead Acetate	1910	1914
Lead Arsenate Insecticide	1910	1949
Lead Arsenate Phenothiazine Mixtures	1946	1947
Lime Sulfur Solution	1910	1948
Linuron	1964	1972
Litharge	1924	1949
Lorox	1963	1981
Ludox AM - Aluminum Modified	1961	Present
Ludox AS - Ammonium Stabilized	1960	Present
Ludox Binder Vehicle	1967	Present
Ludox HS (Colloidal Silica) - 12 millimicron	1948	1963
Ludox HS (Colloidal Silica) - new process 12 millimicron	1963	Present
Ludox HS-FS - Free Stabilized (ethylene glycol)	1964	Present
Ludox LS	1957	Present
Ludox Lithium Polysilicate 48		Present
Ludox Redip Indicator	1968	Present
Ludox SM - 7 millimicron	1957	Present
Ludox TM - 22 millimicron	1966	Present
Ludox (Purchased Nalcoag G-1295)	1947	1948
Manganar	1928	1933
Manganese Sulfate	1933	1933
Marlate 50	1947	1949
Methoxychlor	1947	1949
Methoxychlor Concentrate 80 %	1949	1949
Mixed Acid	1897	1930
Nitric Acid Reagent	1899	1924
Nitric Acid Reagent - Distillation - electrical	1924	1937
Nitric Acid Reagent - Distillation - steam	1937	1958
Nitric Acid Reagent - Modernized Process	1958	1984
Nitric Acid - NaNO ₃ Process	1896	1929
Nitric Acid - purchased in bulk and packaged	1929	1964
Oleum - 20 %	1973	1984
Oleum - 35 %	1981	1984
Oleum - 40 % (SO ₃ Still)	1941	1945
Oleum - 40 % (SO ₃ Still)	1967	1972
Oleum - 65 %	1958	1959
Phosphoric Acid	1925	1951
Plant Food	1928	1930
Siduron	1964	1981
Sodium Bisulfite Solution (For Sale)	1941	1955
Sodium Metasilicate	1931	1958
Sodium Metasilicate - produced by Continuous Cooler	1958	1973
Sodium Silicate	1902	1940
Sodium Silicate - Continuous Fuel Oil Furnace	1940	1957
Sodium Silicate - Gas Fired Continuous	1957	Present
Sodium Silicate - No. 1 Furnace Batch	1930	1957
Sodium Sulfate S. R. Ground	1925	1949
Sodium Sulfide	1915	1929
Sodium Sulfide - Depilatory Grade	1930	1932
Sodium Thiosulfate	1916	1955
Stabilized SO ₃	1966	1984
Sulfamic Acid	1959	1984
Sulfuric Acid Chambers System No. 1	1893	1947
Sulfuric Acid Chambers System No. 2	1893	1947
Sulfuric Acid Chambers System No. 3	1905	1947
Sulfuric Acid Chambers System No. 4	1913	1955
Sulfuric Acid Chambers System No. 5	1916	1955
Sulfuric Acid Contact No. 1	1923	1955
Sulfuric Acid Contact No. 2	1947	1967

DUPONT EAST CHICAGO, INDIANA PRODUCTION HISTORY

PRODUCTS	BEGAN OPERATION	DISCONTINUED OPERATION
Sulfuric Acid Contact No. 3	1955	1982
Sulfuric Acid Contact Verein	1910	1925
Sulfuric Acid Reagent	1899	1922
Sulfuric Acid Reagent - from Oleum Production	1922	1943
Sulfuric Acid Reagent - New Vertical Absorber	1943	1958
Sulfuric Acid Reagent - Process Modernized	1958	1984
Trisodium Phosphate Crystal	1926	1951
Trisodium Phosphate Crystal - Flake	1933	
Trisodium Phosphate Crystal - Flake # 10	1939	1939
Trisodium Phosphate Crystal - High Grade Neutral Phosphate	1926	
Trisodium Phosphate Crystal - Lurgi Filter	1943	1951
Trisodium Phosphate Crystal - Monohydrate	1934	1948
Trisodium Phosphate Crystal - Monosodium Phosphate	1932	1948
Trisodium Phosphate Crystal - P Grade # 10	1939	1939
Trisodium Phosphate Crystal - P Grade (Granular)	1930	
Trisodium Phosphate Crystal - Sodium Silico Fluoride	1927	
Tupersan	1964	1981
Valron - Estersil & Estersil GT	1954	1957
Velpar Intermediate - Hexazinone	1974	1986
Zinc Ammonium Chloride	1940	1963
Zinc Ammonium Chloride - New Facilities - Zaclon	1963	1969
Zinc Chloride Fluid Flux	1960	1963
Zinc Chloride Fused	1902	1969
Zinc Chloride Granular	1902	1969
Zinc Chloride Solution	1902	1969
Zinc Oxide	1916	1937
Zinc (Battery Anodes)	1909	1931



UNITED STATES SMELTING REFINING AND MINING COMPANY INC.

SALES OFFICE
57 WILLIAM STREET
NEW YORK 5, N. Y.

A. B. MARQUAND
VICE PRESIDENT AND MANAGER OF METAL SALES

December 30, 1947

A-755

U S S Lead Refinery, Inc.
East Chicago, Ind.

Gentlemen:

DU PONT SCRAP LEAD

We have your letter 439 of December 24, 1947 and are enclosing copy of invoice sent to du Pont for the freight you paid on scrap lead.

Will you please let us know which of these lots have already been melted and included in the shipments of refined lead to Carney's Point listed on our invoices 12-, 145, 154, 174 and 196.

Very truly yours

R. J. Dan

KJ H

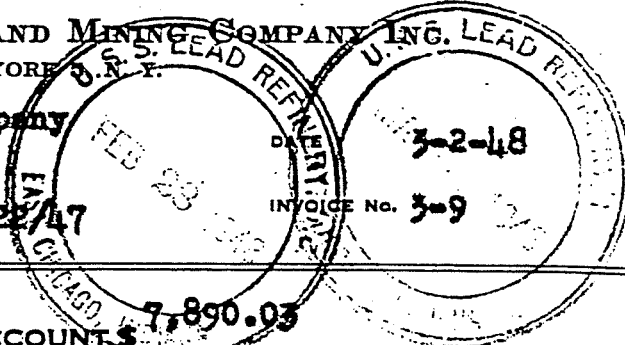
UNITED STATES SMELTING REFINING AND MINING COMPANY

57 WILLIAM STREET. NEW YORK

IN ACCOUNT WITH

E.I. DuPont de Nemours & Company
Wilmington 98, Delaware

Contract M-3915 - M486 - 10/22/47



WE THIS DAY CREDIT YOUR ACCOUNT \$ 7,890.03

Material received at Grasselli (R.R. weights)	1,543,500 lbs.
For accounting purposes, weight of material received assumed to equal weight of pig lead delivered, plus dross, etc.	1,522,962 "
Melting loss	20,538 "

Weight of Pig Lead shipped	1,439,717 lbs.
Foreign Material, scrap iron	970 lbs.
Dross	71,740 "
Skims	10,535 "
	83,245 "
	1,522,962 "
@ \$8.30 Per Ton (761.431 tons)	\$6320.29
Less previously billed Dec./Jan. (1,439,717 lbs.)	5974.83
	\$ 345.46

Dross Analysis

DuPont 85.70 * .66 = 86.36	
USB 85.24 + .26 = 85.50	
Average 85.93% x 71,740 lbs. =	
61,646 lbs. @ 14.35% per lb.	\$8846.20
Less treatment charge \$55 per ton (35.87 tons)	1972.85 6873.35
Skims	
10,535 lbs. x 95% = 10,008 @ 14.40% per lb.	1441.15
Less treatment charge \$15 per ton (5.2675 tons)	79.01 1362.14
	8235.49
	Due DuPont - \$7890.03

Freight due us on scrap lead shipped to Grasselli taken up on invoices 12-195 & 1-138 - \$699.49

Dr. 0

Mr. E. W. Merrick
Superintendent

February 4, 1948

Dear Sir:

E. I. DUPONT SCRAP LEAD

MATERIALS ACCOUNTING

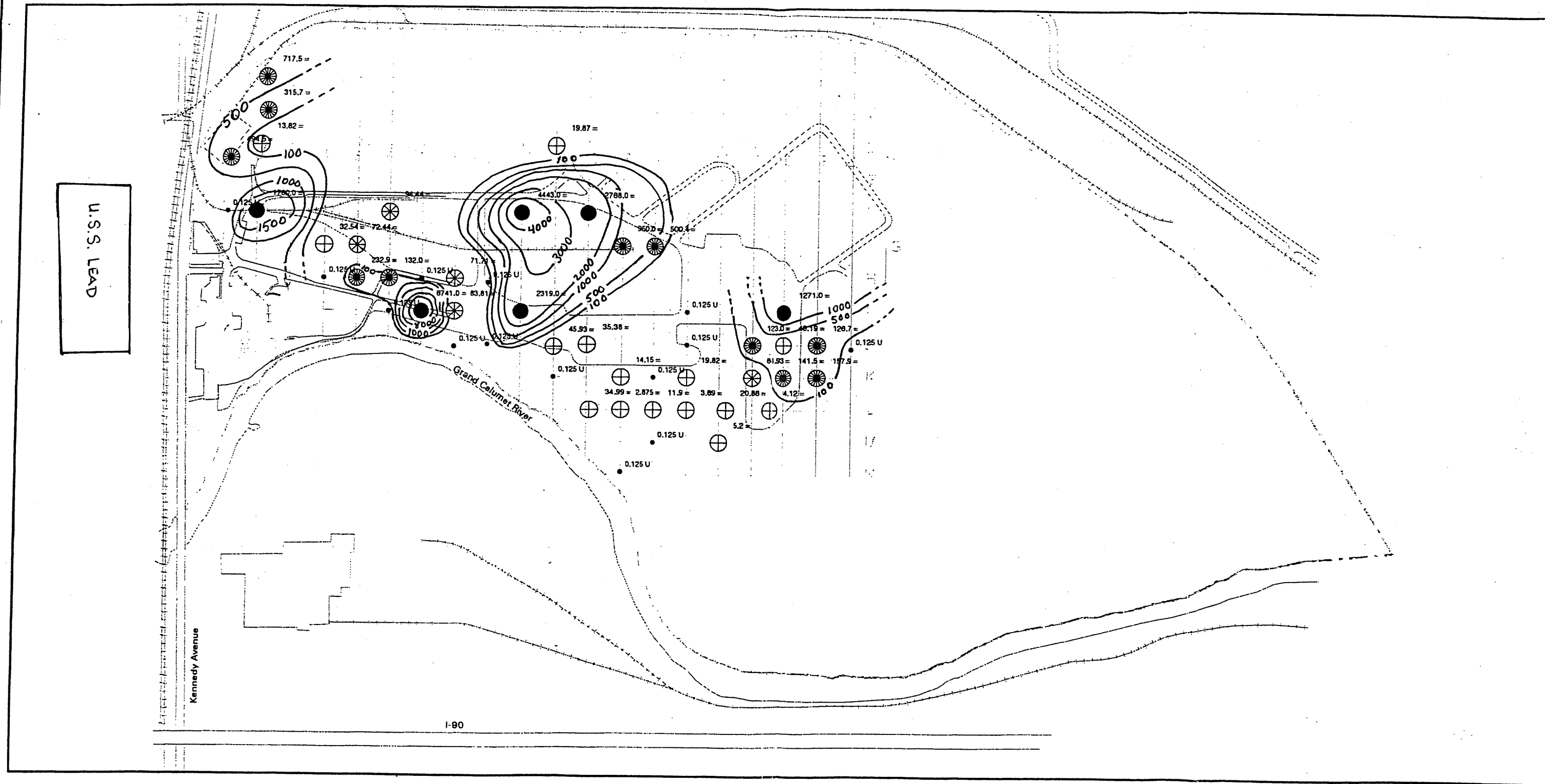
Gross material received	1,543,500 lbs.
Foreign material (scrap iron)	<u>970 lbs.</u>
Net material received	1,542,530 lbs.
Pig lead shipped	1,439,717 lbs.
Dross produced	71,740 lbs.
Skims on hand	<u>10,535 lbs.</u>
Total	1,521,992 lbs.
Melting loss	20,538 lbs.
Percent melting loss =	1.33%
Percent dross =	4.65%

DROSS ANALYSIS:

<u>% Pb</u>	<u>Oz. P/T Ag</u>	<u>% Bi</u>	<u>% Cu</u>	<u>% As</u>	<u>% Sb</u>	<u>% Sn</u>
85.24	1.69	.0043	.16	.0075	.26	.062

SKIM ANALYSIS:

	<u>Oz. P/T Ag</u>	<u>% Bi</u>	<u>% Cu</u>	<u>% As</u>	<u>% Sb</u>	<u>% Sn</u>	<u>% Fe</u>
RM1 - 6262 lbs.	2.21	.0028	.056	.0040	.035	.005	.0010
RM14 - 4273 lbs.	2.42	.0034	.053	.0057	.057	.0030	.0012



Legend

--- DuPont Property Line

Concentration in mg/kg (U - Detection Limit, = - Detected Value)

Grab Sample Location

• <0.125 U ⊖ >=0.125 U to <1 ⊕ 1 to <50 ⊗ 50 to <100 ⊗ 100 to <1,000 ● 1,000 to <10,000



Scale 1:7200
1 inch = 600 feet

* Figure modified to
 include data contours
 by LAW Engineering and
 Environment Services, Inc.
 11/9/00. Prepared by: JSW
 Checked by: _____

Figure 4-5a
Lead Concentrations in Soil

DuPont East Chicago Current Conditions Report

CH2MHILL

Sources:
DuPont and CH2M HILL

Note:
Symbols centered over sample location.



EPA Office of Air Quality Planning And Standards

Source Address Report

November 14, 2000 309 Rows See Disclaimer

Indiana AIRS Air Pollution Sources

Pollutant Emissions In Tons Per Year

Row #	Facility Name	Facility Address	City	State	Zip Code	Contact Name	Pollutant Emissions										Facility ID	Industry Type (SIC)	Year	Latitude (Degrees)
							CO	NO2	PB	PM10	PT	SO2	VOC							
1	Naval Surface Warfare Center Crane	300 Highway 361	Crane	IN	47522	Phil Keith	155	52	6.3	1,093	4	9	159	181010005	9711 - National Security	1997	38.8928			
2	Commonwealth Edison	103rd St & Lake Mich	Hammond	IN	46320	Barry Ukin	391	17,926	4.9	101	503	7,948	26	180890210	4911 - Electric Services	1997	41.7072			
3	Inland Steel Company	3210 Watling Street	East Chicago	IN	46312	John D. Fekete	43,566	14,073	3.7	1,422	2,371	15,782	1,435	180890316	3312 - Blast Furnaces And Steel Mills	1997	41.6597			
4	Bethlehem Steel Corp.	U.S. 12 & S.R. 149	Chesterton	IN	46304	Ken Burcaw	153,505	8,781	3.6	2,879	0	12,072	1,100	181270001	3312 - Blast Furnaces And Steel Mills	1998	41.6414			
5	Dalton Corp. Kendallville Mfg. Facility	200 W. Ohio Street	Kendallville	IN	46755	David Miller	820	42	2.2	344	401	25	213	181130004	3321 - Gray Iron Foundries	1997	41.4414			
6	Golden Casting Corporation	1616 10th St	Columbus	IN	47201	Alan Cronk	530	4	1.9	110	29	34	256	180050006	3321 - Gray Iron Foundries	1996	38.8322			
7	Dana Sleeve Casting (Combo 177-00090)	2153 Williamsburg Pike	Richmond	IN	47375	Jim Lieb	3,232	10	1.6	65	0	20	25	181770004	3321 - Gray Iron Foundries	1997	39.8678			
8	U.S. Steel Co Gary Works	One North Broadway, Ms-70	Gary	IN	46402	J. Alexander	94,471	8,133	1.4	3,653	4,926	12,371	3,750	180890121	3312 - Blast Furnaces And Steel Mills	1997	41.6167			
9	Dodge-Reliance Electric	500 W Union St	Mishawaka	IN	46544	Dave Streeter	3	7	1.0	105	116	1	78	181410007	3321 - Gray Iron Foundries	1997	41.6567			

10	Bremen Castings Inc	500 N Baltimore St	Bremen	IN	46506	Jack Hueni	2,016	8	1.0	61	116	18	55	1997	3321 - Gray Iron Foundries	180990001	41.4517
11	Indiana-Kentucky Electric Corporation	Sr 56	Madison	IN	47250	Erik W. Sims	1,122	59,540	0.8	1,206	3,039	93,454	0	1997	4911 - Electric Services	180770001	38.7400
12	Weil McInain, A United Dominion Company	500 Blaine St.	Michigan City	IN	46360	Larry Paris	5	11	0.5	113	128	2	68	1997	3321 - Gray Iron Foundries	180910020	41.7247
13	Sigeco-Warrick Pwr Plant-Alcoa Generating	Warrick Power Plant	Newburgh	IN	47630	Michael L Sandefur	729	25,490	0.5	825	4,328	114,742	85	1997	4911 - Electric Services	181730002	37.9147
14	Atlas Foundry Co	Henderson & Factory	Marion	IN	46952	Donald Behnke	1,325	1	0.5	34	47	17	9	1995	3321 - Gray Iron Foundries	180530002	40.5669
15	Noblesville Casting, Inc.	1600 S. 18th St.	Noblesville	IN	46060	Roy Miskelley	0	4	0.5	130	154	13	23	1997	3321 - Gray Iron Foundries	180570002	38.8322
16	Jefferson Smurfit Corporation	455 W Factory Street	Wabash	IN	46992	John Wonderly	177	222	0.4	35	94	2,966	87	1997	2631 - Paperboard Mills	181690002	40.7936
17	Ltv Steel Company	3001 Dickey Rd	East Chicago	IN	46312	Bruce L. Piccirillo	20,955	5,268	0.4	1,733	2,802	1,043	314	1997	3312 - Blast Furnaces And Steel Mills	180890318	41.6606
18	Steel Dynamics, Inc.	4500 County Road 59	Butler	IN	46721	Barry A. Smith	85	302	0.3	39	42	125	14	1997	3312 - Blast Furnaces And Steel Mills	180330043	41.3708
19	Ipalco-Petersburg	Sr 57	Petersburg	IN	47567	Anne Heighway	1,552	19,806	0.3	703	2,788	46,384	181	1997	4911 - Electric Services	181250002	38.5278
20	Essex Group, Inc. Metals Processing #055	2601 South 600 East	Columbia City	IN	46725	Robert Distler	0	35	0.3	23	11	4	1,271	1997	3351 - Copper Rolling And Drawing	181830016	41.1050
21	Alcoa (Aluminum Co. Of America)	Warrick Operations	Newburgh	IN	47630	Scott M. Darling	22,654	345	0.3	534	1,370	3,628	744	1997	3334 - Primary Aluminum	181730007	37.9181
22	Central Soya Company Inc	1200 N 2nd St	Decatur	IN	46733	Doyle Smith	88	338	0.1	105	278	479	462	1997	2075 - Soybean Oil Mills	180010005	40.8411

23	Frito-Lay, Inc.	323 S. Co. Rd. 300 W.	Frankfort	IN	46041	Michael McIntire	44	123	0.1	10	48	242	1	1997	2096 - Potato Chips And Similar Snacks	180230020	40.2853
24	Flexel Indiana, Inc.	11778 S. 600 West	Covington	IN	47932	D. K. Vollmer	117	326	0.1	0	176	907	1,674	1996	3089 - Plastics Products, Nec	181710002	40.1475
25	Lone Star Industries, Inc	Limedale Rd	Greencastle	IN	46135	Dave Puzon	42	2,598	0.1	43	120	2,142	0	1997	3272 - Concrete Products, Nec	181330002	39.6167
26	Brockway Glass Inc.	Brookside Rd	Lapel	IN	46051	Mark Tussing	18	401	0.1	100	115	230	17	1997	3221 - Glass Containers	180950012	39.4147
27	International Paper	2401 Prairieton Ave	Terre Haute	IN	47808	D. L. Robinson	225	276	0.1	164	297	1,411	143	1997	2631 - Paperboard Mills	181670022	39.4411
28	Indiana State Univ	528 N 8th Street	Terre Haute	IN	47809	John Little	66	85	0.1	1	3	913	1	1997	8221 - Colleges And Universities, Nec	181670010	39.4725
29	Psi Energy - Gallagher	Jackson St	New Albany	IN	47151	Mike Judd	299	5,579	0.1	132	429	22,717	36	1998	4911 - Electric Services	180430004	38.2625
30	NipSCO - Michigan City	Wabash Street & The Lake	Michigan City	IN	46360	Arthur Smith Jr.	399	15,655	0.1	37	162	15,268	43	1997	4911 - Electric Services	180910021	41.7203
31	NipSCO - Bailly Station	246 Bailly Station Road	Chesterton	IN	46304	Arthur Smith Jr.	407	22,059	0.1	172	803	4,205	47	1998	4911 - Electric Services	181270002	41.6433
32	Sigeco - A. B. Brown	Posey County	West Franklin	IN	47620	Michael L Sandefur	437	7,417	0.1	328	1,327	12,783	51	1997	4911 - Electric Services	181290010	37.9056
33	Sigeco - F.B.Culley Generating Station	Newburgh	Newburgh	IN	47630	Michael L Sandefur	310	7,368	0.1	457	1,781	7,748	36	1997	4911 - Electric Services	181730001	37.9092
34	General Motors Corp., Mfd Marion Plant	2400 W Second Street	Marion	IN	46952	Howard Brinker	61	77	0.1	9	35	591	3	1997	3465 - Automotive Stampings	180530004	40.5733
35	Wabash Alloys	Us 24 W Of Sr 15	Wabash	IN	46992	Gary Huddleston	46	82	0.1	193	193	135	320	1997	3341 - Secondary Nonferrous Metals	181690010	40.7967
36	Decatur Casting	822 Dayton Ave	Decatur	IN	46733	Jason Powell	15	5	0.1	69	108	10	16	1997	3321 - Gray Iron Foundries	180010002	40.8369

37	Plainfield Juvenile Correction Facility	501 W Main St	Plainfield	IN	46168	John Hart	30	46	0.1	9	12	387	0	1997	9223 - Correctional Institutions	180630002	39,6961
38	Westville Correctional Center	1100 W. & St. Rd. 2	Westville	IN	46391	Harold Grise	67	58	0.1	37	98	441	0	1997	9223 - Correctional Institutions	180910004	41,5264