Remediation

ISLIP RESOURCE RECOVERY AGENCY

REMEDIAL INVESTIGATION / FEASIBILITY STUDY

WORK PLAN

SONIA ROAD LANDFILL
WEST BRENTWOOD, NEW YORK
SITE REGISTRY NO. 152013

Dvirka and Bartilucci
Consulting Engineers

VOLUME I OF IV

FEBRUARY 1997

REMEDIAL INVESTIGATION AND FEASIBILITY STUDY WORK PLAN

REMEDIAL INVESTIGATION/FEASIBILITY STUDY
FOR
SONIA ROAD LANDFILL
WEST BRENTWOOD
SUFFOLK COUNTY, NEW YORK

(SITE REGISTRY NO. 152013)

VOLUME I OF IV

PREPARED FOR
ISLIP RESOURCE RECOVERY AGENCY
TOWN OF ISLIP, NEW YORK

BY
DVIRKA AND BARTILUCCI
CONSULTING ENGINEERS
WOODBURY, NEW YORK

FEBRUARY 1997

REMEDIAL INVESTIGATION/FEASIBILITY STUDY WORK PLAN
SONIA ROAD LANDFILL

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

List of Appendices

List of Figures

List of Tables

Volumes

Section 1

1.0 INTRODUCTION

The Sonia Road Landfill is a 42.2-acre closed landfill located in West Brentwood, New York. The landfill is owned by the Town of Islip and is on the New York State Department of Environmental Conservation (NYSDEC) Registry of inactive hazardous waste sites. The landfill is presently listed as a Class 2 site.

In order to meet the requirements of their Order on Consent with NYSDEC, the Town of Islip has initiated development and implementation of a Remedial Program that includes a Remedial Investigation/Feasibility Study (RI/FS). Islip Resource Recovery Agency will be managing the project on behalf of the Town.

The purpose of the RI/FS is to perform a remedial investigation to determine the nature, extent and source(s) of contamination, and the risk to human health and the environment, and to prepare a feasibility study, which will identify and evaluate remedial alternatives, and recommend a cost-effective long-term remedial action plan.

Although the focus of the investigation is the Sonia Road Landfill, the Town is interested in obtaining pertinent information with respect to groundwater quality up and downgradient of the site in order to fully characterize groundwater quality and identify other sources of contamination in the vicinity of the landfill. The identification of other sources of contamination will allow for a more comprehensive understanding of environmental impacts pertaining to all of the contributing sites. Therefore, in addition to the field sampling program being conducted under Title 3 EQBA Program, which provides 75% State funding of approved costs, portions of the program may be funded entirely by the Town. These portions include installation of monitoring wells in the industrial area northwest of the landfill and conducting a soil vapor survey on-site.

This document, entitled "Remedial Investigation and Feasibility Study Work Plan for the Sonia Road Landfill," Volume I of a four volume Work Plan, presents the detailed activities

comprising a focused RI/FS and selection of a Presumptive Remedy prepared in accordance with the federal Comprehensive Emergency Response Compensation and Liability Act (CERCLA), Superfund Amendments and Reauthorization Act (SARA) and the NYSDEC Superfund Program, including NYSDEC Technical and Administrative Guidance Memorandum, "Guidelines for Remedial Investigation/Feasibility Studies."

This document will be utilized in conjunction with a Sampling and Analysis Plan (Volume II), Health and Safety Plan (Volume III) and Citizen Participation Plan (Volume IV), which are all prepared as stand-alone documents for the Sonia Road Landfill RI/FS.

This Work Plan provides a description of the field activities to be conducted as part of the remedial investigation, description of preparation of the qualitative risk/exposure assessment, determination of applicable or relevant and appropriate standards, criteria and guidelines, identification and evaluation of remedial alternatives, development of a remedial action plan and preparation of a Presumptive Remedy Engineering Report.

2.0 SUMMARY OF EXISTING INFORMATION

2.1 Site Location, Ownership and Access

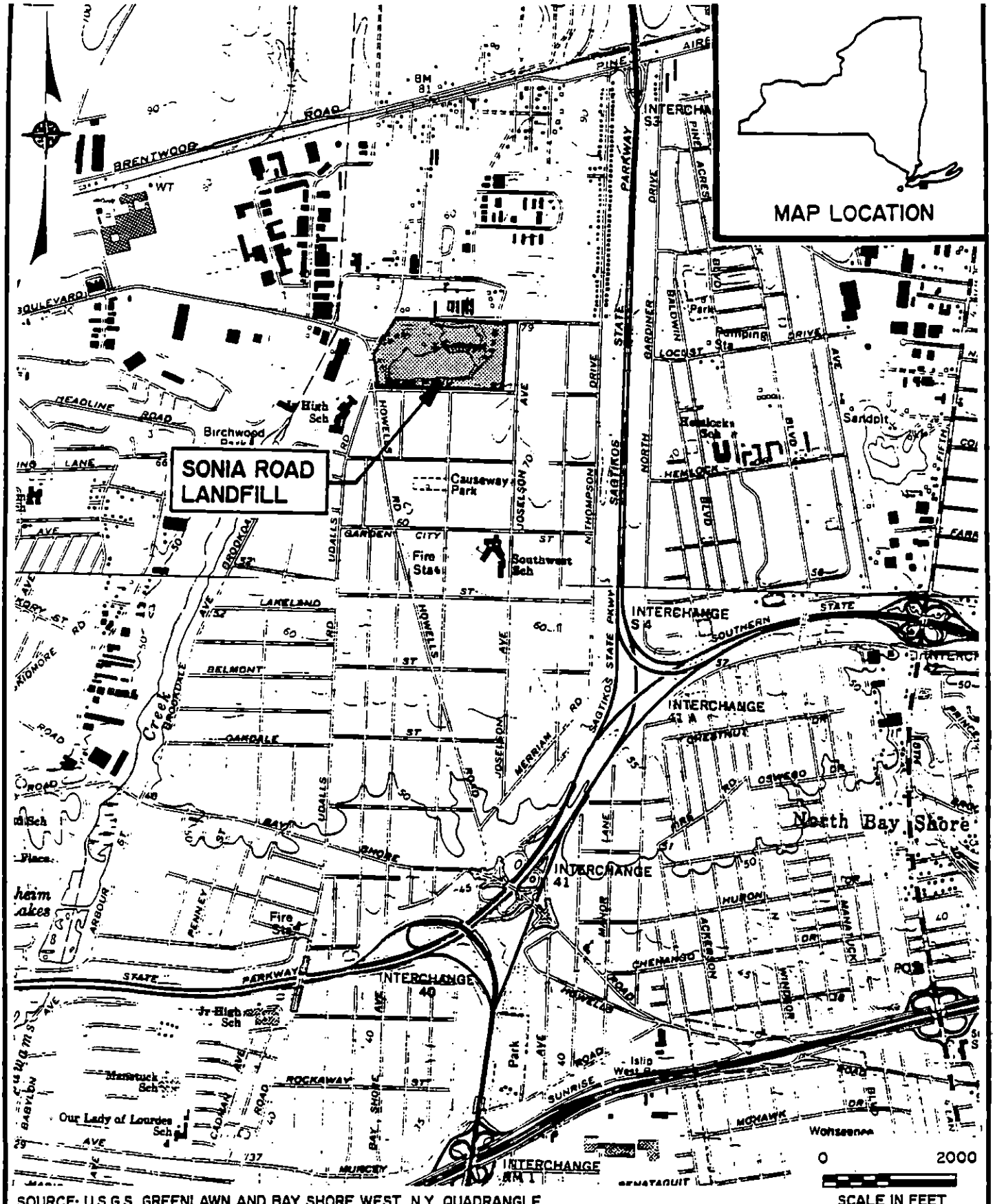
The Sonia Road Landfill is located in West Brentwood in Suffolk County, New York (see Figure 2-1). The 42.2-acre site is currently owned by the Town of Islip and the site is currently vacant.

The entire site is fenced and main access to the site is from Corbin Avenue. Access gates are also located along Sonia Road and Deer Park Avenue.

2.2 Site Description

The Sonia Road Landfill is bordered to the north and west by industrial areas, and to the east and south by residential areas. The site is comprised of two sections, an eastern section comprised of approximately 19 acres and a western section comprised of about 23 acres. The sections are divided by a earthen berm running north and south through the approximate center of the landfill. The eastern section was filled first and later converted to a park/baseball fields, while the western half continued to accept wastes for a period of time. The western portion was never developed. According to a Town of Islip Report dated June 1982, it is estimated that the landfill contains between 1.5 and 2 million cubic yards of solid waste.

The landfill is presently listed as a Class 2 site on New York State Department of Environmental Conservation (NYSDEC) registry of inactive hazardous waste sites. It is believed that the landfill was placed on the registry in the early 1980s. Although the eastern half of the landfill was used as a park, it is now closed since some wastes have risen to the surface. The western half was rezoned for industrial use. A roadbed was built from crushed stone to allow the western section of the property to be subdivided and sold. However, the property remains undeveloped.



SOURCE: U.S.G.S. GREENLAWN AND BAY SHORE WEST, N.Y. QUADRANGLE

ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL

SITE LOCATION MAP

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-1

2.3 Site History

According to the Town of Islip Report dated June 1982, prior to 1965, the site of the Sonia Road landfill was a sand and gravel facility. Sand and gravel was excavated below groundwater. This created a groundwater lake at the site. The most active period of landfilling at the site occurred between 1965 and 1974. During most of its operational period, the landfill accepted all types of municipal solid waste, however, during the last few years of operation, the landfill only accepted refuse, rubbish, demolition materials and yard wastes, particularly leaves. In the early years of operation, this site was used for disposal of junk cars. It is estimated that buried refuse averages 50 feet deep over 60% of the site.

According to NYSDEC records, the landfill allegedly received 400 cubic yards of hazardous materials from Hooker Chemical. These wastes reportedly consisted of gravel containing polyvinyl chloride, trimellitate plasticizers, 2-ethylhexanol and other alcohols. The wastes were allegedly disposed at the landfill from 1973 to 1974 and would, therefore, be located in the western portion of the landfill. According to the NYSDEC Immediate Investigation Work Assignment (IIWA) Work Plan dated July 1994, there have been unconfirmed allegations that trichloroethene and plating sludge may have been received at the landfill.

In 1979, the Suffolk County Department of Health Services (SCDHS) prepared a report entitled "Leachate Pollution Plume at the Sonia Road Landfill." As part of the investigation, 19 temporary leachate exploration wells were installed at various locations southeast and downgradient of the landfill, and one well was installed on the southeast edge of the landfill. Each well was 2 inches in diameter. All of the downgradient wells were installed to a depth of approximately 80 feet below the ground surface. The one well installed on the landfill was installed deeper, to a depth of 108 feet in order to determine the subsurface stratigraphy at the site and to obtain deep groundwater samples for analysis.

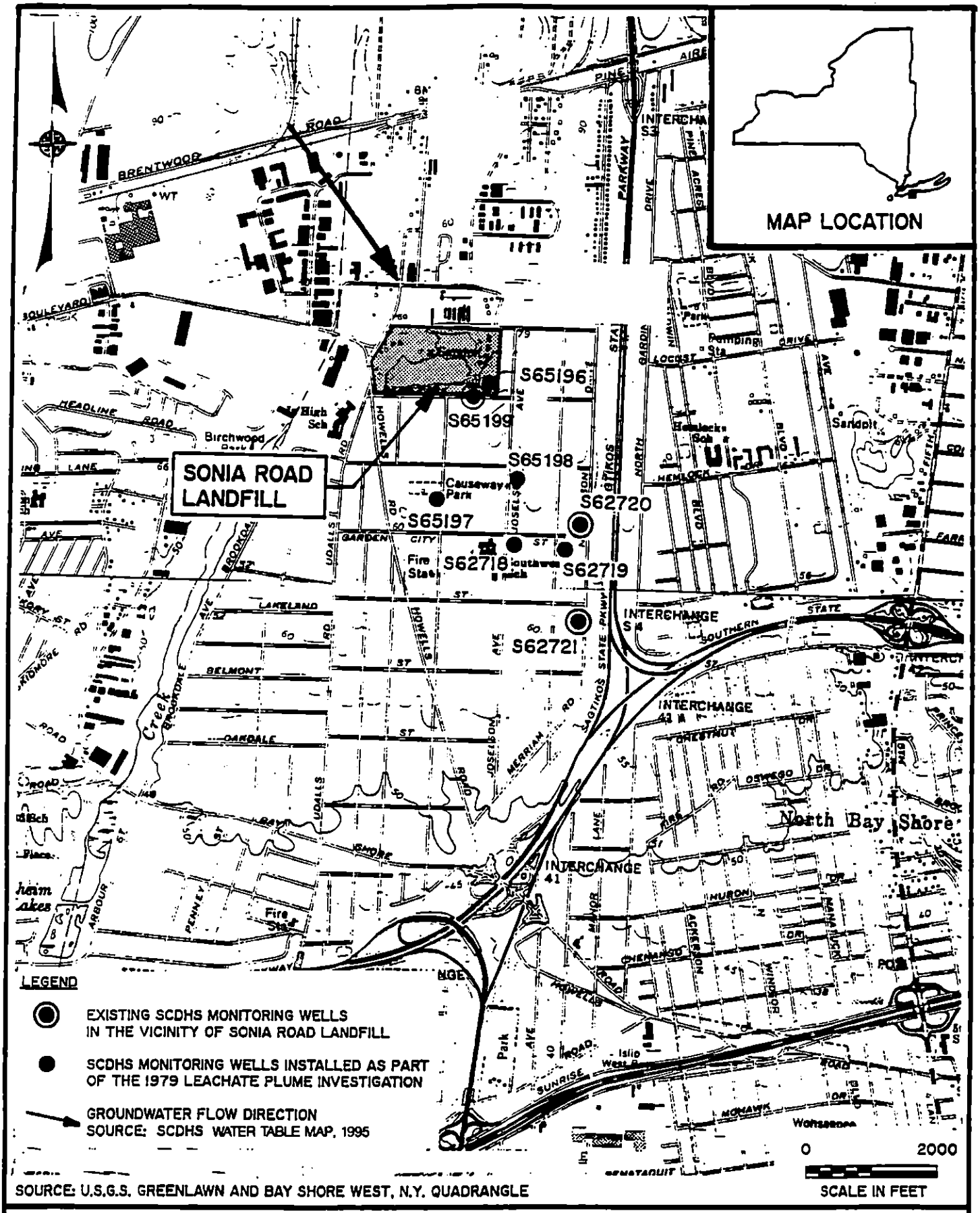
For the 19 downgradient wells, sampling of the groundwater was conducted by initially placing the well screens to approximately 80 feet below ground surface. Water was pumped

from the well, and after "sufficient" pumping, a sample was collected and tested for temperature and specific conductivity. The well screen was then raised 10 feet by raising the entire casing and the well was pumped again and another sample was collected. This procedure continued until the final screen setting was immediately below the water table.

Based on the distribution of wells and the conductivity measurements, a leachate plume was delineated. The plume was reported to extend from the landfill for a distance of 3,800 feet toward the southeast. Its maximum width was determined to be 2,300 feet. Its thickness was determined to be approximately 88 feet due to the presence of Gardiners Clay. The report indicated that four of these wells were left as permanent wells to be used in the future as observation wells for future monitoring of the front of the plume. These wells were designated S62718, S62719, S62720 and S62721 (see Figure 2-2). According to an interoffice memorandum from SCDHS dated May 8, 1979, the four wells were screened at the "worst" leachate encountered as determined by conductivity measurement.

Included in the 1979 SCDHS report was a summary of the results of a report prepared by Holzmacher, Mclendon and Murrell, P.E. Consulting Engineers entitled "A Study of Leachate at landfill sites, 1975." As part of this study, three test borings were constructed within the landfill. One test boring was constructed in the western portion of the landfill, and two of the borings were constructed in the eastern portion of the landfill. Boring "A," constructed in the northeastern portion of the landfill, revealed the presence of at least 29 feet of refuse. Boring "B," constructed in the southwestern corner of the eastern portion of the landfill, also indicated the presence of 29 feet of refuse. Some refuse was noted six feet below the water table. Boring "C" was constructed in the southwestern portion of the landfill. This boring indicated the presence of refuse at least 35 feet below ground surface and at least 11 feet below the water table (see Figure 2-3).

Refuse in the eastern portion of the site was described as consisting of wood, roots, glass, plastic, metal and general rubbish. The refuse in the western portion of the landfill was described as containing wood, glass, plastic, metal, cardboard, concrete and household wastes.



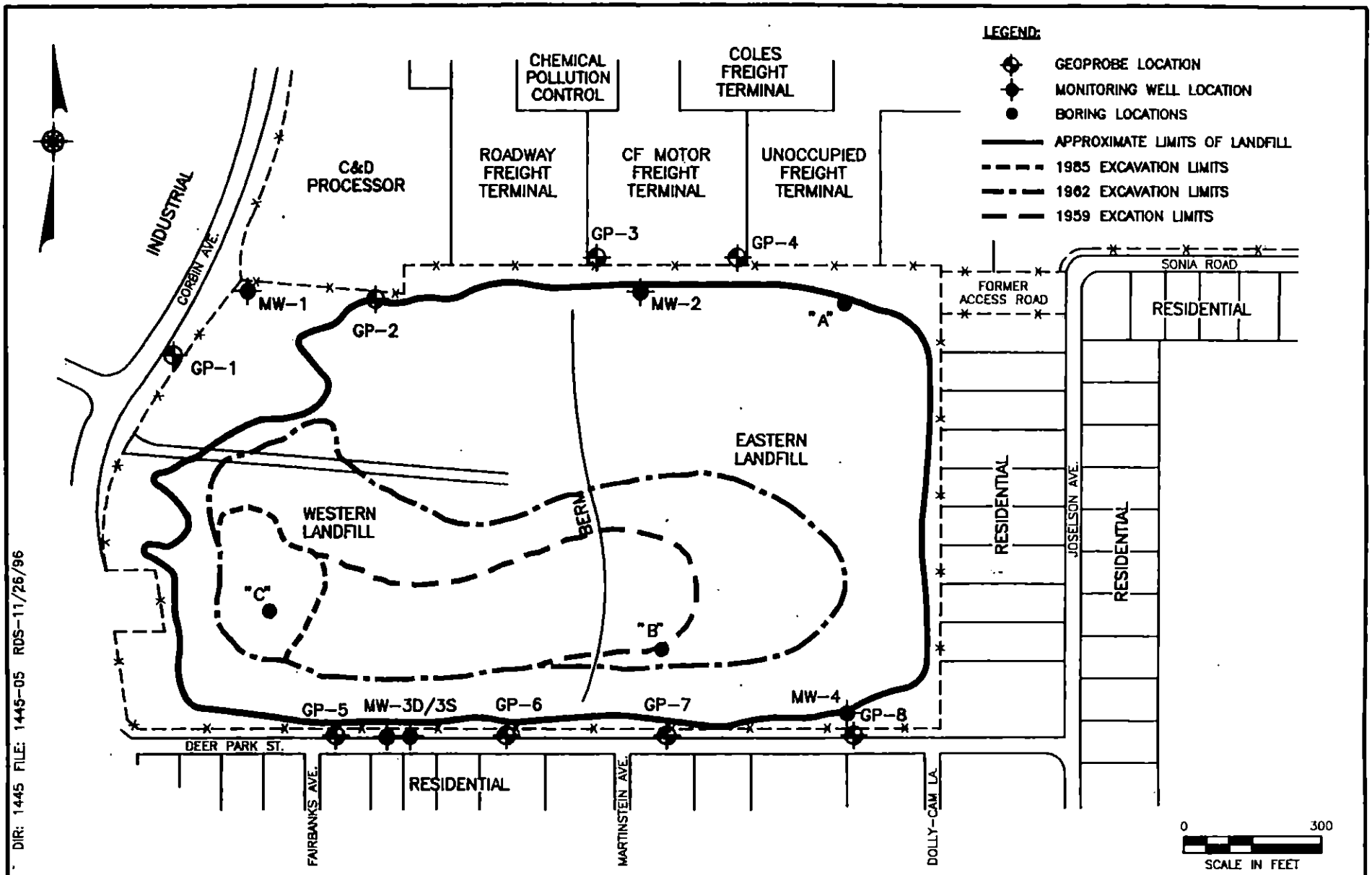
SOURCE: U.S.G.S. GREENLAWN AND BAY SHORE WEST, N.Y. QUADRANGLE

ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL

MONITORING WELL LOCATION MAP

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-2



ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL

HISTORICAL INFORMATION

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-3

According to a SCDHS news release dated August 1982, six SCDHS wells were sampled near the Sonia Road Landfill to detect the possible presence of vinyl chloride. Additionally, eight public water supply wells in the area operated by Suffolk County Water Authority and four private wells were also sampled. The news release indicated that one well on the outer edge of "plume" had vinyl chloride exceeding the detectable limit of 0.7 ug/l. None of the other wells indicated the presence of vinyl chloride above the detection limit. Therefore, based on these results, the news release indicated that it would be difficult to attribute the vinyl chloride to the landfill. The news release further indicated there is no evidence to prove that the vinyl chloride did come from the landfill. The results from the private wells and public water supply wells were not specifically addressed. However, a statement from the Suffolk County Health Commissioner recommended all private well owners connect to public water supply.

In addition to the sampling discussed in the news release, SCDHS collected several groundwater samples from the six downgradient wells between 1981 and 1983. (The locations of these wells are shown in Figure 2-2.) SCDHS also collected one sample from a residential well located approximately 1,000 feet south of the landfill. A summary of the results was provided on the report prepared by Golder Associates for the Islip Resource Recovery Agency in June 1995.

The results of one sample collected from the residential well indicated the presence of 1,1,1-trichloroethane at 3 ug/l. No other volatile organics analyzed for were detected. Well S62721 was sampled in August 1982 and indicated the presence of vinyl chloride at 9 ug/l. This well was resampled two weeks later and indicated the presence of vinyl chloride at 6 ug/l. This well is approximately 3,700 feet southeast of the landfill and was reported to be within the vicinity of the area impacted groundwater as defined by SCDHS 1979 investigation.

1,1-Dichloroethane and 1,1-dichloroethene were detected at concentrations of 36 ug/l and 9 ug/l in well S62718 in November 1983. Well S62720 indicated the presence of 1,1-dichloroethene at 5 ppb during this sampling event and levels of cis-dichloroethene, benzene and chlorobenzene were detected in S62721 at 20 ug/l, 5 ug/l and 7 ug/l, respectively.

In June 1983, Woodward-Clyde Consultants, under contract to NYSDEC, prepared a Phase I Preliminary Investigation report for the Sonia Road Landfill. The investigation comprised compilation of pertinent background information on the site. Preliminary Hazard Ranking Score (HRS) Work Sheets were prepared and site history, site hydrogeology and past sampling and analysis were evaluated. Based on the results of this background information review, additional investigation, which included site specific sampling and analysis under a Phase II investigation, was recommended. A Phase II investigation was never performed for the site.

At the request of NYSDEC, the Town of Islip installed several methane monitoring wells along the perimeter of the site. Based upon continuing monitoring, although methane is being produced (as evidenced by recent and historical methane monitoring), there is no evidence that methane is migrating off the site. Continued monitoring of the wells does not indicate any methane problems.

In a May 19, 1993 letter from NYSDEC to SCDHS, the NYSDEC indicated they sampled wells S62720 and S62721. These wells are one-half mile and three quarters of a mile downgradient from the landfill, respectively. Of the monitoring wells sampled between 1981 and 1983 by SCDHS, these were the only remaining usable wells. Both wells are 80 feet deep and screened between 75 and 80 feet. The NYSDEC reported that sample results from these wells indicated low levels of chlorinated hydrocarbons present in the groundwater. Specifically, the results of the volatile organic analyses indicated 25 ug/l of trichloroethene (TCE) in S62720 and 350 ug/l of TCE in S62721. Other compounds, such as tetrachloroethene (PCE) at 25 ug/l, 1,1,1-trichloroethane (TCA) at 22 ug/l and 1,2-dichloroethene (DCE) at 27 ug/l, were also detected in S62721. The only other compounds detected, not attributed to blank contamination in S62720, were 1,1-dichloroethane (DCA) at 5 ug/l and 1,2-DCE at 4 ug/l. Vinyl chloride was not detected in either sample.

Although low levels of chlorinated hydrocarbons were detected, NYSDEC did not feel that these wells directly monitored the landfill. Specifically, NYSDEC indicated that there were

several potential sources upgradient of the landfill which could be responsible for the volatile organic compounds detected. In particular, they identified the Baron Blakeslee Site and the Chemical Pollution Control Site. The NYSDEC further indicated that a sample from one of Chemical Pollution Control's monitoring wells was used as an upgradient well for the landfill. This well indicated that similar volatile organics are present in the groundwater upgradient of the landfill. As a result, NYSDEC requested assistance from SCDHS to install five water table wells and one deep monitoring well in the immediate vicinity of the landfill. To date, the monitoring wells requested by NYSDEC have not been installed.

Correspondence has been exchanged between the Town and NYSDEC addressing delisting of the Sonia Road Landfill and/or reassessment of the basis for the original designation of the landfill as a Class 2 site. In response, NYSDEC developed an Immediate Investigation Work Assignment Work Plan for the installation of eight Geoprobes along the perimeter of the landfill (see Figure 2-3).

The eight Geoprobes were installed in August 1994. Based upon NYSDEC interpretation of groundwater flow in the area of south-southeast to southeast, four upgradient and four downgradient locations were selected. Two groundwater samples were collected from each Geoprobe location, one just below the water table (13 to 29 feet below ground surface) and one approximately 30 feet below the shallow samples (43 to 59 feet below ground surface). The depth for the deeper samples was determined by field screening of the groundwater at 30 feet below the water table, 40 feet below the water table and 50 feet below the water table for alkalinity, specific conductivity and temperature at a downgradient Geoprobe location. These screening depths were selected based upon information contained in the 1979 SCDHS report, which indicated that groundwater at 43 feet below the water table had the highest specific conductivity, while groundwater at 53 feet below the water table had the highest temperature. Equipment limitations also were also a factor in the selection of the screening depths. As discussed in the IIWA Work Plan, NYSDEC surmised that the selected sampling depths would be the most likely depth to intercept any of the alleged chemical wastes moving with groundwater.

All groundwater samples were analyzed for Target Compound List (TCL) +10 volatile organic compounds (VOCs) and TCL metals. In addition, TCL +20 semivolatile organic compounds were analyzed for each of the shallow samples. TCL pesticides/PCBs and cyanide were only analyzed for the shallow sample obtained at Geoprobe location GP-6. Preliminary, unvalidated results of these samples are provided in Table 2-1. As shown in this table, the results of the sampling indicate the presence of several VOCs above Class GA groundwater and NYSDOH drinking water standards. The shallow samples (ranging in depth from between 13 to 29 feet below ground surface) are designated as S1 through S8 (S1-S4 are upgradient and S5-S8 are downgradient). The deep samples (ranging in depth from between 43 to 59 feet below ground surface) are designated as D1 through D8 (D1-D4 are upgradient and D5-D8 are downgradient). The upgradient samples are the shallow and deep samples collected from Geoprobe points 1 through 4, and the downgradient samples are the shallow and deep samples collected from Geoprobe points 5 through 8.

Low levels (levels below or slightly above the standards) of 1,1-dichloroethane (1,1-DCA) were detected in all of the upgradient samples except D3 and D4. Low levels of 1,1,1-trichloroethane (1,1,1-TCA) were also detected in D1, S2, D2 and S4. In general, all of the shallow Geoprobe locations, and 5 of 8 of the deep locations, indicate low levels of VOCs (maximum concentration of total VOCs of 32 ug/l in S7).

The sample collected from D4 exhibited the highest level of VOCs in any of the upgradient samples (total VOCs of 459 ug/l). The compounds detected were primarily tetrachloroethene (PCE), trichloroethene (TCE), 1,2-dichloroethene (1,2 DCE) and vinyl chloride.

Based on review of data in the SCDHS files, it appears that the likely source of contamination at Geoprobe location D4 is from the former Baron-Blakeslee (Aircraft Turbine Services) facility, where investigation conducted on-site and off-site detected similar VOCs. In fact, a 1986 Hydrogeologic Investigation and Evaluation of Off-Site Recovery Systems prepared

TABLE 2-1
SONIA ROAD LANDFILL
PRELIMINARY GROUNDWATER SAMPLING RESULTS
VOLATILE ORGANICS
AUGUST 1994

SAMPLE IDENTIFICATION	S1	D1	S2	D2	S3	D3	S4	D4	NYSDOH/SCDHS DRINKINGWATER STANDARDS	NYSDEC CLASS GA GROUNWATER STANDARDS
VOLATILE ORGANICS	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Vinyl Chloride	U	U	U	U	U	U	U	33	2 ST	2 ST
Chloroethane	U	U	U	U	U	U	5	U	5 ST	5 ST
1,1-Dichloroethene	U	U	U	U	U	U	U	U	5 ST	5 ST
1,1-Dichloroethane	2	7	4	13	4	U	5	U	5 ST	5 ST
1,2-Dichloroethene	U	U	U	U	U	U	6	170	5 ST	5 ST
1,1,1-Trichloroethane	U	6	1	9	U	U	3	U	5 ST	5 ST
Trichloroethene	U	U	U	U	U	U	5	46	5 ST	5 ST
Benzene	U	U	U	U	U	U	U	U	5 ST	0.7 ST
Tetrachloroethene	U	U	3	U	U	2	5	210	5 ST	5 ST
Chlorobenzene	U	U	U	U	U	U	U	U	5 ST	5 ST
TOTAL VOCs	2	13	8	22	4	2	33	459		

SAMPLE IDENTIFICATION	S5	D5	S6	D6	S7	D7	S8	D8	NYSDOH/SCDHS DRINKINGWATER STANDARDS	NYSDEC CLASS GA GROUNWATER STANDARDS
VOLATILE ORGANICS	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)	(ug/l)
Vinyl Chloride	U	U	U	U	U	83	U	U	2 ST	2 ST
Chloroethane	5	180	16	U	12	U	9	10	5 ST	5 ST
1,1-Dichloroethene	U	140	U	U	U	U	U	U	5 ST	5 ST
1,1-Dichloroethane	U	730	U	4	U	U	U	U	5 ST	5 ST
1,2-Dichloroethene	U	U	U	2	U	140	U	U	5 ST	5 ST
1,1,1-Trichloroethane	U	1400	U	U	U	U	U	U	5 ST	5 ST
Trichloroethene	U	11	U	U	U	U	U	U	5 ST	5 ST
Benzene	U	U	U	U	9	U	4	U	5 ST	0.7 ST
Tetrachloroethene	U	U	U	U	U	7	2	2	5 ST	5 ST
Chlorobenzene	U	U	2	U	11	U	3	3	5 ST	5 ST
TOTAL VOCs	5	2471	18	6	32	210	17	15		

QUALIFIERS
U: Compound analyzed for but not detected
: Exceeds drinking water or groundwater standards

NOTES
ST: Standard

for Aircraft Turbine Services showed a projected contaminant plume from the site crossing the northeast corner of the Sonia Road Landfill in the area of D4.

Based upon the results from D4, similar contaminant levels would be anticipated immediately downgradient of this location. The sample collected from D8 would be the expected downgradient sample based upon a south-southeast groundwater flow direction interpretation. However, the results of the analysis of sample D8 only indicate a trace level of PCE (in addition to 10 ug/l of chloroethane). None of the other compounds detected at elevated levels in D4 were detected in D8.

The results of the analysis for sample D7 are, however, similar to the results of D4. Elevated levels of 1,2-DCE and vinyl chloride, as well as PCE, were detected at this location. This could be a result of an error in sample labeling or handling either in the field or in the laboratory where samples D7 and D8 were inadvertently switched. Another explanation for this unexpected result is the possible "channeling" of groundwater due to the heterogeneity of waste material below the water table. This "channeling" could affect groundwater flow direction in the immediate vicinity of the landfill.

Sample D5 collected on the southwestern portion of the landfill exhibited the highest levels of contamination (total VOCs of 2,471 ug/l). 1,1,1-TCA was detected at 1,400 ug/l. Elevated levels of 1,1-DCA and chloroethane, breakdown products of 1,1,1-TCA, were also detected in this sample. In addition, lower levels of 1,1-DCE and TCE were detected. Based on anticipated groundwater flow direction, a Geoprobe sample may not have been collected directly upgradient of this location. Therefore, although other samples collected upgradient of the landfill (other than D4) do not indicate the presence of these compounds at elevated levels, there is not conclusive evidence that this contamination is emanating from the landfill. There could be an upgradient source of contamination originating from the industrial area located northwest of this landfill.

To address the possibility of an upgradient source of contamination, information is being obtained regarding potential sources to the northwest of the landfill, in particular from the SCDHS

files, which provide information on cesspool/dry well sampling and cleanout. Upgradient water quality information from this area is also being obtained from reports from investigations conducted at upgradient sites as well as, if available, SCDHS monitoring wells.

Elevated levels of tentatively identified compounds (TICs) were detected in S7 and S8. These compounds will be further evaluated to determine the potential source of these constituents.

During the review of the preliminary data, it was also noted that all of the deep samples exhibited elevated levels of chromium with 7 of 8 locations exceeding the groundwater standard of 50 ug/l. Elevated levels were detected both upgradient and downgradient of the landfill. Although this would indicate that the contamination results from an upgradient source, (or perhaps from turbid samples, although based on a preliminary review, it appears that the samples were filtered), since plating waste was allegedly disposed at the Sonia Road Landfill, the landfill could be the source of this contamination.

As discussed above, Golder Associates prepared a Hydrogeologic Assessment Report for the Sonia Road Landfill for the Islip Resource Recovery Agency (Agency) on June 1995. The report provides a brief hydrogeologic assessment of existing data, including utilization of data from wells installed upgradient and downgradient of the landfill in 1995. The report also contains a description of groundwater quality and site history. The report also provides recommendations for future actions at the site. The report concluded that there is significant evidence that groundwater at and downgradient from the site is being impacted by upgradient sources. The report recommended that the Agency collect additional information, both upgradient and downgradient of the site, to better define the impact of upgradient sources of contamination.

2.4 Other Background Information

SCDHS files were reviewed in order to obtain information on potential upgradient sources of contamination in the vicinity of the Sonia Road Landfill. As identified in this section,

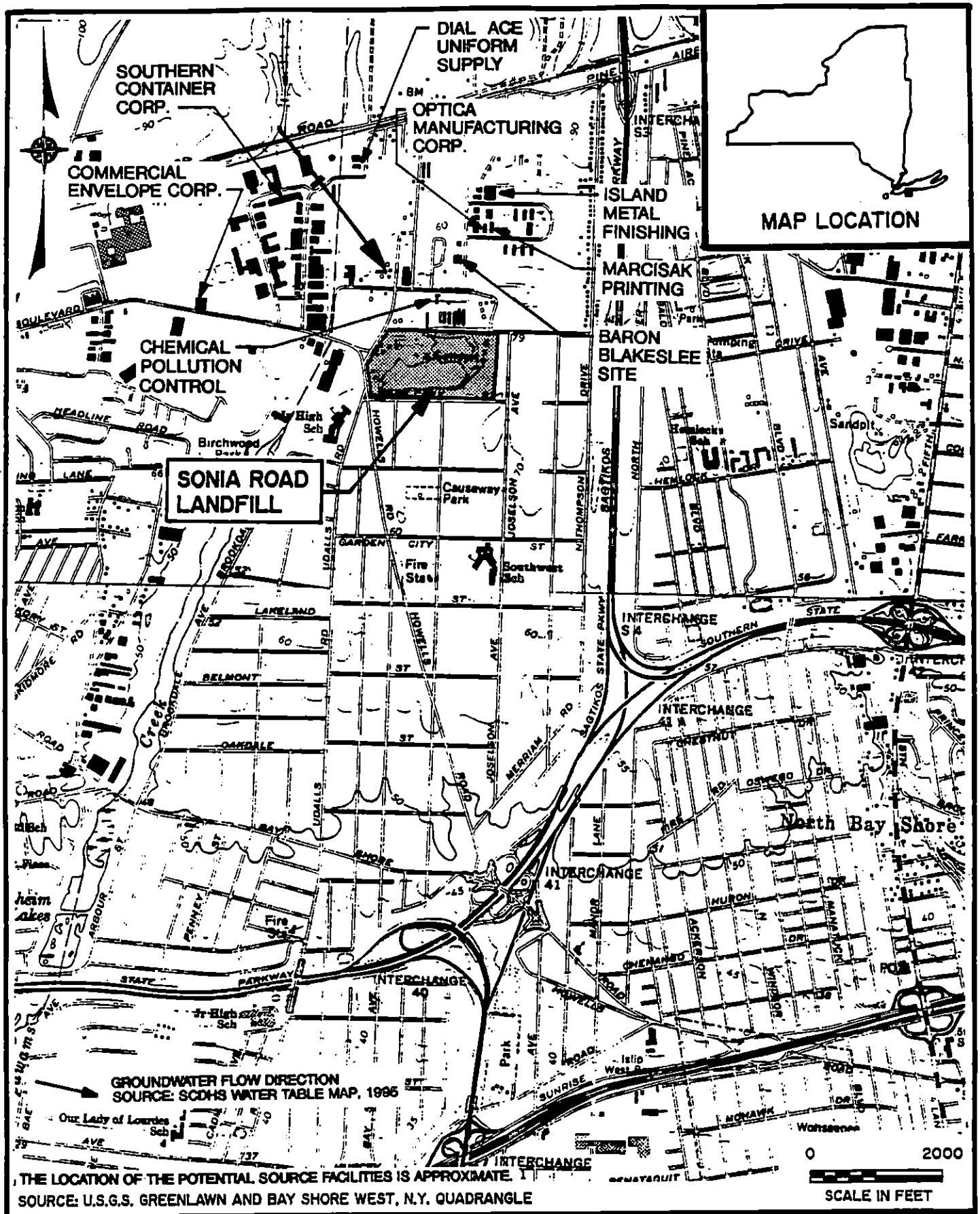
there are several potential upgradient sources of contamination. Additional information on these sources and other potential sources will continue to be obtained throughout the Remedial Investigation. The location of known potential sources are shown on Figure 2-4. A discussion of these sources is provided below.

2.4.1 Baron-Blakeslee

The former Baron-Blakeslee Site is a United States Environmental Protection Agency (USEPA) National Priorities List (NPL) site located at 86 Cleveland Street. The site is also known as the Aircraft Turbine Services (ATS) Site currently the facility name is UNC Accessory Services. Several reports have been prepared by Woodward-Clyde Consultants for Baron-Blakeslee and by ERM Northeast for ATS. The reports that were reviewed at the office of SCDHS include the following:

1. Baron-Blakeslee, Inc. Engineering Report, Woodward-Clyde 1982.
2. Remedial Action Groundwater Studies, Baron-Blakeslee, Inc., Woodward-Clyde, February 1984.
3. Status Report, Baron-Blakeslee, Inc., Woodward-Clyde, January 24, 1985.
4. Installation and Sampling of Monitoring Wells - Aircraft Turbine Services, Inc. Bay Shore, New York, ERM-Northeast, September 1985.
5. Hydrogeologic Site Assessment - Aircraft Turbine Services, Inc., ERM-Northeast, November 1985.
6. Hydrogeologic Investigation and Evaluation of Off-site Recovery Systems - Aircraft Turbine Systems, ERM-Northeast, February 1986.

Based upon the results of sampling sediment from an on-site catch basin (dry well) by Woodward-Clyde in 1984, elevated levels of TCE (410,000 ug/kg), 1,1,1-TCA (2,700,000 ug/kg), and PCE (66,000 ug/kg) were detected in the sediment. Elevated levels (greater than 10,000 ug/kg) of 1,1-DCA and 1,1- DCE were also detected in this sediment sample.



THE LOCATION OF THE POTENTIAL SOURCE FACILITIES IS APPROXIMATE.

SOURCE: U.S.G.S. GREENLAWN AND BAY SHORE WEST, N.Y. QUADRANGLE

ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL

POTENTIAL UPGRADIENT SOURCE LOCATION MAP

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 2-4

Based upon a review of the investigations conducted at the site, several groundwater monitoring wells were installed and sampled at the site. In addition, based upon the results of the groundwater samples collected from the on-site wells, a groundwater recovery and treatment system was installed on-site in 1985. On-site pumping and treatment of the contaminated groundwater occurred from 1985 to 1988.

An evaluation was also conducted to determine the need for installation of an off-site groundwater recovery system. Several wells were installed off-site and groundwater samples were collected from these wells. Results of the analysis of a sample collected from an off-site well (ATS-1) in January 1986, indicated the presence of 1,1 DCA at 290 ug/l, 1,2 DCE at 4200 ug/l, 1,1,1 TCA at 950 ug/l, TCE at 110 ug/l and PCE at 140 ug/l. Although these levels of volatile organics were detected in off-site wells, ERM-Northeast recommended not to install an off-site groundwater recovery system.

2.4.2 Dial Ace Uniform Supply

Dial Ace Uniform Supply, Inc. is located at 30 Dunton Avenue. According to SCDHS files, samples were collected from on-site cesspools in 1981 and 1982. Results of these samples indicated the presence of elevated levels of volatile organic compounds, including PCE as high as 2,900 ug/l, 1,1,2-TCE as high as 1,200 ug/l and 1,2,4-trimethylbenzene as high as 37,000 ug/l. As a result of this sampling, nine groundwater monitoring wells were installed in March 1984. Results from the analysis of samples collected from these wells indicated the presence of VOCs, including vinyl chloride as high as 9 ug/l, 1,1,1-TCA as high as 110 ug/l, 1,1,2-TCE as high as 130 ug/l and cis-DCE as high as 92 ug/l.

2.4.3 Chemical Pollution Control

According to the NYSDEC Inactive Hazardous Waste Report dated April 1996, Chemical Pollution Control, Inc. (CPC) is a NYSDEC Class 2a site located at 120 South 4th Street.

Chemical Pollution Control operates a commercial storage treatment and transfer facility. Eight tanks are located on site to store and treat hazardous waste including oils, non-halogenated solvents, other ignitable hazardous wastes, organic wastewater and acids.

In 1981, the Suffolk County Department of Health identified ten spills of toxic and hazardous materials at Chemical Pollution Control which may pose a threat to the groundwater.

A Phase I investigation was completed in 1988. A consent order was signed and the responsible party is required to conduct a Phase II investigation. According to NYSDEC, a Phase II report was prepared for the facility and NYSDEC was planning additional off-site assessment work for 1996. According to NYSDEC correspondence, a sample from one of CPC's monitoring wells indicates the presence of volatile organic compounds similar to those found in the groundwater upgradient of the landfill. (The specific compounds were not identified in the letter.)

2.4.4 Commercial Envelope Manufacturing Co., Inc.

Commercial Envelope Manufacturing Co., Inc. (CEM) is located at 900 Grand Boulevard. According to the NYSDEC Inactive Hazardous Waste Disposal Report dated April 1996, the facility is a Class 2a site. Waste generated from the photo and printing operations, as part of their envelope manufacturing, were disposed of into on-site sanitary systems. According to SCDHS sampling, three areas have been identified that contained elevated levels of solvents and heavy metals. These areas include on-site leaching pools, waste storage tanks and an area adjacent to a trash compactor. Contaminants identified include methylene chloride, PCE, toluene, xylene, TCE, cis-DCE, copper, lead and zinc.

According to NYSDEC, in the spring of 1986 a clean up effort was initiated and monitoring wells were installed. A Phase I investigation was completed in June 1987 and additional subsurface investigation is planned.

2.4.5 Southern Container Corporation

Southern Container Corporation is located at 140 Industry Court, Deer Park. The facility manufacturers corrugated boxes. In October 1985, an oil spill inventory form was prepared to address a spill of starch and ink at the facility. As a result of the spill, approximately 47 cubic yards of soil was contaminated. The report indicated that this soil was excavated and removed off-site.

2.4.6 Optica Manufacturing Corporation

According to SCDHS files, Optica Manufacturing Corporation was located at 210 S. Fehr Way, Bay Shore. The facility performed lens casting manufacturing. As part of this process, methylene chloride and 1,1,1-trichloroethane was used. In July 1986, the SCDHS issued a Notice of Violation to the facility. Samples collected from a sanitary cesspool indicated the presence of 180 ppb of methylene chloride and 65 ppb of toluene. Lens grinding wastes were also disposed of in a dumpster.

2.4.7 Marcisak Printing

Marcisak Printing was an offset printing facility located at 240 S. Fehr Way, Bay Shore. Review of SCDHS files indicated Marcisak Printing was issued several notices of violation between 1984 and 1985 indicating they were discharging waste photochemicals to cesspool. A sample collected from the cesspool indicated the presence of phenols, iron, cadmium and silver. By 1986, discharge to the cesspool ceased.

2.4.8 Island Metal Finishing

Island Metal Finishing was located at 211 B N. Fehr Way, Bay Shore. According to SCDHS files, in 1983 a sample was collected from a sanitary pool on the property. This sample

indicated the presence of copper, iron and lead. By November 1983, the facility had moved to a new location.

2.4.9 Local Hydrogeology

As discussed in the Hydrogeologic Assessment Report for the Sonia Road Landfill prepared by Golder Associates, there are two major water bearing units in the site region including the Upper Glacial deposits and the Magothy Formation. The Gardiners Clay Formation is believed to separate the two water bearing units. The 1979 report prepared by SCDHS indicated that the site is underlain by at least 80 feet of "highly permeable sand and gravel." The Gardiners clay was noted at approximately 108 feet below ground surface. The report indicated the thickness of the Gardiners Clay at the site is 9 feet and is located approximately 39 feet below sea level.

According to the NYSDEC IIWA investigation, groundwater was encountered between 10 and 15 feet below ground surface along the northern boundary of the site and approximately 20 to 25 feet below ground surface along the southern boundary.

The Hydrogeologic assessment indicated five monitoring wells were installed around the perimeter of the Landfill and were designated as MW-1, MW-2, MW-3S, MW-3D and MW-4 (see Figure 2-3) for approximate locations of the monitoring wells). Based upon one round of ground water elevations obtained an approximate groundwater flow direction was identified. This groundwater flow direction was in the south easterly direction. A horizontal gradient of 0.0019 feet per foot was reported as well as a slight upward gradient at the southern portion of the site. Grain size distribution data was utilized to obtain an average permeability of 0.002 ft/sec. Further calculations yielded as estimated groundwater velocity at the site of 0.33 feet/day or about 120 ft/year.

Average groundwater velocities were calculated in the vicinity of the Baron-Blakeslee/ATS site and reported in the ERM - Northeast Report. A rate of 0.95 ft/day or 346

ft/year based on an average hydraulic conductivity of 128 ft/day, a porosity of 0.27 and a hydraulic gradient of 0.002 ft/ft was determined.

2.4.10 Local Geology

Information obtained from the 1979 SCDHS report indicates that, based on data obtained from two borings constructed in 1974 in the southwestern and northeastern portions of the eastern portion of the landfill, there was at least 29 feet of refuse lying on a natural formation of grayish brown sand. Another boring, also constructed in 1974 on the western portion of the landfill, indicated the presence of at least 35 feet of refuse. Some refuse was encountered 11 feet below the water table.

The refuse encountered in the eastern portion of the landfill consisted of wood, roots, glass, plastic, metal and "general rubbish." In the western portion of the landfill, the refuse has been described as consisting of wood, glass, plastic, metal, cardboard, concrete and household wastes. At the time of boring construction (1974), the landfill was continuing to accept "rubbish, automobile bodies and demolition wastes."

Beneath the waste, the landfill is underlain by unconsolidated glacial outwash deposits of stratified medium to course sand and gravel to a depth of 108 feet. As discussed previously, the thickness of the Gardeners Clay in the vicinity of the landfill is reported to be 9 feet. The Gardiners clay is underlain by the Matawan Group-Magothy Formation consisting of unconsolidated sand, clayey sand and clay. It is estimated that this formation is approximately 750 feet thick.

Section 3

5. Prepare a Presumptive Remedy to cover/cap the landfill, if necessary.

6. Develop additional remedial actions, if necessary.

3.2 Task 1 - Meetings and Preliminary Site Inspections

In order to ensure project completion and implementation in a timely manner, maximum communication and interface with the Islip Resource Recovery Agency/Town of Islip and NYSDEC through meetings, review of draft material and documents, and related activities will be conducted. Meetings and site inspections will include, but are not limited to the following:

1. Meetings, as necessary, with Agency/Town representatives to review the Order on Consent, available file records and data, background of the site and objectives of services to be performed relative to the Sonia Road Landfill and environs.

2. Perform a detailed project inspection with Agency/Town representatives of the site and surrounding environs. Particular interest will be of the upgradient industrial areas, which include potential contaminant sources.

3. Attend progress meetings with the Agency/Town, monthly or more frequently, as appropriate, and conduct one formal meeting to present the findings for each milestone event.

4. Attend meetings with representatives of the NYSDEC, as necessary, to discuss project requirements and for the purpose of routine monthly progress meetings.

5. Contact and meet with the NYSDEC Regional Citizen Participation Specialist, as necessary, for development of the Citizen Participation Plan.

6. Attend public meetings and hearings, as required, during the Remedial Investigation/ Feasibility Study Program.

Under this task, copies of minutes from inspections, meetings, hearings and related activities will be prepared and provided to the Agency. Copies of Minutes will be provided to the Agency within 7 calendar days.

3.3 Task 2 - Program Planning

During this initial program phase, existing on-site and off-site information and data will be collected, potential upgradient contaminant sources will be investigated, and documents required to implement the remedial investigation and feasibility study activities will be developed. The intent of this planning phase is to identify the boundaries of the study area; identify likely remedial action objectives and whether interim actions may be necessary or appropriate to mitigate potential threats, prevent further environmental degradation, or rapidly reduce risks significantly; identify the optimal sequence of site actions and investigative activities; prepare specific project plans; and develop related implementation documentation. Information and data that will be collected as part of this task will be incorporated into the Geographic Information Systems (GIS) system, as appropriate.

The activities that will be conducted during this initial program planning phase will include, but are not limited to the general activities described below.

1. Assemble and evaluate, as appropriate, existing data on and off the site, including results of the NYSDEC Phase I Report, NYSDEC Immediate Investigation Waste Assignment documents, SCHDS reports, Agency/Town reports, and past records for the site.

2. Research appropriate federal, state and local agency files, and contaminated site databases to locate all potential upgradient sources that may be impairing groundwater in the vicinity of the Sonia Road Landfill. Obtain histories, background information, sampling date, etc., of the identified sources so that these sites may be appropriately integrated into the RI/FS activities.

3. Based upon available information and data, develop a conceptual site model that can be used to assess both the nature and extent of contamination, and identify potential exposure pathways and potential human health and/or environmental receptors.

4. Determine data needs and the level of analytical and sampling criteria required for additional data if currently available data are inadequate to conduct a Focused Feasibility Study.

5. Develop and identify preliminary remedial action objectives/alternatives and the data needed for evaluation of alternatives that will be appropriate for the Sonia Road Landfill.

6. Initiate preliminary identification of Applicable or Relevant and Appropriate Requirements (ARARs)/NYSDEC Standards, Criteria and Guidelines (SCGs) expected to apply to site characterization and site remediation activities.

7. Develop a work plan that documents the requisite activities, time duration and schedules, estimates for remedial investigation, and implementation of budget and related program elements necessary for the project planning, remedial investigation, feasibility study, implementation and anticipated future tasks.

8. Prepare a Citizen Participation Plan that is, at a minimum, consistent with the NYSDEC criteria set forth in the NYSDEC's publication "New York State Inactive Hazardous Waste Site Citizen Participation Plan," 6NYCRR Part 375 and related documents.

9. Identify and document health and safety protocols, and develop a Health and Safety Plan (HASP) to protect persons at, and in the vicinity of the site during the performance of the RI/FS. The HASP will be prepared in accordance with 29 CFR 1910 and all other applicable standards. The Plan will be developed by a certified health and safety professional.

10. Prepare a Sampling and Analysis Plan consisting of two parts: 1) a Quality Assurance Project Plan (QAPP)/Quality Assurance and Quality Control (QA/QC) Plan; and 2) a Field Sampling Plan (FSP).

All reports, data, contract documents, interim and final documentation, drawings, etc. generated on behalf of the project will be provided to the Agency in hard copy and on a computer disk. The computer format will be on an IBM personal computer-compatible-disk (3.5 diskette). Text material will be created in a format compatible with Word Perfect, Version 6.0 for DOS and drawings/mapping with Auto-Cad, Version 12.

Data and information obtained on behalf of the project will be developed for information processing in a Geographic Information System (GIS). This GIS will form a data base management system to incorporate spatial analytical techniques to capture, manipulate, use and display site data. Upon completion of the remedial investigation phase of the project, D&B will

purchase, install, setup and turnover to the Agency, at its offices, appropriate P.C. hardware, requisite software, printer and appurtenances for the Agency to utilize, update and modify historical and current data and information provided in the GIS system.

Specifically, the GIS/Key™ Environmental Data Management System will be utilized for the management of all chemical, geologic and hydrologic data obtained as part of this investigation. The management system will be utilized to prepare data tables, generate groundwater contour maps and contaminant concentration maps. As identified by the United States Environmental Protection Agency during the evaluation of the management system, GIS/Key has been found to be an efficient data management system that can reduce data management costs.

3.4 Task 3 - Remedial Investigation

The remedial investigation (RI) will be prepared consistent with all NYSDEC and USEPA statutes, rules, regulations, policies, protocols and guidelines. The purpose and activities to be conducted under the RI will include, but are not limited to those described below:

1. Fulfill the Work Plan objectives;
2. Identify on a preliminary basis, potentially feasible remedial alternatives and technologies;
3. Develop plans, specifications and contract documents for subcontracting services, as required (i.e., well drilling, etc.);
4. Prepare Requests for Proposals to retain subcontracting services, as required (i.e., testing laboratories, etc.);
5. Characterize the geology and hydrology of the site;
6. Further define the study area of the RI/FS;
7. Perform surveys and obtain information to identify public water supply wells within a 2-mile radius of the site, private wells used as a source of drinking and household use

- Supplemental Conditions;
- Detailed Specifications;
- Detailed Drawings; and
- Supplemental Documents.

2. The New York State Department of Labor (NYSDOL) will be contacted to obtain appropriate Prevailing Wage Rate Schedules and related forms.

3. Field visits to the site and meetings with representatives of the Agency/Town will be coordinated.

4. Detailed specifications, drawings and supporting documents necessary for installation of the test borings, monitoring wells, construction of test pits/trenches, etc., will be developed.

5. A separate project specific Quality Assurance/Quality Control (QA/QC) Plan for the test borings/well installations and activities will be prepared. This QA/QC Plan shall include copies of all ASTM or related standards applicable to the project and referenced in the contract documents.

6. A detailed material and installation cost estimate for the test borings/wells, test pits/trenches, testing and monitoring to be provided through the project will be developed.

7. Six sets of preliminary contract documents, including specifications and drawings and QA/QC Plan for review by the Agency and for discussion with the NYSDEC will be provided.

Bidding Phase

1. Twenty-five sets of the final plans, specifications and contract documents for bidding purposes will be provided to the Agency/Town.

2. Assistance will be provided at the Agency/Town by providing a list of potential drillers, etc., that may be interested in bidding on the project.

3. Attendance at one pre-bid site inspection with interested contractors will be arranged.

4. Responses to technical questions developed during the bidding phase will be prepared and a written addenda will also be prepared, as necessary.

5. The bids and bid submissions will be reviewed, tabulated and summarized.

6. Final contract documents for execution by the Agency will be prepared.

Engineering and Technical Support Services

All necessary management, engineering, technical, hydrogeological, and related office and field services for the test boring/well installations, test pits/trench construction, testing and monitoring program will be provided. These services, prior to and during the test boring/monitoring well installation, as well as test pit/trench construction will include, but not be limited to those defined below.

1. Project coordination and administration.

2. Attendance at pre-construction conference, project coordination meetings and related activities.

3. Preparation of proposals to retain soils and water quality testing laboratory firms. The Agency/Town will enter into a separate contract with the soils and water quality laboratories, as appropriate.

4. Provide field survey activities prior to and subsequent to test boring/well installation and test pit/trench construction. Develop record drawings for the final well installation, construction details and pertinent reference elevations.

5. Review detailed construction, shop drawings and materials. Maintain a shop drawing log and update for job meetings.

6. Review and approve subconsultants, subcontractors, and material suppliers and equipment proposed by the contractor.

7. Consult with the Agency/Town as to the acceptability of substitute materials and equipment proposed by the contractor.

8. Provide services of engineers, hydrogeologists, qualified groundwater scientists, etc., necessary during the test boring/well installation and test pit/trench construction program and related activities.

9. Review of partial and final payments, and recommendations on issuance of such contractor payments by the Agency/Town.

10. Prepare supplemental drawings, and issue necessary interpretation and clarification of contract documents, as required.

11. Review contractor's project construction schedules, work progress and inform Agency/Town officials if contractors are not progressing with construction according to schedule.

12. Assemble manufacturer's documentation into an Operation and Maintenance Manual for the facility.

13. Review and make recommendations regarding contractor's claims.

14. Provide assistance during final testing and acceptance of the construction.

15. Perform a pre-final inspection of the completed construction with the contractor(s) and, as a result, prepare a punch list of items to be corrected, if applicable.

16. Coordinate and cooperate with NYSDEC personnel.

17. Perform a final acceptance inspection and advise the Agency/Town whether or not to accept the work as performed by the contractor.

18. Review contractor's record drawing(s) of the completed work.

19. Observe and perform all required systems audits for the quality control inspections, provide quality assurance inspection reports and documentation, and attend quality control field meetings.

20. Ensure that site-specific documentation and field reports are developed, maintained and transferred to appropriate personnel for review and approval.

21. Prepare a photographic record of the work in progress and develop a quality assurance project report.

22. Review field and laboratory test data for consistence with project specifications and contract documents.

23. Prepare deficiency reports, as necessary, and complete documentation to ensure all corrective actions have been completed and retested.

24. Attend contractor deficiency meetings, as required, and other meetings as requested.

Project Close-out

All requisite services for close-out of the contracts will be provided to the Agency/Town. These services will include, but not be limited to those indicated below.

1. Final inspections and acceptance;
2. Issuance of Notice of Substantive Completion;
3. Issuance of Notice of Completion;
4. Letter of Release;
5. Final Payments; and
6. Other close-out services, as requested, in the contract documents.

3.4.4 Field Investigation

The remedial investigation field program will include the following:

- Aerial Photograph Review
- Base Mapping
- Grid Network Survey
- Soil Vapor/Methane Gas Survey and Sampling
- Surface Soil Sampling
- Test Pit/Trench Construction
- Soil Boring Construction
- Hydropunch Screening

- Monitoring Well Installation
- Groundwater Sampling
- Monitoring Well Elevations and Water Level Measurements
- Private/Public Water Supply Survey

Sampling procedures, frequency and locations are described in detail in the Sampling and Analysis Plan (Volume II). A summary of the field investigation program is provided in Table 3-1. Sampling locations are provided on Figures 3-1 and 3-2.

3.4.5 Identification of Standards, Criteria and Guidelines

A key consideration in the performance of a remedial investigation/feasibility study under the provisions of SARA and the New York State Superfund Program is the establishment of standards, criteria and guidelines (SCGs) early in the RI/FS. In New York State, the primary guidance available for groundwater is the Technical and Operational Guidance Series (TOGS) - Ambient Water Quality Standards and Guidance Values (see Appendix A). This document presents the standards and guidance values based on water quality classifications for over 200 chemical compounds for groundwater in New York State. In addition, the NYSDOH has also promulgated groundwater/ drinking water standards for organic compounds and inorganic constituents.

For soils, the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) HWR-94-4046 for the determination of soil cleanup objectives and cleanup levels dated January 1994 will be utilized as the SCG (see Appendix B). Some of the soil samples will be analyzed for Toxicity Characteristic Leaching Procedure (TCLP). The results of the TCLP analysis will be compared to the United States Environmental Protection Agency (USEPA) Regulatory Levels.

Table 3-1

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
REMEDIAL INVESTIGATION FIELD PROGRAM SUMMARY

Program Element	Rationale	Number of Samples	Equipment	Analysis
Aerial Photograph Review	Historical aerial photographs from 1940 to 1990 will be reviewed in order to evaluate the historical excavation and filling activities to define the approximate limits of waste up until 1974, and on-site activities, including grading, which took place after the landfill was closed.	Not Applicable.	Not Applicable.	Not Applicable.
Grid Network Survey	A 300-foot by 300-foot grid network will be established on-site for construction of test pits, positioning of on-site test borings and conducting the soil vapor survey.	Not Applicable.	Grid network survey will be conducted by a licensed New York State surveyor and will be incorporated into the existing topographic map. Each grid point will be identified with a stake and flagging pole.	Not Applicable.
Surface Soil Sampling	Surface soil samples (0-2 inches) will be collected to characterize surface soil quality on-site and off-site.	Four samples will be collected on-site and three samples will be collected off-site (one upgradient and two downgradient).	Surface soil samples will be collected using disposable polyethylene scoops	Each sample will be analyzed for TCL + 30, TAL parameters.

Table 3-1 (continued)

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
REMEDIAL INVESTIGATION FIELD PROGRAM SUMMARY

Program Element	Rationale	Number of Samples	Equipment	Analysis
Soil Vapor Survey	Soil vapor samples will be collected to determine the presence of methane and volatile organic compounds.	Approximately 30 soil vapor measurements will be collected based on a 150-foot by 300-foot grid.	Soil vapor samples will be collected by driving a soil vapor probe 3 feet into the ground. The probe will be purged and once equilibrium has been reached, the probe will be monitored and measured with the PID/FID and combustible gas indicator. Samples for laboratory analysis may be collected using a vacuum pump and sorbent tubes.	Each sample will be screened with a PID/FID and combustible gas indicator. If elevated levels of VOCs are detected on the PID/FID, up to six samples will be collected and analyzed for volatile organics by USEPA Method T01/T02.
Test Trench Construction	Test trenches will be constructed in order to define the limits of the waste for cap design and depth of waste around perimeter of landfill to evaluate potential for waste consolidation.	Approximately 30 test trenches will be constructed based on 150-foot intervals around the perimeter of the landfill.	Each test trench will be constructed utilizing a backhoe. The test trench will be approximately 20 feet long, 3 feet wide and 10 feet deep or until waste or clean soil is encountered.	No samples will be collected for chemical analysis.
Test Pit Construction	Test pits will be constructed in the interior of the landfill to define the thickness of existing soil cover for use as part of capping.	Approximately 20 test pits will be constructed in the interior portion of the landfill based upon the 150-foot by 300-foot grid.	Each test pit will be constructed utilizing a backhoe. The test pit dimensions shall be approximately 6 feet long by 6 feet wide and 6 feet deep.	No samples will be collected for chemical analysis.

Table 3-1 (continued)

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
REMEDIAL INVESTIGATION FIELD PROGRAM SUMMARY

Program Element	Rationale	Number of Samples	Equipment	Analysis
On-site Test Borings	Test borings will be constructed in order to define depth of waste in the landfill and below groundwater.	Four borings will be constructed to a depth of approximately 50 feet or to the depth of waste. Split spoon samples will be collected at the water table interface and the base of the borehole to confirm the depth of waste. Four samples will be collected (one from each boring with at least two at the water table interface) for chemical analysis.	Borings will be constructed using 4 1/4 I. D. inch hollow stem augers. Soil samples will be collected using split spoon samplers.	Two samples will be analyzed for TCL + 30, TAL parameters and two samples will be analyzed for TCLP parameters.
Upgradient Monitoring Wells (MW-9, MW-10, MW-11, MW-12)	Four monitoring well clusters (shallow, intermediate and deep) will be installed upgradient of the site and immediately downgradient of the industrial areas located north and northwest of the landfill in order to further define upgradient groundwater quality and identify other sources of contamination.	Twelve monitoring wells will be installed upgradient of the site, and one sample will be collected from each well.	Monitoring wells will be constructed of 4-inch diameter, flush joint, schedule 40 PVC with 10 slot stainless steel screen. The 15-foot screen will be placed 5 feet above the water table in the shallow well. All remaining wells will have 10-foot screens. Deep wells will be screened just above the confining unit.	None.

Table 3-1 (continued)

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
REMEDIAL INVESTIGATION FIELD PROGRAM SUMMARY

Program Element	Rationale	Number of Samples	Equipment	Analysis
Perimeter Hydropunch/ Groundwater Screening	Groundwater samples will be collected along the southern border of the landfill utilizing a Hydropunch sampler in order to locate the perimeter monitoring wells.	Seven Hydropunch screening points will be installed along the southern perimeter of the landfill. The screening point will be based on the 300-foot grid developed for the site. Groundwater samples will be collected from each screening point at 10 foot intervals initiating at the water table to the top of the Gardiners clay (approximately 120 feet) for a total of about 70 samples.	Groundwater samples will be collected directly from the Hydropunch sampler.	Each sample will be analyzed in the field using a portable gas chromatograph. Analysis for select volatile organic compounds of concern will be conducted. Ten percent of the samples will be analyzed in an off-site laboratory for confirmatory TCL volatile organics.

Table 3-1 (continued)

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
REMEDIAL INVESTIGATION FIELD PROGRAM SUMMARY

Program Element	Rationale	Number of Samples	Equipment	Analysis
Perimeter Monitoring Wells (MW-2 through MW-8)	Monitoring wells will be installed immediately down-gradient and upgradient of the site in order to supplement the existing monitoring wells and to further define downgradient groundwater quality. Clusters will be installed at up to four new locations (shallow, intermediate and deep) and three existing locations will be completed with the addition of three deep and two intermediate wells. The shallow wells will be installed at the water table and deep wells will be constructed to the depth of the Gardiners Clay (approximately 120 feet). Intermediate depth wells will be installed dependent upon the results of the Hydropunch screening. The final locations of clusters will be predicated based upon the results of the Hydropunch results. For planning purposes, up to four clusters screened throughout the aquifer may be installed.	Up to 17 monitoring wells will be installed upgradient and downgradient along the site perimeter, in addition to the four existing wells, and one sample will be collected from each well.	Monitoring wells will be constructed of 4 inch diameter, flush joint, schedule 40 PVC with 10 slot stainless steel screen. The 15-foot screen will be placed 5 feet above the water table for the shallow wells. All remaining wells will have 10-foot screens. Deep wells will be screened just above the confining unit.	None.

Table 3-1 (continued)

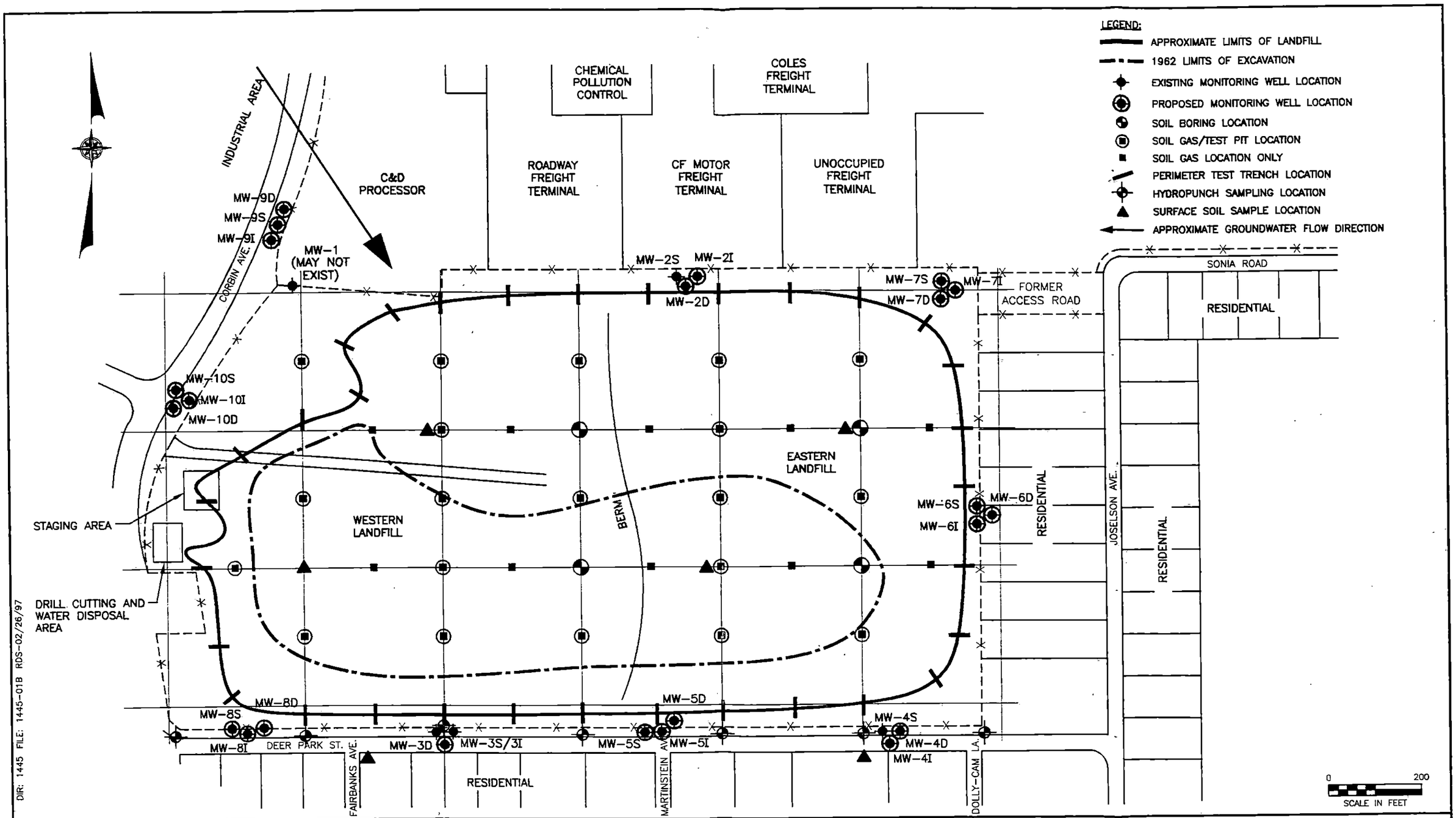
SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
REMEDIAL INVESTIGATION FIELD PROGRAM SUMMARY

Program Element	Rationale	Number of Samples	Equipment	Analysis
Downgradient Monitoring Wells (MW-13 and MW-14)	Two monitoring well clusters (shallow, intermediate and deep) will be installed downgradient of the site in order to characterize and further define downgradient ground water quality.	Six monitoring wells will be installed downgradient of the site. Attempts will be made to utilize existing SCDHS intermediate wells. One sample will be collected from each well.	Monitoring wells will be constructed of 4-inch diameter flush joint, schedule 40 PVC with 10 slot stainless steel screen. The 15-foot screen will be placed 5 feet above the water table in the shallow wells. All remaining wells will have 10-foot screens. Deep wells will be screened above the confining unit.	None.
Monitoring Well Groundwater Sampling	Groundwater samples will be collected in order to characterize groundwater quality.	Groundwater samples will be collected from the 35 wells installed as part of this investigation and from the four existing wells for a total of 39 samples.	Monitoring wells will be purged of three to five well volumes prior to collection of the samples. Wells will be purged with a submersible pump or disposable polyethylene bailer. Purged water will be monitored for pH, conductivity, temperature and turbidity. Once each of the parameters has stabilized, groundwater samples will be collected. Groundwater samples will be obtained utilizing disposable polyethylene bailers.	Each sample will be analyzed for TCL +30, TAL parameters and leachate parameters as identified in the Part 360 Expanded Parameter List.
Water Level Measurements	Water level measurements will be collected to evaluate groundwater flow on-site and off-site.	Two rounds of groundwater level measurements will be collected during the investigation.	An electronic water level indicator will be utilized to obtain the groundwater level measurements.	None.

Table 3-1 (continued)

SONIA ROAD LANDFILL
REMEDIAL INVESTIGATION AND FEASIBILITY STUDY
REMEDIAL INVESTIGATION FIELD PROGRAM SUMMARY

Program Element	Rationale	Number of Samples	Equipment	Analysis
Public/Private Well Survey	The survey will be conducted in order to determine potential receptors that may be exposed to groundwater contamination that may be migrating from the landfill.	None.	None.	None.



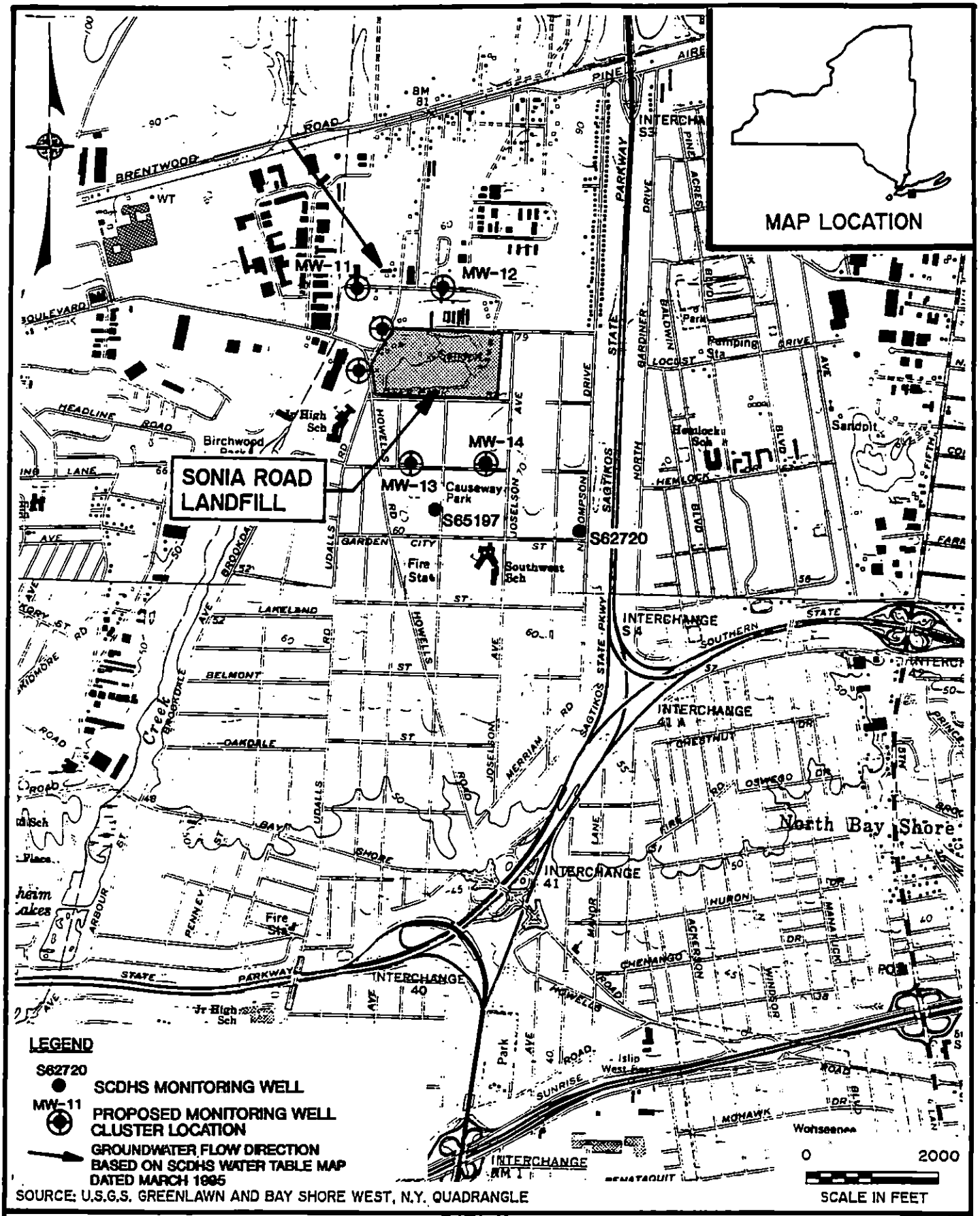
DIR: 1445 FILE: 1445-01B RDS-02/26/97

ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIELD SAMPLING PROGRAM

FIGURE 3-1



SOURCE: U.S.G.S. GREENLAWN AND BAY SHORE WEST, N.Y. QUADRANGLE

ISLIP RESOURCE RECOVERY AGENCY
SONIA ROAD LANDFILL

OFFSITE MONITORING WELL LOCATIONS

Dvirka and Bartilucci
Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 3-2

For soil vapor, the Draft New York State Air Guide-1, Guidelines for the Control of Toxic Ambient Air Contaminants, dated 1991, including complete Hazardous Air Pollutant (HAP) listings, AGCs, SGCs and Air Quality Standards for the Air Guide-1 will be utilized (see Appendix C).

3.4.6 Qualitative Risk/Exposure Assessment

The methodology to be used to perform the human health risk/exposure assessment is provided in the following United States Environmental Protection Agency (USEPA) documents: Risk Assessment Guidance for Superfund (RAGS), Volume I, Human Health Evaluation Manual Part A, Interim Final dated December 1989; and Risk Assessment Guidance for Superfund (RAGS), Volume II, Environmental Evaluation Manual, Interim Final dated March 1989. The assessment will identify the contaminants and concentrations of concern at the site, define the routes of exposure from these contaminants, define the contaminant migration pathways and identify the potential human receptors based upon the results of the remedial investigation.

A list of indicator chemicals will be developed for the site from the set of validated remedial investigation data. Indicator chemicals will be selected to represent the most toxic, mobile and persistent contaminants at the site, as well as those compounds which exceed the SCGs, and are detected most frequently and at the highest concentrations. Identification of indicator chemicals will enable the health risk assessment to focus on the contaminants of greatest potential concern to human health.

Utilizing data from the remedial investigation, site reconnaissance and previous site investigations, the contaminant sources, migration pathways and human exposure points will be identified and evaluated. Potential human exposures from contaminants and contaminated media include potential ingestion, inhalation and dermal contact with waste, contaminated groundwater, surface/drainage water, soil, and vapors and fugitive dust. The risk/exposure assessment will focus on groundwater and landfill gas relative to potential impacts.

3.4.7 Habitat Based Assessment

A wildlife habitat survey will be conducted in order to prepare a Wildlife Impact Assessment for the site as required by NYSDEC for RI/FS projects. The survey will be performed in accordance with Step I of the NYSDEC Division of Fish and Wildlife document, entitled "Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites," dated October 1994.

The Step I analysis will include the following: preparation of cover type mapping of Sonia Road Landfill, which will present the major vegetative communities on the site; a description of the terrestrial fauna on or adjacent to the site, including fauna expected within each cover type; qualitative assessment of the value of the wildlife resources; and selection of appropriate soil quality standards, criteria and guidance values (SCGs).

A Step IIa analysis will be completed as part of the assessment. The habitat field survey will identify terrestrial species which are directly observed, including vectors, as well as vegetative cover types and wildlife which may inhabit the site and surrounding area.

In accordance with the Step IIa analysis, an assessment of impacts of site-related contaminants, based on selected SCGs, will be conducted to define, in a qualitative manner, the pathways which site contaminants may affect wildlife resources.

The goals of the Wildlife Impact Assessment are to:

- Identify the potential impacts to flora and fauna posed by existing contamination at the site; and
- Provide a basis for determining required remediation and contaminant levels that can remain on-site and off-site, while providing adequate protection of wildlife resources.

Because the presumptive remedy is to cap the landfill, primary emphasis in the environmental assessment will be given to this action relative to impacts.

3.4.8 Remedial Investigation Report

During and upon completion of the Remedial Investigation, a Remedial Investigation Report will be prepared that documents the means, methods and findings of the Remedial Investigation. Draft and final versions of the Remedial Investigation Report will be prepared. This report will provide characterization of the site, and information to serve as a reference during development of alternatives and identification of remedial goals in the Feasibility Study.

The Remedial Investigation Report format will conform with NYSDEC and USEPA guidelines and include, but not be limited to the following sections:

1. Executive Summary;
2. Introduction;
3. Study Area Investigation;
4. Physical Characteristics of the Study Area;
5. Nature and Extent of Contamination;
6. Contaminant Fate and Transport;
7. Baseline Risk Assessment;
8. Summary and Conclusion; and
9. Appendices and Supporting Documentation.

In addition to the results of the investigation, the RI report will provide preliminary recommendations for the remedial plan. Since the cap will be addressed as a Presumptive

Remedy, the recommendation in the report will focus on remediation of groundwater and landfill gas, if required.

3.5 Task 4 - Feasibility Study

The feasibility study (FS) will be prepared in three interrelated phases/sections, and will include the development of alternatives, screening of the alternatives and detailed analysis of alternatives. The alternatives will be developed and screened concurrently with the remedial investigation, with the results of one influencing the other in an interactive fashion. Appropriate remedial actions will be evaluated to ensure protection of human health and the environment, considering the site-specific circumstances. The development and screening of alternatives, as well as the detailed analysis of alternatives, will be presented in a draft and final Feasibility Study Report. The preparation of the feasibility study will be consistent with NYSDEC and USEPA guidelines.

Primary emphasis on the development, screening and selection of alternatives will be on the Presumptive Remedy approach for remediation of Class 2 municipal landfills, consistent with NYSDEC TAGM No. 4044 "Accelerated Remedial Actions at Class 2 Non-RCRA Regulated Landfills" (see Appendix D).

For the Sonia Road Landfill, because there is no liner and the depth to groundwater is substantial (approximately 20 feet or greater), the concept of leachate collection and treatment will apply to groundwater extraction and treatment.

Based on available information and selection of the Presumptive Remedy a Focused Feasibility Study will be prepared that will address each of the three FS phases in a single document. This approach will reduce both the cost and time to complete the project.

To accelerate the remedial design and, therefore, remedial construction, rather than recommending the Presumptive Remedy as a recommendation of the Focused FS, a separate

Presumptive Remedy Engineering Design Report (see Section 3.6) will be prepared and submitted early in the RI/FS process. This report will provide the rationale and appropriateness for selection of the cap, as well as the design parameters, including variances to the Part 360 cap as referenced in TAGM 4044. Part 360 cap variances, which will be addressed as part of the design, will be reduction in the barrier protection layer thickness from 24 inches to 18 inches or 12 inches, replacement of top soil with a vegetative growth medium and elimination of the gas venting layer by providing additional gas vents.

The selection of these variances will, in part, be dependent upon planned site use. For example, if the site or areas of the site will be used for active recreation, then perhaps the barrier protection layer should be not reduced (in particular in the area planned for intensive use), and/or the gas venting layer should not be eliminated and the number of gas vents increased. The remedial design, including variances, will be coordinated with the Agency/Town.

Based on the proposed approach to the feasibility study as described above, provided below is the detailed scope of work with modification to be consistent with the concept of a Presumptive Remedy and Focused FS.

3.5.1 Development of Alternatives

Alternatives for remediation will be developed by assessing a limited number of combinations of technologies, and the media to which they would be applied, that address site contamination or an identified operable unit of the site that would be applicable to municipal landfills.

Consideration of possible remedial alternatives will be conducted in order to develop an appropriate range of site management options to be analyzed more fully in the detailed analysis phase of the Focused Feasibility Study Report. The potential remedial action alternatives will then be screened to narrow the list of candidates for the detailed analysis. The development of alternatives will include, but is not limited to, the following:

1. Development of remedial action objectives for each medium of interest (i.e., groundwater, soil, air, etc.), including discussions on contaminants of concern, exposure pathways, allowable exposure based on risk assessment and Standards, Criteria and Guidelines (SCGs), and development of remediation goals.

2. Development of general response actions for each medium of interest, exposure pathways, including estimation of areas or volumes to which treatment, containment or exposure technologies may be applied.

3. Identification and screening of technologies applicable to each general response action, including evaluation of process options and selection of a representative process for each technology type.

4. Assembly of selected representative technologies into alternatives and a discussion of the rationale behind the alternatives. A containment alternative and the no-action alternative will be included in this discussion.

There are only a few, practical remedial alternatives for large landfills, such as the Sonia Road Landfill, these being: limited excavation and removal, such as buried drums and high contaminated wastes/soils as part of an Operable Unit; capping with a permeable or low permeability cover; leachate collection and treatment; groundwater extraction and treatment; in situ groundwater treatment; and gas collection and treatment. Other remedial technologies, such as large-scale excavation and removal, soil washing, solvent extraction, solidification, stabilization, vitrification, thermal desorption and incineration, are too costly, and, in addition, may not be effective. For this Focused Feasibility Study, only those practical alternatives described above will be considered.

3.5.2 Initial Screening of Alternatives

The potential remedial action alternatives described above will be screened to narrow the list of candidates for the detailed analysis. The screening will preserve a range of the most promising treatment alternatives as determined by their implementability and their effectiveness in reducing risk from each media and/or pathway of concern. The no action alternative will be

considered against which to compare the action alternatives. A meeting will be held with the Agency/Town concerning the initial screen criteria and methodology.

3.5.3 Detailed Analysis of Alternatives

This task will include the detailed analysis and comparison of alternatives remaining after the initial screening of alternatives. The evaluation will include performing detailed human health, environmental and institutional analysis.

The detailed analysis of alternatives will consider the following statutory requirements:

- Be protective of human health and the environment;
- Attain ARARs/SCGs, or provide grounds for involving a waiver;
- Be cost effective;
- Utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent possible; and
- Satisfy the preference for treatment that reduces toxicity, mobility or volume as a principal element or provide explanation as to why it does not.

The selection of the preferred alternative for implementation at the Sonia Road Landfill will be based on a detailed comparative analysis utilizing nine (9) evaluation criteria defined by federal (CERCLA) and New York State Superfund Program requirements to address technical, policy and institutional considerations. These criteria are the following:

1. Overall protection of human health and the environment;
2. Compliance with ARARs/SCGs;
3. Long-term effectiveness and permanence;
4. Reduction of toxicity, mobility or volume;

5. Short-term effectiveness;

6. Implementability;

7. Cost;

8. NYSDEC acceptance; and

9. Community acceptance.

In order to determine the respective strengths and weaknesses of each alternative, the detailed analysis will include the following.

- A comparative analysis among the alternatives to assess the relative performance of each alternative with respect to each evaluation criteria.
- The selection of a preferred alternative reflecting consideration of the preferred treatment method and the best balance across all evaluation criteria.

3.5.4 Preparation of Feasibility Study

During and upon completion of the Focused Feasibility Study, a Feasibility Study Report will be prepared that documents the means, methods and results of the identification and screening of alternatives, and selection of a recommended implementation plan. Draft and final versions of the Feasibility Study Report will be prepared.

The Feasibility Study Report format will conform with NYSDEC and USEPA guidelines and include, but not be limited to, the following sections:

1. Executive Summary;

2. Introduction;

3. Identification and Screening of Technologies;

4. Development and Screening of Alternatives;

5. Detailed Analysis of Alternatives;

6. Bibliography; and

7. Appendices.

Deliverables

Under this task, draft and final copies of all subtask reports and the Feasibility Study Report will be prepared. The draft and final documents will be provided to the Agency in accordance with the activities and schedule described below.

Development of Alternatives

Draft Document - Within 60 calendar days of receipt of laboratory reports, six draft copies of the subtask report on development of alternatives will be provided to the Agency.

Final Document - Within 15 calendar days after receipt of Agency comments, the 15 copies of the subtask report will be provided to the Agency.

Initial Screening of Alternatives

Draft Document - Within 90 calendar days of receipt of laboratory reports, six draft copies of the subtask report on initial screening of alternatives will be provided to the Agency.

Final Document - Within 15 calendar days after receipt of Agency comments, the 15 copies of the subtask report will be provided to the Agency.

Detailed Analysis of Alternatives

Draft Document - Within 120 calendar days of receipt of laboratory reports, six draft copies of the subtask report on detailed analysis of alternatives will be provided to the Agency.

Final Document - Within 15 calendar days after receipt of Agency comments, the 15 copies of the subtask report will be provided to the Agency.

Preparation of Feasibility Study

Draft Document - Within 150 calendar days of the Consultant's receipt of laboratory reports, six draft copies of the complete Feasibility Study Report will be provided to the Agency.

Final Document - Within 15 calendar days after receipt of Agency comments, the 15 copies of the Feasibility Study Report and supporting documentation will be provided to the Agency.

3.6 Task 5 - Preparation of Presumptive Remedy Engineering Design Report

The approach toward remediation of the Sonia Road Landfill is to designate the landfill as an Operable Unit and consider Presumptive Remedies. This approach will allow design to proceed concurrently with the RI/FS and accelerate implementation of the remedial action. Guidance for this accelerated remediation approach is provided in NYSDEC Technical Administrative Guidance Memorandum No. 4044 (Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills).

To accomplish this accelerated design approach, a Presumptive Remedy Engineering Design Report will be prepared early in the Remedial Investigation Program. This Engineering Design report will provide the justification and rationale for the selection of the remedial action, as well as identify and address design parameters to facilitate preparation of design/construction

documents. The report will be prepared in sufficient detail to permit accurate construction cost estimates. The report will address variances to the Part 360 regulations, if appropriate. As discussed earlier, these variances could comprise reduction of the barrier protection layer, modification to the gas venting layer/system, etc. The anticipated outline for this report is the following:

Presumptive Remedy Engineering Design Report Outline

Introduction

Site History and Inventory of Wastes

Presumptive Remedy and Planned Land Uses

Closure Plan

- Existing Grades, Site Plan and Property Lines
- Proposed Subgrade
- Proposed Final Grades
- Storm Water Management
- Landfill Consolidation/Footprint Reduction
- Landfill Gas Controls/Management
- Capping Details
- Veneer Stability
- Seismic Stability
- Variances and Variance Requests
- Help Model
- Universal Soil Loss Equation

Construction Schedule

Construction Cost Estimate

Following approval of the Presumptive Remedy Engineering Design Report by NYSDEC, as illustrated in the Project Schedule in Section 4.1, it is planned to immediately commence the design in order to have NYSDEC approved plans and specifications completed in early 1998. This report will also serve to a large extent, the basis of the Focused Feasibility Study Report.

With regard to design, in the early stages of preparation of the Presumptive Remedy Engineering Design Report, a number of considerations will be discussed with the Agency/Town, a few of which are the following:

1. Possibility of waste consolidation to reduce the footprint of the landfill, and area and cost of the cap. The feasibility/cost effectiveness of consolidation will be determined as a result of the test trench program. The downside would be that the creation of odors, however, since consolidation, based upon cost-effectiveness, will only be for those areas where the waste is 4-6 feet deep, and the fact that waste disposal ceased over 20 years ago, odors may not be a problem. This will be confirmed during the test trench program.

2. Desirability of preparing an undulating surface contour for the landfill site rather than the typical straight 4% slope. This would reduce the amount of material that would need to be brought to the site for contour grading material. This would not only reduce cost, but would also provide an appealing, rolling topography that would enhance the use of the site for passive recreational purposes. It would also significantly reduce the height of the capped landfill, which if a straight 4% slope were used, would result in a height of about 40 feet in the center of the site.

3. Planned use of the site. This is important, because the cap design would need to consider and integrate planned use into the design. For example, as discussed before, if the site were to be heavily used, then perhaps the barrier protection layer could not be reduced.

4. Cover Options. This would include evaluation of different types of cover options including soil cover, geomembrane liner with or without barrier protection, geosynthetic clay liner, clay, pavement, etc.

Section 4

4.0 PROJECT MANAGEMENT

4.1 Project Management, Organization and Key Technical Personnel

Dvirka and Bartilucci Consulting Engineers will be the prime consultant responsible for managing and performing the RI/FS, and preparing the remedial design for the Sonia Road Landfill. In addition to overall project management, D&B will be directly responsible for preparation of the RI/FS Work Plan, implementation of the remedial investigation field program, preparation of the environmental assessment and remedial investigation report, preparation of the feasibility study report, development of the remediation plan, provision of assistance to the Agency regarding implementation of the Citizen Participation Plan, and preparation of the remedial design and construction contract documents.

C.C. Johnson and Malhotra, P.C., which is an MBE firm, will prepare the human health risk assessment, and Field Safety Corporation, which is a WBE firm, will provide Health and Safety Services. YEC, Inc., which is a MBE firm, will provide surveying services and Nancy Potak, which is a WBE firm, will perform third party data validation.

The project organization chart for performance of the Sonia Road Landfill RI/FS and remedial design, illustrating both management and project responsibility functions for the project team and key personnel, is provided in Figure 4-1.

4.1.1 M/WBE Utilization

In order to meet the goals for this project, the following firms will be utilized:

- Field Safety Corporation (WBE) - Health and Safety;
- C.C. Johnson and Malhotra, P.C. (MBE) - Qualitative Risk/Exposure Assessment;
- YEC, Inc. (MBE) - Surveying; and

Dvirka and Bartilucci
CONSULTING ENGINEERS
A Division of William F. Cosulich Associates, P.C.

PROJECT ORGANIZATION CHART

Sonia Road Landfill
Development and Implementation of a Remedial Program for an Inactive Hazardous Waste Disposal Site

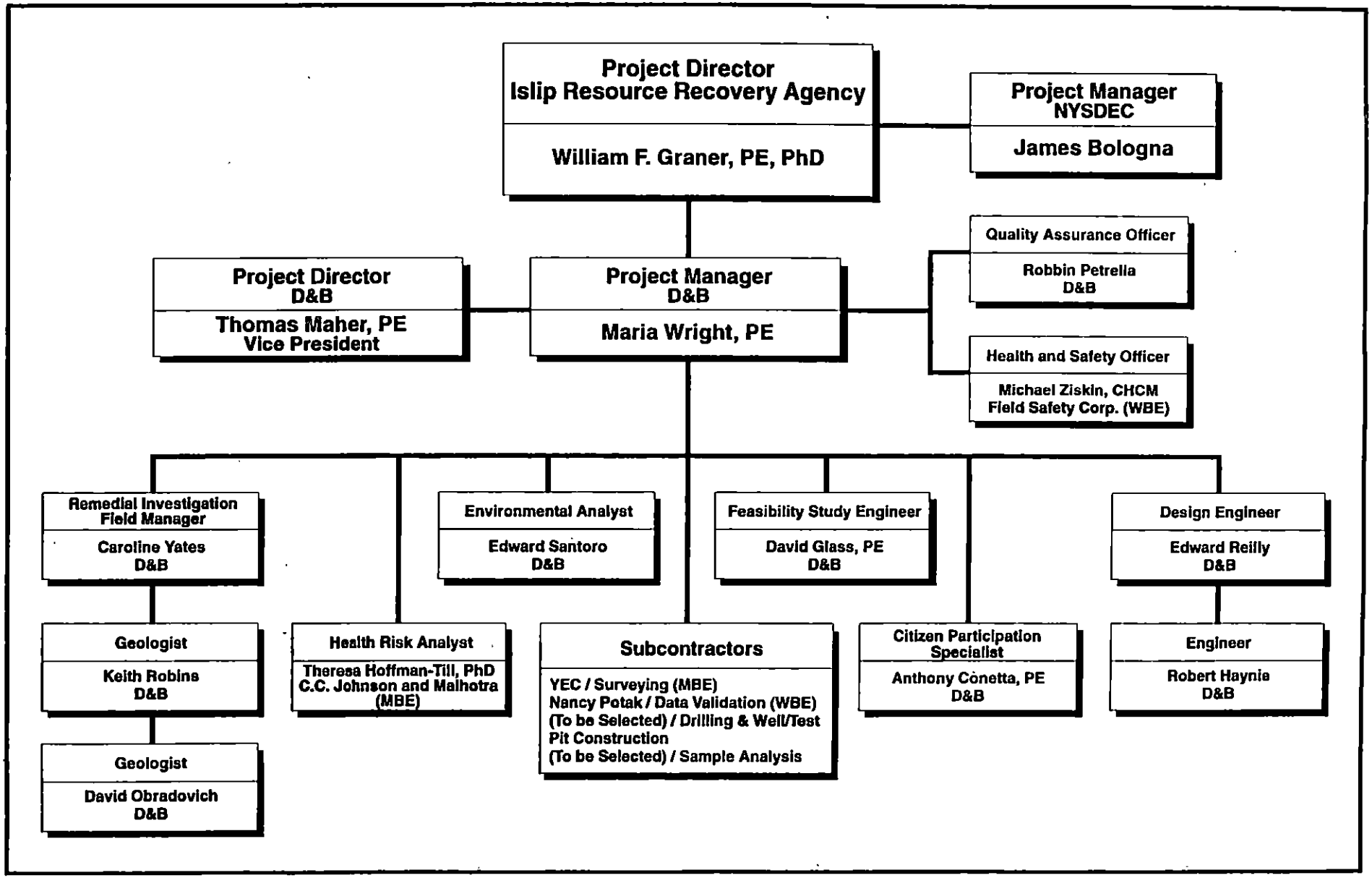


FIGURE 4-1

- Nancy Potak (WBE) - Data Validation

In addition, it is planned to solicit a M/WBE analytical laboratory and drilling contractor, if possible, as determined by the Agency.

4.2 Project Schedule and Key Milestones/Reports

The RI/FS schedule as defined in this Work Plan is depicted in Figure 4-2. As illustrated in the Project Schedule, key milestones/document deliverables are identified that will focus and monitor work progress. Specific time frames/dates have been established throughout the project schedule, including Agency and NYSDEC review periods, to ensure timely completion of the project to meet the goal of issuing a Record of Decision (ROD) in early 1998.

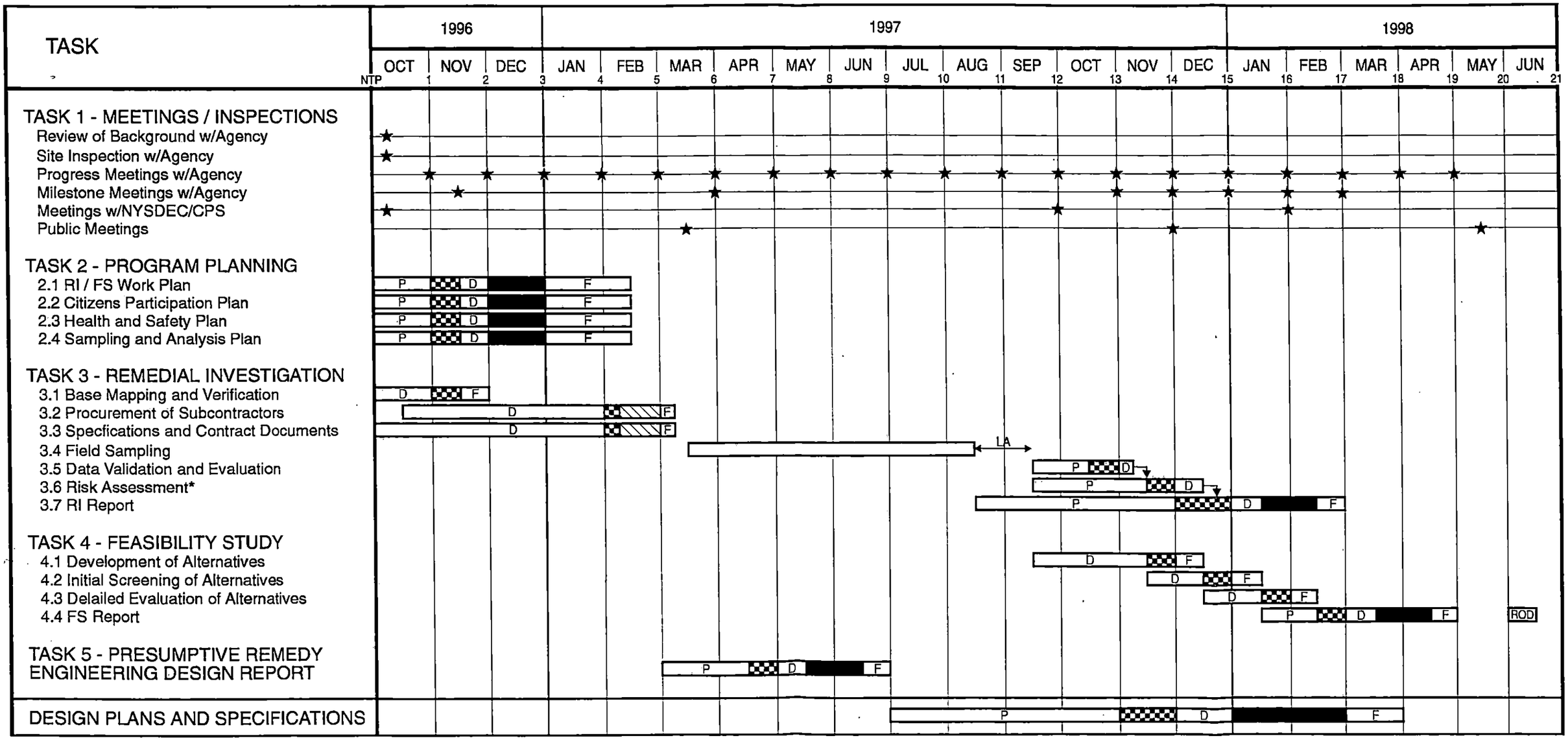
In order to expedite review by the Agency, as well as NYSDEC, we intend that appropriate key portions of the deliverables, such as preliminary analytical results (without data validation) and data interpretation, definition of SCGs and identification of the Presumptive Remedy, will be provided to the Agency and NYSDEC as interim deliverables for early review and discussion. As a result of this approach, preliminary comments by the Agency and NYSDEC will be incorporated into the draft documents, which will shorten the formal review of the RI and FS reports, as well as the remedial design documents.

The following is the list of key milestones proposed for this project:

Milestone 1	Submittal of the Preliminary Draft RI/FS Work Plan to the Agency
Milestone 2	Submittal of the Draft RI/FS Work Plan to NYSDEC
Milestone 3	Submittal of the Final RI/FS Work Plan to NYSDEC

FIGURE 4-2

PROJECT SCHEDULE
Remedial Investigation/Feasibility Study
Sonia Road Landfill
Inactive Hazardous Waste Disposal Site



P - PRELIMINARY DRAFT
D - DRAFT
F - FINAL

PROCUREMENT
AGENCY REVIEW
NYSDEC REVIEW

LA - LABORATORY ANALYSIS
ROD - RECORD OF DECISION

NOTE: * Risk Assessment Needs to be Prepared Using Validated Data

Dvirka and Bartilucci CONSULTING ENGINEERS
A Division of William F. Cosulich Associates, P.C.

Milestone 4	Submittal of the Preliminary Sample Results, SCGs and Data Interpretation to the Agency and NYSDEC
Milestone 5	Submittal of the Preliminary Draft Presumptive Remedy Engineering Design Report to the Agency
Milestone 6	Submittal of Draft Presumptive Remedy Engineering Design Report to NYSDEC
Milestone 7	Submittal of Final Presumptive Remedy Engineering Design Report to NYSDEC
Milestone 8	Submittal of the Preliminary Draft Remedial Investigation Report to the Agency
Milestone 9	Submittal of the Draft Remedial Investigation Report to NYSDEC
Milestone 10	Submittal of the Final Remedial Investigation Report to NYSDEC
Milestone 11	Submittal of the Preliminary Draft Focused Feasibility Study Report to the Agency
Milestone 12	Submittal of the Draft Focused Feasibility Study Report to NYSDEC
Milestone 13	Submittal of the Final Focused Feasibility Study Report to NYSDEC

With regard to project management reporting, a level of effort and budget will be established and tracked for each task and subtask according to the Project Schedule. Monthly Progress Reports, Cost Control Reports and MBE/WBE Utilization Reports will be prepared and submitted with a monthly invoice according to the EQBA Title 3 requirements. Progress Reports will provide details by task, compliance with the project schedule, accomplishments during the reporting period, work planned for next period, problems, suggested resolution of problems, and projected changes in scope, as well as utilization of minority and women's business enterprises.

and non-oncogenic data to justify a value greater than 50 ug/L are not available. The above determinations for specific substances are made by the Criteria and Standards Section.

As with other guidance values for specific substances, all guidance values derived from the general organic guidance value as of the date of this document are listed in Table 1 of this TOGS.

Standards and guidance values are the maximum allowable concentration in units of ug/L, unless otherwise indicated. Where standards or guidance values are expressed as a function of hardness, hardness is in units of parts per million (ppm), expressed as calcium carbonate, and the resulting value is in ug/L. Also, in such hardness functions, the term "exp" represents the base e exponential function. "ND" means a non-detectable concentration by the approved analytical methods referenced in section 700.3.

B. Substance (CAS No.)

The substance or group of substances (entry) for which a standard or guidance value has been derived is presented in this column in alphabetical order. The Chemical Abstract Service Registry (CAS) Number(s) are given, where applicable, to provide positive identification. Because a substance may be known by names other than the one used in this document, identification of the CAS number can be useful for locating the substance. An index of CAS numbers is provided.

Some of the groups contain a large or unlimited number of substances that are not identified specifically; therefore, a determination of the specific substances encompassed by a standard or guidance value may be necessary. Group entries fit into one of three categories, as described below. For each such entry, a Remark will indicate whether the standard(s) or guidance value(s) apply to the sum of the substances or to each substance individually.

Interpretation of Group Entries

1. Where the entry consists of two or more specific substances, with or without CAS Numbers (e.g.: Aldrin and Dieldrin), the entry includes only the specific substances listed.

2. Where the entry is the name of a group of substances, with CAS numbers listed (e.g.: Dichlorotoluenes), the entry includes only those substances for which the CAS Numbers are listed.

3. Where the entry is the name of a group of substances, without CAS Numbers (e.g.: Principal organic contaminant), the entry includes all substances that belong to the group, unless otherwise noted. These specific substances may not be listed in the entry or the index. **A determination of the specific substances encompassed by the standard(s) or guidance value(s), therefore, may be necessary.**

   The **principal organic contaminant (POC) standard for groundwater** is the largest and most complex of this third type of group entry. It is a **general standard that applies individually to a virtually unlimited number of substances in six chemical classes.** Because of the importance of this general groundwater standard, **instructions for determining its applicability to specific substances are included in Section III, below.**

   The other group entries in Table 1 without CAS Nos. are identified below for convenience:

   Alkyl diphenyl oxide sulfonates
   Aminomethylene phosphonic acid salts
   Aryltriazoles
   Boric acid, Borates and Metaborates
   Chlorinated dibenzo-p-dioxins and Chlorinated dibenzofurans
   Foaming agents
   Isothiazolones, total
   Linear alkyl benzene sulfonates (LAS)
   Methylbenz(a)anthracenes
   Phenolic compounds (total phenols)
   Phenols, total chlorinated
   Phenols, total unchlorinated
   Polychlorinated biphenyls
   Quaternary ammonium compounds
   Sulfides, total

C. Water Classes and Type

Standards and guidance values are developed for specific classes of fresh and saline surface waters and fresh groundwaters for protection of the best usages assigned to each class. Best usages are described in Part 701. Standards and guidance values are further designated as to "Type." Values for protection of sources of drinking water are designated Health (Water Source) and noted by H(WS). Similarly, values for protection of human consumers of fish are designated as Health (Bioaccumulation) and noted by H(B). Values for protection of aquatic life and for wildlife consumers of

fish are designated as Aquatic and noted by A. Designation of the Type of value determines the applicability of section 702.17, which concerns variances for aquatic type values, and section 702.15, which concerns derivation of guidance values.

A summary description of best usage protections, water classes and type of values related to toxic pollutants is presented below. The groupings of Water Classes and Type presented for the summary description are those that frequently appear in Table 1. A complete description of the water classifications is provided in Part 701.

Water Classes	Type	Protection For
A, A-S, AA, AA-S	H(WS)	Source of Drinking Water
GA	H(WS)	Source of Drinking Water
A, A-S, AA, AA-S, B, C	A	Fish Propagation or Wildlife Consumption of Fish
D	A	Fish Survival or Wildlife Consumption of Fish
A, A-S, AA, AA-S, B, C, D	H(B)	Human Consumption of Fish
SA, SB, SC, I	A	Fish Propagation or Wildlife Consumption of Fish
SD	A	Fish Survival or Wildlife Consumption of Fish
SA, SB, SC, I, SD	H(B)	Human Consumption of Fish

For many substances, more than one Type of value will be listed for a specific water class. In these situations, all values apply and may be used to derive the most stringent limitations.

D. Basis Code

The letters in this column designate the specific procedure used to derive the standard or guidance value. The key to the letter designations is provided in Table 4.

II. DEVELOPMENT, INTERPRETATION AND USE

A. Development of Standards and Guidance Values

Guidance values are developed as needed with priorities primarily reflecting greater expected or observed occurrence in the environment and greater toxicity. Most requests for development of guidance values originate through the use and discharge information that is generated through the State Pollutant Discharge Elimination System (SPDES) permit program. Standards are proposed for rule making with similar priority considerations.

As stated previously, a guidance value may be utilized where a standard has not been adopted for a substance. Guidance values that have been developed for surface waters and groundwaters are presented in Table 1. If a substance is judged to pose a threat to the environment and if no standard or guidance value is presented in Table 1 for that substance and water class, a request for development of a guidance value should be made to the Criteria and Standards Section.

B. Analytical Methods

Section 700.3 provides the analytical requirements to determine compliance with water quality standards and guidance values. These regulations include specific analytical references and also refer to "...other methods approved by the department..." The Division of Water maintains a compilation of methods approved by the department in a separate Technical and Operational Guidance Series (TOGS) document.

There are a number of water quality standards and guidance values for which there is no approved analytical procedure. Use of these values should be accompanied by the identification of an acceptable analytical method.

C. SPDES Effluent Limits

Ambient water quality standards and guidance values are used to derive water quality-based effluent limitations for SPDES permits. Instruction for the derivation of these limitations is provided in a separate TOGS document. There are, however, a number of topics that warrant discussion here.

1. Hydrologic Flow Base and Averaging Period

The derivation of water quality based effluent limitations from ambient water quality standards or guidance values requires selection of a receiving water flow and the specification of an averaging period for the effluent limitation. Their selection will be a function of the variability of the receiving water flow and effluent load and the time period associated with the critical health or aquatic effect. In general, health or aquatic standards and guidance values that are based on adverse effects that develop over time periods greater than a month will receive effluent limitations based on the minimum average 30 consecutive day receiving water flow with a one-in-ten year occurrence (MA30CD/10) and calculated as a monthly average. Values based on shorter-term adverse effects will generally receive effluent limitations based on MA7CD/10 flow and calculated as a daily maximum. Specific determinations, however, are made at the time of permit issuance.

2. Chemical Species

Certain ambient standards and guidance values apply to a specific toxic species rather than all forms (total) of the substance. Changes in the form of a substance can occur in the receiving water. As a result, the form of the substance that is specified as an effluent limitation may differ from the form of the ambient standard or guidance value.

3. Groundwater Effluent Limitations

Section 702.16 provides authority for groundwater effluent limitations. Section 703.6 of the water quality regulations provides specific effluent standards for discharges to class GA waters. For substances for which there is no groundwater effluent standard in 703.6, groundwater effluent limitations shall apply as follows:

- for substances with an ambient guidance value for groundwater, the groundwater effluent limitation shall be equal to the ambient guidance value;

- for substances to which the groundwater POC standard applies, the groundwater effluent limitation shall be 5 ug/L;

- for organic substances that have an ambient groundwater standard of 50 ug/L, the groundwater effluent limitation shall be 50 ug/L; and

- for substances that have an ambient groundwater standard other than 50 ug/L, the groundwater effluent limitation shall be determined using site specific considerations.

4. Total of Organic Chemicals [§]

Subparagraph 702.16(b)(3) of the water quality regulations specifies, for the purpose of deriving effluent limitations for surface water, an ambient value of 100 ug/L for the total of organic substances having a standard or guidance value established pursuant to the human-health methodologies. The only substances included in this total are those listed in Table 1 of this TOGS that have both the symbol "§" above the name and a health (water source) [H(WS)] type standard or guidance value for surface water.

A groundwater effluent limitation shall be established at 100 ug/L for the total of certain organic substances. The substances included in this total are those listed in Table 1 of this TOGS that have both the symbol "§" above the name and a standard or guidance value for groundwater. This includes all substances covered by the principal organic contaminant groundwater standard (Table 1, page 41), whether they are listed in this TOGS or not (see I.C. above and III below).

III. DETERMINATION OF APPLICABILITY OF POC STANDARD TO SPECIFIC SUBSTANCES

A. Introduction

The POC standard for groundwater (Table 1, page 41) is a general standard that applies individually to an unlimited number of substances in six chemical classes. Consequently, its applicability to specific substances must be determined.

The POC standard was developed by the New York State Department of Health (DOH) for drinking water. The definitions of the six POC classes (6 NYCRR section 700.1 and Table 5 of this TOGS), obtained from the DOH regulations, are definitive for the first two classes, but require interpretation for the others. Furthermore, some substances that meet the definition of a particular POC class may not be regulated by the POC standard because

they have a more stringent specific standard. It is, therefore, important to follow sequentially the steps below for determining the applicability of the POC groundwater standard.

It should be noted that the POC applies as a general standard only to groundwater.

B. Steps for Determining Applicability of the POC Groundwater Standard (not to be used for surface water)

This procedure consists of five steps. These steps must be followed in sequential order to avoid making an incorrect determination. They include reference to three tables within this TOGS, the use of definitions for two POC classes, and how to obtain assistance.

Step 1: Check Table 1 of this TOGS. If the substance is listed in Table 1 as having either a specific groundwater standard or groundwater guidance value, that listed value applies and the reader should not go further. If not, go on to Step 2.

Step 2: Check Table 2 of this TOGS, which is a partial list of substances regulated by the POC groundwater standard. If the substance is listed in Table 2, the POC groundwater standard of 5 ug/L applies and the reader should not go further. If the substance is not in Table 2, go on to Step 3.

Step 3: Check Table 3 of this TOGS, which is a partial list of substances to which the POC groundwater standard does not apply. If the substance is listed in Table 3, the standard does not apply and the reader should not go further. If the substance is not in Table 3, go on to Step 4.

[Note: The number of substances in both Tables 2 and 3 will increase as determinations of POC applicability are made to additional substances, but the lists can never be complete.]

Step 4: Compare the substance with the definitions of POC classes 1 and 2, below. If it meets either of these definitions, the POC groundwater standard applies and the reader should not go further. If it does not meet either definition, or if the reader is uncertain whether it does, go on to Step 5.

Definitions of POC Classes 1 and 2:

Class 1 - Halogenated alkane*: Compound containing carbon (C), hydrogen (H) and halogen (X) where X = fluorine (F), chlorine (Cl), bromide (Br) and/or iodine (I), having the general formula $C_nH_yX_z$, where $y + z = 2n + 2$; n, y and z are integer variables; n and z are equal to or greater than one and y is equal to or greater than zero.

Class 2 - Halogenated ether: Compound containing carbon (C), hydrogen (H), oxygen (O) and halogen (X) (where X = F, Cl, Br and/or I) having the general formula $C_nH_yX_zO$, where $y + z = 2n + 2$; the oxygen is bonded to two carbons; n, y and z are integer variables; n is equal to or greater than two, y is equal to or greater than zero and z is equal to or greater than one.

Step 5: Although the definitions of the remaining classes are in regulation and reproduced in Table 5, determinations beyond this point involve interpretations, including chemical comparisons with previously determined substances. The user, therefore, should contact the Criteria and Standards Section (CSS) staff (Scott Stoner or Arline Sumner, 518-457-3651) for assistance. The CSS will make the determination, consulting with the DOH as needed. Provision of the CAS number and structure of the substance will facilitate the determination.

*Note: This definition does not mention the specific exclusions listed in the definition in regulation (6 NYCRR 700.1 and Table 5) because those excluded substances are listed in Table 1 of this TOGS and thus covered by Step 1 of this procedure.

TABLE 1

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Acetone (67-64-1)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Acenaphthene (83-32-9)	A, A-S, AA, AA-S	20		H(WS)	D
	GA		20	H(WS)	D
§ Acrylic acid (79-10-7)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Acrylonitrile (107-13-1)	A, A-S, AA, AA-S		0.07	H(WS)	A
	GA	5		H(WS)	J
§ Alachlor (15972-60-8)	A, A-S, AA, AA-S		0.3	H(WS)	A
	GA	35		H(WS)	F
§ Aldicarb (116-06-3)	A, A-S, AA, AA-S	7		H(WS)	B
§ Aldicarb & Methomyl (116-06-3; 16752-77-5)	GA	0.35		H(WS)	F
Remarks: Value listed applies to sum of these substances.					
§ Aldicarb sulfone (1646-88-4)	A, A-S, AA, AA-S		2*	H(WS)	G
	GA		2*	H(WS)	G
Remarks: * This substance did not receive a review beyond determining the existence of a Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ Aldicarb sulfoxide (1646-87-3)	A, A-S, AA, AA-S		4*	H(WS)	G
	GA		4*	H(WS)	G
Remarks: * This substance did not receive a review beyond determining the existence of a Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
Aldrin (309-00-2)	A, A-S, AA, AA-S		0.002	H(WS)	A
	GA	ND		H(WS)	F
	A, A-S, AA, AA-S, B, C, D	*		H(B)	
	SA, SB, SC, SD	*		H(B)	
	I		*	H(B)	
Remarks: * Refer to entry for "Aldrin and Dieldrin."					
Aldrin & Dieldrin (309-00-2; 60-57-1)	A, A-S, AA, AA-S, B, C, D	0.001		H(B)	K
	SA, SB, SC, SD	0.001		H(B)	K
	I		0.001	H(B)	K
Remarks: Values listed apply to sum of these substances.					
Alkyl dimethyl benzyl ammonium chloride (8391-01-5)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
	A, A-S, AA, AA-S, B, C	*		A	
Remarks: * Refer to entry for "Quaternary ammonium compounds."					
Alkyl diphenyl oxide sulfonates (Not Applicable)	A, A-S, AA, AA-S		50*	H(WS)	Z
	GA		50*	H(WS)	Z
Remarks: * Applies to each alkyl diphenyl oxide sulfonate individually.					
Aluminum, ionic (Not Applicable)	A, A-S, AA, AA-S, B, C	100		A	N
Amstryn (4812-8)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
Binocresols (1319-77-3; 4097-41-2; 4097-42-3)	A, A-S, AA, AA-S	*		H(WS)	
	GA	*		H(WS)	
	A, A-S, AA, AA-S, B, C	**		A	
	D	**		A	
Remarks: * Refer to entry for "Phenolic compounds (total phenols)." ** Refer to entry for "Phenols, total unchlorinated."					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Aminomethylene phosphonic acid salts (Not Applicable)	A, A-S, AA, AA-S		50*	H(WS)	Z
	GA		50*	H(WS)	Z
Remarks: * Applies to each aminomethylene phosphonic acid salt individually.					
§ Aminopyridines (462-08-8; 504-24-5; 504-29-0; 26445-05-6)	A, A-S, AA, AA-S		1	H(WS)	B
	GA		1	H(WS)	B
Remarks: Values listed apply to sum of these substances.					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

MICROGRAMS/LITER

UBSTANCE (CAS NO.)	WATER CLASSES	STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
mmonia and Ammonium (664-41-7; ot Applicable)	A, A-S, AA, AA-S	2,000*		H(WS)	H
	GA	2,000*		H(WS)	H
	A, A-S, AA, AA-S, B, C	**		A	N
	D	**		A	Q

emarks: * $NH_3 + NH_4^+$ as N.

** Un-ionized ammonia as NH_3; tables below provide the standard in ug/l at varying pH and temperature for different classes and specifications. Linear interpolation between the listed pH values and temperatures is applicable.

Classes A,A-S, AA, AA-S, B, C with the (T) or (TS) Specification

pH	0°C	5°C	10°C	15°-30°C
50	0.7	0.9	1.3	1.9
.75	1.2	1.7	2.3	3.3
00	2.1	2.9	4.2	5.9
25	3.7	5.2	7.4	11
50	6.6	9.3	13	19
75	11	15	22	31
.0	13	18	25	35

Classes A, A-S, AA, AA-S, B, C without the (T) or (TS) Specification

pH	0°C	5°C	10°C	15°C	20°-30°C
50	0.7	0.9	1.3	1.9	2.6
.75	1.2	1.7	2.3	3.3	4.7
00	2.1	2.9	4.2	5.9	8.3
25	3.7	5.2	7.4	11	15
50	6.6	9.3	13	19	26
.75	11	15	22	31	43
.0	13	18	25	35	50

Class D

pH	0°C	5°C	10°C	15°C	20°C	25°-30°C
50	9.1	13	18	26	36	51
75	15	21	30	42	59	84
.00	23	33	46	66	93	131
.25	34	48	68	95	140	190
50	45	64	91	130	180	260
.75	56	80	110	160	220	320
0.0	65	92	130	180	260	370

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

Total Ammonia (mg/L NH_3)

Classes A,A-S, AA, AA-S, B, C with the (T) or (TS) Specification

pH	0°C	5°C	10°C	15°C	20°C	25°C	30°C
6.50	2.5	2.4	2.2	2.2	1.5	1.0	.73
6.75	2.5	2.4	2.2	2.2	1.5	1.0	.73
7.00	2.5	2.4	2.2	2.2	1.5	1.0	.74
7.25	2.5	2.4	2.2	2.2	1.5	1.0	.74
7.50	2.5	2.4	2.2	2.2	1.5	1.1	.74
7.75	2.3	2.2	2.1	2.0	1.4	.99	.71
8.00	1.5	1.4	1.4	1.3	.93	.66	.47
8.25	.87	.82	.78	.76	.54	.39	.28
8.50	.49	.47	.45	.44	.32	.23	.17
8.75	.28	.27	.26	.27	.19	.15	.11
9.00	.16	.16	.16	.16	.13	.10	.08

Classes A, A-S, AA, AA-S, B, C without the (T) or (TS) Specification

pH	0°C	5°C	10°C	15°C	20°C	25°C	30°C
6.50	2.5	2.4	2.2	2.2	2.1	1.5	1.0
6.75	2.5	2.4	2.2	2.2	2.1	1.5	1.0
7.00	2.5	2.4	2.2	2.2	2.1	1.5	1.0
7.25	2.5	2.4	2.2	2.2	2.1	1.5	1.1
7.50	2.5	2.4	2.2	2.2	2.1	1.5	1.1
7.75	2.3	2.2	2.1	2.0	1.9	1.4	1.0
8.00	1.5	1.4	1.3	1.3	1.3	.93	.67
8.25	.87	.82	.78	.76	.76	.54	.40
8.50	.49	.47	.45	.44	.45	.33	.25
8.75	.28	.27	.26	.27	.27	.21	.16
9.00	.16	.16	.16	.16	.17	.14	.11

Class D

pH	0°C	5°C	10°C	15°C	20°C	25°C	30°C
6.50	35	33	31	30	29	29	20
6.75	32	30	28	27	27	26	19
7.00	28	26	25	24	23	23	16
7.25	23	22	20	20	19	19	14
7.50	17	16	16	15	15	15	10
7.75	12	11	11	11	10	10	7.3
8.00	8.0	7.5	7.1	6.9	6.8	6.8	4.9
8.25	4.5	4.2	4.1	4.0	3.9	4.0	2.9
8.50	2.6	2.4	2.3	2.3	2.3	2.4	1.8
8.75	1.4	1.4	1.3	1.4	1.4	1.5	1.1
9.00	.86	.83	.83	.86	.91	1.0	.82

This table provides total ammonia concentrations that will contain the un-ionized ammonia concentration at the level of the standard at the respective pH and temperatures based on relationships established in USEPA 1985. Ambient Water Quality Criteria for Ammonia - 1984. Office of Water, Criteria & Standards Division, Washington, D.C. 20460. EPA 440/5-85-001. January 1985. (Cited, Thurston, R.V., R.C. Russo, and K. Emerson. 1979. Aqueous ammonia equilibrium - tabulation of percent un-ionized ammonia. EPA Ecol. Res. Ser. EPA-600/3-79-091. Environmental Research Laboratory, U.S. Environmental Protection Agency, Duluth, MN: 427 p.)

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
Aniline (62-53-3)	A, A-S, AA, AA-S		1	H(WS)	A
	GA	5		H(WS)	J
Anthracene (120-12-7)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
Antimony (Not Applicable)	A, A-S, AA, AA-S		3	H(WS)	B
	GA		3	H(WS)	B
Arsenic (Not Applicable)	A, A-S, AA, AA-S	50		H(WS)	G
	GA	25		H(WS)	F
	A, A-S, AA, AA-S, B, C	190*		A	N
	D	360*		A	Q
	SA, SB, SC	63*		A	N
	I		36*	A	N
	SD	120*		A	Q

Remarks: * Dissolved arsenic form.

Aryltriazoles (Not Applicable)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z

Remarks: Applies to each aryltriazole individually.

Atrazine (1912-24-9)	A, A-S, AA, AA-S		3*	H(WS)	G
	GA	7.5		H(WS)	F

Remarks: * This substance did not receive a review beyond determining the existence of a Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

Barium (7440-39-3)	A, A-S, AA, AA-S		0.07	H(WS)	A
	GA	4.4		H(WS)	F
	A, A-S, AA, AA-S, B, C	0.005		A	N
	SA, SB, SC	0.01		A	N
	I		0.01	A	N
Benzene (71-43-3)	A, A-S, AA, AA-S		0.5	H(WS)	A
	GA	5		H(WS)	J
Boron (Not Applicable)	A, A-S, AA, AA-S	1,000		H(WS)	G
	GA	1,000		H(WS)	F

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Benefin (1861-40-1)	GA	35		H(WS)	F
§ Benz(a)anthracene (56-55-3)	A, A-S, AA, AA-S		0.002	H(WS)	A,E
	GA		0.002	H(WS)	A,E
§ Benzene (71-43-2)	A, A-S, AA, AA-S	0.7		H(WS)	A
	GA	0.7		H(WS)	A
	A, A-S, AA, AA-S, B, C, D		6	H(B)	K
	SA, SB, SC, I, SD		6	H(B)	K
§ Benzidine (92-87-5)	A, A-S, AA, AA-S		0.02	H(WS)	A
	GA	5		H(WS)	J
	A, A-S, AA, AA-S, B, C	0.1		A	N
	D	0.1		A	Q
§ Benzisothiazole (271-61-4)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Benzo(b)fluoranthene (205-99-2)	A, A-S, AA, AA-S		0.002	H(WS)	A,E
	GA		0.002	H(WS)	A,E
§ Benzo(k)fluoranthene (207-08-9)	A, A-S, AA, AA-S		0.002	H(WS)	A,E
	GA		0.002	H(WS)	A,E
§ Benzo(a)pyrene (50-32-8)	A, A-S, AA, AA-S		0.002	H(WS)	A
	GA	ND		H(WS)	F
	A, A-S, AA, AA-S, B, C, D		0.0012	H(B)	K
	SA, SB, SC, I, SD		0.0006	H(B)	K
Beryllium (Not Applicable)	A, A-S, AA, AA-S		3	H(WS)	B
	GA		3	H(WS)	B
	A, A-S, AA, AA-S, B, C	*		A	N

Remarks: * 11 ug/L, when hardness is less than or equal to 75 ppm; 1,100 ug/L, when hardness is greater than 75 ppm.
Aquatic standards apply to acid-soluble form.

§ Bis(2-chloroethyl) ether (111-44-4)	A, A-S, AA, AA-S		0.03	H(WS)	A
	GA	1.0		H(WS)	F

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
	A, A-S, AA, AA-S		4	H(WS)	A
(2-ethylhexyl) thalate (7-81-7)	GA	50		H(WS)	J
	A, A-S, AA, AA-S, B, C	0.6		A	N
ic acid, Borates & etaborates (Not Applicable)	A, A-S, AA, AA-S		125	H(WS)	B
	GA		125	H(WS)	B
Remarks: Applies as boron equivalents. Values listed apply to sum of these substances.					
on (Not Applicable)	GA	1,000		H(WS)	H
	A, A-S, AA, AA-S, B, C	10,000		A	N
	SA, SB, SC	1,000		A	N
	I		1,000	A	N
Remarks: Aquatic standards and guidance value apply to acid-soluble form.					
acil (-40-9)	GA	4.4		H(WS)	F
nide (Not Applicable)	A, A-S, AA, AA-S		2,000	H(WS)	B
	GA		2,000	H(WS)	B
obenzene (36-1)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
ochloromethane (4 7-5)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
odichloromethane (5- 7-4)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
oform (-2)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Bromomethane (74-83-9)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ Butachlor (23184-66-9)	GA	3.5		H(WS)	F
§ Butoxyethoxyethanol (112-34-5)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Butoxypropanol (5131-66-8)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Butylate (2008-41-5)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
§ n-Butylbenzene (104-51-8)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ sec-Butylbenzene (135-98-8)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ tert-Butylbenzene (98-06-6)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ Butyl benzyl phthalate (85-68-7)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
tyl isopropyl phthalate (Not Applicable)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
dmium (Not Applicable)	A, A-S, AA, AA-S	10		H(WS)	G
	GA	10		H(WS)	F
	A, A-S, AA, AA-S, B, C	*		A	N
	D	**		A	Q
	SA, SB, SC, I	7.7		A	N
	SD	21		A	Q
	SA, SB, SC, I, SD		2.7	H(B)	K
Remarks: * exp(0.7852 [ln (ppm hardness)] - 3.490) **exp(1.128 [ln (ppm hardness)] - 3.828) Aquatic standards and guidance values apply to acid-soluble form.					
ptan (3-06-2)	GA	18		H(WS)	F
baryl (25-2)	GA	29		H(WS)	F
bofuran (3-66-2)	A, A-S, AA, AA-S	15		H(WS)	B
	GA		15	H(WS)	B
	A, A-S, AA, AA-S, B, C	1.0		A	N
	D	10		A	Q
rbon tetrachloride (56-23-5)	A, A-S, AA, AA-S		0.4	H(WS)	A
	GA	5		H(WS)	F
rboxin (5-44-68-4)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
hloramben (Not Applicable)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
Remarks: Includes: related forms that convert to the organic acid upon acidification to a pH of 2 or less; and esters of the organic acid.					
lordane (57-74-9)	A, A-S, AA, AA-S		0.02	H(WS)	A
	GA	0.1		H(WS)	F
	A, A-S, AA, AA-S, B, C, D		0.002	H(B)	K
	SA, SB, SC, I, SD		0.002	H(B)	K

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
Chloride	A, A-S, AA, AA-S	250,000		H(WS)	H
(Not Applicable)	GA	250,000		H(WS)	F
§	A, A-S, AA, AA-S		*	H(WS)	
Chlorinated dibenzo-p-	GA	0.000035♦	*	H(WS)	
dioxins and Chlorinated	A, A-S, AA, AA-S, B, C, D	0.000001♠		H(B)	K
dibenzofurans					
(Not Applicable)					

Remarks: * Guidance value for the total of the chlorinated dibenzo-p-dioxins and chlorinated dibenzofurans that are listed in the table below is 0.0000002 ug/L equivalents of 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). The 2,3,7,8-TCDD equivalent for a congener is obtained by multiplying the concentration of that congener by its toxicity equivalence factor (TEF) from the table below. The guidance value for Class GA waters does not include the congener 2,3,7,8-TCDD.

The Basis Code for the guidance value for 2,3,7,8-TCDD is A; for all other congeners it is Basis Code A,E.

♦ Applies only to 2,3,7,8-TCDD. The Basis Code for the standard is F.

♠ Applies only to 2,3,7,8-TCDD.

Human Health Toxicity Equivalence Factors (TEFs) for Individual Congeners

CONGENER	TEF
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1
Other tetrachlorodibenzo-p-dioxins	0.01
2,3,7,8-Pentachlorodibenzo-p-dioxin	0.5
Other pentachlorodibenzo-p-dioxins	0.005
2,3,7,8-Hexachlorodibenzo-p-dioxins	0.05
Other hexachlorodibenzo-p-dioxins	0.0005
2,3,7,8-Heptachlorodibenzo-p-dioxin	0.005
Other heptachlorodibenzo-p-dioxins	0.00005
Octachlorodibenzo-p-dioxin	0.005
2,3,7,8-Tetrachlorodibenzofuran	0.1
Other tetrachlorodibenzofurans	0.001
2,3,4,7,8-Pentachlorodibenzofuran	0.5
1,2,3,7,8-Pentachlorodibenzofuran	0.05
Other pentachlorodibenzofurans	0.005
2,3,7,8-Hexachlorodibenzofurans	0.1
Other hexachlorodibenzofurans	0.001
2,3,7,8-Heptachlorodibenzofurans	0.005
Other heptachlorodibenzofurans	0.00005
Octachlorodibenzofuran	0.005

APPENDIX A

DIVISION OF WATER TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGs) (1.1.1) - AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES, DATED OCTOBER 1993

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

In response to your request, we are pleased to forward the enclosed TOGS 1.1.1

Recent reorganization in the department has tranferred the **Bulk Storage TOGS (4.1.1 through 4.1.13)** from the Division of Water to the Division of Construction Management. Therefore, they have not been included in the attached Table of Contents.

Bulk Storage TOGS formerly listed can be obtained by calling the Bureau of Spill Prevention, Division of Construction Management at 457-7363. The Bulk Storage TOGS have been renamed **SPOTS** (Spill Prevention Operational and Technical Series).

All other items remain as TOGS.

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-3508

Thomas C. Jorling
Commissioner

OCT 2 2 1993

MEMORANDUM

TO: Bureau Directors, Regional Water Engineers and Section Chiefs

SUBJECT: Division of Water Technical and Operational Guidance Series (1.1.1)
AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES
(Originator: John Zambrano)

I. Purpose

The attachment to this memorandum provides a compilation of ambient water quality standards and guidance values for toxic and non-conventional pollutants for use in department programs, including the SPDES permit program.

II. Discussion

This edition is being issued to add guidance values for more than 50 substances that have been developed subsequent to the previous (11/15/91) edition. Specifically, this edition includes the changes listed below.

1. Addition of 51 entries in Table 1. All of these added entries provide health (water source) guidance values for surface waters, and eight provide values for groundwater as well.

2. Removal of those substances from Table 2 or Table 3 that are now included in Table 1, as described above.

3. Revision of four entries in Table 1 to add surface water health (water source) guidance values.

4. Identification of approximately 12 additional substances regulated by the POC groundwater standard (Table 2).

5. Identification of approximately 50 additional substances not regulated by the POC groundwater standard (Table 3).

6. Addition of guidance value for phosphorus.

7. Expansion of the Index of CAS numbers to include substances in Table 3.

8. Correction of the Table 1 entry for hydroquinone, addition of remarks for some individual phenols and correction of chemical name/CAS No. discrepancies in both Table 2 and the Index (CAS Nos. 101-61-1 and 1807-55-2).

9. Minor revisions throughout to provide greater clarity.

III. Guidance

The Quality Allocation Section will use the attachment to develop water quality-based effluent limits. The Criteria and Standards Section will maintain and revise it on a regular basis.

N.G. Kaul
Director
Division of Water

Attachment

cc: Mr. Sullivan
Mr. Campbell
Ms. Chrimes
Mr. Bruening
Regional Directors for Environmental Quality

Effective January 9, 1994, the department promulgated new and revised aquatic-based standards for zinc. These new standards supersede the aquatic-based standards and guidance value originally presented in the October 1993 issue of TOGS 1.1.1. The information below may be cut out and inserted in the October 1993 edition of TOGS 1.1.1 to provide an up-to-date compliation of standards and guidance values.

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
(Not Applicable)	A, A-S, AA, AA-S	300		H(WS)	H
	GA	300		H(WS)	H
	A, A-S, AA, AA-S, B, C	*		A	N
	D	**		A	Q
	SA, SB, SC, I	66		A	N
	SD	95		A	Q

Remarks: Aquatic standards apply to dissolved form.

* exp(0.85[ln(ppm hardness)] + 0.50)
** exp(0.85[ln(ppm hardness)] + 0.86)

Notes: Effective January 9, 1994, the department promulgated the above aquatic-based standards for zinc. These new standards supersede the aquatic-based values originally presented in the October 1993 issue of TOGS 1.1.1.

DIVISION OF WATER

TECHNICAL & OPERATIONAL GUIDANCE SERIES

		Current Date	Cost per copy
1.0	**SPDES**		
1.1	**STANDARDS**		
1.1.1	Ambient Water Quality Standards and Guidance Values (R)*	10/93	23.50
1.2	**PERMIT ADMINISTRATION**		
1.2.1	Industrial SPDES Permit Drafting Strategy for Surface Waters (R)	4/90	1.75
1.2.2	SPDES Permit Program Priorities and Definitions (R)	5/90	3.00
1.2.3	Decentralization of Technical Permit Drafting Authority	4/90	.50
1.2.4	Individual Sewage Treatment System Discharges to Surface Waters	10/90	.50
1.3	**PERMIT DEVELOPMENT**		
1.3.1	Waste Assimilative Capacity Analysis & Allocation for W.Q. based Effluent Limits (R)	5/90	2.75
1.3.1C	Development of Water Quality Based Effluent Limits for Metals/Amendment	8/91	1.25
1.3.2	Toxicity Testing in the SPDES Program (R)	5/90	7.50
1.3.3	Permit Development for POTWs	12/90	15.50
1.3.4	BPJ Methodologies	4/87	3.00
1.3.4.A	BPJ Methodologies/Amendments	11/88	.50
1.3.5	Waste Assimilation Capacity Determinations for Isolated Wastewater Discharges in Fresh Water Streams (R)	10/90	4.50
1.3.6	Phosphorus Removal Requirements for Wastewater Discharges to Lakes & Lake Watersheds	12/88	2.75
1.3.7	Analytical Detectability & Quantitation Guidelines for Selected Environmental Parameters	7/90	1.00

(R) = Content Revision

			Current Date	Cost per copy
1.4	**COMPLIANCE**			
	1.4.1	Integrated Compliance Strategy System	4/88	1.00
	1.4.2	Compliance/Enforcement of SPDES Permits	9/88	5.00
	1.4.4	Technical Assistance to Operators of Wastewater Treatment Plants (R)	7/90	.75
	1.4.5	Implementation. Reporting. and Over-sight of Pretreatment Programs	4/87	5.00
	1.4.7	Sewer Moratorium on New Connections to POTWs	3/88	1.75
1.5	**SURVEILLANCE**			
	1.5.1	Inspection of Major & Significant Minor Wastewater Facilities (R)	8/90	4.00
	1.5.3	Neutral Surveillance Plan (R)	8/90	.75
	1.5.4	Guidelines for Staffing Wastewater Treatment Plants	8/90	1.00
1.6	**TEMPORARY/INTERMITTENT DISCHARGES**			
	1.6.2	Bypasses	11/88	1.25
	1.6.3	Combined Sewer Overflows	10/93	6.75
2.0	**GROUNDWATER**			
	2.1.1	Groundwater Contamination Remediation Strategy	12/90	5.00
	2.1.2	UIR at Groundwater Remediation Sites (R)	7/90	.50
	2.1.3	Primary and Principal Aquifers Determinations	10/90	2.00
3.0	**WATER QUANTITY**			
3.1	**FLOOD PROTECTION**			
	3.1.1	Ice Jam Problems	12/90	1.00
	3.1.2	Dam Safety Inspection & Remediation Procedures	12/90	1.00
3.2	**WATER SUPPLY**			
	3.2.1	Public Water Supply Permits Program Application Processing	12/90	6.75
	3.2.2	Engineer's Reports; Applications for Water Supply and L.I. Well Permits	8/90	1.25

			Current Date	Cost per Copy
5.0	**OTHER TECHNICAL SUBJECTS**			
	5.1.2	Plans Prepared by Land Surveyors	4/90	.50
	5.1.3	Investigation & Enforcement of Farming Sources of Surface Water Pollution	4/87	.50
	5.1.4	Official County & Minor Civil Divisions Population Projections	10/90	.50
	5.1.5	Bridge Scraping and Painting	10/90	2.50
	5.1.6	Wastewater Treatment Plant Operator Certification Procedures (R)	8/90	2.50
	5.1.7	Storage & Use of Highway Salt and Salt/Sand Mixtures	1/89	1.75
	5.1.8	Stormwater Management Guidelines for New Development	4/90	5.25
	5.1.9	Spill Response Guidance Manual	8/90	.50
	5.1.10	Erosion and Sediment Control Guidelines for New Development	4/91	1.75
9.1	**PERSONNEL**			
	9.1.1	Engineering Licensure (R)	4/90	.75
	9.1.2	Staff Training	10/90	2.00
	9.1.3	Career Development-General Philosophy	4/90	.25
	9.1.4	Personnel Responsibilities & Procedures (R)	6/90	1.50
	9.1.5	Communications	4/90	.25
9.2	**NON-PERSONAL SERVICES**			
	9.2.2	Grant Clearance Process (R)	8/90	.50
9.3	**OTHER ADMINISTRATIVE**			
	9.3.1	Organization - Division of Water (R)	5/91	.50
	9.3.2	Records Management Program (R)	10/90	1.00
	9.3.3	Development of EDP Systems (R)	10/90	.75
	9.3.4	Legislative Hearings-Scheduling and Conducting (R)	7/90	.75
	9.3.5	TOGS Development Procedures	4/93	.50

***Make check payable to the** N.Y.S. Department of Environmental Conservation. Mail to: N.Y.S. Department of Environmental Conservation, 50 Wolf Road - Room 310, Albany, N.Y. 12233-3501*

Cost of 1 complete set is $137.50

(11/93)

Reorganization in the department has tranferred the ***Bulk Storage TOGS (4.1.1 through 4.1.13)*** *from the Division of Water to the Division of Spill Prevention, Remediation & Response. Therefore, they have not been included in the attached Table of Contents.*

Bulk Storage TOGS formerly listed can be obtained by calling the Division of Spill Prevention, Remediation & Response at 457-7363. The ***Bulk Storage*** *TOGS have been renamed* ***SPOTS*** *(Spill Prevention Operational and Technical Series).*

All other items remain as TOGS.

DAVID S. GLASS

AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

New York State
Department of Environmental Conservation
Division of Water
Albany, New York

October 1993

TABLE OF CONTENTS

INTRODUCTION

This document presents Division of Water ambient water quality standards and guidance values. The authority for these values is derived from Article 17 of the Environmental Conservation Law and 6 NYCRR Parts 700-705, Water Quality Regulations.

Standards and guidance values for toxic and non-conventional pollutants are presented in Table 1. This Table includes all of the division's numerical standards and guidance values established as of the date of this document except standards for dissolved oxygen, dissolved solids, coliforms, pH, color, odor and turbidity. The reader is referred to Part 703 for the excepted standards.

Section I of this Introduction provides a description of the columns in Table 1. Section II provides guidance on certain aspects of development, interpretation and use of standards and guidance values. Section III concerns the principal organic contaminant (POC) groundwater standard, which is a general standard. It provides detailed instructions on its applicability to specific substances.

I. DESCRIPTION OF COLUMNS IN TABLE 1

A. Standard and Guidance Value

Standards and guidance values are ambient water quality values that are set to protect the state's waters. They both are derived according to scientific procedures that are in regulation (6 NYCRR Part 702).

A standard is a value that has been promulgated and placed into regulation. The standards for the surface water and groundwater classes are extracted from Part 703 of Title 6. Surface water and groundwater standards were last revised effective September 1, 1991.

A guidance value may be used where a standard for a substance or group of substances has not been established for a particular water class and type of value (section 702.15).

In addition to specific guidance values, the regulations (702.15(a)(1)(ii)) allow the department to develop a health (water source) "general organic guidance value" of 50 ug/L for an individual organic substance. The department can derive this value where procedures in 702.3 - 702.7 do not yield a more stringent value and where adequate and sufficient oncogenic

and non-oncogenic data to justify a value greater than 50 ug/L are not available. The above determinations for specific substances are made by the Criteria and Standards Section.

As with other guidance values for specific substances, all guidance values derived from the general organic guidance value as of the date of this document are listed in Table 1 of this TOGS.

Standards and guidance values are the maximum allowable concentration in units of ug/L, unless otherwise indicated. Where standards or guidance values are expressed as a function of hardness, hardness is in units of parts per million (ppm), expressed as calcium carbonate, and the resulting value is in ug/L. Also, in such hardness functions, the term "exp" represents the base e exponential function. "ND" means a non-detectable concentration by the approved analytical methods referenced in section 700.3.

B. Substance (CAS No.)

The substance or group of substances (entry) for which a standard or guidance value has been derived is presented in this column in alphabetical order. The Chemical Abstract Service Registry (CAS) Number(s) are given, where applicable, to provide positive identification. Because a substance may be known by names other than the one used in this document, identification of the CAS number can be useful for locating the substance. An index of CAS numbers is provided.

Some of the groups contain a large or unlimited number of substances that are not identified specifically; therefore, a determination of the specific substances encompassed by a standard or guidance value may be necessary. Group entries fit into one of three categories, as described below. For each such entry, a Remark will indicate whether the standard(s) or guidance value(s) apply to the sum of the substances or to each substance individually.

Interpretation of Group Entries

1. Where the entry consists of two or more specific substances, with or without CAS Numbers (e.g.: Aldrin and Dieldrin), the entry includes only the specific substances listed.

2. Where the entry is the name of a group of substances, with CAS numbers listed (e.g.: Dichlorotoluenes), the entry includes only those substances for which the CAS Numbers are listed.

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
Chlorine, Total Residual (Not Applicable)	A, A-S, AA, AA-S, B, C	5		A	N
	D	19		A	Q
	SA, SB, SC, I	7.5		A	N
	SD	13		A	Q
Chlorobenzene (108-90-7)	A, A-S, AA, AA-S	20		H(WS)	D
	GA	5		H(WS)	J
	A, A-S, AA, AA-S, B, C	5		A	N
	D	50		A	R
	SA, SB, SC, I		5	A	N
	SD		50	A	R
Chlorobenzotrifluoride (98-56-6)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
Chloroethane (75-00-3)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J

Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

Chloroform (67-66-3)	A, A-S, AA, AA-S	7		H(WS)	A
	GA	7		H(WS)	A
Chloronaphthalene (91-58-7)	A, A-S, AA, AA-S	10		H(WS)	D,E
	GA		10	H(WS)	D,E
Chlorotoluene (95-49-8)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J

Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

Chlorotoluene (108-43-4)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J

Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§	A, A-S, AA, AA-S		0.7	H(WS)	A
5-Chloro-o-toluidine	GA	5		H(WS)	J
(95-79-4)					
Chromium	A, A-S, AA, AA-S	50		H(WS)	G
(Not Applicable)	GA	50		H(WS)	G
	A, A-S, AA, AA-S, B, C	*		A	N
	D	**		A	Q
Remarks: * exp(0.819 [ln (ppm hardness)] + 1.561)					
** exp(0.819 [ln (ppm hardness)] + 3.688)					
Aquatic standards apply to acid-soluble form.					
Chromium (hexavalent)	GA	50		H(WS)	F
(Not Applicable)	A, A-S, AA, AA-S, B, C	11		A	N
	D	16		A	Q
	SA, SB, SC	54		A	N
	I		50	A	N
	SD	1,200		A	Q
Remarks: Aquatic standards and guidance value apply to acid-soluble form.					
§	A, A-S, AA, AA-S		0.002	H(WS)	A,E
Chrysene	GA		0.002	H(WS)	A,E
(218-01-9)					
Cobalt	A, A-S, AA, AA-S, B, C	5		A	N
(Not Applicable)	D		110	A	Q
Remarks: Aquatic standard and guidance value apply to acid-soluble form.					
Copper	A, A-S, AA, AA-S	200		H(WS)	H
(Not Applicable)	GA	200		H(WS)	H
	A, A-S, AA, AA-S, B, C	*		A	N
	D	**		A	Q
	SA, SB, SC, I	2.9		A	N
	SD	2.9		A	Q
Remarks: * exp(0.8545 [ln (ppm hardness)] - 1.465)					
** exp(0.9422 [ln (ppm hardness)] - 1.464)					
Aquatic standards apply to dissolved form.					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
yanide (lot Applicable)	A, A-S, AA, AA-S	100		H(WS)	H
	GA	100		H(WS)	H
	A, A-S, AA, AA-S, B, C	5.2*		A	N
	D	22*		A	Q
	SA, SB, SC	1.0*		A	N
	I		1.0*	A	N
	SD	1.0*		A	Q
marks: * As free cyanide - the sum of HCN and CN^- expressed as CN.					
lapon (ot Applicable)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
marks: Includes: related forms that convert to the organic acid upon acidification to a pH of 2 or less; and esters of the organic acid.					
T, DDD & DDE (-29-3; 72-54-8; 72-55-9)	A, A-S, AA, AA-S	0.01		H(WS)	A
	GA	ND		H(WS)	F
	A, A-S, AA, AA-S, B, C, D	0.001		A	S
	SA, SB, SC, SD	0.001		A	S
	I		0.001	A	S
marks: Values listed apply to sum of these substances.					
chlorane Plus (560-89-9)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
neton (8065-48-3; 298-03-3; 6-75-0)	A, A-S, AA, AA-S, B, C	0.1		A	N
	SA, SB, SC	0.1		A	N
	I		0.1	A	N
narks: Values listed apply to sum of these substances.					
zinon (3-41-5)	GA	0.7		H(WS)	F
	A, A-S, AA, AA-S, B, C	0.08		A	N
romochloromethane (124-48-1)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ 1,2-Dibromo-3-chloro-propane (96-12-8)	A, A-S, AA, AA-S		0.2*	H(WS)	G
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining the existence of a Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ Dibromodichloro-methane (594-18-3)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ Dibromomethane (74-95-3)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ 2,2-Dibromo-3-nitrilo-propionamide & Dibromoacetonitrile (10222-01-2; 3252-43-5)	A, A-S, AA, AA-S		50*	H(WS)	Z
	GA		50*	H(WS)	Z
	A, A-S, AA, AA-S, B, C		20	A	N
	D		50	A	Q
Remarks: Values listed apply to sum of these substances, except as noted below. * Applies to 2,2-dibromo-3-nitrilopropionamide only.					
§ Di-n-butyl phthalate (84-74-2)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
§ Dicamba (1918-00-9)	GA	0.44		H(WS)	F

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

BSTANCE AS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
-Dichlorobenzene & 4-Dichlorobenzene -50-1; 106-46-7)	A, A-S, AA, AA-S	30*		H(WS)	D
	GA	4.7		H(WS)	F
	A, A-S, AA, AA-S, B, C	**		A	
	D	**		A	
	SA, SB, SC, I		**	A	
	SD		**	A	

narks: Value applies to the sum of these substances, except as noted below.
* Applies to 1,4-Dichlorobenzene only.
** Refer to entry for "Dichlorobenzenes."

Dichlorobenzene 541-73-1)	A, A-S, AA, AA-S	20		H(WS)	D
	GA	5		H(WS)	J
	A, A-S, AA, AA-S, B, C	*		A	
	D	*		A	
	SA, SB, SC, I		*	A	
	SD		*	A	

arks: * Refer to entry for "Dichlorobenzenes."

lorobenzenes 50-1; 106-46-7; 73-1; 25321-22-6)	A, A-S, AA, AA-S, B, C	5		A	N,T
	D	50		A	R
	SA, SB, SC, I		5	A	N,T
	SD		50	A	R

arks: Values listed apply to sum of these substances.

Dichlorobenzo- ride 84-7)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J

orodifluoromethane 1-8)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J

arks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

ichloroethane 4-3)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J

ichloroethane 56-2)	A, A-S, AA, AA-S	0.8		H(WS)	A
	GA	5		H(WS)	J

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ cis-1,2-Dichloroethene (156-59-2)	A, A-S, AA, AA-S GA	5	5*	H(WS) H(WS)	I J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ 1,1-Dichloroethylene (75-35-4) ✓	A, A-S, AA, AA-S GA	5	0.07	H(WS) H(WS)	A J
§ trans-1,2-Dichloroethylene (156-60-5)	A, A-S, AA, AA-S GA	5	5	H(WS) H(WS)	I J
§ Dichlorofluoromethane (75-43-4)	A, A-S, AA, AA-S GA	5	5	H(WS) H(WS)	I J
§ 2,4-Dichlorophenol (120-83-2)	A, A-S, AA, AA-S GA A, A-S, AA, AA-S, B, C, D	0.3*** * **		H(WS) H(WS) A	D
Remarks: * Refer to entry for "Phenolic compounds (total phenols)." ** Refer to entry for "Phenols, total chlorinated." *** Also see entry for "Phenolic compounds (total phenols)."					
§ 2,4-Dichloro-phenoxyacetic acid (94-75-7)	A, A-S, AA, AA-S GA	100 4.4		H(WS) H(WS)	G F
§ 1,2-Dichloropropane (78-87-5) ✓	A, A-S, AA, AA-S GA	5	0.5	H(WS) H(WS)	A J
§ Dichloropropanes (78-99-9; 142-28-9; 594-20-7)	A, A-S, AA, AA-S GA	5	5	H(WS) H(WS)	I J
Remarks: Applies to each isomer (1,1-, 1,3-, and 2,2-) individually.					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

BSTANCE \S NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
	A, A-S, AA, AA-S		5*	H(WS)	I
-Dichloropropene (3-58-6)	GA	5		H(WS)	J

narks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

	A, A-S, AA, AA-S		5*	H(WS)	I
1,3-Dichloropropene (0061-01-5)	GA	5		H(WS)	J

arks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

	A, A-S, AA, AA-S		5*	H(WS)	I
-1,3-Dichloropropene 061-02-6)	GA	5		H(WS)	J

arks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

	A, A-S, AA, AA-S		5	H(WS)	I
lorotoluenes 8-54-0; 95-73-8; 8-61-9; 118-69-4; -0; 25186-47-4)	GA	5		H(WS)	J

arks: Values listed apply to each isomer (2,3-, 2,4-, 2,5-, 2,6-, 3,4- and 3,5-) individually.

	A, A-S, AA, AA-S		0.0009	H(WS)	A
drin 7-1)	GA	ND		H(WS)	F
	A, A-S, AA, AA-S, B, C, D	*		H(B)	
	SA, SB, SC, SD	*		H(B)	
	I		*	H(B)	

rks: * Refer to entry for "Aldrin and Dieldrin."

	A, A-S, AA, AA-S		50	H(WS)	Z
thylhexyl) ate 0-23-1)	GA		50	H(WS)	Z

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Diethyl phthalate (84-66-2)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z
§ N,N-Dimethyl aniline (121-69-7)	A, A-S, AA, AA-S GA	5	1.0	H(WS) H(WS)	A,E J
§ Dimethylformamide (68-12-2)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z
§ Dimethyl phthalate (131-11-3)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z
§ Dimethyl tetrachloro-terephthalate (1861-32-1)	A, A-S, AA, AA-S GA	50	50	H(WS) H(WS)	Z J
§ 2,6-Dinitrotoluene (606-20-2)	A, A-S, AA, AA-S GA	5	0.07	H(WS) H(WS)	A J
§ Di-n-octyl phthalate (117-84-0)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z
§ Dinoseb (88-85-7)	A, A-S, AA, AA-S GA	* *		H(WS) H(WS)	

Remarks: * Refer to entry for "Phenolic compounds (total phenols)."

§ Diphenamid (957-51-7)	A, A-S, AA, AA-S GA	50	50	H(WS) H(WS)	Z J
§ Diphenylhydrazines (122-66-7; 530-50-7)	A, A-S, AA, AA-S GA	ND	0.05*	H(WS) H(WS)	A F

Remarks: Value listed applies to sum of these substances, except as noted below.
* Value listed applies to (1,2-) isomer only.

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
iquat dibromide -00-7	A, A-S, AA, AA-S		20*	H(WS)	G
	GA		20*	H(WS)	G

Remarks: * This substance did not receive a review beyond determining that a final MCL has been promulgated by USEPA. A more in-depth review, currently underway, may lead to a more (but not less) stringent guidance value.

decylguanidine state and decylguanidine ydrochloride 39-10-3; 13590-97-1)	A, A-S, AA, AA-S		50	H(WS)	B
	GA		50	H(WS)	B

Remarks: Values listed apply to sum of these substances.

phylline 79-18-5)	A, A-S, AA, AA-S	50		H(WS)	B,E
	GA		50	H(WS)	B,E
dosulfan 5-29-7)	A, A-S, AA, AA-S, B, C	0.009		A	N
	D	0.22		A	Q
	SA, SB, SC	0.001		A	N
	I		0.001	A	N
	SD	0.034		A	Q
lothall 5-73-3)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
rin 20-8)	A, A-S, AA, AA-S	0.2		H(WS)	G
	GA	ND		H(WS)	F
	A, A-S, AA, AA-S, B, C, D	0.002		H(B)	K
	SA, SB, SC, SD	0.002		H(B)	K
	I		0.002	H(B)	K
lbenzene -41-4)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
lene chlorohydrin -07-3)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Ethylene dibromide (106-93-4)	A, A-S, AA, AA-S		0.05*	H(WS)	G
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining the existence of a Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ Ethylene glycol (107-21-1)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
	A, A-S, AA, AA-S, B, C		500*	A	N
	D		1,000*	A	Q
Remarks: * Units are mg/L					
§ Ethylene oxide (75-21-8)	A, A-S, AA, AA-S		0.05	H(WS)	A
	GA		0.05	H(WS)	A
§ Ethylenethiourea (96-45-7)	GA	ND		H(WS)	F
§ Ferbam (14484-64-1)	GA	4.2		H(WS)	F
§ Fluometuron (2164-17-2)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
§ Fluoranthene (206-44-0)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Fluorene (86-73-7)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
Fluoride (Not Applicable)	A, A-S, AA, AA-S	1,500		H(WS)	H
	GA	1,500		H(WS)	F
	A, A-S, AA, AA-S, B, C	*		A	N
	D	**		A	N
Remarks: * (0.02) exp(0.907 [ln (ppm hardness)] + 7.394) ** (0.1) exp(0.907 [ln (ppm hardness)] + 7.394)					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
Foaming agents (Not Applicable)	GA	500		H(WS)	F
Remarks: Determined as methylene blue active substances (MBAS) or by other tests as specified by the Commissioner.					
Folpet (133-07-3)	GA	50		H(WS)	J
Glyphosate (1071-83-6)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
Gross alpha radiation (Not Applicable)	A, A-S, AA, AA-S	*		H(WS)	G
	GA	*		H(WS)	G
Remarks: * 15 picocuries per liter, excluding radon and uranium.					
Gross beta radiation (Not Applicable)	A, AA	*		H(WS)	H
	A-S, AA-S		*	H(WS)	H
	GA	*		H(WS)	H
Remarks: * 1,000 picocuries per liter, excluding strontium-90 and alpha emitters.					
Guaifenesin (93-14-1)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
Heptachlor & Heptachlor epoxide (1024-44-8; 1024-57-3)	A, A-S, AA, AA-S	0.009		H(WS)	A
	GA	ND		H(WS)	F
	A, A-S, AA, AA-S, B, C, D	0.001		A	S
	SA, SB, SC, SD	0.001		A	S
	I		0.001	A	S
Remarks: Values listed apply to the sum of these substances.					
Hexachlorobenzene (118-74-1)	A, A-S, AA, AA-S		0.02	H(WS)	A
	GA	0.35		H(WS)	F
Hexachlorobutadiene (87-68-3)	A, A-S, AA, AA-S	0.5		H(WS)	A
	GA	5		H(WS)	J
	A, A-S, AA, AA-S, B, C	1.0		A	N
	D	10		A	Q
	SA, SB, SC	0.3		A	N
	I		0.3	A	N
	SD	3.0		A	Q

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§	A, A-S, AA, AA-S		0.02	H(WS)	A
Hexachlorocyclohexanes	GA	ND		H(WS)	F
(58-89-9; 319-84-6;	A, A-S, AA, AA-S, B, C	0.01		A	N
319-85-7; 319-86-8;	D	2		A	Q
608-73-1; 6108-10-7)	SA, SB, SC	0.004		A	N
	I		0.004	A	N
	SD	0.16		A	Q
Remarks: Values listed apply to the sum of these substances.					
§	A, A-S, AA, AA-S	1.0		H(WS)	D
Hexachlorocyclo-	GA	5		H(WS)	J
pentadiene	A, A-S, AA, AA-S, B, C	0.45		A	N
(77-47-4)	D	4.5		A	Q
	SA, SB, SC	0.07		A	N
	I		0.07	A	N
	SD	0.7		A	Q
§	A, A-S, AA, AA-S		50	H(WS)	Z
2-Hexanone	GA		50	H(WS)	Z
(591-78-6)					
§	A, A-S, AA, AA-S		50	H(WS)	Z
Hexazinone	GA	50		H(WS)	J
(51235-04-2)					
§	A, A-S, AA, AA-S, B, C	*		A	N
Hydrazine	D	**		A	Q
(302-01-2)					
Remarks: * 5 ug/L at less than 50 ppm hardness and 10 ug/L at greater than or equal to 50 ppm hardness. ** 50 ug/L at less than 50 ppm hardness and 100 ug/L at greater than or equal to 50 ppm hardness.					
Hydrogen sulfide	A, A-S, AA, AA-S		**	H(WS)	
(7783-06-4)	GA		**	H(WS)	
	A, A-S, AA, AA-S, B, C	2.0*		A	N
	SA, SB, SC	2.0*		A	N
	I		2.0*	A	N
Remarks: * Undissociated. ** Refer to entry for Sulfides.					
§	A, A-S, AA, AA-S	*		H(WS)	
Hydroquinone	GA	*		H(WS)	
(123-31-9)	A, A-S, AA, AA-S, B, C	2.2**		A	N
	D	4.4**		A	Q
Remarks: * Refer to entry for "Phenolic compounds (total phenols)." ** Also see entry for "Phenols, total unchlorinated."					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

UBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
	A, A-S, AA, AA-S		50	H(WS)	Z
Hydroxyethylidene-1,1-diphosphonic acid 809-21-4)	GA		50	H(WS)	Z
	A, A-S, AA, AA-S		50	H(WS)	Z
(2-Hydroxy-3,5-i-tert-pentylphenyl)-enzotriazole (25973-55-1)	GA		50	H(WS)	Z
	A, A-S, AA, AA-S		0.002	H(WS)	A,E
deno (1,2,3-cd) pyrene 193-39-5)	GA		0.002	H(WS)	A,E
n	A, A-S, AA, AA-S	300		H(WS)	G
ot Applicable)	GA	300*		H(WS)	F
	A, A-S, AA, AA-S, B, C	300		A	N
	D	300		A	Q
emarks: * Also see entry for "Iron and Manganese."					
n and Manganese ot Applicable)	GA	500		H(WS)	F
marks: Value listed applies to the sum of these substances.					
	A, A-S, AA, AA-S, B, C	1.7		A	N
sodecyl diphenyl osphate 761-21-5)	D	22		A	Q
	A, A-S, AA, AA-S		50	H(WS)	Z
phorone -59-1)	GA		50	H(WS)	Z
	A, A-S, AA, AA-S		5*	H(WS)	I
propylbenzene -82-8)	GA	5		H(WS)	J

marks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§	A, A-S, AA, AA-S		5*	H(WS)	I
4-Isopropyltoluene	GA	5		H(WS)	J
(99-87-6)					
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§	A, A-S, AA, AA-S, B, C	1		A	N
Isothiazolones, total (isothiazolinones) (includes 5-chloro-2-methyl-4-isothiazolin-3-one & 2-methyl-4-isothiazolin-3-one)	D	10		A	Q
(Not Applicable)					
Remarks: Values listed apply to the sum of these substances.					
§	GA	ND		H(WS)	F
Kepone					
(143-50-0)					
Lead	A, A-S, AA, AA-S	50		H(WS)	G
(Not Applicable)	GA	25		H(WS)	F
	A, A-S, AA, AA-S, B, C	*		A	N
	D	**		A	Q
	SA, SB, SC	8.6		A	N
	I		8.6	A	N
	SD	220		A	Q
Remarks: * exp(1.266 [ln (ppm hardness)] - 4.661) ** exp(1.266 [ln(ppm hardness)] - 1.416) Aquatic standards and guidance value apply to acid-soluble form.					
§	A, A-S, AA, AA-S, B, C	40*		A	N
Linear alkyl benzene sulfonates (LAS)					
(Not Applicable)					
Remarks: * LAS with side chains greater than 13 carbons only. Values listed applies to the sum of these substances.					
Magnesium	A, A-S, AA, AA-S	35,000		H(WS)	B
(Not Applicable)	GA		35,000	H(WS)	B

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
S	GA	7.0		H(WS)	F
Malathion	A, A-S, AA, AA-S, B, C	0.1		A	N
(121-75-5)	SA, SB, SC	0.1		A	N
	I		0.1	A	N
)	GA	1.8		H(WS)	F
Mancozeb					
8018-01-7)					
)	GA	1.8		H(WS)	F
Maneb					
12427-38-2)					
Manganese	A, A-S, AA, AA-S	300		H(WS)	G
Not Applicable)	GA	300*		H(WS)	F
emarks: * Also see entry for "Iron and Manganese."					
	A, A-S, AA, AA-S		50	H(WS)	Z
lercaptobenzothiazole	GA		50	H(WS)	Z
49-30-4)					
lercury	A, A-S, AA, AA-S	2		H(WS)	G
Not Applicable)	GA	2		H(WS)	F
	A, A-S, AA, AA-S, B, C, D		0.2	H(B)	K
	SA, SB, SC, I, SD		0.1	H(B)	K
	A, A-S, AA, AA-S		50	H(WS)	Z
Methacrylic acid	GA		50	H(WS)	Z
9-41-4)					
	A, A-S, AA, AA-S	35		H(WS)	H
ethoxychlor	GA	35		H(WS)	F
2-43-5)	A, A-S, AA, AA-S, B, C	0.03		A	N
	SA, SB, SC	0.03		A	N
	I		0.03	A	N
	A, A-S, AA, AA-S		50	H(WS)	Z
ethoxyethylbenzenes	GA		50	H(WS)	Z
013-34-7; 3558-60-9)					
marks: Values listed apply to each isomer [(2-Methoxyethyl)benzene and (1-Methoxyethyl)benzene] individually.					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Methylbenz(a)-anthracenes (Not Applicable)	A, A-S, AA, AA-S GA		0.002 0.002	H(WS) H(WS)	A,E A,E
Remarks: Values listed apply to the sum of these substances.					
§ Methyl chloride (74-87-3)	A, A-S, AA, AA-S GA	5	5	H(WS) H(WS)	I J
§ 2-Methyl-4-chloro-phenoxyacetic acid (94-74-6)	GA	0.44		H(WS)	F
§ Methylene bisthiocyanate (6317-18-6)	A, A-S, AA, AA-S GA A, A-S, AA, AA-S, B, C	1.0	50 50	H(WS) H(WS) A	Z Z N
§ Methylene chloride (75-09-2)	A, A-S, AA, AA-S GA	5	5	H(WS) H(WS)	I J
§ 4-(1-Methylethoxy)-1-butanol (31600-69-8)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z
§ 2-Methylethyl-1,3-dioxolane (126-39-6)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z
§ Methyl ethyl ketone (78-93-3)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z
§ Methyl methacrylate (80-62-6)	GA	50		H(WS)	J
§ 2-Methylstyrene (611-15-4)	A, A-S, AA, AA-S GA	5	5	H(WS) H(WS)	I J
§ 3-Methylstyrene (100-80-1)	A, A-S, AA, AA-S GA	5	5	H(WS) H(WS)	I J

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Metribuzin (21087-64-9)	A, A-S, AA, AA-S GA	50	50	H(WS) H(WS)	Z J
§ Mirex (2385-85-5)	A, A-S, AA, AA-S GA A, A-S, AA, AA-S, B, C D SA, SB, SC I SD	5 0.001 0.001 0.001	0.04 0.001 0.001	H(WS) H(WS) A A A A A	A J N Q N N Q
) Nabam 142-59-6)	GA	1.8		H(WS)	F
Naphthalene)1-20-3)	A, A-S, AA, AA-S GA	10	10	H(WS) H(WS)	D D
Niacinamide)8-92-0)	A, A-S, AA, AA-S GA	500	500	H(WS) H(WS)	B B
Nickel (Not Applicable)	A, A-S, AA, AA-S, B, C D SA, SB, SC I SD	* ** 7.1 140	7.1	A A A A A	N Q N N Q

Remarks: * exp (0.76 [ln (ppm hardness)] + 1.06)
** exp (0.76 [ln (ppm hardness)] + 4.02)
Aquatic standards and guidance value apply to acid-soluble form.

Nitralin (4726-14-1)	GA	35		H(WS)	F
Nitrate and Nitrite, total (expressed as N) (Not Applicable)	A, A-S, AA, AA-S GA	10,000* 10,000		H(WS) H(WS)	G H

Remarks: Value listed applies to the sum of these substances, except as noted below.
* Applies only to nitrate.

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§	A, A-S, AA, AA-S	3**		H(WS)	A
Nitrilotriacetic acid	GA	3**		H(WS)	A
(Not Applicable)	A, A-S, AA, AA-S, B, C	5,000*		A	N
Remarks: * Applies to Nitrilotriacetate. ** Includes related forms that convert to nitrilotriacetic acid upon acidification to a pH of 2.3 or less.					
Nitrite	GA	*		H(WS)	
(Not Applicable)	A, A-S, AA, AA-S, B, C	**		A	
Remarks: * Refer to entry for "Nitrate and Nitrite." ** Value is 100 ug/L for warm water fishery waters and 20 ug/L for cold water fishery waters.					
§	A, A-S, AA, AA-S	30		H(WS)	D
Nitrobenzene	GA	5		H(WS)	J
(98-95-3)					
§	A, A-S, AA, AA-S		50	H(WS)	Z
N-Nitrosodiphenylamine	GA		50	H(WS)	Z
(86-30-6)					
§	A, A-S, AA, AA-S		50	H(WS)	Z
Oxamyl	GA	50		H(WS)	J
(23135-22-0)					
§	GA	3.0		H(WS)	F
Paraquat					
(4685-14-7)					
§	GA	1.5		H(WS)	F
Parathion & Methyl parathion	A, A-S, AA, AA-S, B, C	0.008		A	N,T
(56-38-2; 298-00-0)					
Remarks: Values listed apply to the sum of these substances.					
§	GA	ND		H(WS)	F
Pentachloronitro-benzene					
(82-68-8)					
§	A, A-S, AA, AA-S	*		H(WS)	
Pentachlorophenol	GA	*		H(WS)	
(87-86-5)	A, A-S, AA, AA-S, B, C	0.4***		A	N
	D	**		A	
Remarks: * Refer to entry for "Phenolic compounds (total phenols)." ** Refer to entry for "Phenols, total chlorinated." *** Also see entry for "Phenols, total chlorinated."					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Phenanthrene (85-01-8)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z.
§ Phenol (108-95-2)	A, A-S, AA, AA-S	*		H(WS)	
	GA	*		H(WS)	
	A, A-S, AA, AA-S, B, C, D	**		A	
Remarks: * Refer to entry for "Phenolic compounds (total phenols)." ** Refer to entry for "Phenols, total unchlorinated."					
§ Phenolic compounds (total phenols) (Not Applicable)	A, A-S, AA, AA-S	1		H(WS)	H
	GA	1		H(WS)	F
Remarks: Value listed applies to the sum of these substances.					
§ Phenols, total chlorinated (Not Applicable)	A, A-S, AA, AA-S	*		H(WS)	
	GA	*		H(WS)	
	A, A-S, AA, AA-S, B, C, D	1.0		A	R
Remarks: Value listed applies to the sum of these substances. * Refer to entry for "Phenolic compounds (total phenols)."					
§ Phenols, total unchlorinated (Not Applicable)	A, A-S, AA, AA-S, B, C, D	5.0		A	R
Remark: Value listed applies to sum of these substances.					
§ Phenyl ether (101-84-8)	A, A-S, AA, AA-S	10		H(WS)	D
	GA		10	H(WS)	D
§ Phenylpropanolamine (14838-15-4)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ 3-Phenyl-1-propene (637-50-3)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ cis-1-Phenyl-1-propene (766-90-5)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§	A, A-S, AA, AA-S		5	H(WS)	I
trans-1-Phenyl-1-propene	GA	5		H(WS)	J
(873-66-5)					
§	GA	ND		H(WS)	F
Phorate & Disulfoton					
(298-02-2; 298-04-4)					
Remark: Value listed apply to sum of these substances.					
Phosphorus	A, A-S, AA, AA-S, B		20*	**	**
(Not Applicable)					
Remarks: * Applies only where the letter "P" (ponds, lakes and reservoirs) appears in the Water Index Number, excluding Lake Champlain. The department is considering site-specific values for Lake Champlain and for Lake Ontario and Lake Erie, both of which do not have the letter "P" designation.					
** Based on aesthetic effects for primary and secondary contact recreation.					
§	A, A-S, AA, AA-S		50	H(WS)	Z
Picloram	GA	50		H(WS)	J
(Not Applicable)					
Remarks: Includes: related forms that convert to the organic acid upon acidification to a pH of 2 or less; and esters of the organic acid.					
§	A, A-S, AA, AA-S	0.01		H(WS)	A
Polychlorinated	GA	0.1		H(WS)	F
biphenyls	A, A-S, AA, AA-S, B, C, D	0.001		A	S
(Not Applicable)	SA, SB, SC, SD	0.001		A	S
	I		0.001	A	S
	A, AS, AA, AA-S, B, C, D		0.0000006	H(B)	K
	SA, SB, SC, I, SD		0.0000006	H(B)	K
Remark: Values listed apply to sum of these substances.					

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Principal organic contaminant (Not Applicable)	GA	5		H(WS)	J

Remarks: This standard applies to any and every individual substance that is in one of the principal organic contaminant classes as defined in 6 NYCRR 700.1 (see Table 5 of this TOGS), except any substance that has a standard for class GA waters listed elsewhere in this Table. Refer to the Introduction of this TOGS for guidance on determining the applicability of the POC standard to individual substances.

A less stringent guidance value for an individual substance may be substituted for this standard if so determined by the Commissioner of the New York State Department of Health, pursuant to 10 NYCRR §5-1.51(g).

§ Prometon (1610-18-0)	A, A-S, AA, AA-S GA	 50	50	H(WS) H(WS)	Z J
§ Propachlor (1918-16-7)	GA	35		H(WS)	F
§ Propanil (709-98-8)	GA	7.0		H(WS)	F
§ Propazine (139-40-2)	GA	16		H(WS)	F
§ Propham (122-42-9)	A, A-S, AA, AA-S GA	 50	50	H(WS) H(WS)	Z J
§ n-Propylbenzene (103-65-1)	A, A-S, AA, AA-S GA	 5	5	H(WS) H(WS)	I J
§ Pyrene (129-00-0)	A, A-S, AA, AA-S GA		50 50	H(WS) H(WS)	Z Z

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Pyridine (110-86-1)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Quaternary ammonium compounds (including dimethyl benzyl ammonium chloride & dimethyl ethyl benzyl ammonium chloride) (Not Applicable)	A, A-S, AA, AA-S, B, C	10		A	N
Remarks: Value listed applies to sum of these substances.					
Radium 226 (Not Applicable)	A, AA	*		H(WS)	H
	A-S, AA-S		*	H(WS)	H
	GA	*		H(WS)	H
Remarks: * 3 picocuries per liter.					
Radium 226 and Radium 228 (Not Applicable)	A, A-S, AA, AA-S	*		H(WS)	G
	GA	*		H(WS)	G
Remarks: * 5 picocuries per liter. Values listed apply to sum of these substances.					
Selenium (Not Applicable)	A, A-S, AA, AA-S	10		H(WS)	G
	GA	10		H(WS)	G
	A, A-S, AA, AA-S, B, C	1.0*		A	N
Remarks: * Aquatic standard applies to acid-soluble form.					
Silver (Not Applicable)	A, A-S, AA, AA-S	50		H(WS)	G
	GA	50		H(WS)	F
	A, A-S, AA, AA-S, B, C	0.1*		A	N
	D	**		A	Q
	SD	2.3		A	Q

Remarks: * Ionic silver.
** exp (1.72 [ln (ppm hardness)] - 6.52)
Standards for D and SD Classes apply to acid-soluble form.

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Simazine (122-34-9)	A, A-S, AA, AA-S		4*	H(WS)	G
	GA	50		H(WS)	J

Remarks: * This substance did not receive a review beyond determining that a final MCL has been promulgated by USEPA. A more in-depth review, currently underway, may lead to a more (but not less) stringent guidance value.

Sodium (Not Applicable)	GA	20,000		H(WS)	H
Strontium 90 (Not Applicable)	A, A-S, AA, AA-S	*		H(WS)	G

Remarks: * 8 pCi/L
If two or more radionuclides are present, the sum of their doses shall not exceed annual potential dose of 4 millirems per year.

§ Styrene (100-42-5)	A, A-S, AA, AA-S	50		H(WS)	D
	GA	5		H(WS)	J
Sulfate (Not Applicable)	A, A-S, AA, AA-S	250,000		H(WS)	G
	GA	250,000		H(WS)	F
Sulfides, total (Not Applicable)	A, A-S, AA, AA-S		50*	H(WS)	D
	GA		50*	H(WS)	D
	A, A-S, AA, AA-S, B, C	**		A	
	SA, SB, SC	**		A	
	I		**	A	

Remarks: Values listed apply to sum of these substances.
* Expressed as hydrogen sulfide.
** Refer to entry for "Hydrogen Sulfide."

Sulfite (Not Applicable)	A, A-S, AA, AA-S, B, C	200		A	N
§ Tebuthiuron (34014-18-1)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA	50		H(WS)	J
§ Terbacil (5902-51-2)	GA	50		H(WS)	J

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Terbufos (13071-79-9)	A, A-S, AA, AA-S		0.09	H(WS)	B
	GA		0.09	H(WS)	B
§ Tetrachlorobenzenes (634-66-2; 634-90-2; 95-94-3; 12408-10-5)	A, A-S, AA, AA-S	10		H(WS)	D
	GA	5*	10**	H(WS)	
Remarks: Values listed apply to sum of these substances, except as noted below. ** Basis Code is D. * Applies to each isomer (1,2,3,4-, 1,2,3,5-, and 1,2,4,5-) individually; Basis Code is J.					
§ 1,1,1,2-Tetrachloroethane (630-20-6)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J
Remarks: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth review, currently underway, could lead to a more (but not less) stringent guidance value.					
§ 1,1,2,2-Tetrachloroethane (79-34-5)	A, A-S, AA, AA-S		0.2	H(WS)	A
	GA	5		H(WS)	J
§ Tetrachloroethylene (127-18-4)	A, A-S, AA, AA-S		0.7	H(WS)	A
	GA	5		H(WS)	J
	A, A-S, AA, AA-S, B, C, D		1	H(B)	K
	SA, SB, SC, I, SD		1	H(B)	K
§ Tetrachloroterephthalic acid (2136-79-0)	GA	50		H(WS)	J
§ Tetrahydrofuran (109-99-9)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
Thallium (Not Applicable)	A, A-S, AA, AA-S		4	H(WS)	B
	GA		4	H(WS)	B
	A, A-S, AA, AA-S, B, C	8		A	N
	D	20		A	Q
Remarks: Aquatic standards apply to acid-soluble form.					

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ Theophylline (58-55-9)	A, A-S, AA, AA-S	40		H(WS)	B
	GA		40	H(WS)	B
§ Thiram (137-26-8)	GA	1.8		H(WS)	F
§ Toluene (108-88-3)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ o-Toluidine (95-53-4)	A, A-S, AA, AA-S		0.6	H(WS)	A
	GA	5		H(WS)	J
§ Tolyltriazole (29385-43-1)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z
§ Toxaphene (8001-35-2)	A, A-S, AA, AA-S		0.01	H(WS)	A
	GA	ND		H(WS)	F
	A, A-S, AA, AA-S, B, C	0.005		A	N
	D	1.6		A	Q
	SA, SB, SC	0.005		A	N
	I		0.005	A	N
	SD		0.07	A	Q
§ 1,2,4-Tribromobenzene (615-54-3)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ Tributyltin oxide (56-35-9)	A, A-S, AA, AA-S		50	H(WS)	Z
	GA		50	H(WS)	Z

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§	A, A-S, AA, AA-S	10		H(WS)	D
Trichlorobenzenes	GA	5*	10**	H(WS)	
(87-61-6; 120-82-1;	A, A-S, AA, AA-S, B, C	5		A	N,T
108-70-3; 12002-48-1)	D	50		A	R
	SA, SB, SC	5		A	N,T
	I		5	A	N,T
	SD	50		A	R
§	A, A-S, AA, AA-S		5	H(WS)	I
1,1,1-Trichloroethane	GA	5		H(WS)	J
(71-55-6)					
§	A, A-S, AA, AA-S	0.6		H(WS)	A
1,1,2-Trichloroethane	GA	5		H(WS)	J
(79-00-5)					
§	A, A-S, AA, AA-S		3	H(WS)	A
Trichloroethylene	GA	5		H(WS)	J
(79-01-6)	A, A-S, AA, AA-S, B, C, D		11	H(B)	K
	SA, SB, SC, I, SD		11	H(B)	K
§	A, A-S, AA, AA-S		5	H(WS)	I
Trichlorofluoromethane	GA	5		H(WS)	J
(75-69-4)					
§	GA	35		H(WS)	F
2,4,5-Trichlorophenoxy-acetic acid					
(93-76-5)					
§	A, A-S, AA, AA-S	10		H(WS)	G
2,4,5-Trichloro-phenoxypropionic acid	GA	0.26		H(WS)	F
(93-72-1)					
§	A, A-S, AA, AA-S		5	H(WS)	I
1,1,2-Trichloropropane	GA	5		H(WS)	J
(598-77-6)					

Remarks: Values listed apply to the sum of substances, expect as noted below.

** Basis Code is D.

* Applies to each isomer (1,2,3-, 1,2,4-, and 1,3,5-) individually; Basis Code is J.

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§ 1,2,3-Trichloropropane (96-18-4)	A, A-S, AA, AA-S		5*	H(WS)	I
	GA	5		H(WS)	J

Remark: * This substance did not receive a review beyond determining that it is in a principal organic contaminant class and that it does not have a more stringent Specific MCL. A more in-depth relvew, currently underway, could lead to a more (but not less) stringent guidance value.

§ cis-1,2,3-Trichloropropene (13116-57-9)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ trans-1,2,3-Trichloropropene (13116-58-0)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ alpha,2,4-Trichlorotoluene (94-99-5)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ alpha,2,6-Trichlorotoluene (2014-83-7)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ alpha,3,4-Trichlorotoluene (102-47-6)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ alpha,alpha,2-Trichlorotoluene (88-66-4)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ alpha,alpha,4-Trichlorotoluene (13940-94-8)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
§ 2,3,4-Trichlorotoluene (7359-72-0)	A, A-S, AA, AA-S		0.34	H(WS)	B,E
	GA	5		H(WS)	J
§ 2,3,5-Trichlorotoluene (56961-86-5)	A, A-S, AA, AA-S		0.34	H(WS)	B,E
	GA	5		H(WS)	J
§ 2,3,6-Trichlorotoluene (2077-46-5)	A, AS, AA, AA-S		0.34	H(WS)	B
	GA	5		H(WS)	J

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS/LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
§	A, AS, AA, AA-S		0.34	H(WS)	B,E
2,4,5-Trichlorotoluene	GA	5		H(WS)	J
(6639-30-1)					
§	A, A-S, AA, AA-S		0.34	H(WS)	B,E
2,4,6-Trichlorotoluene	GA	5		H(WS)	J
(23749-65-7)					
§	A, A-S, AA, AA-S		5	H(WS)	I
Trichlorotrifluoroethanes	GA	5		H(WS)	J
(354-58-5; 76-13-1; 26523-64-8)					
Remarks: Values listed applies to each isomer (1,1,1-trichloro-2,2,2-trifluoroethane and 1,1,2-trichloro-1,2,2-trifluoroethane) individually.					
§	GA	35		H(WS)	F
Trifluralin		—			
(1582-09-8)					
§	A, A-S, AA, AA-S		5	H(WS)	I
Trimethylbenzenes	GA	5		H(WS)	J
(526-73-8; 95-63-6; 108-67-8; 25551-13-7)					
Remarks: Values listed applies to each isomer (1,2,3-, 1,2,4-, and 1,3,5-) individually.					
§	A, A-S, AA, AA-S		50	H(WS)	Z
Trimethylpyridines	GA		50	H(WS)	Z
(1462-84-6; 108-75-8)					
Remarks: Values listed applies to each isomer (2,3,6- and 2,4,6-) individually.					
§	A, A-S, AA, AA-S		50	H(WS)	Z
Triphenyl phosphate	GA		50	H(WS)	Z
(115-86-6)	A, A-S, AA, AA-S, B, C	4		A	N
	D	40		A	Q
Tritium	A, A-S, AA, AA-S	*		H(WS)	G
(Not Applicable)					
Remarks: * 20,000 picocuries per liter; if two or more radionuclides are present, the sum of their annual dose equivalent to the total body or any organ shall not exceed 4 millirems per year.					
Uranyl ion	GA	5,000		H(WS)	H
(Not Applicable)		—			

TABLE 1 (continued)

NEW YORK STATE AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES

Date of Revision: October 1993

SUBSTANCE (CAS NO.)	WATER CLASSES	MICROGRAMS / LITER STANDARD	GUIDANCE VALUE	TYPE	BASIS CODE
Vanadium (Not Applicable)	A, A-S, AA, AA-S, B, C	14		A	N
	D	190		A	Q
Remarks: Values listed apply to acid-soluble form.					
§ Vinyl chloride (75-01-4)	A, A-S, AA, AA-S		0.3	H(WS)	A
	GA	2		H(WS)	G
§ Xylenes (95-47-6; 108-38-3; 106-42-3; 1330-20-7)	A, A-S, AA, AA-S		5	H(WS)	I
	GA	5		H(WS)	J
Remarks: Values listed applies to each isomer (1,2-, 1,3-, and 1,4-) individually.					
Zinc (Not Applicable)	A, A-S, AA, AA-S	300		H(WS)	H
	GA	300		H(WS)	H
	A, A-S, AA, AA-S, B, C	30		A	N
	D	*		A	Q
	SA, SB, SC	58		A	N
	I		67	A	N
	SD	170		A	Q

Remarks: * exp (0.83 [ln (ppm hardness)] + 1.95)
Aquatic standards and guidance value apply to acid-soluble form.

Note: **The department has proposed revisions to the aquatic values for zinc. New standards are likely to be adopted and would become effective in about two months. An insert sheet for this TOGS with the new zinc values will be available at that time.**

§ Zineb (12122-67-7)	GA	1.8	H(WS)	F
§ Ziram (137-30-4)	GA	4.2	H(WS)	F

TABLE 2

PARTIAL LIST OF SUBSTANCES REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD OF 5 ug/L

October, 1993

Note: Refer to Section III of Introduction for Explanation

LINE NO.	SUBSTANCE	CAS NO.
1	Acrolein	107-02-8
2	Acrylamide	79-06-1
3	Allyl chloride	107-05-1
4	4-Aminobiphenyl	92-67-1
5	3-Aminotoluene	108-44-1
6	4-Aminotoluene	106-49-0
7	1,1'-Biphenyl	92-52-4
8	Bis(2-chloroethoxy)methane	111-91-1
9	Bis(chloromethyl)ether	542-88-1
10	Bis(2-chloro-1-methylethyl)ether	108-60-1
11	cis-2-Butenal	15798-64-8
12	trans-2-Butenal	123-73-9
13	cis-2-Butenenitrile	1190-76-7
14	trans-2-Butenenitrile	627-26-9
15	Chloranil	118-75-2
16	2-Chloroaniline	95-51-2
17	3-Chloroaniline	108-42-9
18	4-Chloroaniline	106-47-8
19	1-Chlorobutane	109-69-3
20	Chloromethyl methyl ether	107-30-2
21	2-Chloronitrobenzene	88-73-3
22	3-Chloronitrobenzene	121-73-3
23	4-Chloronitrobenzene	100-00-5
24	Chloroprene	126-99-8
25	Chlorothalonil	1897-45-6

TABLE 2 (Continued)

PARTIAL LIST OF SUBSTANCES REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD OF 5 ug/L

October, 1993

Note: Refer to Section III of Introduction for Explanation

LINE NO.	SUBSTANCE	CAS NO.
26	3-Chlorotoluene	108-41-8
27	4-Chloro-o-toluidine	95-69-2
28	3-Chloro-1,1,1-trifluoropropane	460-35-5
29	Cyanogen bromide	506-68-3
30	Cyanogen chloride	506-77-4
31	1,2-Dibromobenzene	583-53-9
32	1,3-Dibromobenzene	108-36-1
33	1,4-Dibromobenzene	106-37-6
34	3,3'-Dichlorobenzidine	91-94-1
35	cis-1,4-Dichloro-2-butene	1476-11-5
36	trans-1,4-Dichloro-2-butene	110-57-6
37	1,2-Difluoro-1,1,2,2-tetrachloroethane	76-12-0
38	1,2-Diisopropylbenzene	577-55-9
39	1,3-Diisopropylbenzene	99-62-7
40	1,4-Diisopropylbenzene	100-18-5
41	2,3-Dimethylaniline	87-59-2
42	2,4-Dimethylaniline	95-68-1
43	2,5-Dimethylaniline	95-78-3
44	2,6-Dimethylaniline	87-62-7
45	3,4-Dimethylaniline	95-64-7
46	3,5-Dimethylaniline	108-69-0
47	3,3'-Dimethylbenzidine	119-93-7
48	4,4'-Dimethylbibenzyl	538-39-6
49	4,4'-Dimethyldiphenylmethane	4957-14-6
50	alpha, alpha-Dimethyl phenethylamine	122-09-8

TABLE 2 (Continued)

PARTIAL LIST OF SUBSTANCES REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD OF 5 ug/L

October, 1993

Note: Refer to Section III of Introduction for Explanation

LINE NO.	SUBSTANCE	CAS NO.
51	1,3-Dinitrobenzene	99-65-0
52	2,3-Dinitrotoluene	602-01-7
53	2,4-Dinitrotoluene	121-14-2
54	2,5-Dinitrotoluene	619-15-8
55	3,4-Dinitrotoluene	610-39-9
56	3,5-Dinitrotoluene	618-85-9
57	Diphenylamine	122-39-4
58	Endrin aldehyde	7421-93-4
59	Endrin ketone	53494-70-5
60	Hexachloroethane	67-72-1
61	Hexachlorophene	70-30-4
62	Hexachloropropene	1888-71-7
63	Isodrin	465-73-6
64	Isopropalin	33820-53-0
65	2-Isopropyltoluene	527-84-4
66	3-Isopropyltoluene	535-77-3
67	Methacrylonitrile	126-98-7
68	N-Methylaniline	100-61-8
69	4,4'-Methylene-bis-(2-chloroaniline)	101-14-4
70	4,4'-Methylene-bis-(N-methyl)aniline	1807-55-2
71	4,4'-Methylene-bis-(N,N'-dimethyl)aniline	101-61-1
72	Methyl iodide	74-88-4
73	alpha-Methylstyrene	98-83-9
74	4-Methylstyrene	622-97-9
75	2-Nitroaniline	88-74-4
76	3-Nitroaniline	99-09-2

TABLE 3 (Continued)

PARTIAL LIST OF SUBSTANCES NOT REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD

October, 1993

Note: Refer to Section III of Introduction for Explanation

(No standard or guidance value for groundwater is available for these substances as of the date of this document)

LINE NO.	SUBSTANCE	CAS NO.
25	1-Butanol	71-36-3
26	Cacodylic acid	75-60-5
27	Caprolactam	105-60-1
28	Captafol	2425-06-1
29	Carbazole	86-74-8
30	Carbon disulfide	75-15-0
31	Chloral	75-87-6
32	Chloroacetic acid	79-11-8
33	Chlorobenzilate	510-15-6
34	4-Chlorobenzoic acid	74-11-3
35	2-Chloroethyl vinyl ether	110-75-8
36	4-(4-Chloro-2-methylphenoxy)butyric acid	94-81-5
37	2-(4-Chloro-2-methylphenoxy)propionic acid	93-65-2
38	4-Chlorophenyl phenyl ether	7005-72-3
39	Chlorpyrifos	2921-88-2
40	Cimectacarb	95266-40-3
41	Clopyralid	1702-17-6
42	Cyanazine	21725-46-2
43	Cyclohexane	110-82-7
44	Cyclohexanol	108-93-0
45	Cyclohexanone	108-94-1
46	Cyclohexanone oxime	100-64-1
47	Cyclohexene	110-83-8
48	Cyclohexylamine	108-91-8

TABLE 3 (Continued)

PARTIAL LIST OF SUBSTANCES NOT REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD

October, 1993

Note: Refer to Section III of Introduction for Explanation

(No standard or guidance value for groundwater is available for these substances as of the date of this document)

LINE NO.	SUBSTANCE	CAS NO.
49	Cyclopentanone	120-92-3
50	Cyclotrimethylenetrinitramine	121-82-4
51	2,4-DB	94-82-6
52	Decanal	112-31-2
53	Demeton	8065-48-3
54	Diallate	2303-16-4
55	Dibenz(a,h)anthracene	55-70-3
56	Dibenzofuran	132-64-9
57	Dibromoacetonitrile	3252-43-5
58	Dibutyltin chloride	683-18-1
59	Dibutyltin dilaurate	77-58-7
60	2,3-Dichloro-1,4-napthoquinone	117-80-6
61	alpha, alpha -Dichlorotoluene	98-87-3
62	Dicyclopentadiene	77-73-6
63	Diethylamine	109-89-7
64	Diethylene glycol	111-46-6
65	Diethylene glycol monoethyl ether	111-90-0
66	Diethyl formamide	617-84-4
67	Diethyl maleate	141-05-9
68	Diethyl mercury	627-44-1
69	o,o-Diethyl-o-2-pyrazinyl phosphorothioate	297-97-2
70	Diethyltin dycaprylate	2641-56-7
71	2,3-Dihydro-1,6-dimethyl-1H-indene	17059-48-2
72	2,3-Dihydro-1-methyl-1H-indene	767-58-8

TABLE 3 (Continued)

PARTIAL LIST OF SUBSTANCES NOT REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD

October, 1993

Note: Refer to Section III of Introduction for Explanation

(No standard or guidance value for groundwater is available for these substances as of the date of this document)

LINE NO.	SUBSTANCE	CAS NO.
73	Diisopropylamine	108-18-9
74	Diisopropyl ether	108-20-3
75	Dimethoate	60-51-5
76	3,3'-Dimethoxybenzidine	119-90-4
77	Dimethylamine	124-40-3
78	4-(Dimethylamino)azobenzene	60-11-7
79	7,12-Dimethylbenz(a)anthracene	57-97-6
80	Dimethylbenzylammonium chloride	1875-92-9
81	trans-1,4-Dimethylcyclohexane	2207-04-7
82	Dimethyldioxane	25136-55-4
83	Dimethyldithiocarbamate	79-45-8
84	Dimethylethylbenzylammonium chloride	5197-80-8
85	2,5-Dimethylfuran	625-86-5
86	1,1-Dimethylhydrazine	57-14-7
87	1,2-Dimethylhydrazine	540-73-8
88	Dimethylphenylcarbinol	617-94-7
89	Dimethylterephthalate	120-61-6
90	1,4-Dioxane	123-91-1
91	Dodecanoic acid	143-07-7
92	Endosulfan I	959-98-8
93	Endosulfan II	33213-65-9
94	Endosulfan sulfate	1031-07-8

TABLE 3 (Continued)

PARTIAL LIST OF SUBSTANCES NOT REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD

October, 1993

Note: Refer to Section III of Introduction for Explanation

(No standard or guidance value for groundwater is available for these substances as of the date of this document)

LINE NO.	SUBSTANCE	CAS NO.
95	Epichlorohydrin	106-89-8
96	Ethion	563-12-2
97	2-Ethoxyethanol	110-80-5
98	2-Ethoxyethanol acetate	111-15-9
99	Ethyl acetate	141-78-6
100	Ethyl acrylate	140-88-5
101	Ethyl di-n-propylthiocarbamate (EPTC)	759-96-4
102	Ethylene cyanohydrin	109-78-4
103	Ethyl ether	60-29-7
104	Ethyl mercuric chloride	107-27-7
105	Ethyl methacrylate	97-63-2
106	Ethyl methane sulfonate	62-50-0
107	Famphur	52-85-7
108	Formaldehyde	50-00-0
109	Formic acid	64-18-6
110	Furan	110-00-9
111	Furazolidone	67-45-8
112	Furfural	98-01-1
113	Furium	531-82-8
114	Glycidaldehyde	765-34-4
115	n-Heptane	142-82-5
116	1-Heptanol	111-70-6
117	2-Heptanol	543-49-7

TABLE 3 (Continued)

PARTIAL LIST OF SUBSTANCES NOT REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD

October, 1993

Note: Refer to Section III of Introduction for Explanation

(No standard or guidance value for groundwater is available for these substances as of the date of this document)

LINE NO.	SUBSTANCE	CAS NO.
118	3-Heptanol	589-82-2
119	4-Heptanol	589-55-9
120	Hexamethylene diamine	124-09-4
121	Hexanate	25056-70-6
122	n-Hexane	110-54-3
123	3-Hexanone	589-38-8
124	Hydrazine	302-01-2
125	3-Hydroxycarbofuran	16655-82-6
126	α-Hydroxy-α-methylbenzeneacetic acid	515-30-0
127	1,3-Isobenzofurandione	85-44-9
128	1(3H)-Isobenzofuranone	87-41-2
129	Isobutyl alcohol	78-83-1
130	Isodecyl diphenylphosphate	29761-21-5
131	Isopropyl alcohol	67-63-0
132	Isopropylamine	75-31-0
133	Isopropylbenzene hydroperoxide	80-15-9
134	Isosafrole	120-58-1
135	Isothiazolones	NA*
136	Linear alkylbenzenesulfonates	NA
137	Linuron	330-55-2
138	2,5-Lutidine	589-93-5
139	Maleic anhydride	108-31-6
140	Maleic hydrazide	123-33-1
141	Malononitrile	109-77-3

TABLE 3 (Continued)

PARTIAL LIST OF SUBSTANCES NOT REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD

October, 1993

Note: Refer to Section III of Introduction for Explanation

(No standard or guidance value for groundwater is available for these substances as of the date of this document)

LINE NO.	SUBSTANCE	CAS NO.
142	Methacrylamide	79-39-0
143	Methanol	67-56-1
144	Methapyrilene	91-80-5
145	2-Methoxyethanol	109-86-4
146	2-Methoxyethanol acetate	110-49-6
147	2-Methoxy-5-nitroaniline	99-59-2
148	Methyl acetate	79-20-9
149	Methylacrylate	96-33-3
150	Methylamine	74-89-5
151	2-Methylanthracene	613-12-7
152	9-Methylanthracene	779-02-2
153	2-Methylbenzaldehyde	529-20-4
154	3-Methylbenzaldehyde	620-23-5
155	4-Methylbenzaldehyde	104-87-0
156	4-Methylbenzenemethanol	589-18-4
157	2-Methyl benzene sulfonamide	88-19-7
158	4-Methyl benzene sulfonamide	70-55-3
159	2-Methylbenzoic acid	118-90-1
160	3-Methylbenzoic acid	99-04-7
161	3-Methylcholanthrene	56-49-5
162	Methylcyclopentane	96-37-7
163	Methyl mercury	22967-92-6
164	Methylmethanesulfonate	66-27-3
165	1-Methyl-4-(1-methylethenyl)cyclohexene	138-86-3

TABLE 3 (Continued)

PARTIAL LIST OF SUBSTANCES NOT REGULATED BY THE PRINCIPAL ORGANIC CONTAMINANT (POC) GROUNDWATER STANDARD

October, 1993

Note: Refer to Section III of Introduction for Explanation

(No standard or guidance value for groundwater is available for these substances as of the date of this document)

LINE NO.	SUBSTANCE	CAS NO.
166	2-Methylnaphthalene	91-57-6
167	Methylolmethacrylamide	923-02-4
168	4-Methyl-2-pentanone	108-10-1
169	Methylphthalate	4376-18-5
170	Methyl tert-butyl ether	1634-04-4
171	Metolachlor	51218-45-2
172	Molinate	2212-67-1
173	1,4-Naphthoquinone	130-15-4
174	1-Napthylamine	134-32-7
175	2-Napthylamine	91-59-8
176	Nitrocyclohexane	1122-60-7
177	Nitrofurantoin	67-20-9
178	Nitrofurazone	59-87-0
179	2-Nitropropane	79-46-9
180	4-Nitroquinoline-1-oxide	56-57-5
181	N-Nitrosodi-N-butylamine	924-16-3
182	N-Nitrosodiethylamine	55-18-5
183	N-Nitrosodimethylamine	62-75-9
184	N-Nitrosodipropylamine	621-64-7
185	N-Nitrosomethylethylamine	10595-95-6
186	N-Nitroso-N-methyl urea	684-93-5
187	N-Nitrosomorpholine	59-89-2
188	N-Nitrosopiperidine	100-75-4
189	N-Nitrosopyrrolidine	930-55-2

TABLE 4

EXPLANATION OF BASIS CODES IN TABLES 1 AND 2

TYPE[1]	BASIS CODE	NYCRR TITLE	NYCRR REFERENCE	PROCEDURE
H(WS)	A	6	702.4	Oncogenic
	B	6	702.5	Non-oncogenic, Chronic
	C	6	702.5	Non-oncogenic, Acute
	D	6	702.6	Aesthetic
Human Health	E	6	702.7	Chemical correlation
(Water Source)	F	6	----	Former groundwater regulations 703.5(a)(3)
	G	6	702.3(a)	Specific MCL
	H	10	Part 170	Former use of or reference to
	I	6	702.3(b)	Principal Organic Contaminant Classes
	J	10	Subpart 5-1	Former groundwater reference to general standards
	Z	6	702.15(a)(1)(ii)	General organic guidance value
H(B) Human Health (Fish Consumption)	K	6	702.8	Bioaccumulation (Health)
A	N	6	702.10	Propagation
	Q	6	702.11	Survival
Aquatic Life	R	6	702.12	Tainting
and	S	6	702.13	Bioaccumulation (Wildlife Protection)
Wildlife	T	6	702.14	Chemical correlation

[1] See page 3.

TABLE 5

DEFINITION FOR PRINCIPAL ORGANIC CONTAMINANT CLASSES*

(excerpted from 6 NYCRR Section 700.1)

Principal organic contaminant classes means the following classes of organic chemicals.

(1) Halogenated alkane: Compound containing carbon (C), hydrogen (H) and halogen (X) where X = fluorine (F), chlorine (Cl), bromine (Br) and/or iodine (I), having the general formula $C_nH_yX_z$, where $y + z = 2n + 2$; n, y and z are integer variables; n and z are equal to or greater than one and y is equal to or greater than zero. Specifically excluded from this class are chloroform, bromoform, bromodichloromethane and dibromochloromethane.

(2) Halogenated ether: Compound containing carbon (C), hydrogen (H), oxygen (O) and halogen (X) (where X = F, Cl, Br and/or I) having the general formula $C_nH_yX_zO$, where $y + z = 2n + 2$; the oxygen is bonded to two carbons; n, y and z are integer variables; n is equal to or greater than two, y is equal to or greater than zero and z is equal to or greater than one.

(3) Halobenzenes and substituted halobenzenes: Derivatives of benzene which have at least one halogen atom attached to the ring and which may or may not have straight or branched chain hydrocarbon, nitrogen or oxygen substituents.

(4) Benzene and alkyl- or nitrogen-substituted benzenes: Benzene or a derivative of benzene which has either an alkyl- and/or a nitrogen-substituent.

(5) Substituted, unsaturated hydrocarbons: A straight or branched chain unsaturated hydrocarbon compound containing one of the following: halogen, aldehyde, nitrile, amide.

(6) Halogenated non-aromatic cyclic hydrocarbons: A non-aromatic cyclic compound containing a halogen.

---

*Note: **Determining the applicability of the POC groundwater standard to a specific substance can be a complex process that should not be undertaken using these definitions alone. Refer to Section III of the Introduction of this TOGS (page 7) for instructions.**

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER

October, 1993

Notes: 1. This index refers the user to either Table 1, 2 or 3 of this TOGS. Entries within each Table are listed alphabetically. As this index indicates, a few entries are listed in both Tables 1 and 3.

2. Where an entry includes multiple substances, underlining identifies the specific substance that corresponds to the CAS number listed. Entries having no CAS number are indicated by "NA" (not applicable).

3. CAS numbers that represent groups of substances, including pairs of cis- and trans- isomers, may not be included in this index. The user may need to determine individual substances and CAS numbers.

CAS Number	Entry	Table
NA	Alkyl diphenyl oxide sulfonates	1
NA	Aluminum, ionic	1
NA	Aminomethylene phosphonic acid salts	1
NA	Ammonia and Ammonium	1
NA	Antimony	1
NA	Arsenic	1
NA	Aryltriazoles	1
NA	Barium	1
NA	Beryllium	1
NA	Boric acid, Borates and Metaborates	1
NA	Boron	1
NA	Bromide	1
NA	Butyl isopropyl phthalate	1
NA	Cadmium	1
NA	Chloramben	1
NA	Chloride	1
NA	Chlorinated dibenzo-p-dioxins and Chlorinated dibenzofurans	1
NA	Chlorine, Total Residual	1
NA	Chromium	1
NA	Chromium (hexavalent)	1
NA	Cobalt	1
NA	Copper	1

INDEX OF TOGS 1.1.1, TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
NA	Cyanide	1
NA	Dalapon	1
NA	Fluoride	1
NA	Foaming agents	1
NA	Gross alpha radiation	1
NA	Gross beta radiation	1
NA	Iron; Iron and Manganese	1;1
NA	Isothiazolones, total; Isothiazolones	1;3
NA	Lead	1
NA	Linear alkylbenzene sulfonates (LAS)	1;3
NA	Magnesium	1
NA	Manganese; Iron and Manganese	1;1
NA	Mercury	1
NA	Methylbenz(a)anthracenes	1
NA	Nickel	1
NA	Nitrate and Nitrite, total	1
NA	Nitrilotriacetic acid	1
NA	Nitrite; Nitrate and Nitrite, total	1;1
NA	Phenolic compounds (total phenols)	1
NA	Phenols, total chlorinated	1
NA	Phenols, total unchlorinated	1
NA	Phosphorus	1
NA	Picloram	1
NA	Polychlorinated biphenyls	1
NA	Principal organic contaminant	1
NA	Quaternary ammonium compounds	1;3
NA	Radium 226; Radium 226 and Radium 228	1;1
NA	Radium 226 and Radium 228	1
NA	Selenium	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
NA	Silver	1
NA	Sodium	1
NA	Strontium 90	1
NA	Sulfate	1
NA	Sulfides, total	1
NA	Sulfite	1
NA	Thallium	1
NA	Tritium	1
NA	Uranyl ion	1
NA	Vanadium	1
NA	Zinc	1
50-00-0	Formaldehyde	3
50-29-3	DDT, DDD & DDE	1
50-32-8	Benzo(a)pyrene	1
50-55-5	Reserpine	3
52-51-7	Bronopol	3
52-85-7	Famphur	3
53-96-3	2-Acetylaminofluorene	3
55-18-5	N-Nitrosodiethylamine	3
55-70-3	Dibenz(a,h)anthracene	3
56-23-5	Carbon tetrachloride	1
56-35-9	Tributyltin oxide	1
56-38-2	Parathion & Methyl parathion	1
56-49-5	3-Methylcholanthrene	3
56-55-3	Benz(a)anthracene	1
56-57-5	4-Nitroquinoline-1-oxide	3
57-14-7	1,1-Dimethylhydrazine	3
57-24-9	Strychnine	3
57-74-9	Chlordane	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
57-97-6	7, 12-Dimethylbenz(a)anthracene	3
58-55-6	Propylene glycol	3
58-55-9	Theophylline	1
58-89-9	Hexachlorocyclohexanes (Gamma Isomer)	1
59-87-0	Nitrofurazone	3
59-89-2	N-Nitrosomorpholine	3
60-11-7	4-(Dimethylamino)azobenzene	3
60-29-7	Ethyl ether	3
60-51-5	Dimethoate	3
60-57-1	Aldrin and Dieldrin; Dieldrin	1;1
62-38-4	Phenylmercuric acetate	3
62-44-2	Phenacitin	3
62-50-0	Ethyl methane sulfonate	3
62-53-3	Aniline	1
62-56-6	Thiourea	3
62-75-9	N-Nitrosodimethylamine	3
63-25-2	Carbaryl	1
64-18-6	Formic acid	3
65-85-0	Benzoic acid	3
66-27-3	Methylmethanesulfonate	3
67-20-9	Nitrofurantoin	3
67-45-8	Furazolidone	3
67-56-1	Methanol	3
67-63-0	Isopropyl alcohol	3
67-64-1	Acetone	1
67-66-3	Chloroform	1
67-72-1	Hexachloroethane	2
68-12-2	Dimethylformamide	1
70-30-4	Hexachlorophene	2

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
70-55-3	4-Methylbenzene sulfonamide	3
71-23-8	1-Propanol	3
71-36-3	1-Butanol	3
71-43-2	Benzene	1
71-55-6	1,1,1-Trichloroethane	1
72-20-8	Endrin	1
72-43-5	Methoxychlor	1
72-54-8	DDT, DDD, & DDE	1
72-55-9	DDT, DDD & DDE	1
74-11-3	4-Chlorobenzoic acid	3
74-83-9	Bromomethane	1
74-87-3	Methyl chloride	1
74-88-4	Methyl iodide	2
74-89-5	Methylamine	3
74-95-3	Dibromomethane	1
74-97-5	Bromochloromethane	1
75-00-3	Chloroethane	1
75-01-4	Vinyl chloride	1
75-05-8	Acetonitrile	3
75-09-2	Methylene chloride	1
75-15-0	Carbon disulfide	3
75-21-8	Ethylene oxide	1
75-25-2	Bromoform	1
75-27-4	Bromodichloromethane	1
75-31-0	Isopropylamine	3
75-34-3	1,1-Dichloroethane	1
75-35-4	1,1-Dichloroethylene	1
75-43-4	Dichlorofluoromethane	1
75-56-9	Propylene oxide	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
75-60-5	Cacodylic acid	3
75-69-4	Trichlorofluoromethane	1
75-71-8	Dichlorodifluoromethane	1
75-86-5	Acetone cyanohydrin	3
75-87-6	Chloral	3
76-01-7	Pentachloroethane	2
76-12-0	1,2-Difluoro-1,1,2,2-tetrachloroethane	2
76-13-1	Trichlorotrifluoroethanes(1,1,2-Trichloro-1,2,2-trifluoroethane)	1
76-44-8	Heptachlor & Heptachlor epoxide	1
77-47-4	Hexachlorocyclopentadiene	1
77-58-7	Dibutyltin dilaurate	3
77-73-6	Dicyclopentadiene	3
78-00-2	Tetraethyl lead	3
78-59-1	Isophorone	1
78-83-1	Isobutyl alcohol	3
78-87-5	1,2-Dichloropropane	1
78-93-3	Methyl ethyl ketone	1
78-99-9	Dichloropropanes (1,1-)	1
79-00-5	1,1,2-Trichloroethane	1
79-01-6	Trichloroethylene	1
79-06-1	Acrylamide	2
79-10-7	Acrylic acid	1
79-11-8	Chloroacetic acid	3
79-20-9	Methyl acetate	3
79-34-5	1,1,2,2-Tetrachloroethane	1
79-39-0	Methacrylamide	3
79-41-4	Methacrylic acid	1
79-45-8	Dimethyldithiocarbamate	3
79-46-9	2-Nitropropane	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
80-15-9	Isopropylbenzene hydroperoxide	3
80-62-6	Methyl methacrylate	1
81-81-2	Warfarin	3
82-68-8	Pentachloronitrobenzene	1
83-32-9	Acenaphthene	1
83-79-4	Rotenone	3
84-66-2	Diethyl phthalate	1
84-74-2	Di-n-butylphthalate	1
85-00-7	Diquat dibromide	1
85-01-8	Phenanthrene	1
85-44-9	1,3-Isobenzofurandione	3
85-68-7	Butyl benzyl phthalate	1
86-30-6	N-Nitrosodiphenylamine	1
86-50-0	Azinphosmethyl	1
86-73-7	Fluorene	1
86-74-8	Carbazole	3
87-41-2	1(3H)-Isobenzofuranone	3
87-59-2	2,3-Dimethylaniline	2
87-61-6	Trichlorobenzenes (1,2,3-)	1
87-62-7	2,6-Dimethylaniline	2
87-68-3	Hexachlorobutadiene	1
87-86-5	Pentachlorophenol	1
88-19-7	2-Methyl benzene sulfonamide	3
88-66-4	alpha, alpha,2-Trichlorotoluene	1
88-72-2	2-Nitrotoluene	2
88-73-3	2-Chloronitrobenzene	2
88-74-4	2-Nitroaniline	2
88-85-7	Dinoseb	1
91-20-3	Naphthalene	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
91-22-5	Quinoline	3
91-57-6	2-Methylnaphthalene	3
91-58-7	2-Chloronaphthalene	1
91-59-8	2-Napthylamine	3
91-80-5	Methapyrilene	3
91-94-1	3,3'-Dichlorobenzidine	2
92-52-4	1,1'-Biphenyl	2
92-67-1	4-Aminobiphenyl	2
92-87-5	Benzidine	1
93-14-1	Guaifenesin	1
93-65-2	2-(4-Chloro-2-methylphenoxy)propionic acid	3
93-72-1	2,4,5-Trichlorophenoxypropionic acid	1
93-76-5	2,4,5-Trichlorophenoxyacetic acid	1
94-59-7	Safrole	3
94-74-6	2-Methyl-4-chlorophenoxyacetic acid	1
94-75-7	2,4-Dichlorophenoxyacetic acid	1
94-81-5	4-(4-Chloro-2-methylphenoxy)butyric acid	3
94-82-6	2,4-DB	3
94-99-5	alpha,2,4-Trichlorotoluene	1
95-47-6	Xylenes (1,2- or ortho)	1
95-49-8	2-Chlorotoluene	1
95-50-1	1,2-Dichlorobenzene & 1,4-Dichlorobenzene; Dichlorobenzenes (1,2-)	1;1
95-51-2	2-Chloroaniline	2
95-53-4	o-Toluidine	1
95-54-5	1,2-Phenylenediamine	2
95-63-6	Trimethylbenzenes (1,2,4-)	1
95-64-7	3,4-Dimethylaniline	2
95-68-1	2,4-Dimethylaniline	2
95-69-2	4-Chloro-o-toluidine	2

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
95-70-5	Toluene-2,5-diamine	2
95-73-8	Dichlorotoluenes (2,4-)	1
95-75-0	Dichlorotoluenes (3,4-)	1
95-78-3	2,5-Dimethylaniline	2
95-79-4	5-Chloro-o-toluidine	1
95-80-7	Toluene-2,4-diamine	2
95-84-1	Aminocresols (2-Amino-para-cresol)	1
95-94-3	Tetrachlorobenzenes (1,2,4,5-)	1
96-12-8	1,2-Dibromo-3-chloropropane	1
96-18-4	1,2,3-Trichloropropane	1
96-19-5	See 13116-57-9 and 13116-58-0	
96-33-3	Methylacrylate	3
96-37-7	Methylcyclopentane	3
96-45-7	Ethylenethiourea	1
97-63-2	Ethyl methacrylate	3
98-01-1	Furfural	3
98-06-6	tert-Butylbenzene	1
98-07-7	alpha, alpha, alpha-Trichlorotoluene	3
98-56-6	4-Chlorobenzotrifluoride	1
98-82-8	Isopropylbenzene	1
98-83-9	α-Methylstyrene	2
98-86-2	Acetophenone	3
98-87-3	alpha, alpha -Dichlorotoluene	3
98-92-0	Niacinamide	1
98-95-3	Nitrobenzene	1
99-04-7	3-Methylbenzoic acid	3
99-08-1	3-Nitrotoluene	2
99-09-2	3-Nitroaniline	2
99-35-4	sym-Trinitrobenzene	2

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
99-55-8	5-Nitro-o-toluidine	2
99-59-2	2-Methoxy-5-nitroaniline	3
99-62-7	1,3-Diisopropylbenzene	2
99-65-0	1,3-Dinitrobenzene	2
99-87-6	4-Isopropyltoluene	1
99-99-0	4-Nitrotoluene	2
100-00-5	4-Chloronitrobenzene	2
100-01-6	4-Nitroaniline	2
100-18-5	1,4-Diisopropylbenzene	2
100-41-4	Ethylbenzene	1
100-42-5	Styrene	1
100-44-7	Benzyl chloride	3
100-51-6	Benzyl alcohol	3
100-52-7	Benzaldehyde	3
100-61-8	N-Methylaniline	2
100-63-0	Phenylhydrazine	2
100-64-1	Cyclohexanone oxime	3
100-66-3	Anisole	3
100-75-4	N-Nitrosopiperidine	3
100-80-1	3-Methylstyrene	1
101-14-4	4,4'-Methylene-bis-(2-chloroaniline)	2
101-55-3	4-Bromophenylphenylether	3
101-61-1	4,4'-Methylene-bis-(N,N'-dimethyl)aniline	2
101-84-8	Phenyl ether	1
102-47-6	alpha, 3,4-Trichlorotoluene	1
103-23-1	Di(2-ethylhexyl)adipate	1
103-33-3	Azobenzene	1
103-65-1	n-Propylbenzene	1
103-82-2	Benzeneacetic acid	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
104-51-8	n-Butylbenzene	1
104-87-0	4-Methylbenzaldehyde	3
105-11-3	1,4-Quinone dioxide	3
105-60-1	Caprolactam	3
106-37-6	1,4-Dibromobenzene	2
106-42-3	Xylenes (1,4- or para)	1
106-43-4	4-Chlorotoluene	1
106-46-7	1,2-Dichlorobenzene and 1,4-Dichlorobenzene; Dichlorobenzenes (1,4-)	1;1
106-47-8	4-Chloroaniline	2
106-49-0	4-Aminotoluene	2
106-50-3	1,4-Phenylenediamine	2
106-89-8	Epichlorohydrin	3
106-93-4	Ethylene dibromide	1
107-02-8	Acrolein	2
107-05-1	Allyl chloride	2
107-06-2	1,2-Dichloroethane	1
107-07-3	Ethylene chlorohydrin	1
107-12-0	Propionitrile	3
107-13-1	Acrylonitrile	1
107-18-6	Allyl alcohol	3
107-21-1	Ethylene glycol	1
107-27-7	Ethyl mercuric chloride	3
107-30-2	Chloromethyl methyl ether	2
108-05-4	Vinyl acetate	3
108-10-1	4-Methyl-2-pentanone	3
108-18-9	Diisopropylamine	3
108-20-3	Diisopropyl ether	3
108-31-6	Maleic anhydride	3
108-36-1	1,3-Dibromobenzene	2

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
108-38-3	Xylenes (1,3- or meta)	1
108-41-8	3-Chlorotoluene	2
108-42-9	3-Chloroaniline	2
108-44-1	3-Aminotoluene	2
108-45-2	1,3-Phenylenediamine	2
108-60-1	Bis(2-chloro-1-methylethyl)ether	2
108-67-8	Trimethylbenzenes (1,3,5-)	1
108-69-0	3,5-Dimethylaniline	2
108-70-3	Trichlorobenzenes (1,3,5-)	1
108-75-8	Trimethylpyridines (2,4,6-)	1
108-86-1	Bromobenzene	1
108-88-3	Toluene	1
108-90-7	Chlorobenzene	1
108-91-8	Cyclohexylamine	3
108-93-0	Cyclohexanol	3
108-94-1	Cyclohexanone	3
108-95-2	Phenol	1
109-06-8	alpha-Picoline	3
109-69-3	1-Chlorobutane	2
109-77-3	Malononitrile	3
109-78-4	Ethylene cyanohydrin	3
109-86-4	2-Methoxyethanol	3
109-89-7	Diethylamine	3
109-99-9	Tetrahydrofuran	1
110-00-9	Furan	3
110-49-6	2-Methoxyethanol acetate	3
110-54-3	n-Hexane	3
110-57-6	trans-1,4-Dichloro-2-butene	2
110-75-8	2-Chloroethyl vinyl ether	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
110-80-5	2-Ethoxyethanol	3
110-82-7	Cyclohexane	3
110-83-8	Cyclohexene	3
110-86-1	Pyridine	1
111-15-9	2-Ethoxyethanol acetate	3
111-44-4	Bis(2-chloroethyl)ether	1
111-46-6	Diethylene glycol	3
111-70-6	1-Heptanol	3
111-90-0	Diethylene glycol monoethyl ether	3
111-91-1	Bis(2-chloroethoxy)methane	2
112-31-2	Decanal	3
112-34-5	Butoxyethoxyethanol	1
115-07-1	1-Propene	3
115-29-7	Endosulfan	1
115-86-6	Triphenyl phosphate	1
116-06-3	Aldicarb; Aldicarb and Methomyl	1;1
117-80-6	2,3-Dichloro-1,4-napthoquinone	3
117-81-7	Bis(2-ethylhexyl)phthalate	1
117-84-0	Di-n-octyl phthalate	1
118-69-4	Dichlorotoluenes (2,6-)	1
118-74-1	Hexachlorobenzene	1
118-75-2	Chloranil	2
118-90-1	2-Methylbenzoic acid	3
118-96-7	2,4,6-Trinitrotoluene	2
119-90-4	3,3'-Dimethoxybenzidine	3
119-93-7	3,3'-Dimethylbenzidine	2
120-12-7	Anthracene	1
120-58-1	Isosafrole	3
120-61-6	Dimethylterephthalate	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
120-82-1	Trichlorobenzenes (1,2,4-)	1
120-83-2	2,4-Dichlorophenol	1
120-92-3	Cyclopentanone	3
121-14-2	2,4-Dinitrotoluene	2
121-44-8	Triethylamine	3
121-69-7	N,N-Dimethyl aniline	1
121-73-3	3-Chloronitrobenzene	2
121-75-5	Malathion	1
121-82-4	Cyclotrimethylenetrinitramine	3
122-09-8	alpha, alpha-Dimethylphenethylamine	2
122-34-9	Simazine	1
122-39-4	Diphenylamine	2
122-42-9	Propham	1
122-66-7	Diphenylhydrazines (1,2-)	1
123-31-9	Hydroquinone	1
123-33-1	Maleic hydrazide	3
123-73-9	trans-2-Butenal	2
123-91-1	1,4-Dioxane	3
124-09-4	Hexamethylene diamine	3
124-19-6	Nonanal	3
124-40-3	Dimethylamine	3
124-48-1	Dibromochloromethane	1
126-39-6	2-Methylethyl-1,3-dioxolane	1
126-68-1	o,o,o-Triethylphosphorothioate	3
126-75-0	Demeton (-S)	1
126-98-7	Methacrylonitrile	2
126-99-8	Chloroprene	2
127-18-4	Tetrachloroethylene	1
129-00-0	Pyrene	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
130-15-4	1,4-Naphthoquinone	3
131-11-3	Dimethyl phthalate	1
132-64-9	Dibenzofuran	3
133-06-2	Captan	1
133-07-3	Folpet	1
134-32-7	1-Napthylamine	3
135-98-8	sec-Butylbenzene	1
136-25-4	Pentanate	3
137-26-8	Thiram	1
137-30-4	Ziram	1
138-86-3	1-Methyl-4-(1-methylethenyl)cyclohexene	3
139-40-2	Propazine	1
140-57-8	Aramite	3
140-88-5	Ethyl acrylate	3
141-05-9	Diethyl maleate	3
141-78-6	Ethyl acetate	3
142-28-9	Dichloropropanes (1,3-)	1
142-59-6	Nabam	1
142-82-5	n-Heptane	3
143-07-7	Dodecanoic acid	3
143-08-8	1-Nonanol	3
143-50-0	Kepone	1
145-73-3	Endothall	1
148-18-5	Sodium diethyldithiocarbamate	3
149-30-4	Mercaptobenzothiazole	1
152-16-9	Octamethylpyrophosphoramine	3
156-59-2	cis-1,2-Dichloroethene	1
156-60-5	trans-1,2-Dichloroethylene	1
191-24-2	Benzo(g,h,i)perylene	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
192-97-2	Benzo(e)pyrene	3
193-39-5	Indeno (1.2.3-cd)pyrene	1
205-99-2	Benzo(b)fluoranthene	1
206-44-0	Fluoranthene	1
207-08-9	Benzo(k)fluoranthene	1
208-96-8	Acenaphthylene	3
218-01-9	Chrysene	1
271-61-4	Benzisothiazole	1
297-97-2	o,o-Diethyl-o-2-pyrazinyl phosphorothioate	3
298-00-0	Parathion & Methyl parathion	1
298-02-2	Phorate & Disulfoton	1
298-03-3	Demeton (-o)	1
298-04-4	Phorate & Disulfoton	1
299-84-3	Ronnel	3
302-01-2	Hydrazine	1;3
309-00-2	Aldrin; Aldrin & Dieldrin	1;1
314-40-9	Bromacil	1
319-84-6	Hexachlorocyclohexanes (alpha)	1
319-85-7	Hexachlorocyclohexanes (beta)	1
319-86-8	Hexachlorocyclohexanes (delta)	1
328-84-7	3,4-Dichlorobenzotrifluoride	1
330-55-2	Linuron	3
333-41-5	Diazinon	1
354-58-5	Trichlorotrifluoroethanes (1,1,1-Trichloro-2,2,2-trifluoroethane)	1
460-35-5	3-Chloro-1,1,1-trifluoropropane	2
462-08-8	Aminopyridines (3-)	1
465-73-6	Isodrin	2
479-18-5	Dyphylline	1
501-52-0	Benzenepropanoic acid	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
504-24-5	Aminopyridines (4-)	1
504-29-0	Aminopyridines (2-)	1
506-68-3	Cyanogen bromide	2
506-77-4	Cyanogen chloride	2
510-15-6	Chlorobenzilate	3
512-56-1	Trimethyl phosphate	3
515-30-0	α-Hydroxy-α-methylbenzeneacetic acid	3
526-73-8	Trimethylbenzenes (1,2,3-)	1
527-84-4	2-Isopropyltoluene	2
529-20-4	2-Methylbenzaldehyde	3
530-50-7	Diphenylhydrazines (1,1-)	1
531-82-8	Furium	3
535-77-3	3-Isopropyltoluene	2
538-39-6	4,4'-Dimethylbibenzyl	2
540-73-8	1,2-Dimethylhydrazine	3
541-73-1	1,3-Dichlorobenzene; Dichlorobenzenes (1,3-)	1;1
542-75-6	See 10061-01-5 and 10061-02-6	
542-88-1	Bis(chloromethyl)ether	2
543-49-7	2-Heptanol	3
563-12-2	Ethion	3
563-58-6	1,1-Dichloropropene	1
577-55-9	1,2-Diisopropylbenzene	2
583-53-9	1,2-Dibromobenzene	2
584-84-9	Toluene diisocyanate	3
589-18-4	4-Methylbenzenemethanol	3
589-38-8	3-Hexanone	3
589-55-9	4-Heptanol	3
589-82-2	3-Heptanol	3
589-93-5	2,5-Lutidine	3

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
591-78-6	2-Hexanone	1
594-18-3	Dibromodichloromethane	1
594-20-7	Dichloropropanes (2,2-)	1
597-64-8	Tetraethyl tin	3
598-77-6	1,1,2-Trichloropropane	1
602-01-7	2,3-Dinitrotoluene	2
602-29-9	2,3,4-Trinitrotoluene	2
603-15-6	3,4,5-Trinitrotoluene	2
606-20-2	2,6-Dinitrotoluene	1
608-73-1	Hexachlorocyclohexanes	1
608-93-5	Pentachlorobenzene	2
610-25-3	2,4,5-Trinitrotoluene	2
610-39-9	3,4-Dinitrotoluene	2
611-15-4	2-Methylstyrene	1
613-12-7	2-Methylanthracene	3
615-54-3	1,2,4-Tribromobenzene	1
617-84-4	Diethyl formamide	3
617-94-7	Dimethylphenylcarbinol	3
618-85-9	3,5-Dinitrotoluene	2
619-15-8	2,5-Dinitrotoluene	2
620-23-5	3-Methylbenzaldehyde	3
621-64-7	N-Nitrosodipropylamine	3
622-97-9	4-Methylstyrene	2
625-86-5	2,5-Dimethylfuran	3
627-26-9	trans-2-Butenenitrile	2
627-44-1	Diethyl mercury	3
630-20-6	1,1,1,2-Tetrachloroethane	1
634-66-2	Tetrachlorobenzenes (1,2,3,4-)	1
634-90-2	Tetrachlorobenzenes (1,2,3,5-)	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
634-93-5	2,4,6-Trichloroaniline	2
637-50-3	3-Phenyl-1-propene	1
643-79-8	1,2-Benzenedicarboxaldehyde	3
683-18-1	Dibutyltin chloride	3
684-93-5	N-Nitroso-N-methyl urea	3
709-98-8	Propanil	1
759-96-4	Ethyl di-n-propylthiocarbamate (EPTC)	3
764-41-0	See 1476-11-5 and 110-57-6	
765-34-4	Glycidaldehyde	3
766-90-5	cis-1-Phenyl-1-propene	1
767-58-8	2,3-Dihydro-1-methyl-1H-indene	3
779-02-2	9-Methylanthracene	3
823-40-5	Toluene-2,6-diamine	2
834-12-8	Ametryn	1
873-66-5	trans-1-Phenyl-1-propene	1
873-94-9	3,3,5-Trimethylcyclohexanone	3
923-02-4	Methylolmethacrylamide	3
924-16-3	N-Nitrosodi-N-butylamine	3
930-55-2	N-Nitrosopyrrolidine	3
957-51-7	Diphenamid	1
959-98-8	Endosulfan I	3
1024-57-3	Heptachlor & Heptachlor epoxide	1
1031-07-8	Endosulfan sulfate	3
1071-83-6	Glyphosate	1
1114-71-2	Pebulate	3
1122-60-7	Nitrocyclohexane	3
1163-19-5	Bis(pentabromophenyl)ether	3
1190-76-7	cis-2-Butenenitrile	2
1321-12-6	See 88-72-2; 99-08-1 and 99-99-0	

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
-CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
1330-20-7	Xylenes	1
1463-84-6	Trimethylpyridines (2,3,6-)	1
1476-11-5	cis-1,4-Dichloro-2-butene	2
1563-66-2	Carbofuran	1
1582-09-8	Trifluralin	1
1589-49-7	Propylene glycol monomethyl ether	3
1610-18-0	Prometon	1
1634-04-4	Methyl tert-butyl ether	3
1646-87-3	Aldicarb sulfoxide	1
1646-88-4	Aldicarb sulfone	1
1689-84-5	Bromoxynil	3
1702-17-6	Clopyralid	3
1807-55-2	4,4'-Methylene-bis-(N-methyl)aniline	2
1861-32-1	Dimethyl tetrachloroterephthalate	1
1861-40-1	Benefin	1
1863-63-4	Benzoic acid, ammonium salt	3
1875-92-9	Dimethylbenzylammonium chloride	3
1888-71-7	Hexachloropropene	2
1897-45-6	Chlorothalonil	2
1912-24-9	Atrazine	1
1918-00-9	Dicamba	1
1918-16-7	Propachlor	1
1929-77-7	Vernolate	3
2008-41-5	Butylate	1
2014-83-7	alpha, 2,6-Trichlorotoluene	1
2077-46-5	2,3,6-Trichlorotoluene	1
2104-96-3	Bromophos	3
2136-79-0	Tetrachloroterephthalic acid	1
2164-17-2	Fluometuron	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
2207-04-7	trans-1,4-Dimethyl cyclohexane	3
2212-67-1	Molinate	3
2303-16-4	Diallate	3
2303-17-5	Triallate	3
2385-85-5	Mirex	1
2425-06-1	Captafol	3
2439-10-3	Dodecylguanidine acetate and Dodecyguanidine hydrochloride	1
2641-56-7	Diethyltin dycaprylate	3
2809-21-4	1-Hydroxyethylidene-1,1-diphosphonic acid	1
2835-95-2	Aminocresols (5-Amino-ortho-cresol)	1
2835-99-6	Aminocresols (4-Amino-meta-cresol)	1
2921-88-2	Chlorpyrifos	3
3252-43-5	2,2-Dibromo-3-nitrilopropionamide & Dibromoacetonitrile; Dibromoacetonitrile	1;3
3558-60-9	Methoxyethylbenzenes ([2-Methoxyethyl]benzene)	1
3689-24-5	Tetraethyl dithiopyrophosphate	3
4013-34-7	Methoxyethylbenzenes ([1-Methoxyethyl]benzene)	1
4170-30-3	See 123-73-9 and 15798-64-8	
4376-18-5	Methylphthalate	3
4685-14-7	Paraquat	1
4726-14-1	Nitralin	1
4786-20-3	See 1190-76-7 and 627-26-9	
4957-14-6	4,4'-Dimethyldiphenylmethane	2
5131-66-8	Butoxypropanol	1
5197-80-8	Dimethylethylbenzylammonium chloride	3
5216-25-1	alpha, alpha, alpha, 4-Tetrachlorotoluene	2
5234-68-4	Carboxin	1
5902-51-2	Terbacil	1
6108-10-7	Hexachlorocyclohexanes (epsilon)	1
6317-18-6	Methylene bisthiocyanate	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
6639-30-1	2,4,5-Trichlorotoluene	1
7005-72-3	4-Chlorophenyl phenyl ether	3
7359-72-0	2,3,4-Trichlorotoluene	1
7421-93-4	Endrin aldehyde	2
7486-38-6	Sodium adipate, disodium salt	3
7664-41-7	Ammonia and Ammonium	1
7783-06-4	Hydrogen sulfide	1
8001-35-2	Toxaphene	1
8018-01-7	Mancozeb	1
8065-48-3	Demeton	1;3
9003-27-4	Polybutene(1-propene, 2-methyl homopolymer)	3
10061-01-5	cis-1,3-Dichloropropene	1
10061-02-6	trans-1,3-Dichloropropene	1
10222-01-2	2,2-Dibromo-3-nitrilopropionamide & Dibromoacetonitrile	1
10595-95-6	N-Nitrosomethylethylamine	3
12002-48-1	Trichlorobenzenes	1
12122-67-7	Zineb	1
12408-10-5	Tetrachlorobenzenes	1
12427-38-2	Maneb	1
13071-79-9	Terbufos	1
13116-57-9	cis-1,2,3-Trichloropropene	1
13116-58-0	trans-1,2,3-Trichloropropene	1
13560-89-9	Dechlorane Plus	1
13590-97-1	Dodecylguanidine acetate and Dodecyguanidine hydrochloride	1
13940-94-8	alpha, alpha, 4-Trichlorotoluene	1
14484-64-1	Ferbam	1
14838-15-4	Phenylpropanolamine	1
15798-64-8	cis-2-Butenal	2
15972-60-8	Alachlor	1

INDEX OF TOGS 1.1.1. TABLE 1, 2 AND 3 ENTRIES BY
CHEMICAL ABSTRACTS SERVICE REGISTRY (CAS) NUMBER
October, 1993
(Continued)

CAS Number	Entry	Table
16655-82-6	3-Hydroxycarbofuran	3
16752-77-5	Aldicarb & Methomyl	1
17059-48-2	2,3-Dihydro-1,6-dimethyl-1H-indene	3
18292-97-2	2,3,6-Trinitrotoluene	2
19089-47-5	Propylene glycol monoethyl ether	3
19398-61-9	Dichlorotoluenes (2,5-)	1
21087-64-9	Metribuzin	1
21564-17-0	2-(Thiocyanomethylthio)benzothiazole	3
21725-46-2	Cyanazine	3
22967-92-6	Methyl mercury	3
23135-22-0	Oxamyl	1
23184-66-9	Butachlor	1
23749-65-7	2,4,6-Trichlorotoluene	1
23950-58-5	Pronamide	3
25056-70-6	Hexanate	3
25136-55-4	Dimethyldioxane	3
25154-54-5*	See 99-65-0	
25167-93-5	See 88-73-3; 100-00-5 and 121-73-3	
25168-05-2*	See 95-49-8 and 106-43-4	
25186-47-4	Dichlorotoluenes (3,5-)	1
25265-76-3	See 95-54-5; 106-50-3 and 108-45-2	
25321-09-9	See 99-62-7; 100-18-5 and 577-55-9	
25321-14-6	See 121-14-2; 602-01-7; 606-20-2; 610-39-9; 618-85-9 and 619-15-8	
25321-22-6	Dichlorobenzenes (See also 95-50-1; 106-46-7 and 541-73-1)	1
25551-13-7	Trimethylbenzenes (mixed isomers)	1
25973-55-1	2-(2-Hydroxy-3,5-di-tert-pentylphenyl)benzotriazole	1
26399-36-0	Profluralin	3
26445-05-6	Aminopyridines	1
26523-64-8	Trichlorotrifluoroethanes	1

CAS Number	Entry	Table
27134-26-5	See 95-51-2; 106-47-8 and 108-42-9	
29091-21-2	Prodiamine	3
29385-43-1	Tolyltriazole	1
29611-84-5*	See 108-75-8 and 1462-84-6	
29761-21-5	Isodecyl diphenyl phosphate	1;3
29797-40-8	See 95-73-8; 95-75-0; 118-69-4; 19398-61-9; 25186-47-4 and 32768-54-0	
30560-19-1	Acephate	3
31600-69-8	4-(1-Methylethoxy)-1-butanol	1
32768-54-0	Dichlorotoluenes (2,3-)	1
33213-65-9	Endosulfan II	3
33820-53-0	Isopropalin	2
34014-18-1	Tebuthiuron	1
35448-14-7	Oxalic acid, benzyl ester	3
37299-86-8	Rhodamine WT	3
39196-18-4	Thiofanox	3
40487-42-1	Pendimethalin	2
51218-45-2	Metolachlor	3
51235-04-2	Hexazinone	1
53494-70-5	Endrin ketone	2
56961-86-5	2,3,5-Trichlorotoluene	1
59536-65-1	Polybrominated biphenyls (PBBs)	2
68391-01-5	Alkyl dimethyl benzyl ammonium chloride	1
95266-40-3	Cimectacarb	3

* This non-individual CAS number also refers to one or more individual substances that are not specifically listed in Tables 1 and 2. These individual substances, however, may be encompassed by a group entry in Table 1 (for example, Principal Organic Contaminant or Phenolic Compounds). Refer to IB of the Introduction for an explanation of group entries.

APPENDIX B

NYSDEC TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM (TAGM) No. - FOR THE DETERMINATION OF SOIL CLEANUP OBJECTIVES AND CLEANUP LEVELS DATED JANUARY 1994

HWR-94-4046
January 24, 1994
(REVISED)

15 (2-75)

New York State Department of Environmental Conservation

MEMORANDUM

TO: Regional Hazardous Waste Remediation Engineers, Bureau Directors and Section Chiefs
FROM: Michael J. O'Toole, Jr., Director, Division of Hazardous Waste Remediation
SUBJECT: Revised TAGM - Determination of Soil Cleanup Objectives and Cleanup Levels

DATE: JAN 24 1994

Attached is the revised Division Technical and Administrative Guidance Memorandum (TAGM) on Determination of Soil Cleanup Objectives and Cleanup Levels in its final form. The changes are to the Tables of Appendix A. They are minor in nature and do not change the content of the TAGM. The changes include:

1. Alphabetizing contaminants in Table 1 through Table 4.

2. The addition of a few contaminants to Table 1 and Table 2.

3. Table 4 has been revised to indicate that background levels for lead vary widely and provide a range for undeveloped and developed areas. It also has been revised to indicate that site-specific form(s) of cyanide should be considered when establishing soil cleanup objectives for cyanide.

If you have any questions, please contact Ajay Shroff of my staff at (518)485-8792.

Attachment
cc: T. Jorling
J. Lacey
M. Gerstman
A. DeBarbieri
E. Sullivan
T. Donovan
C. Sullivan
J. Eckl
R. Davies
R. Dana
C. Goddard
C. Costopoulos
P. Counterman
J. Davis
J. Kelleher
J. Colquhoun
D. Persson
J. Printup
M. Bermingham
D. Johnson
M. Kadlecek
Regional Directors
Regional Engineers
Regional Solid and Haz. Waste Engrs.
Regional Citizen Participation Spec.

New York State Department of Environmental Conservation

MEMORANDUM

TO: Regional Haz. Waste Remediation Engineers, Bureau Dirs. & Section Chiefs
FROM: Michael J. O'Toole, Jr., Director, Div. of Hazardous Waste Remediation
SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM: DETERMINATION OF SOIL CLEANUP OBJECTIVES AND CLEANUP LEVELS
DATE:

JAN 24 1994

The cleanup goal of the Department is to restore inactive hazardous waste sites to predisposal conditions, to the extent feasible and authorized by law. However, it is recognized that restoration to predisposal conditions will not always be feasible.

1. INTRODUCTION:

This TAGM provides a basis and procedure to determine soil cleanup levels at individual Federal Superfund, State Superfund, 1986 EQBA Title 3 and Responsible Party (RP) sites, when the Director of the DHWR determines that cleanup of a site to predisposal conditions is not possible or feasible.

The process starts with development of soil cleanup objectives by the Technology Section for the contaminants identified by the Project Managers. The Technology Section uses the procedure described in this TAGM to develop soil cleanup objectives. Attainment of these generic soil cleanup objectives will, at a minimum, eliminate all significant threats to human health and/or the environment posed by the inactive hazardous waste site. Project Managers should use these cleanup objectives in selecting alternatives in the Feasibility Study (FS). Based on the proposed selected remedial technology (outcome of FS), final site specific soil cleanup levels are established in the Record of Decision (ROD) for these sites.

It should be noted that even after soil cleanup levels are established in the ROD, these levels may prove to be unattainable when remedial construction begins. In that event, alternative remedial actions or institutional controls may be necessary to protect the environment.

2. BASIS FOR SOIL CLEANUP OBJECTIVES:

The following alternative bases are used to determine soil cleanup objectives:

(a) Human health based levels that correspond to excess lifetime

cancer risks of one in a million for Class A[1] and B[2] carcinogens, or one in 100,000 for Class C[3] carcinogens. These levels are contained in USEPA's Health Effects Assessment Summary Tables (HEASTs) which are compiled and updated quarterly by the NYSDEC's Division of Hazardous Substances Regulation;

(b) Human health based levels for systemic toxicants, calculated from Reference Doses (RfDs). RfDs are an estimate of the daily exposure an individual (including sensitive individuals) can experience without appreciable risk of health effects during a lifetime. An average scenario of exposure in which children ages one to six (who exhibit the greatest tendency to ingest soil) is assumed. An intake rate of 0.2 gram/day for a five-year exposure period for a 16-kg child is assumed. These levels are contained in USEPA's Health Effects Assessment Summary Tables (HEASTs) which are compiled and updated quarterly by the NYSDEC's Division of Hazardous Substances Regulation;

(c) Environmental concentrations which are protective of groundwater/drinking water quality; based on promulgated or proposed New York State Standards;

(d) Background values for contaminants; and

(e) Detection limits.

A recommendation on the appropriate cleanup objective is based on the criterion that produces the most stringent cleanup level using criteria a, b, and c for organic chemicals, and criteria a, b, and d for heavy metals. If criteria a and/or b are below criterion d for a contaminant, its background value should be used as the cleanup objective. However, cleanup objectives developed using this approach must be, at a minimum, above the method detection limit (MDL) and it is preferable to have the soil cleanup objectives above the Contract Required Quantitation Limit (CRQL) as defined by NYSDEC. If the cleanup objective of a compound is "non-detectable", it should mean that it is not detected at the MDL. Efforts should be made to obtain the best MDL detection possible when selecting a laboratory and analytical protocol.

The water/soil partitioning theory is used to determine soil cleanup objectives which would be protective of groundwater/drinking water quality for its best use. This theory is conservative in nature and assumes that contaminated soil and groundwater are in direct contact. This theory is based upon the ability of organic matter in soil to adsorb organic chemicals. The approach predicts the maximum amount of contamination that may remain in soil so that leachate from the contaminated soil will not violate groundwater and/or drinking water

standards.

(1) Class A are proved human carcinogens
(2) Class B are probable human carcinogens
(3) Class C are possible human carcinogens

This approach is not used for heavy metals, which do not partition appreciably into soil organic matter. For heavy metals, eastern USA or New York State soil background values may be used as soil cleanup objectives. A list of values that have been tabulated is attached. Soil background data near the site, if available, is preferable and should be used as the cleanup objective for such metals. Background samples should be free from the influences of this site and any other source of contaminants. Ideal background samples may be obtained from uncontaminated upgradient and upwind locations.

3. DETERMINATION OF SOIL CLEANUP GOALS FOR ORGANICS IN SOIL FOR PROTECTION OF WATER QUALITY

Protection of water quality from contaminated soil is a two-part problem. The first is predicting the amount of contamination that will leave the contaminated media as leachate. The second part of the problem is to determine how much of that contamination will actually contribute to a violation of groundwater standards upon reaching and dispersing into groundwater. Some of the contamination which initially leaches out of soil will be absorbed by other soil before it reaches groundwater. Some portion will be reduced through natural attenuation or other mechanism.

PART A: PARTITION THEORY MODEL

There are many test and theoretical models which are used to predict leachate quality given a known value of soil contamination. The Water-Soil Equilibrium Partition Theory is used as a basis to determine soil standard or contamination limit for protection of water quality by most of the models currently in use. It is based on the ability of organic carbon in soil to adsorb contamination. Using a water quality value which may not be exceeded in leachate and the partition coefficient method, the equilibrium concentration (Cs) will be expressed in the same units as the water standards. The following expression is used:

Allowable Soil Concentration $Cs = f \times Koc \times Cw$ . . . . (1)

Where: f = fraction of organic carbon of the natural soil medium.

Koc = partition coefficient between water and soil media. Koc can be estimated by the following equation:

$\log Koc = 3.64 - 0.55 \log S$

S = water solubility in ppm
Cw = appropriate water quality value from TOGS 1.1.1

Most Koc and S values are listed in the Exhibit A-1 of the USEPA Superfund Public Health Evaluation Manual (EPA/540/1-86/060). The Koc values listed in this manual should be used for the purpose. If the Koc value for a contaminant is not listed, it should be estimated using the above mentioned equation.

PART B: PROCEDURE FOR DETERMINATION OF SOIL CLEANUP OBJECTIVES

When the contaminated soil is in the unsaturated zone above the water table, many mechanisms are at work that prevent all of the contamination that would leave the contaminated soil from impacting groundwater. These mechanisms occur during transport and may work simultaneously. They include the following: (1) volatility, (2) sorption and desorption, (3) leaching and diffusion, (4) transformation and degradation, and (5) change in concentration of contaminants after reaching and/or mixing with the groundwater surface. To account for these mechanisms, a correction factor of 100 is used to establish soil cleanup objectives. This value of 100 for the correction is consistent with the logic used by EPA in its Dilution Attenuation Factor (DAF) approach for EP Toxicity and TCLP. (Federal Register/Vol. 55, No. 61, March 29, 1990/Pages 11826-27). Soil cleanup objectives are calculated by multiplying the allowable soil concentration by the correction factor. If the contaminated soil is very close (<3' - 5') to the groundwater table or in the groundwater, extreme caution should be exercised when using the correction factor of 100 (one hundred) as this may not give conservative cleanup objectives. For such situations the Technology Section should be consulted for site-specific cleanup objectives.

Soil cleanup objectives are limited to the following maximum values. These values are consistent with the approach promulgated by the States of Washington and Michigan.

1) Total VOCs $\leq$ 10 ppm.
2) Total Semi VOCs $\leq$ 500 ppm.
3) Individual Semi VOCs $\leq$ 50 ppm.
4) Total Pesticides $\leq$ 10 ppm.

One concern regarding the semi-volatile compounds is that some of these compounds are so insoluble that their Cs values are fairly large. Experience (Draft TOGS on Petroleum

Contaminated Soil Guidance) has shown that soil containing some of these insoluble substances at high concentrations can exhibit a distinct odor even though the substance will not leach from the soil. Hence any time a soil exhibits a discernible odor nuisance, it shall not be considered clean even if it has met the numerical criteria.

4. DETERMINATION OF FINAL CLEANUP LEVELS:

Recommended soil cleanup objectives should be utilized in the development of final cleanup levels through the Feasibility Study (FS) process. During the FS, various alternative remedial actions developed during the Remedial Investigation (RI) are initially screened and narrowed down to the list of potential alternative remedial actions that will be evaluated in detail. These alternative remedial actions are evaluated using the criteria discussed in TAGM 4030, Selection of Remedial Actions at Inactive Hazardous Waste Sites, revised May 15, 1990, and the preferred remedial action will be selected. After the detailed evaluation of the preferred remedial action, the final cleanup levels which can be actually achieved using the preferred remedial action must be established. Remedy selection, which will include final cleanup levels, is the subject of TAGM 4030.

Recommended soil cleanup objectives that have been calculated by the Technology Section are presented in Appendix A. These objectives are based on a soil organic carbon content of 1% (0.01) and should be adjusted for the actual organic carbon content if it is known. For determining soil organic carbon content, use attached USEPA method (Appendix B). Please contact the Technology Section, Bureau of Program Management for soil cleanup objectives not included in Appendix A.

Attachments

cc: T. Jorling
J. Lacey
M. Gerstman
A. DeBarbieri
E. Sullivan
T. Donovan
C. Sullivan
J. Eckl
R. Davies
R. Dana
C. Goddard
E. McCandless
P. Counterman
J. Davis
J. Kelleher
J. Colquhoun
D. Persson
A. Carlson
M. Birmingham
D. Johnson
B. Hogan
Regional Directors
Regional Engineers
Regional Solid and Haz. Waste Engrs.
Regional Citizen Participation Spec.

APPENDIX A

TABLE 1

Recommended soil cleanup objectives (mg/kg or ppm)

Volatile Organic Contaminants

Contaminant	Partition coefficient Koc	Groundwater Standards/ Criteria Cw ug/l or ppb.	a Allowable Soil conc. ppm. Cs	b ** Soil Cleanup objectives to Protect GW Quality (ppm)	USEPA Health Based (ppm) Carcinogens	Systemic Toxicants	CRQL (ppb)	*** Rec.soil Clnup Objct (ppm)
Acetone	2.2	50	0.0011	0.11	N/A	8,000	10	0.2
Benzene	83	0.7	0.0006	0.06	24	N/A	5	0.06
Benzoic Acid	54*	50	0.027	2.7	N/A	300,000	5	2.7
2-Butanone	4.5*	50	0.003	0.3	N/A	4,000	10	0.3
Carbon Disulfide	54*	50	0.027	2.7	N/A	8,000	5	2.7
Carbon Tetrachloride	110*	5	0.006	0.6	5.4	60	5	0.6
Chlorobenzene	330	5	0.017	1.7	N/A	2,000	5	1.7
Chloroethane	37*	50	0.019	1.9	N/A	N/A	10	1.9
Chloroform	31	7	0.003	0.30	114	800	5	0.3
Dibromochloromethane	N/A	50	N/A	N/A	N/A	N/A	5	N/A
1,2-Dichlorobenzene	1,700	4.7	0.079	7.9	N/A	N/A	330	7.9
1,3-Dichlorobenzene	310 *	5	0.0155	1.55	N/A	N/A	330	1.6
1,4-Dichlorobenzene	1,700	5	0.085	8.5	N/A	N/A	330	8.5
1,1-Dichloroethane	30	5	0.002	0.2	N/A	N/A	5	0.2
1,2-Dichloroethane	14	5	0.001	0.1	7.7	N/A	5	0.1
1,1-Dichloroethene	65	5	0.004	0.4	12	700	5	0.4
1,2-Dichloroethene(trans)	59	5	0.003	0.3	N/A	2,000	5	0.3
1,3-dichloropropene	51	5	0.003	0.3	N/A	N/A	5	0.3
Ethylbenzene	1,100	5	0.055	5.5	N/A	8,000	5	5.5
113 Freon(1,1,2 Trichloro-1,2,2 Trifluoroethane)	1,230*	5	0.060	6.0	N/A	200,000	5	6.0
Methylene chloride	21	5	0.001	0.1	93	5,000	5	0.1
4-Methyl-2-Pentanone	19*	50	0.01	1.0	N/A	N/A	10	1.0
Tetrachloroethene	277	5	0.014	1.4	14	800	5	1.4
1,1,1-Trichloroethane	152	5	0.0076	0.76	N/A	7,000	5	0.8
1,1,2,2-Tetrachloroethane	118	5	0.006	0.6	35	N/A	5	0.6
1,2,3-trichloropropane	68	5	0.0034	0.34	N/A	80	5	0.4
1,2,4-Trichlorobenzene	670 *	5	0.034	3.4	N/A	N/A	330	3.4
Toluene	300	5	0.015	1.5	N/A	20,000	5	1.5
Trichloroethene	126	5	0.007	0.70	64	N/A	5	0.7
Vinyl chloride	57	2	0.0012	0.12	N/A	N/A	10	0.2
Xylenes	240	5	0.012	1.2	N/A	200,000	—	1.2

a. Allowable Soil Concentration Cs = f x Cw x Koc

b. Soil cleanup objective = Cs x Correction Factor (CF)

N/A is not available

* Partition coefficient is calculated by using the following equation:
log Koc = -0.55 log S + 3.64, where S is solubility in water in ppm.
All other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total VOCs < 10 ppm.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1% , and should be adjusted for the actual soil organic carbon content if it is known.

APPENDIX A (cont.)

TABLE 2

Recommended Soil Cleanup Objectives (mg/kg or ppm)

Semi-Volatile Organic Contaminants

Contaminant	Partition coefficient Koc	Groundwater Standards/ Criteria Cw ug/l or ppb.	[a] Allowable Soil conc. ppm. Cs	[b] [**] Soil Cleanup objectives to Protect GW Quality (ppm)	USEPA Health Based (ppm) Carcinogens	USEPA Health Based (ppm) Systemic Toxicants	CRQL (ppb)	Rec.soil Clnup Objct. (ppm)
Acenaphthene	4,600	20	0.9	90.0	N/A	5,000	330	50.0***
Acenaphthylene	2,056*	20	0.41	41.0	N/A	N/A	330	41.0
Aniline	13.8	5	0.001	0.1	123	N/A	330	0.1
Anthracene	14,000	50	7.00	700.0	N/A	20,000	330	50.0***
Benzo(a)anthracene	1,380,000	0.002	0.03	3.0	0.224	N/A	330	0.224 or MDL
Benzo(a)pyrene	5,500,000	0.002(ND)	0.110	11.0	0.0609	N/A	330	0.061 or MDL
Benzo(b)fluoranthene	550,000	0.002	0.011	1.1	N/A	N/A	330	1.1
Benzo(g,h,i)perylene	1,600,000	5	8.0	800	N/A	N/A	330	50.0***
Benzo(k)fluoranthene	550,000	0.002	0.011	1.1	N/A	N/A	330	1.1
bis(2-ethylhexyl)phthalate	8,706*	50	4.35	435.0	50	2,000	330	50.0***
Butylbenzylphthlate	2,430	50	1.215	122.0	N/A	20,000	330	50.0***
Chrysene	200,000	0.002	0.004	0.4	N/A	N/A	330	0.4
4-Chloroaniline	43 ****	5	0.0022	0.22	200	300	330	0.220 or MDL
4-Chloro-3-methylphenol	47	5	0.0024	0.24	N/A	N/A	330	0.240 or MDL
2-Chlorophenol	15*	50	0.008	0.8	N/A	400	330	0.8
Dibenzofuran	1,230*	5	0.062	6.2	N/A	N/A	330	6.2
Dibenzo(a,h)anthracene	33,000,000	50	1,650	165,000	0.0143	N/A	330	0.014 or MDL
3,3'-Dichlorobenzidine	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dichlorophenol	380	1	0.004	0.4	N/A	200	330	0.4
2,4-Dinitrophenol	38	5	0.002	0.2	N/A	200	1,600	0.200 or MDL
2,6 Dinitrotoluene	198*	5	0.01	1.0	1.03	N/A	330	1.0
Diethylphthlate	142	50	0.071	7.1	N/A	60,000	330	7.1
Dimethylphthlate	40	50	0.020	2.0	N/A	80,000	330	2.0
Di-n-butyl phthalate	162*	50	0.081	8.1	N/A	8,000	330	8.1
Di-n-octyl phthlate	2,346*	50	1.2	120.0	N/A	2,000	330	50.0***
Fluoranthene	38,000	50	19	1900.0	N/A	3,000	330	50.0***
Fluorene	7,300	50	3.5	350.0	N/A	3,000	330	50.0***
Hexachlorobenzene	3,900	0.35	0.014	1.4	0.41	60	330	0.41
Indeno(1,2,3-cd)pyrene	1,600,000	0.002	0.032	3.2	N/A	N/A	330	3.2
Isophorone	88.31*	50	0.044	4.40	1,707	20,000	330	4.40
2-methylnaphthalene	727*	50	0.364	36.4	N/A	N/A	330	36.4
2-Methylphenol	15	5	0.001	0.1	N/A	N/A	330	0.100 or MDL
4-Methylphenol	17	50	0.009	0.9	N/A	4,000	330	0.9
Napnthalene	1,300	10	0.130	13.0	N/A	300	330	13.0
Nitrobenzene	36	5	0.002	0.2	N/A	40	330	0.200 or MDL
2-Nitroaniline	86	5	0.0043	0.43	N/A	N/A	1,600	0.430 or MDL
2-Nitrophenol	65	5	0.0033	0.33	N/A	N/A	330	0.330 or MDL
4-Nitrophenol	21	5	0.001	0.1	N/A	N/A	1,600	0.100 or MDL
3-Nitroaniline	93	5	0.005	0.5	N/A	N/A	1,600	0.500 or MDL
Pentachlorophenol	1,022	1	0.01	1.0	N/A	2,000	1,600	1.0 or MDL
Phenanthrene	4,365*	50	2.20	220.0	N/A	N/A	330	50.0***
Phenol	27	1	0.0003	0.03	N/A	50,000	330	0.03 or MDL
Pyrene	13,295*	50	6.65	665.0	N/A	2,000	330	50.0***
2,4,5-Trichlorophenol	89*	1	0.001	0.1	N/A	8,000	330	0.1

a. Allowable Soil Concentration Cs = f x Cw x Koc
b. Soil cleanup objective = Cs x Correction Factor (CF)

N/A is not available
MDL is Method Detection Limit

* Partition coefficient is calculated by using the following equation:
log Koc = -0.55 log S + 3.64, where S is solubility in water in ppm. Other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total VOCs < 10 ppm., Total Semi-VOCs < 500 ppm. and Individual Semi-VOCs < 50 ppm.

**** Koc is derived from the correlation Koc = 0.63 Kow (Determining Soil Response Action Levels..... EPA/540/2-89/057). Kow is obtained from the USEPA computer database 'MAIN'.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1%, and should be adjusted for the actual soil organic carbon content if it is known.

APPENDIX A (cont.)

TABLE 3 -

Recommended soil cleanup objectives (mg/kg or ppm)

Organic Pesticides / Herbicides and PCBs

Contaminant	Partition coefficient Koc	Groundwater Standards/ Criteria Cw ug/l or ppb.	a Allowable Soil conc. ppm. Cs	b ** Soil Cleanup objectives to Protect GW Quality (ppm)	USEPA Health Based (ppm) Carcinogens	Systemic Toxicants	CRQL (ppb)	*** Rec.soil Clnup Objct (ppm)
Aldrin	96,000	ND(<0.01)	0.005	0.5	0.041	2	8	0.041
alpha - BHC	3,800	ND(<0.05)	0.002	0.2	0.111	N/A	8	0.11
beta - BHC	3,800	ND(<0.05)	0.002	0.2	3.89	N/A	8	0.2
delta - BHC	6,600	ND(<0.05)	0.003	0.3	N/A	N/A	8	0.3
Chlordane	21,305*	0.1	0.02	2.0	0.54	50	80	0.54
2,4-D	104*	4.4	0.005	0.5	N/A	800	800	0.5
4,4'-DDD	770,000*	ND(<0.01)	0.077	7.7	2.9	N/A	16	2.9
4,4'-DDE	440,000*	ND(<0.01)	0.0440	4.4	2.1	N/A	16	2.1
4,4'-DDT	243,000*	ND(<0.01)	0.025	2.5	2.1	40	16	2.1
Dibenzo-P-dioxins(PCDD)								
2,3,7,8 TCDD	1709800	0.000035	0.0006	0.06	N/A	N/A	N/A	N/A
Dieldrin	10,700*	ND(<0.01)	0.0010	0.1	0.044	4	16	0.044
Endosulfan I	8,168*	0.1	0.009	0.9	N/A	N/A	16	0.9
Endosulfan II	8,031*	0.1	0.009	0.9	N/A	N/A	16	0.9
Endosulfan Sulfate	10,038*	0.1	0.01	1.0	N/A	N/A	16	1.0
Endrin	9,157*	ND(<0.01)	0.001	0.1	N/A	20	8	0.10
Endrin keytone	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
gamma - BHC (Lindane)	1,080	ND(<0.05)	0.0006	0.06	5.4	20	8	0.06
gamma - chlordane	140,000	0.1	0.14	14.0	0.54	5	80	0.54
Heptachlor	12,000	ND(<0.01)	0.0010	0.1	0.16	40	8	0.10
Heptachlor epoxide	220	ND(<0.01)	0.0002	0.02	0.077	0.8	8	0.02
Methoxychlor	25,637	35.0	9.0	900	N/A	400	80	***
Mirotane	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Parathion	760	1.5	0.012	1.2	N/A	500	8	1.2
PCBs	17,510*	0.1	0.1	10.0	1.0	N/A	160	1.0(Surfac 10(sub-su
Polychlorinated dibenzo-furans(PCDF)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silvex	2,600	0.26	0.007	0.7	N/A	600	330	0.7
2,4,5-T	53	35	0.019	1.9	N/A	200	330	1.9

a. Allowable Soil Concentration Cs = f x Cw x Koc

b. Soil cleanup objective = Cs x Correction Factor (CF)

N/A is not available

* Partition coefficient is calculated by using the following equation:
log Koc = -0.55 log S + 3.64, where S is solubility in water in ppm.
All other Koc values are experimental values.

** Correction Factor (CF) of 100 is used as per TAGM #4046

*** As per TAGM #4046, Total Pesticides < 10 ppm.

Note: Soil cleanup objectives are developed for soil organic carbon content (f) of 1% (5% for PCBs as per PCB guidance document), and should be adjusted for the actual soil organic Carbon content if it is known.

APPENDIX A

Rev. 12/93

TABLE 4

Recommended Soil Cleanup Objectives (mg/kg or ppm) for Heavy Metals

Contaminants	Protect Water Quality ppm	Eastern USA Background ppm	* CRDL mg/kg or ppm	***** Rec.soil Clnup Objct. (ppm)
Aluminum	N/A	33,000	2.0	SB
Antimony	N/A	N/A	0.6	SB
Arsenic	N/A	3-12 **	0.1	7.5 or SB
Barium	N/A	15-600	2.0	300 or SB
Beryllium	N/A	0-1.75	0.05	0.16(HEAST) or SB
Cadmium	N/A	0.1-1	0.05	1 or SB
Calcium	N/A	130 - 35,000 **	50.0	SB
Chromium	N/A	1.5-40 **	0.1	10 or SB
Cobalt	N/A	2.5-60 **	0.5	30 or SB
Copper	N/A	1-50	0.25	25 or SB
Cyanide	N/A	N/A	0.1	***
Iron	N/A	2,000 - 550,000	1.0	2,000 or SB
Lead	N/A	****	0.03	SB****
Magnesium	N/A	100 - 5,000	50.0	SB
Manganese	N/A	50 - 5,000	0.15	SB
Mercury	N/A	0.001-0.2	0.002	0.1
Nickel	N/A	0.5-25	0.4	13 or SB
Potassium	N/A	8,500 - 43,000 **	50.0	SB
Selenium	N/A	0.1-3.9	0.05	2 or SB
Silver	N/A	N/A	0.1	SB
Sodium	N/A	6,000 - 8,000	50.0	SB
Thallium	N/A	N/A	0.1	SB
Vanadium	N/A	1-300	0.5	150 or SB
Zinc	N/A	9-50	0.2	20 or SB

Note: Some forms of metal salts such as Aluminum Phosphide, Calcium Cyanide, Potassium Cyanide, Copper cyanide, Silver cyanide, Sodium cyanide, Zinc phosphide, Thallium salts, Vanadium pentoxide, and Chromium (VI) compounds are more toxic in nature. Please refer to the USEPA HEASTs database to find cleanup objectives if such metal salts are present in soil.

SB is site background
N/A is not available

* CRDL is contract required detection limit which is approx. 10 times the CRDL for water.

** New York State backgrond

*** Some forms of Cyanide are complex and very stable while other forms are pH dependent and hence are very unstable. Site-specific form(s) of Cyanide should be taken into consideration when establishing soil cleanup objective.

**** Background levels for lead vary widely. Average levels in undeveloped, rural areas may range from 4-61 ppm. Average background levels in metropolitan or suburban areas or near highways are much higher and typically range from 200-500 ppm.

*****Recommended soil cleanup objectives are average background concentrations as reported in a 1984 survey of reference material by E. Carol McGovern, NYSDEC.

TOTAL ORGANIC CARBON (TOC)

USE AND LIMITATIONS

Total organic carbon is a measure of the total amount of nonvolatile, volatile, partially volatile, and particulate organic compounds in a sample. Total organic carbon is independent of the oxidation state of the organic compounds and is not a measure of the organically bound and inorganic elements that can contribute to the biochemical and chemical oxygen demand tests.

Because inorganic carbon (e.g., carbonates, bicarbonates, free CO_2) will interfere with total organic carbon determinations, samples should be treated to remove inorganic carbon before being analyzed.

FIELD PROCEDURES

Collection

Samples can be collected in glass or plastic containers. A minimum sample size of 25 g is recommended. If unrepresentative material is to be removed from the sample, it should be removed in the field under the supervision of the chief scientist and noted on the field log sheet.

Processing

Samples should be stored frozen and can be held for up to 6 mo under that condition. Excessive temperatures should not be used to thaw samples.

LABORATORY PROCEDURES

Analytical Procedures

- Equipment
  - Induction furnace
    e.g., Leco WR-12, Dohrmann DC-50, Coleman CH analyzer, Perkin Elmer 240 elemental analyzer, Carlo-Erba 1106
  - Analytical balance
    0.1 mg accuracy
  - Desiccator
  - Combustion boats
  - 10 percent hydrochloric acid (HCl)
  - Cupric oxide fines (or equivalent material)
  - Benzoic acid or other carbon source as a standard.

- Equipment preparation
  - Clean combustion boats by placing them in the induction furnace at 950° C. After being cleaned, combustion boats should not be touched with bare hands.
  - Cool boats to room temperature in a desiccator.
  - Weigh each boat to the nearest 0.1 mg.

- Sample preparation
  - Allow frozen samples to warm to room temperature.
  - Homogenize each sample mechanically, incorporating any overlying water.
  - Transfer a representative aliquot (5-10 g) to a clean container.

- Analytical procedures
  - Dry samples to constant weight at 70 ± 2° C. The drying temperature is relatively low to minimize loss of volatile organic compounds.
  - Cool dried samples to room temperature in a desiccator.
  - Grind sample using a mortar and pestle to break up aggregates.
  - Transfer a representative aliquot (0.2-0.5 g) to a clean, preweighed combustion boat.
  - Determine sample weight to the nearest 0.1 mg.
  - Add several drops of HCl to the dried sample to remove carbonates. Wait until the effervescing is completed and add more acid. Continue this process until the incremental addition of acid causes no further effervescence. Do not add too much acid at one time as this may cause loss of sample due to frothing. Exposure of small samples (i.e., 1-10 mg) having less than 50 percent carbonate to an HCl atmosphere for 24-48 h has been shown to be an effective means of removing carbonates (Hedges and Stern 1984). If this method is used for sample sizes greater than 10 mg, its effectiveness should be demonstrated by the user.
  - Dry the HCl-treated sample to constant weight at 70 ± 2° C.
  - Cool to room temperature in a desiccator.
  - Add previously ashed cupric oxide fines or equivalent material (e.g., alumina oxide) to the sample in the combustion boat.
  - Combust the sample in an induction furnace at a minimum temperature of 950 ± 10° C.

- Calculations
  - If an ascarite-filled tube is used to capture CO_2, the carbon content of the sample can be calculated as follows:

$$\text{Percent carbon} = \frac{A(0.2729)(100)}{B}$$

Where:

A = the weight (g) of CO_2 determined by weighing the ascarite tube before and after combustion
B = dry weight (g) of the unacidified sample in the combustion boat
0.2729 = the ratio of the molecular weight of carbon to the molecular weight of carbon dioxide

A silica gel trap should be placed before the ascarite tube to catch any moisture driven off during sample combustion. Additional silica gel should be placed at the exit end of the ascarite tube to trap any water that might be formed by reaction of the trapped CO_2 with the NaOH in the ascarite.

- If an elemental analyzer is used, the amount of CO_2 will be measured by a thermal conductivity detector. The instrument should be calibrated daily using an empty boat blank as the zero point and at least two standards. Standards should bracket the expected range of carbon concentrations in the samples.

QA/QC Procedures

It is critical that each sample be thoroughly homogenized in the laboratory before a subsample is taken for analysis. Laboratory homogenization should be conducted even if samples were homogenized in the field.

Dried samples should be cooled in a desiccator and held there until they are weighed. If a desiccator is not used, the sediment will accumulate ambient moisture and the sample weight will be overestimated. A color-indicating desiccant is recommended so that spent desiccant can be detected easily. Also, the seal on the desiccator should be checked periodically and, if necessary, the ground glass rims should be greased or the "O" rings should be replaced.

It is recommended that triplicate analyses be conducted on one of every 20 samples, or on one sample per batch if less than 20 samples are analyzed. A method blank should be analyzed at the same frequency as the triplicate analyses. The analytical balance should be inspected daily and calibrated at least once per week. The carbon analyzer should be calibrated daily with freshly prepared standards. A standard reference material should be analyzed at least once for each major survey.

DATA REPORTING REQUIREMENTS

Total organic carbon should be reported as a percentage of the dry weight of the unacidified sample to the nearest 0.1 unit. The laboratory should report the results of all samples (including QA replicates, method

blanks, and standard reference measurements) and should note any problems that may have influenced sample quality. The laboratory should also provide a summary of the calibration procedure and results (e.g., range covered, regression equation, coefficient of determination).

APPENDIX C

DRAFT NEW YORK STATE AIR GUIDE-1, GUIDELINES FOR THE CONTROL OF TOXIC AMBIENT AIR CONTAMINANTS, DATED 1991

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-3254
Telephone: (518) 457-7688

Michael D. Zagata
Commissioner

October 16, 1995

MEMORANDUM

TO: Air Guide-1 Software Program User's

FROM: Eric Wade, Bureau of Application Review and Permitting (BARP)

SUBJECT: Complete & HAPs Listings of AGCs, SGCs and Air Quality Standards

Attached to this memo are four printouts of the AGC/SGC guideline values used by the Air Guide-1 software program. The first two are complete listings of all the AGCs, SGCs and Air Quality Standards listed, or incorporated by reference, in Air Guide-1. One of these is sorted alphabetically by contaminant name and the other sorted numerically by CAS number. The next two printouts (alpha & numeric sorts) only include only those contaminants that were identified as HAPs by the 1990 Clean Air Act Amendments. All printouts are currently up-to-date as they were derived from the most recent toxicological data and include the 1995-96 ACGIH TLV-TWA values.

Please note, the attached listings include some unofficial interim AGC and SGC values and bogus CAS numbers (e.g., "*FLUORIDE*"). These bogus CAS numbers are used for structure-activity analogies or cross-referencing by the AGC/SGC assignment program. Excluding the Moderate Toxicity ***de minimis*** value, all unofficial interim AGC/SGC assignments are identified by lower case letters (o,s,u) describing "HOW" the AGC, or SGC, was derived. Also unofficial, is the software program's High Toxicity ***de minimis*** value. The High Toxicity ***de minimis*** value was chosen so that almost all sources emitting the contaminant would fail the AG-1 screening procedures.

The critical differences between the attached printouts and the official Appendix C listing are discussed below. These differences are also discussed in Section III.F.1 of the User's Guide for the Air Guide-1 software program.

(1) Air Quality Standards (S)

Sources of contaminants must meet all Federal and State Air Quality Standards. These standards are excluded from Tables II, III and IV of Appendix C because they are not guideline values. As such, they are listed in Table I of the same document. The NYS hydrocarbon standard is excluded from Table I as it has been targeted for repeal.

In the AG-1 software program, it makes no difference whether a criteria value is a standard or guideline limit. Appendix C separates the standards and guideline values to emphasize the difference. Standards must be maintained, whereas guideline values represent limits for determining control requirements. Either way, both must be assessed.

When a standard for a specific contaminant exists, that standard is listed in the attached printouts if based on an hourly or annual averaging period. For example, both the hourly carbon monoxide and annual sulfur dioxide standards are listed in the attached printouts and are identified by the capital letter "S" (HOW derived).

When a standard exists for a group of contaminants (e.g., particulate or fluorides), both the standard and contaminant specific AGC/SGC apply. However, one of these values is critical. That critical value is listed in the attached printouts as the "AGC" or "SGC". For example, sources of particulate matter must meet both the annual PM-10 standard and the contaminant specific AGC.

The PM-10 standard will be listed as the "AGC" in the attached printouts if the standard is the more conservative of the two values.

(2) Equivalent Standard (s)

There are several State and Federal Standards not based on hourly or annual averaging times. Since a source must comply with both the standards and guideline values (AGCs and SGCs), field staff must consider both values when determining "compliance".

Equivalent standards" represent actual standards mathematically adjusted to a one hour or annual averaging period. These "pseudo standards" are listed in the attached printouts when they represent the critical limit for determining "compliance". That critical limit is the more conservative of the two values. Equivalent standards should not be used for determining non-compliance. Therefore, when a source impact exceeds an equivalent standard, compliance should be reassessed for the correct averaging time.

The following equivalent "standards" have been assigned to some of the contaminants in the attached printouts:

(a) NYS Fluoride Standards (Part 257-8)

New York State has several air quality standards for gaseous fluorides. Fluorides

are defined as any compound that tests as fluoride by the appropriate method. Therefore, the regulation applies to all **inorganic** gaseous compounds which contain the element fluoride (F).

There are 4 separate gaseous fluoride standards for different averaging times; 1 month (0.8 $\mu g/m^3$), 1 week (1.65 $\mu g/m^3$), 24 hour (2.85 $\mu g/m^3$) and 12 hour (3.7 $\mu g/m^3$). Unfortunately, none of these standards has an hourly or annual averaging period. Therefore, compliance is difficult to assess using the Air Guide-1 Appendix B methods.

The following equivalent standards have been assigned for the Air Guide-1 software program to assess compliance with the Fluoride standards:

> Annual "standard" - 0.8/2 = 0.4 (F) $\mu g/m^3$. The factor of two represents a rough NYSDEC averaging time adjustment.
>
> 1 hour "standard" = 2.85/0.4 = 7.125 (F) $\mu g/m^3$. The factor of 0.4 is documented in EPA's October 1992 "Screening Procedures for Estimating the air Quality Impact of Stationary Sources, Revised."

(b) Federal 3 Month Lead Standard

The Federal quarterly standard for lead is 1.5 $\mu g/m^3$. Obviously, if the annual impact from a source exceeds this value, the source would also fail the three month standard since maximum measured and modeled concentrations are always greater for shorter averaging times. Therefore, to assess compliance with the 3 month standard, an equivalent annual "standard" was developed for the software program.

> Annual "standard" = 1.5/2 = 0.75 $\mu g/m^3$. The factor of two represents a rough NYSDEC averaging time adjustment.

(c) Federal 24 Hour PM-10 Standard

The Federal 24 hour PM-10 standard for particulate is 150 $\mu g/m^3$. There is no 1 hour short-term standard for this contaminant. Yet, the 24 hour limit is representative of a relatively short-term averaging period.

As a guideline for assessing compliance with the 24 hour standard, the following equivalent 1 hour standard was developed:

> 1 hour "standard" = 150/0.4 = 380 $\mu g/m^3$. The 0.4 factor is documented in EPA's October 1992 "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised."

(d) Federal 3 hour Sulfur Dioxide Standard

The Federal 3 hour sulfur dioxide standard is 1300 $\mu g/m^3$. There is no 1 hour

short-term standard for this contaminant. Yet, the 3 hour limit is representative of a short-term averaging period.

As a guideline for assessing compliance with the 3 hour standard, the following equivalent 1 hour standard was developed:

> 1 hour "standard" = 1300/0.9 = 1400 $\mu g/m^3$. The 0.9 factor is documented in EPA's October 1992 "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised."

(3) High Toxicity *de minimis* Limit (*)

There is no ***de minimis*** limit for High Toxicity contaminants. When no AGC exists for such a contaminant, the Air Guide-1 document instructs the user to contact BARP.

The Air Guide-1 software program must have an assigned AGC or else the program will bomb-out. Therefore, a somewhat arbitrary number, 3.0×10^{-8} $\mu g/m^3$, was selected as the "High Toxicity ***de minimis*** limit" for the software program. This value is equal to the AGC for 2,3,7,8 TCDD and represents the smallest AGC listed in Air Guide-1. It was chosen so that almost any source emitting such a contaminant would fail the Air Guide-1 screening process.

(4) Unevaluated HEAST Unit Risk Factors (u)

The smallest AGCs listed in Air Guide-1 are those developed from carcinogenic risk data. Almost all of these AGCs are less than the 0.1 $\mu g/m^3$ Moderate Toxicity ***de minimis*** limit.

The HEAST tables contain some unit risk factors for contaminants neither listed, nor incorporated by reference, in Air Guide-1. These factors have not been reviewed by NYSDEC. Should AGCs be developed from this data, they may be extremely small and less than the 0.1 $\mu g/m^3$ ***de minimis*** limit. Therefore, the unevaluated HEAST unit risk factors were used to develop unofficial interim AGCs to prevent inappropriate use of the ***de minimis*** limit. Should any source of such a contaminant fail Air Guide-1, field staff should submit the contaminant to BARP to verify the unofficial "interim" AGC.

(5) HEAST Oral RFD Factors (o)

HEAST oral RFD factors have been used to develop unofficial interim AGCs for some of the unlisted and unreferenced AG-1 contaminants. These factors are generally conservative. The Toxics Assessment Section prefers to use inhalation exposure data when developing an AGC.

The primary purpose for using the oral data, is to provide some numerical guidance other than the ***de minimis*** limit. Should any source of such a contaminant fail the Air Guide-1 review, field staff should submit the contaminant to BARP for evaluation.

(6) Compounds Exempt from Air Guide-1 Review (X)

Simple asphyxiant and water mist are exempt from the Air Guide-1 review process. All such compounds are eligible for "D" environmental ratings.

The Air Guide-1 software program must have an assigned AGC for each contaminant. Therefore, an arbitrary number, 9999999 $\mu g/m^3$, was assigned as the "AGC." This number was chosen so that any source emitting such a contaminant would pass the Air Guide-1 screening program.

Attachments:

1. AIR GUIDE-1 AGCs/SGCs (ALPHABETICALLY by Contaminant Name)
2. AIR GUIDE-1 AGCs/SGCs (NUMERICAL Sort by CAS Number)
3. HAPs IDENTIFIED BY 1990 CAAA (ALPHABETICALLY by Contaminant Name)
4. HAPs IDENTIFIED BY 1990 CAAA (NUMERICAL Sort by CAS Number)

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
1,2,4-BENZENETRICARB	67989-23-5	4		---		1.0E-01	d M
1,3-PROPANEDIAMINE	00109-76-2	4		6000.0	A	30.0	D M R
1-PENTENE	00109-67-1	4		---		1.0E-01	d M
1-TETRADECENE	01120-36-1	4		250000.0	A	18000.0	D L R
2,4,5-T	00093-76-5	4		2400.0	T	24.0	T
2,4-D	00094-75-7	4		2400.0	T	24.0	T H
2,5-DICHLOROANILINE	00095-82-9	4		1800.0	A	6.0E-01	A M U RR
2,5-DIMETHYLFURAN	00625-86-5	4		9500.0	A	95.0	A M RR
2-DIMETHYL AMINO ETH	00108-01-0	4		---		410.0	D L
2-METHYLFURAN	00534-22-5	4		23.0	A	2.0E-02	A H RR
2-METHYLPROPANAL	00078-84-2	4		---		12.0	D M
2METHYL-3-BUTYN-2-OL	00115-19-5	4		---		260.0	D M
3,3-DIMETHYLBUTENE	00558-37-2	4		---		1.0E-01	d M
3-ETHOXYPROPANOL	00111-35-3	4		88000.0	A	2000.0	A M RR
3-METHYL-1-PENTANOL	00589-35-5	4		---		1.0E-01	d M
4-PENTEN-2-OL	00625-31-0	4		480.0	A	11.0	A H RR
5-ACETOACETAMIDO-2-B	26576-46-5	4		---		1.0E-01	d M
ACETALDEHYDE	00075-07-0	4		4500.0	T	110.0	T M HC
ACETAMIDE	00060-35-5	4		---		1.0E-01	d M H
ACETIC ACID	00064-19-7	4		6000.0	T	60.0	T
ACETIC ANHYDRIDE	00108-24-7	4		5000.0	T	50.0	T M
ACETOIN	00513-86-0	4		140000.0	A	300.0	A M RR
ACETONE	00067-64-1	4		140000.0	R	14000.0	R L
ACETONE CYANOHYDRIN	00075-86-5	4		400.0	R	9.5	R H C
ACETONITRILE	00075-05-8	4		8100.0	R	50.0	E M H
ACETOPHENONE	00098-86-2	4		12000.0	T	2.0E-02	I H
ACETYL CHLORIDE	00075-36-5	4		---		6.4E-01	D H
ACETYLAMINOFLUOR,2-	00053-96-3	4		---		1.0E-01	d M H
ACETYLENE	00074-86-2	4		---	X	9999999.0	X G C
ACETYLENE TETRABROM	00079-27-6	4		3300.0	T	33.0	T
ACROLEIN	00107-02-8	4		23.0	T	2.0E-02	I H H
ACRYLAMIDE	00079-06-1	4		3.0	T	8.0E-04	E H U HB
ACRYLIC ACID	00079-10-7	6		1400.0	T	1.0	E M H
ACRYLIC MONOMERS	09081-82-7	4		98000.0	A	9.8	D M R
ACRYLONITRILE	00107-13-1	4		220.0	R	1.0E-02	E H U HB
ADIPIC ACID	00124-04-9	4		1200.0	T	12.0	T
ADIPONITRILE	00111-69-3	4		2100.0	T	21.0	T
ALDICARB	00116-06-3	4		---		2.0	H H
ALDRIN	00309-00-2	4		60.0	T	6.0E-01	T
ALKANES (C5-C8)	ALKANES***	4		83000.0	R	830.0	R
ALLYL ALCOHOL	00107-18-6	4		480.0	T	11.0	T H
ALLYL CHLORIDE	00107-05-1	4		710.0	T	1.0	E M H
ALLYL GLYCIDYL ETHER	00106-92-3	4		5500.0	T	55.0	T C
ALLYL PROPYL DISULFI	02179-59-1	4		2900.0	T	29.0	T
ALPHA OLEFIN	00629-73-2	4		---		220.0	D M
ALPHAMETHRIN	67375-30-8	4		1200.0	A	12.0	A M RR
ALUMINUM	07429-90-5	1	Al	380.0	s	24.0	T K
ALUMINUM (PYRO,FUME)	Al*POWDFUM	1	Al	380.0	s	12.0	T
ALUMINUM (SALTS,ALK)	Al*SALTALK	1	Al	380.0	s	4.8	T
ALUMINUM OXIDE	01344-28-1	1	Al2	380.0	s	45.0	T I QQ
ALUMINUM PHOSPHIDE	20859-73-8	1		---		1.4	o
ALUMINUM, TRIETHYL	00097-93-8	6	Al	850.0	T	20.0	T H RRQQ
AMINODIPHENYL, P-	00092-67-1	4		---		3.0E-08	* H HA

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T 123456789012345
AMINOPYRIDINE, 2-	00504-29-0	4		450.0	T	4.5	T
AMITROLE	00061-82-5	4		48.0	T	4.8E-01	T
AMMONIA	07664-41-7	6		4000.0	T	100.0	E L C
AMMONIUM BROMIDE	12124-97-9	1		380.0	s	24.0	A M RR
AMMONIUM CHLORIDE	12125-02-9	1		380.0	s	24.0	T M
AMMONIUM PERFLUOROOC	03825-26-1	6		2.4	T	2.4E-02	T
AMMONIUM SULFAMATE	07773-06-0	4		2400.0	T	240.0	T L
AMMONIUM SULFATE	07783-20-2	6		2400.0	A	240.0	A L RR
AMOSITE	12172-73-5	1		---		3.0E-08	* H HAI
AMYL ACETATE, N-	00628-63-7	4		130000.0	T	1300.0	T
AMYL ACETATE, SEC-	00626-38-0	4		160000.0	T	1600.0	T
AMYL MERCAPTAN	00110-66-7	4		210.0	R	5.0	R C
ANILINE	00062-53-3	4		760.0	T	6.0E-01	D H U H
ANISIDINE	29191-52-4	4		120.0	T	1.2	T M
ANISIDINE, P-	00104-94-9	4		120.0	T	1.2	T M
ANISIDINE,O	00090-04-0	4		120.0	T	1.2	T M H
ANTHRACENE	00120-12-7	4		---		2.0E-02	A H H R
ANTIMONY	07440-36-0	1	Sb	120.0	T	1.2	T M H
ANTIMONY TRICHLORIDE	10025-91-9	1	Sb	220.0	T	2.2	T H RRQQ
ANTIMONY TRIOXIDE	01309-64-4	1	Sb2	140.0	T	1.4	T M HB QQ
ANTIMONY TRISULFIDE	01345-04-6	1	Sb2	170.0	T	1.7	T H RRQQ
ANTU	00086-88-4	4		71.0	T	7.1E-01	T
AQUA AMMONIA	01336-21-6	6		4000.0	A	100.0	A L RR
ARGON AR	07440-37-1	6		---	X	9999999.0	X G
ARSENIC	07440-38-2	1	As	2.0E-01	R	2.3E-04	E H U HAIC
ARSENIC (AS 073)	NY073-33-0	6	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (AS 074)	NY074-33-0	6	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (AS 076)	NY076-33-0	6	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (AS 077)	NY077-33-0	6	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (ORGANIC)	As*ORGANIC	1	As	---		2.3E-04	E H U H
ARSENIC ACID	01327-52-2	4	As	3.8E-01	R	4.4E-04	E H U H RRQQ
ARSENIC PENTOXIDE	01303-28-2	1	As2	3.1E-01	R	3.5E-04	E H U H RRQQ
ARSENIC TRIOXIDE	01327-53-3	1	As2	2.6E-01	R	3.0E-04	E H U H RRQQ
ARSENOUS TRICHLORIDE	07784-34-1	1	As	4.8E-01	R	5.6E-04	E H U H RRQQ
ARSENOUS TRIFLUORIDE	07784-35-2	6	As	3.5E-01	R	4.1E-04	E H U H RRQQ
ARSENOZO III	01668-00-4	1	As2	---		1.1E-03	E H U H R Q
ARSINE	07784-42-1	6		2.0E-01	R	2.4E-04	E H U H C
ASBESTOS	01332-21-4	1		---		3.0E-08	* H HAI
ASPHALT	08052-42-4	4		1200.0	T	12.0	T C
ATRAZINE	01912-24-9	1		380.0	s	12.0	T
AURAMINE	02465-27-2	6		---		3.0E-08	* H
AZINPHOS-METHYL	00086-50-0	4		48.0	T	4.8E-01	T
B A P	00050-32-8	4		---		2.0E-03	H H U HB
BARIUM	07440-39-3	1	Ba	120.0	T	5.0E-01	E M
BARIUM CHROMATE	10294-40-3	1	Cr	4.9E-01	R	9.8E-05	H H U H RRQQ
BARIUM CYANIDE	00542-62-1	1	Ba	380.0	s	6.9E-01	E H H RRQQ
BARIUM LEAD SULFATE	42579-89-5	1	Pb	25.0	T	1.6	s H RRQQ
BARIUM SULFATE	07727-43-7	1		380.0	s	24.0	T M I
BASIC LEAD ACETATE	51404-69-4	1		---		1.0E-01	d H
BASIC LEAD CARBONATE	01319-46-6	1	Pb3	15.0	T	9.4E-01	s H RRQQ
BE ETHYL DIAM CL	13497-34-2	1	Be	1.1	R	8.9E-03	E H U H RRQQ
BENOMYL	17804-35-2	4		2400.0	T	24.0	T
BENZ METHBIS ISOCYAN	26447-40-5	4		5.0	A	2.0E-02	A H H RR

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
BENZENE	00071-43-2	4		32.0	R	1.2E-01	E H U HA
BENZENEARSONIC ACID	00098-05-5	1	As	---		6.2E-04	E H U H R Q

BENZIDINE	00092-87-5	4		---		1.5E-05	E H U HA	
BENZO(A)ANTHRACENE	00056-55-3	4		---		2.0E-02	A H HB	R
BENZOTRICHLORIDE	00098-07-7	4		---		3.0E-08	* H H	
BENZOYL CHLORIDE	00098-88-4	4		280.0	T	6.7	T C	
BENZOYL PEROXIDE	00094-36-0	4		1200.0	T	12.0	T	
BENZYL ACETATE	00140-11-4	4		15000.0	T	150.0	T	
BENZYL CHLORIDE	00100-44-7	4		500.0	R	2.0E-02	E H U H C	
BERYLLIUM	07440-41-7	1	Be	5.0E-02	R	4.0E-04	E H U HB C	
BERYLLIUM (Be 007)	NY007-04-0	6	Be	5.0E-02	A	4.0E-04	A H U H	RR
BERYLLIUM FLUORIDE	07787-49-7	1	Be	2.6E-01	R	2.1E-03	E H U H	RRQQ
BERYLLIUM OXIDE	01304-56-9	1	Be	1.4E-01	R	1.1E-03	E H U H	RRQQ
BERYLLIUM SULFATE	13510-49-1	1	Be	5.8E-01	R	4.7E-03	E H U H	RRQQ
BIFENTHRIN	82657-04-3	4		1200.0	A	12.0	A M	RR
BIPHENYL	00092-52-4	4		310.0	T	3.1	T M H	
BISMUTH TELLURIDE	01304-82-1	1		380.0	s	24.0	T K	
BORAX	01303-96-4	1		240.0	T	2.4	T K	
BORON OXIDE	01303-86-2	1		380.0	s	24.0	T	
BORON TRIBROMIDE	10294-33-4	1		380.0	s	24.0	T C	
BORON TRIFLUORIDE	07637-07-2	6		8.5	s	4.8E-01	s C	RRQQ
BRIJ 30	09002-92-0	4		---		48.0	D M	
BROMACIL	00314-40-9	4		2400.0	T	24.0	T	
BROMADIOLONE	28772-56-7	4		---		3.0E-08	* H	
BROMINE	07726-95-6	6		160.0	T	1.6	T M	
BROMINE PENTAFLUORID	07789-30-2	1		13.0	s	7.4E-01	s	RRQQ
BROMODICHLOROMETHANE	00075-27-4	4		---		2.0E-02	D H	
BROMOFORM	00075-25-2	4		1200.0	T	9.0E-01	E M H	
BUTADIENE POLYMER	69102-90-5	4		440.0	A	3.6E-03	A H U	RR
BUTADIENE, 1,3	00106-99-0	4		440.0	T	3.6E-03	E H U HB	
BUTANE	00106-97-8	4		450000.0	T	45000.0	T L	
BUTANOL, SEC (9CI)	00078-92-2	4		72000.0	T	720.0	T	
BUTOXYETHANOL, 2-	00111-76-2	4		29000.0	T	290.0	T M H	
BUTOXYETHYL ACETATE	00112-07-2	4		29000.0	A	290.0	A M H	RR
BUTYL ACETATE	00123-86-4	4		23000.0	P	2300.0	P L	
BUTYL ACETATE, SEC-	00105-46-4	4		230000.0	T	2300.0	T	
BUTYL ACETATE, TERT-	00540-88-5	4		230000.0	T	2300.0	T	
BUTYL ACRYLATE, N-	00141-32-2	4		12000.0	T	120.0	T	
BUTYL ALCOHOL, N-	00071-36-3	4		7600.0	P	1800.0	P L C	
BUTYL ALCOHOL, TERT	00075-65-0	4		72000.0	T	720.0	T	
BUTYL BENZYL PHTHALA	00085-68-7	4		1200.0	A	12.0	A M	RR
BUTYL CARBITOL	00112-34-5	4		7700.0	A	360.0	A M H	RR MM
BUTYL CHROMATE, TERT	01189-85-1	4	Cr03	4.4E-01	R	8.9E-05	H H U H	RRQQ
BUTYL GLYCIDYL ETHER	02426-08-6	4		3000.0	R	71.0	R C	
BUTYL LACTATE, N-	00138-22-7	4		7100.0	T	71.0	T	
BUTYL MERCAPTAN	00109-79-5	4		430.0	T	4.3	T M C	
BUTYL PHTHALATE GLYC	00085-70-1	4		1200.0	A	12.0	A M	RR
BUTYLPHENOL,O-SEC	00089-72-5	4		7400.0	T	74.0	T	
BUTYLTOLUENE,P-TERT	00098-51-1	4		1500.0	T	15.0	T	
BUTYRONITRILE, N-	00109-74-0	4		5200.0	R	52.0	R	
BUYYLAMINE, N-	00109-73-9	4		1500.0	T	36.0	T M C	
CADMIUM	07440-43-9	1	Cd	2.0E-01	T	5.0E-04	H H U HBK	
CADMIUM (CD 109)	NY109-48-0	6	Cd	2.0E-01	A	5.0E-04	A H U H	RR

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
CADMIUM (CD 115)	NY115-48-0	6	Cd	2.0E-01	A	5.0E-04	A H U H RR
CADMIUM CHLORIDE	10108-64-2	1	Cd	3.3E-01	T	8.2E-04	H H U H RRQQ
CADMIUM CHLORIDE HYD	07790-78-5	1	Cd	3.3E-01	T	8.2E-04	H H U H RRQQ
CADMIUM CYANIDE	00542-83-6	1	Cd	380.0	s	7.3E-04	H H U H RRQQ
CADMIUM IODIDE	07490-80-9	1	Cd	6.5E-01	T	1.6E-03	H H U H RRQQ
CADMIUM IODIDE	07790-80-9	1	Cd	6.5E-01	T	1.6E-03	H H U H RRQQ
CADMIUM NITRATE	10325-94-7	1	Cd	4.2E-01	T	1.1E-03	H H U H RRQQ

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T	codes 123456789012345
CADMIUM OXIDE	01306-19-0	1	Cd	2.3E-01	T	5.7E-04	H H U H	RRQQ
CADMIUM SELENIDE	01306-24-7	1	Cd	3.4E-01	T	8.5E-04	H H U H	RRQQ
CADMIUM STEARATE	02223-93-0	4	Cd2	7.1E-01	T	1.8E-03	H H U H	RRQQ
CADMIUM SULFATE	10124-36-4	1	Cd	3.7E-01	T	9.4E-04	H H U H	RRQQ
CADMIUM SULFIDE	01306-23-6	1	Cd	2.6E-01	T	6.4E-04	H H U H	RRQQ
CADMIUM ZINC SULFATE	12442-27-2	1	Cd	3.7E-01	T	9.3E-04	H H U H	RRQQ
CADMIUMMERCURYSULFID	01345-09-1	4	Cd	6.1E-01	T	1.5E-03	H H U H	RRQQ
CALCIUM ARSENATE	07778-44-1	1	As2	5.4E-01	R	6.2E-04	E H U H	RRQQ
CALCIUM CARBONATE	01317-65-3	1		380.0	s	24.0	T I	
CALCIUM CHROMATE	13765-19-0	1	Cr	3.0E-01	R	6.1E-05	H H U HB	RRQQ
CALCIUM CYANAMIDE	00156-62-7	1		120.0	T	1.2	T H	
CALCIUM CYANIDE	00592-01-8	1		380.0	s	50.0	S H H	R Q
CALCIUM HYDROXIDE	01305-62-0	1		380.0	s	12.0	T	
CALCIUM OXIDE	01305-78-8	1		380.0	s	4.8	T	
CALCIUM SILICATE	01344-95-2	1		380.0	s	24.0	T I	
CALCIUM SULFATE	07778-18-9	1		380.0	s	24.0	T I	
CAMPHOR	00076-22-2	4		2900.0	T	29.0	T	
CAPROLACTAM	00105-60-2	4		240.0	T	2.4	T HK	
CAPTAFOL	02425-06-1	4		24.0	T	2.4E-01	T	
CAPTAN	00133-06-2	4		1200.0	T	12.0	T H	
CARBARYL	00063-25-2	4		1200.0	T	12.0	T H	
CARBENDAZIM	10605-21-7	4		24.0	A	2.4E-01	A M	RR
CARBITOL CELLOSOLVE	00111-90-0	4		4300.0	A	7000.0	D M H	R
CARBOFURAN	01563-66-2	4		24.0	T	2.4E-01	T M	
CARBON BLACK	01333-86-4	1		380.0	s	8.3	T M	
CARBON DIOXIDE	00124-38-9	6		2100000.0	T	21000.0	T	
CARBON DISULFIDE	00075-15-0	6		710.0	R	10.0	I M H	
CARBON MONOXIDE	00630-08-0	5		40000.0	S	69.0	T	
CARBON TETRABROMIDE	00558-13-4	4		330.0	T	3.3	T	
CARBON TETRACHLORIDE	00056-23-5	4		1300.0	R	7.0E-02	E H U H C	
CARBON, ISOTOPE-11	14333-33-6	6		---		1.0E-01	d H	
CARBONIC ACID Ni SLT	03333-67-3	1	Ni	9.0	P	7.2E-03	H H U H	RRQQ
CARBONYL FLUORIDE	00353-50-4	4		12.0	s	6.9E-01	s	RRQQ
CARBONYL SULFIDE	00463-58-1	6		---		1.0E-01	d H	
CATECHOL	00120-80-9	4		5500.0	T	55.0	T H	
CD DIETHDITHIOCARB	14239-68-0	1	Cd	7.3E-01	T	1.8E-03	H H U H	RRQQ
CELLULOSE	09004-34-6	1		380.0	s	24.0	T	
CELLULOSE ETHYL ETHR	09004-57-3	1		---		50.0	D L	
CESIUM HYDROXIDE	21351-79-1	1		380.0	s	4.8	T	
CHLOR DIPHENYL OXIDE	55720-99-5	4		120.0	T	1.2	T	
CHLORAL	00075-87-6	4		---		7.0	o	
CHLORAMBEN	00133-90-4	1		---		1.0E-01	d H	
CHLORBENZMALONONIT,O	02698-41-1	4		39.0	T	9.3E-01	T C	
CHLORDANE	00057-74-9	4		50.0	T	1.2	T H H	
CHLORDECONE	00143-50-0	4		1.0E-01	R	2.4E-03	R H	
CHLORINATED CAMPHENE	08001-35-2	4		50.0	T	1.2	T H H	

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T	codes 123456789012345
CHLORINE	07782-50-5	6		350.0	R	3.5	R M H	
CHLORINE DIOXIDE	10049-04-4	6		67.0	T	2.0E-01	E M	
CHLORINE TRIFLUORIDE	07790-91-2	6		12.0	s	6.5E-01	s C	RRQQ
CHLORO DIFLUOROETHAN	00075-68-3	4		---		50000.0	E L	
CHLORO NITROANILINE	00121-87-9	4		710.0	A	6.0	A M	RR
CHLORO NITROPROPANE	00600-25-9	4		2400.0	T	24.0	T	
CHLOROACETALDEHYDE	00107-20-0	4		320.0	T	7.6	T C	
CHLOROACETIC ACID	00079-11-8	4		---		3.0E-08	* H H	
CHLOROACETONE	00078-95-5	4		380.0	T	9.0	T C	
CHLOROACETOPHENONE,2	00532-27-4	4		76.0	T	3.0E-02	E M H	
CHLOROACETYLCHLORIDE	00079-04-9	4		55.0	T	5.5E-01	T	
CHLOROANILINE, P-	00106-47-8	4		---		6.0	H M	

CHLOROBENZILATE	00510-15-6	4		---		1.0E-01	d H	
CHLOROBROMOMETHAN	00074-97-5	4		250000.0	T	2500.0	T	
CHLORODIBROMOMETHANE	00124-48-1	4		---		1.0E-01	d M	
CHLORODIFLUOROMETHAN	00075-45-6	6		840000.0	T	8400.0	T	
CHLORODIPHENYL	11097-69-1	4		120.0	T	1.2	T	
CHLORODIPHENYL	53469-21-9	4		240.0	T	2.4	T	
CHLOROFORM	00067-66-3	4		980.0	R	4.0E-02	E M U HB C	
CHLOROMETHANE	00074-87-3	4		22000.0	D	770.0	D M H	
CHLOROMETHYL ETH,BIS	00542-88-1	4		4.7E-01	T	1.6E-05	E H U HA	
CHLORONITROBENZENE,P	00100-00-5	4		150.0	T	1.5	T M	
CHLOROPENTAFLUOROETH	00076-15-3	6		1500000.0	T	15000.0	T	
CHLOROPICRIN	00076-06-2	4		160.0	T	1.6	T	
CHLOROPRENE, B-	00126-99-8	4		360.0	R	7.0	I H C	
CHLOROPROPIONICACI,2	00598-78-7	4		100.0	T	1.0	T	
CHLOROSTYRENE, O-	02039-87-4	4		67000.0	T	670.0	T	
CHLOROTOLUENE,ORTHO	00095-49-8	4		62000.0	T	620.0	T	
CHLOROTRIFLUORETHENE	00079-38-9	4		---		1.0E-01	d M	
CHLORPYRIFOS	02921-88-2	4		48.0	T	4.8E-01	T	
CHLORTRIFLETH POLYM	25101-45-5	4		---		1.0	d L	
CHROMATE	13907-45-4	1	Cr	2.2E-01	R	4.5E-05	H H U H	RRQQ
CHROME TANNED COWHID	68131-98-6	1	Cr	1.0E-01	A	2.0E-05	A H U H	RR
CHROMIC (VI) ACID	07738-94-5	1	Cr	2.3E-01	R	4.5E-05	H H U H	RRQQ
CHROMIC ACID	11115-74-5	1	Cr	2.3E-01	R	4.5E-05	H H U H	RRQQ
CHROMIC ACID	13530-68-2	6	Cr2	2.1E-01	R	4.2E-05	H H U H	RRQQ
CHROMIC ACID, DIAMMO	07789-09-5	1	Cr2	2.4E-01	R	4.8E-05	H H U H	RRQQ
CHROMIC ACID, DILITH	14307-35-8	1	Cr	2.5E-01	R	5.1E-05	H H U H	RRQQ
CHROMIC ACID, DISODI	07789-12-0	6	Cr2	2.6E-01	R	5.2E-05	H H U H	RRQQ
CHROMIC ACID,Na SALT	07775-11-3	1	Cr	3.2E-01	R	6.3E-05	H H U H	RRQQ
CHROMIUM	07440-47-3	1	Cr	1.0E-01	R	2.0E-05	H H U HAK	
CHROMIUM CHLORIDE	10025-73-7	1	Cr	360.0	T	3.0E-01	H H	RRQQ
CHROMIUM CHLORIDE	10060-12-5	1	Cr	360.0	T	3.0E-01	H H	RRQQ
CHROMIUM DIOXIDE	12018-01-8	1	Cr	190.0	T	1.6E-01	H H	RRQQ
CHROMIUM HYDROXIDE	01308-14-1	1	Cr	240.0	T	2.0E-01	H H	RRQQ
CHROMIUM III	16065-83-1	1	Cr	120.0	T	1.0E-01	H M H	
CHROMIUM OXIDE	01308-38-9	1	Cr2	170.0	T	1.5E-01	H M H	RRQQ
CHROMIUM OXIDE	01333-82-0	1	Cr	1.9E-01	R	3.8E-05	H H U H	RRQQ
CHROMIUM SULFATE	10101-53-8	1	Cr	340.0	T	2.9E-01	H H	RRQQ
CHROMIUM ZINC OXIDE	12018-19-8	1	Cr	340.0	T	2.9E-01	H H	RRQQ
CHROMIUM ZINC OXIDE	50922-29-7	1	Cr2	2.2E-01	R	4.5E-05	H H U H	RRQQ
CHROMYL CHLORIDE	14977-61-8	1	Cr	3.0E-01	R	6.0E-05	H H U H	RRQQ
CHROMYL FLUORIDE	07788-96-7	1	Cr	2.3E-01	R	4.7E-05	H H U H	RRQQ

Date Created: 10-06-95

AIR GUIDE-1 AGCs/SGCs (ALPHABETICALLY by Contaminant Name) Page 6

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
CHRYSENE	00218-01-9	4		---		2.0E-02	A H H R
CHRYSOTILE	12001-29-5	1		---		3.0E-08	* H HAI
CLOPIDOL	02971-90-6	4		2400.0	T	24.0	T
COAL TAR PITCH VOLAT	65996-93-2	4		24.0	R	2.4E-01	R AI
COBALT	07440-48-4	1	Co	4.8	T	4.8E-02	T M H
COBALT (Co 57)	NY057-27-0	6	Co	4.8	A	4.8E-02	A H RR
COBALT (Co 58)	NY058-27-0	6	Co	4.8	A	4.8E-02	A H RR
COBALT (Co 60)	NY060-27-0	6	Co	4.8	A	4.8E-02	A H RR
COBALT ALUMINATE	01345-16-0	1	Co	14.0	T	1.4E-01	T H RRQQ
COBALT CARBONATE	00513-79-1	1	Co	9.8	T	9.8E-02	T H RRQQ
COBALT CARBONYL	10210-68-1	1	Co2	14.0	T	1.4E-01	T H RRQQ
COBALT CHLORINE	07646-79-9	1	Co	10.0	T	1.0E-01	T H RRQQ
COBALT COMPLEX	53108-50-2	1		---		1.0E-01	d H
COBALT HYDROCARBONYL	16842-03-8	4	Co	14.0	T	1.4E-01	T H RRQQ
COBALT NAPTHA	61789-51-3	6		---		1.0E-01	d H
COBALT OXIDE	01307-96-6	1		4.8	A	4.8E-02	A M H RR
COBALT OXIDE(Co 304)	01308-06-1	1	Co3	6.5	T	6.5E-02	T H RRQQ

COBALT SULFATE	10124-43-3	6	Co	13.0	T	1.3E-01	T		H	RRQQ
COBALT SULFIDE	01317-42-6	1	Co	7.4	T	7.4E-02	T	M	H	RRQQ
COBALT TRIFLUORIDE	10026-18-3	1	Co	9.4	T	9.4E-02	T		H	RRQQ
COPPER	07440-50-8	1	Cu	48.0	T	4.8E-01	T	M	K	
COPPER	Cu*DUSMIST	1	Cu	240.0	T	2.4	T	M	K	
COPPER CYANIDE	00544-92-3	1		380.0	s	41.0	T	H	H	RRQQ
CRESOL	01319-77-3	4		2400.0	R	24.0	R	M	H	
CRESOL, M-	00108-39-4	4		2400.0	A	24.0	A	M	H	RR
CRESOL, O-	00095-48-7	4		2400.0	A	24.0	A	M	H	RR
CRESOL, P-	00106-44-5	4		2400.0	A	24.0	A	M	H	RR
CROCIDOLITE	12001-28-4	1		---		3.0E-08	*	H	HAI	
CROTONALDEHYDE	00123-73-9	4		1400.0	A	14.0	A			RR
CROTONALDEHYDE	04170-30-3	4		1400.0	T	14.0	T			
CRUFORMATE	00299-86-5	1		380.0	s	12.0	T			
CUMENE (8CI)	00098-82-8	4		59000.0	T	9.0	I		H	
CYANAMIDE	00420-04-2	4		480.0	T	4.8	T	M		
CYANIDE (8CI9CI)	00057-12-5	4	CN	500.0	T	12.0	T	H	H	
CYANOACETAMIDE	00107-91-5	4	CN	3800.0	T	38.0	T	M	H	RRQQ
CYANOGEN	00460-19-5	4		5000.0	T	50.0	T	M		
CYANOGEN BROMIDE	00506-68-3	4		---		320.0	o			
CYANOGEN CHLORIDE	00506-77-4	4		75.0	T	1.8	T		C	
CYCLOHEXANE	00110-82-7	4		250000.0	T	25000.0	T	L		
CYCLOHEXANETHIOL	01569-69-3	4		240.0	R	5.7	R		C	
CYCLOHEXANOL C6H12O	00108-93-0	4		49000.0	T	490.0	T			
CYCLOHEXANONE	00108-94-1	4		24000.0	T	240.0	T	M		
CYCLOHEXENE MIXTURE	00110-83-8	4		240000.0	T	2400.0	T			
CYCLOHEXYLAMINE	00108-91-8	4		9800.0	T	98.0	T			
CYCLONITE	00121-82-4	4		360.0	T	3.6	T			
CYCLOPENTADIENE, 1,3	00542-92-7	4		48000.0	T	480.0	T	M		
CYCLOPENTANE	00287-92-3	4		410000.0	T	4100.0	T			
CYHEXATIN	13121-70-5	4		1200.0	T	12.0	T			
CYPERMETHRIN	52315-07-8	4		1200.0	A	12.0	A	M		RR
Cd CYCLOHEXANE BUTY	55700-14-6	4	Cd	5.0E-01	T	1.3E-03	H	H	U H	RRQQ
DDE	00072-55-9	4		---		1.0E-01	d		H	
DDT	00050-29-3	4		50.0	R	1.2	R		C	
DECABORANE(14)	17702-41-9	4		60.0	T	6.0E-01	T			

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
DECAMETHYLCYCLOPENTA	00541-02-6	4		---		550.0	D L
DECANE C10H22	00124-18-5	4		---		1.0E-01	d M
DECANETHIOL, 1-	00143-10-2	4		360.0	R	8.6	R C
DEMETON	08065-48-3	4		26.0	T	2.6E-01	T
DEUTERIUM SULFATE	13813-19-9	6		240.0	A	2.4	A M RR
DI(ME)TETRA(MEO)DISI	18186-97-5	4		1400.0	A	14.0	A M RR
DIACETONE ALCOHOL	00123-42-2	4		57000.0	T	570.0	T M
DIALKYL PHTHALATES	39393-37-8	4		1200.0	A	12.0	A M RR
DIALLYLAMALEATE	00999-21-3	4		240.0	A	2.4	A M RR
DIAMINO TOLUENE,2,5	00095-70-5	4		---		1.0E-01	d M
DIANISIDINE, O-	00119-90-4	4		---		2.0E-01	H M H
DIAZINON	00333-41-5	1		24.0	T	2.4E-01	T
DIAZOMETHANE	00334-88-3	4		81.0	T	8.1E-01	T M H
DIBASIC LEADSTEARATE	56189-09-4	1		---		1.0E-01	d H
DIBENZ(a,h)ANTHRACEN	00053-70-3	4		---		7.1E-05	u U
DIBENZOFURANS	00132-64-9	4		---		3.0E-08	* H H
DIBORANE(6) B2H6	19287-45-7	4		26.0	T	2.6E-01	T
DIBROMOCHLOROPROPANE	00096-12-8	4		24.0	R	2.4E-01	R H
DIBROMOETHANE, 1,2-	00106-93-4	4		38.0	R	5.0E-03	E H U HB
DIBUTYL CARBITOL	00112-73-2	4		10000.0	A	480.0	A M H RR MM
DIBUTYL PHENYL PHOSP	02528-36-1	4		830.0	T	8.3	T
DIBUTYL PHOSPHATE	00107-66-4	4		2000.0	T	20.0	T

DIBUTYL PHTHALATE	00084-74-2	4		1200.0	T	12.0	T		H					
DIBUTYL SEBACATE	00109-43-3	4		---		80.0	A	L				R		
DIBUTYLAMINOETOL,2-N	00102-81-8	4		830.0	T	8.3	T							
DICHLONE	00117-80-6	4		---		1.0E-01	d	M						
DICHLORDIMEHYDANTOIN	00118-52-5	4		48.0	T	4.8E-01	T							
DICHLORO-2-BUTENE,14	00764-41-0	4		6.0	T	6.0E-02	T		B					
DICHLOROACETYLENE	07572-29-4	4		39.0	T	9.3E-01	T		C					
DICHLOROBENZENE, O-	00095-50-1	4		36000.0	T	200.0	E	M						
DICHLOROBENZENE,P-	00106-46-7	4		14000.0	T	700.0	D	M	H					
DICHLOROBENZIDINE33'	00091-94-1	4		---		1.0E-01	H	H	HB					
DICHLORODIFLUOROMETH	00075-71-8	6		1200000.0	T	200.0	I							
DICHLOROETHANE	00107-06-2	4		950.0	R	3.9E-02	E	M	U	H				
DICHLOROETHANE, 1,1	00075-34-3	4		96000.0	T	500.0	E	L	H					
DICHLOROETHYL ETHER	00111-44-4	4		6900.0	T	69.0	T		H					
DICHLOROETHYLENE, 12	00540-59-0	4		190000.0	T	1900.0	T	M						
DICHLOROFLUOROMETHAN	00075-43-4	4		10000.0	T	100.0	T							
DICHLOROMETHANE	00075-09-2	6		41000.0	T	27.0	D	M	U	HB				
DICHLORONITROETHANE	00594-72-9	4		2900.0	T	29.0	T							
DICHLOROPHENOL, 2,4-	00120-83-2	1		---		11.0	o							
DICHLOROPROPENE, 1,3	00542-75-6	4		1100.0	T	20.0	I		H					
DICHLOROPROPIONICACI	00075-99-0	4		1400.0	T	14.0	T							
DICHLORTETRAFLUORETH	00076-14-2	6		1700000.0	T	17000.0	T							
DICHLORVOS	00062-73-7	4		210.0	T	5.0E-01	E	M	H					
DICROTOPHOS	00141-66-2	4		60.0	T	6.0E-01	T							
DICYCLOPENTADIENE	00077-73-6	4		6400.0	T	64.0	T							
DICYCPENTDIENYL IRON	00102-54-5	4		2400.0	T	24.0	T							
DIELDRIN	00060-57-1	4		60.0	T	6.0E-01	T							
DIETHANOLAMINE	00111-42-2	4		480.0	T	4.8	T		H					
DIETHYL CARBITOL	00112-36-7	4		4300.0	A	200.0	A	M	H			RR		
DIETHYL KETONE	00096-22-0	4		170000.0	T	1700.0	T							
DIETHYL PHTHALATE	00084-66-2	4		1200.0	T	12.0	T	M						

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W	T	123456789012345
									-----codes----- 111111
DIETHYL SULFATE	00064-67-5	4		---		3.0E-08	*	H	H
DIETHYLAMINE	00109-89-7	4		3600.0	T	36.0	T		
DIETHYLAMINOETHANOL	00100-37-8	4		2300.0	T	23.0	T		
DIETHYLEN GLYCOL ADP	58984-19-3	4		---		1.0E-01	d		H
DIETHYLENE TRIAMINE	00111-40-0	4		1000.0	T	10.0	T	M	
DIETHYLENEDIMETHYLET	00111-96-6	4		6700.0	A	35.0	A	M	RR MM
DIETHYLSTILBESTROL	00056-53-1	4		---		7.7E-06	u	H	U
DIFLUORDIBROMOMETHAN	00075-61-6	4		200000.0	T	2000.0	T		
DIFLUOROETHANE	00075-37-6	4		---		40000.0	E	L	
DIGLYCID AMINO...	05026-74-4	4		140.0	A	1.4	A	M	RR
DIGLYCIDYL ETHER	02238-07-5	4		130.0	T	1.3	T		C
DIISOBUTYL KETONE	00108-83-8	4		33000.0	R	330.0	R		
DIISODECYL PHTHALATE	26761-40-0	4		1200.0	A	12.0	A	M	RR
DIISOOCTYLPHTHALATE	27554-26-3	4		1200.0	A	12.0	A	M	RR
DIISOPROPYLAMINE	00108-18-9	4		5000.0	T	50.0	T		
DIMETHOATE	00060-51-5	4		---		7.0E-01	o		
DIMETHOXANE	00828-00-2	4		360.0	A	8.6	A	M	RR
DIMETHYL AMINE	00124-40-3	4		2200.0	T	22.0	T		
DIMETHYL DISULFIDE	00624-92-0	4		14.0	A	1.0	A	M	RR
DIMETHYL ETHER	00115-10-6	4		290000.0	A	29000.0	A	L	RR
DIMETHYL HYDRAZINE	00057-14-7	4		6.0	T	6.0E-02	T	M	H C
DIMETHYL PHTHALATE	00131-11-3	4		1200.0	T	12.0	T		H
DIMETHYL SULFATE	00077-78-1	4		52.0	T	1.2	T	H	HB
DIMETHYL SULFIDE	00075-18-3	4		14.0	A	1.0	A	M	RR
DIMETHYLACETAMIDE	00127-19-5	4		8600.0	T	86.0	T		
DIMETHYLAMINOAZOBENZ	00060-11-7	4		---		1.0E-01	d	M	H
DIMETHYLANILINE	00121-69-7	4		520.0	A	60.0	T	M	H R

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T	codes 123456789012345
DIMETHYLBUTANE, 2,3-	00079-29-8	4		420000.0	T	4200.0	T	
DIMETHYLCARBMYLCHLOR	00079-44-7	4		---		1.0E-01	d M HB	
DIMETHYLDICHLOROSILA	00075-78-5	4		1600.0	A	16.0	A M	RR
DIMETHYLFORMAMIDE	00068-12-2	4		7100.0	T	30.0	E M H	
DIMETHYLHEXADIENE	00764-13-6	4		390000.0	A	3900.0	A M	RR
DIMTHYLETHOXYSILANE	14857-34-2	1		380.0	s	5.0	P	
DINITRO-O-CRESOL	00534-52-1	4		48.0	T	4.8E-01	T H	
DINITRO-O-TOLUAMIDE	00148-01-6	4		1200.0	T	12.0	T	
DINITROBENZENE	00100-25-4	4		240.0	T	2.4	T	
DINITROBENZENE	00528-29-0	4		240.0	T	2.4	T	
DINITROBENZENE, M-	00099-65-0	4		240.0	T	2.4	T M	
DINITROPHENOL, 2,4-	00051-28-5	4		---		7.0	o H	
DINITROTOLUENE	25321-14-6	4		36.0	T	3.6E-01	T B	
DINITROTOLUENE,2,4-	00121-14-2	4		---		3.0E-08	* H H	
DINOSEB	00088-85-7	4		---		3.5	o	
DIOCTYL ADIPATE	00103-23-1	4		1200.0	A	12.0	A M	RR
DIOCTYL PHTHALATE	00117-81-7	4		1200.0	T	12.0	T M H	
DIOCTYL SEBACATE	00122-62-3	4		---		80.0	D L	
DIOXANE	00123-91-1	4		360.0	R	8.6	R M H C	
DIOXATHION	00078-34-2	4		48.0	T	4.8E-01	T	
DIOXOLANE	00646-06-0	4		---		140.0	D L	
DIPHENYL CARBONATE	00102-09-0	4		310.0	A	3.1	A M	RR
DIPHENYL HYDRAZINE	00122-66-7	4		2.5	A	4.5E-03	E H U H	R
DIPHENYL MERCURY	00587-85-9	4	Hg	1.8	T	4.2E-02	T H H	RRQQ
DIPHENYLAMINE	00122-39-4	4		2400.0	T	24.0	T	
DIPROPGLYCOLMETHETHR	34590-94-8	4		140000.0	T	1400.0	T	

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T	codes 123456789012345
DIPROPYL KETONE	00123-19-3	4		55000.0	T	550.0	T	
DIPROPYLENE GLYCOL	25265-71-8	4		88000.0	A	2000.0	A L	RR
DIQUAT	00085-00-7	1		24.0	A	2.4E-01	A	RR
DIQUAT	00231-36-7	1		24.0	T	2.4E-01	T K	
DIQUAT	06385-62-2	1		24.0	A	2.4E-01	A	RR
DISULFIRAM	00097-77-8	4		480.0	T	4.8	T	
DISULFOTON	00298-04-4	4		24.0	T	2.4E-01	T	
DITERT BUTLY-P-CRES	00128-37-0	4		2400.0	T	240.0	T L	
DIURON	00330-54-1	4		2400.0	T	24.0	T	
DIVINYL BENZENE	00108-57-6	4		13000.0	A	130.0	A	RR
DIVINYL BENZENE	01321-74-0	4		13000.0	T	130.0	T	
DODECANETHIOL, 1-	00122-55-0	4		410.0	R	9.8	R C	
DODECYL BENZENE	00123-01-3	4		---		18000.0	D L	
DODECYLGLYCIDYLETHER	02461-18-9	4		---		1.0E-01	d M	
Diethoxyacetophenone	06175-45-7	4		---		270.0	D M	
Dimethylbutane, 2,2-	00075-83-2	4		83000.0	A	4200.0	T M	R
EMERY	01302-74-5	1		380.0	s	24.0	T I	
ENDOSULFAN	00115-29-7	4		24.0	T	2.4E-01	T	
ENDRIN	00072-20-8	4		24.0	T	2.4E-01	T	
ENFLURANE	13838-16-9	4		130000.0	T	1300.0	T	
EPICHLOROHYDRIN	00106-89-8	4		450.0	P	8.0E-01	E M U HB	
EPN	02104-64-5	4		24.0	T	2.4E-01	T	
EPOXIDE 4221	02386-87-0	4		---		210.0	D M	
ET HEXYLMETHACRYLATE	00688-84-6	4		1700.0	A	17.0	A M	RR
ETHANE	00074-84-0	6		---	X	9999999.0	X L G	
ETHANOL	00064-17-5	4		450000.0	T	45000.0	T L	
ETHANOL,2-(PHENYLMET	00622-08-2	4		---		1.0E-01	d H	
ETHANOL,2-PHENOXY-	00122-99-6	4		6600.0	A	310.0	A M H	RR MM
ETHANOLAMINE	00141-43-5	4		1800.0	T	18.0	T M	
ETHION	00563-12-2	1		95.0	T	9.5E-01	T	
ETHOXYETHYL ACETATE2	00111-15-9	4		6400.0	T	64.0	T M H	
ETHYL 4-OXAHEXANOATE	00763-69-9	4		6400.0	A	64.0	A M	RR

ETHYL ACETATE	00141-78-6	4		340000.0	T	34000.0	T	L						
ETHYL ACRYLATE	00140-88-5	4		4800.0	T	48.0	T			HB				
ETHYL AMINE	00075-04-7	4		2200.0	T	22.0	T							
ETHYL AMYL KETONE	00106-68-3	4		31000.0	A	310.0	A						RR	
ETHYL AMYL KETONE	00541-85-5	4		31000.0	T	310.0	T							
ETHYL BENZENE	00100-41-4	4		100000.0	T	1000.0	E	M		H				
ETHYL BROMIDE	00074-96-4	4		5200.0	T	52.0	T			B				
ETHYL BUTYL KETONE	00106-35-4	4		56000.0	T	560.0	T							
ETHYL CHLORIDE	00075-00-3	4		63000.0	T	13000.0	E	L		H				
ETHYL ETHER	00060-29-7	4		290000.0	T	29000.0	T	L						
ETHYL FORMATE	00109-94-4	4		72000.0	T	720.0	T							
ETHYL MERCAPTAN	00075-08-1	4		310.0	T	3.1	T	M			C			
ETHYL MERCURIC PHOSP	02235-25-8	1	Hg	1.6	T	3.9E-02	T	H		H			RRQQ	
ETHYL OXIRANE	00106-88-7	4		3000.0	D	20.0	D	M		H				
ETHYL SILICATE	00078-10-4	4		20000.0	T	200.0	T							
ETHYLENE	00074-85-1	4		---	X	9999999.0	X			G				
ETHYLENE CHLOROHYDRN	00107-07-3	4		330.0	T	7.9	T			C				
ETHYLENE DIAMINE	00107-15-3	4		6000.0	T	60.0	T	M						
ETHYLENE GLYCOL	00107-21-1	4		10000.0	T	240.0	T			HC				
ETHYLENE GYLCOL MONO	00111-45-5	4		---		1.0E-01	d	M		H				
ETHYLENE OXIDE	00075-21-8	4		18.0	D	1.9E-02	D	H	U	HB				

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
ETHYLENE THIOUREA	00096-45-7	4		---		3.0E-08	* H H
ETHYLENEGLY MONOPR E	02807-30-9	4		---		70.0	D M
ETHYLENEGLYCOLDINITR	00628-96-6	4		10.0	R	2.4E-01	R C
ETHYLENEIMINE	00151-56-4	4		88.0	T	2.1	T H H
ETHYLIDENENORBORNENE	16219-75-3	4		2500.0	T	60.0	T C
ETHYLMORPHOLINE,N-	00100-74-3	4		5700.0	T	57.0	T
Ethoxylated alcohols	74432-13-6	4		---		48.0	A M R
FENAMIPHOS	22224-92-6	6		24.0	T	2.4E-01	T
FENSULFOTHION	00115-90-2	4		24.0	T	2.4E-01	T
FENTHION	00055-38-9	4		48.0	T	4.8E-01	T
FERBAM	14484-64-1	1		380.0	s	24.0	T
FERRIC SULFATE	10028-22-5	6		240.0	A	24.0	A L RR
FERROVANADIUM DUST	12604-58-9	1		240.0	T	2.4	T
FISH OIL	08016-13-5	6		48.0	A	4.8	A L RR
FLUORIDE.NY STANDARD	*FLUORIDE*	1	F	7.1	s	4.0E-01	s
FLUORINE	07782-41-4	6		380.0	T	3.8	T M
FONOFOS	00944-22-9	4		24.0	T	2.4E-01	T
FORMALDEHYDE	00050-00-0	4		30.0	H	6.0E-02	H H U HBC
FORMAMIDE	00075-12-7	4		4300.0	T	43.0	T M
FORMIC ACID	00064-18-6	4		2200.0	T	22.0	T M
FREON 13	00075-72-9	4		560000.0	A	700.0	A L RR
FURFURAL	00098-01-1	4		1900.0	T	50.0	E M
FURFURYL ALCOHOL	00098-00-0	4		9500.0	T	95.0	T M
GALLIUM ARSENIDE	01303-00-0	1	As	3.9E-01	R	4.4E-04	E H U H C RRQQ
GASOLINE	08006-61-9	4		210000.0	T	2100.0	T H
GERMANIUMTETRAHYDRID	07782-65-2	1		150.0	T	1.5	T
GLUTARALDEHYDE	00111-30-8	4		20.0	P	4.8E-01	P C
GLYCERIN	00056-81-5	4		2400.0	T	240.0	T L I
GLYCIDALDEHYDE	00765-34-4	4		---		1.0	E M
GLYCIDOL	00556-52-5	4		1500.0	P	15.0	P
GLYCOL ETHER	00111-46-6	4		---		1.0E-01	d H
GLYCOL MONOETHYLETHR	00110-80-5	4		4300.0	T	200.0	E M H
GLYCOLONITRILE	00107-16-4	4		500.0	R	12.0	R C
GOLD CYANIDE	37187-64-7	1	CN	380.0	s	50.0	S H H RRQQ
GOLD POTASSIUM CYAN	00554-07-4	4	C2N2	2800.0	T	66.0	T H H RRQQ
GRAPHITE	07782-42-5	1		380.0	s	4.8	T I
HAFNIUM HF	07440-58-6	1		120.0	T	1.2	T

HALOTHANE	00151-67-7	4		96000.0	T	960.0	T										
HELIUM HE	07440-59-7	6		---	X	9999999.0	X			G							
HELOXY WC-8006	92529-64-1	4		---		1.0E-01	d	M									
HEPTACHLOR	00076-44-8	1		5.0	T	8.0E-04	E	H	U	H							
HEPTACHLOR EPOXIDE	01024-57-3	1		12.0	T	1.2E-01	T										
HEPTANE, N-	00142-82-5	4		83000.0	R	830.0	R	M									
HEPTANETHIOL, 1-	01639-09-4	4		270.0	R	6.4	R				C						
HEPTYL ACETATE	00112-06-1	4		70000.0	A	7000.0	A	L						RR			
HEXACHLOROBENZENE	00118-74-1	4		2.5	T	2.2E-03	E	H	U	H							
HEXACHLOROBUTADIENE	00087-68-3	4		50.0	T	5.0E-02	E	M	U	HB							
HEXACHLOROETHANE	00067-72-1	4		2300.0	T	23.0	T			HB							
HEXACHLORONAPTHALENE	01335-87-1	4		48.0	T	4.8E-01	T	M									
HEXACHLOROPHENE	00070-30-4	4		---		1.1	o										
HEXADECANETHIOL, 1-	02917-26-2	4		530.0	R	13.0	R				C						
HEXAFLUOROACETONE	00684-16-2	4		160.0	T	1.6	T										
HEXAMETHYLDISILOXANE	00107-46-0	4		1600.0	A	220.0	D	M						R			

Date Created: 10-06-95

AIR GUIDE-1 AGCs/SGCs (ALPHABETICALLY by Contaminant Name) Page 11

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W	T	codes 123456	codes 789012	codes 345
HEXAMETHYLENE DIISOC	00822-06-0	4		3.4	T	1.0E-02	E	H	H		
HEXAMETHYLPHOSPHORAM	00680-31-9	4		---		1.0E-01	d	M	HB		
HEXANE	00110-54-3	4		42000.0	T	240.0	E	M	H		
HEXANEDIAMINE, 1,6-	00124-09-4	4		550.0	T	5.5	T	M			
HEXANETHIOL, 1-	00111-31-9	4		240.0	R	5.7	R			C	
HEXCHLORCYCPENTDIENE	00077-47-4	4		26.0	T	7.0E-02	E	M	H		
HEXMETHDODEC POLYMER	26098-55-5	4		---		1.0E-01	d	M			
HEXYL ACETATE, SEC-	00108-84-9	4		70000.0	T	7000.0	T	L			
HEXYL CARBITOL	00112-59-4	4		9000.0	A	420.0	A	M	H	RR	MM
HEXYLENE GLYCOL	00107-41-5	4		12000.0	T	2900.0	T	L	C		
HYDRAZINE	00302-01-2	4		1.3	T	2.0E-04	E	H	U H C		
HYDROGEN	01333-74-0	6		---	X	9999999.0	X		G		
HYDROGEN BROMIDE	10035-10-6	6		990.0	T	240.0	T	L	C		
HYDROGEN CHLORIDE	07647-01-0	6		150.0	E	20.0	E	L	HC		
HYDROGEN CYANIDE	00074-90-8	1		380.0	s	3.0	E	H	H C		
HYDROGEN FLUORIDE	07664-39-3	6	F	7.5	s	4.2E-01	s	M	HC	RR	QQ
HYDROGEN PEROXIDE	07722-84-1	6		330.0	T	3.3	T				
HYDROGEN SELENIDE	07783-07-5	1	Se	39.0	T	3.9E-01	T		H	QQ	
HYDROGEN SULFIDE	07783-06-4	6		14.0	S	1.0	E	M	C		
HYDROGENATED TERPHEN	61788-32-7	4		1200.0	T	12.0	T				
HYDROQUINONE	00123-31-9	4		480.0	T	4.8	T	M	H C		
HYDROXYPROPYLACRYLAT	00999-61-1	4		670.0	T	6.7	T				
HYDROXYPROPYLMETHACR	27813-02-1	4		98000.0	A	980.0	A	M		RR	
INDENE	00095-13-6	4		11000.0	T	110.0	T				
INDIUM IN	07440-74-6	1	In	10.0	T	2.4E-01	T	H			
INDIUM, TRIETHYL	00923-34-2	6	In	18.0	T	4.2E-01	T	H		RR	QQ
IODINE	07553-56-2	1		100.0	T	24.0	T	L	C		
IODOFORM	00075-47-8	4		2400.0	T	24.0	T				
IRON OXIDE	01309-37-1	1	Fe2	380.0	s	17.0	T				QQ
IRON PENTACARBONYL	13463-40-6	1	Fe	190.0	T	1.9	T				QQ
IRON SALTS	Fe*SOLSALT	1	Fe	240.0	T	2.4	T				
ISO-OCTANE	00540-84-1	4		83000.0	A	830.0	A	M	H	RR	
ISO-PENTANE	00078-78-4	4		83000.0	A	8300.0	A	L		RR	
ISOAMYL ACETATE	00123-92-2	4		130000.0	T	13000.0	T	L			
ISOAMYL ALCOHOL	00123-51-3	6		86000.0	T	8600.0	T	L			
ISOBUTANE	00075-28-5	4		450000.0	A	28000.0	D	L		R	
ISOBUTANOLAMINE	00124-68-5	4		1800.0	A	18.0	A	M		RR	
ISOBUTYL ACETATE	00110-19-0	4		170000.0	T	17000.0	T	L	H		
ISOBUTYL ALCOHOL	00078-83-1	4		36000.0	T	360.0	T				
ISOBUTYL-ISOBUTYRATE	00097-85-8	4		---		45000.0	D	L			
ISOBUTYLENE	00115-11-7	4		---		1.0E-01	d	M			
ISOBUTYRONITRILE	00078-82-0	4		5200.0	R	52.0	R				

ISOOCTYL ALCOHOL	26952-21-6	4		63000.0	T	630.0	T							
ISOPHORONE	00078-59-1	4		5500.0	R	55.0	R	M		HC				
ISOPHORONE DIISOCYAN	04098-71-9	4		11.0	T	1.1E-01	T							
ISOPROPOXYETHANOL,2-	00109-59-1	4		25000.0	T	250.0	T							
ISOPROPYL ACETATE	00108-21-4	4		250000.0	T	2500.0	T							
ISOPROPYL ALCOHOL	00067-63-0	4		230000.0	T	2300.0	T	M						
ISOPROPYL ETHER	00108-20-3	4		250000.0	T	2500.0	T							
ISOPROPYLAMINE	00075-31-0	4		2900.0	T	29.0	T	M						
ISOPROPYLANILINE, N-	00768-52-5	4		2600.0	T	26.0	T							
ISOPROPYLGLYCIDYLETH	04016-14-2	4		57000.0	T	570.0	T				C			
KAOLIN (CLAY)	01332-58-7	1		380.0	s	4.8	T			I				

Date Created: 10-06-95

AIR GUIDE-1 AGCs/SGCs (ALPHABETICALLY by Contaminant Name) Page 12

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W	T	codes 123456	789012	345
KELTHANE	00115-32-2	4		---		1.0E-01	d	M			
KEROSENE	08008-20-6	4		24000.0	R	2400.0	R	L			
KETENE	00463-51-4	4		200.0	T	2.0	T	M			
LEAD	07439-92-1	1	Pb	12.0	T	7.5E-01	s		H		
LEAD ACETATE	01335-32-6	1		---		1.0E-01	d	M	H		
LEAD ALLOY,SN ,DROSS	69011-60-5	1		---		1.0E-01	d		H		
LEAD ARSENATE	07645-25-2	1	As	9.3E-01	R	1.1E-03	E	H	U H		RRQQ
LEAD ARSENATE	07784-40-9	1		2.4	R	2.8E-03	E	H	U H		RRQQ
LEAD CARBONATE	00598-63-0	1	Pb	15.0	T	9.7E-01	s		H		RRQQ
LEAD CARBONATE	25510-11-6	1	Pb	15.0	T	9.7E-01	s		H		RRQQ
LEAD CHLORIDE	07758-95-4	1	Pb	16.0	T	1.0	s		H		RRQQ
LEAD CHROMATE	07758-97-6	1	Cr	6.2E-01	R	1.2E-04	H	H	U HB		RRQQ
LEAD CHROMATE OXIDE	18454-12-1	1	Cr	1.1	R	2.1E-04	H	H	U H		RRQQ
LEAD FLUOROBORATE	13814-96-5	1	Pb	17.0	T	1.1	s		H		RRQQ
LEAD MOLYBDATE	10190-55-3	1	Pb	21.0	T	1.3	s		H		RRQQ
LEAD NAPHTHENATE	61790-14-5	6		---		1.0E-01	d		H		
LEAD OXIDE	01309-60-0	1	Pb	14.0	T	8.7E-01	s		H		RRQQ
LEAD OXIDE	01317-36-8	1	Pb	13.0	T	8.1E-01	s		H		RRQQ
LEAD OXIDE	01335-25-7	1	Pb	13.0	T	8.1E-01	s		H		RRQQ
LEAD OXIDE SULFATE	12202-17-4	1	Pb	20.0	T	1.3	s		H		RRQQ
LEAD PHOSPHATE SALT	07446-27-7	1	Pb2	17.0	T	1.0	s		H		RRQQ
LEAD SILICATE	11120-22-2	1	Pb3	15.0	T	9.5E-01	s		H		RRQQ
LEAD STEARATE SALT	07428-48-0	1	Pb	28.0	T	1.8	s		H		RRQQ
LEAD TETROXIDE	01314-41-6	1	Pb3	13.0	T	8.3E-01	s		H		RRQQ
LEAD TITANATE ZIRCON	12626-81-2	1		---		1.0E-01	d		H		
LEAD TITANIUM OXIDE	12060-00-3	1	Pb	17.0	T	1.1	s		H		RRQQ
LEAD ZIRCONIUM OXIDE	12060-01-4	1	Pb	20.0	T	1.3	s		H		RRQQ
LEAD,BENZENEDICARBOX	69011-06-9	4		---		1.0E-01	d		H		
LIMONENE (ALPHA)	00138-86-3	4		---		210.0	D	M			
LINDANE, ALPHA-	00319-84-6	4		120.0	A	6.0E-04	A	M	U H		RR
LINDANE, BETA-	00319-85-7	4		120.0	A	2.0E-03	E	M	U H		R
LINDANE, GAMMA-	00058-89-9	4		120.0	T	6.0E-04	E	M	U H		
LIQUIFIED GAS	68476-85-7	4		430000.0	T	4300.0	T				
LITHIUM HYDRIDE LIH	07580-67-8	4		6.0	T	6.0E-02	T				
MAGNESITE	00546-93-0	1		380.0	s	24.0	T			I	
MAGNESIUM OXIDE	01309-48-4	1		380.0	s	24.0	T				
MALATHION	00121-75-5	4		2400.0	T	24.0	T	M			
MALEIC ANHYDRIDE	00108-31-6	4		240.0	T	2.4	T	M	H		
MALONONITRILE	00109-77-3	1		380.0	s	19.0	R				
MANGANESE	07439-96-5	1	Mn	48.0	T	5.0E-02	I	M	HI		
MANGANESE NITRATE	10377-66-9	1	Mn	100.0	T	1.1E-01	I		H		RRQQ
MANGANESE OXIDE	01313-13-9	1	Mn	370.0	T	3.8E-01	I		H		RRQQ
MANGANESE OXIDE	01317-34-6	1	Mn2	68.0	T	7.2E-02	I		H		RRQQ
MANGANESE PHOSPHATE	10124-54-6	1	Mn	130.0	T	1.4E-01	I		H		RRQQ
MANGANESE ROSINATE	09008-34-8	1		---		1.0E-01	d		H		
MANGANESE SULFATE	07785-87-7	1	Mn	130.0	T	1.4E-01	I		H		RRQQ
MANGANESE TETROXIDE	01317-35-7	1	Mn3	66.0	T	6.9E-02	I		H		RRQQ

MANGANESECYCLOPENTAD	12079-65-1	4	Mn	88.0	T	8.8E-01	T	H		QQ
MEK PEROXIDE	01338-23-4	4		150.0	T	3.6	T	C		
MELAMINEFORMALDEHYDE	68891-01-0	4		30.0	A	6.0E-02	A	M	U	RR
MERCURY	07439-97-6	1	Hg	6.0	T	3.0E-01	E	M	HK	
MERCURY	22967-92-6	4	Hg	1.0	A	2.4E-02	A	H	H	RR
MERCURY	Hg**ARYL**	1	Hg	24.0	T	2.4E-01	T		H	

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
MERCURY	Hg*ALKYL**	1	Hg	2.4	T	2.4E-02	T H
MERCURY "NUCLEATE"	12002-19-6	1		---		1.0E-01	d H
MERCURY CHLORIDE	07487-94-7	1	Hg	8.1	T	4.1E-01	E H RRQQ
MERCURY IODINE	07774-29-0	1	Hg	13.0	T	6.8E-01	E H RRQQ
MERCURY NITRATE	10045-94-0	1	Hg	9.7	T	4.9E-01	E H RRQQ
MERCURY SULFIDE	01344-48-5	1	Hg	6.9	T	3.5E-01	E H RRQQ
MESITYENE	00108-67-8	4		29000.0	A	290.0	A M RR
MESITYL OXIDE	00141-79-7	4		9500.0	R	95.0	R
METH ACRY AC METH ES	00080-62-6	4		98000.0	T	980.0	T M H
METH BIS-O-CHLORANIL	00101-14-4	4		7.1E-01	R	7.1E-03	R HB
METHACRYLIC ACID 8CI	00079-41-4	4		17000.0	T	170.0	T
METHANE	00074-82-8	6		---	X	9999999.0	X G
METHANESULFONIC ACID	00075-75-2	4		150.0	A	20.0	A L RR
METHANOL	00067-56-1	4		62000.0	T	620.0	T H
METHOMYL	16752-77-5	4		600.0	T	6.0	T
METHOXY BUTYLACETATE	04935-53-4	4		---		200.0	D M
METHOXYCHLOR	00072-43-5	4		2400.0	T	24.0	T H
METHOXYETHYL ACET,2-	00110-49-6	4		5700.0	T	57.0	T
METHOXYPHENOL, 4-	00150-76-5	4		1200.0	T	12.0	T
METHOXYPROPYLACETATE	00108-65-6	4		88000.0	A	2000.0	A L RR
METHYL ACETATE	00079-20-9	4		140000.0	T	1400.0	T
METHYL ACETYLENE	00074-99-7	4		390000.0	T	3900.0	T M
METHYL ACRYLATE	00096-33-3	4		1700.0	P	17.0	P M
METHYL AMYL KETONE	00110-43-0	4		55000.0	T	550.0	T
METHYL ANILINE	00100-61-8	4		520.0	T	5.2	T M
METHYL BROMIDE	00074-83-9	4		4500.0	T	5.0	D M H
METHYL CARBITOL	00111-77-3	4		6000.0	A	32.0	A M RR MM
METHYL CELLOSOLVE	00109-86-4	4		3800.0	T	20.0	E M H
METHYL CHLOROFORM	00071-55-6	6		450000.0	T	1000.0	E L H C
METHYL CHLOROMETHETH	00107-30-2	4		---		1.0E-01	d M HB
METHYL CYANOACRYLATE	00137-05-3	4		2200.0	T	22.0	T
METHYL DEMETON	08022-00-2	4		120.0	T	1.2	T
METHYL ETHYL KETONE	00078-93-3	4		140000.0	T	300.0	E M H
METHYL ETHYLKETOXINE	00096-29-7	4		140000.0	A	300.0	A M RR
METHYL FORMATE	00107-31-3	4		59000.0	T	590.0	T M
METHYL IODIDE	00074-88-4	4		2900.0	T	29.0	T HB
METHYL ISOBUTYL KETO	00108-10-1	4		48000.0	R	480.0	R M H
METHYL ISOCYANATE	00624-83-9	4		4.7	T	1.1E-01	T H H
METHYL MERCAPTAN	00074-93-1	4		230.0	T	2.3	T M C
METHYL N-BUTYL KETON	00591-78-6	4		950.0	R	9.5	R
METHYL PARATHION	00298-00-0	4		48.0	T	4.8E-01	T
METHYL PROPYL KETONE	00107-87-9	4		130000.0	R	1300.0	R
METHYL PYRROLIDONE	00872-50-4	4		---		580.0	D M
METHYL SALICYLATE	00119-36-8	4		---		52000.0	D L
METHYL SILICATE	00681-84-5	4		1400.0	T	14.0	T M
METHYL STYRENE, @	00098-83-9	4		58000.0	T	580.0	T
METHYL TETRAMER	00556-67-2	6		---		550.0	D L
METHYLACRYLONITRILE	00126-98-7	4		640.0	T	6.4	T
METHYLAL	00109-87-5	4		740000.0	T	7400.0	T
METHYLAMINE	00074-89-5	4		1500.0	T	15.0	T M
METHYLBUTANONE	00096-17-3	4		---		1.0E-01	d M
METHYLCYCLOHEXADIENE	30640-46-1	4		390000.0	A	3900.0	A M RR

METHYLCYCLOHEXANE	00108-87-2	4		380000.0	T	3800.0	T M			

Date Created: 10-06-95

AIR GUIDE-1 AGCs/SGCs (ALPHABETICALLY by Contaminant Name) Page 14

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T	-----codes----- 111111 123456789012345
METHYLCYCLOHEXANOL	25639-42-3	4		56000.0	T	560.0	T	
METHYLCYCLOHEXANON,O	00583-60-8	4		55000.0	T	550.0	T	
METHYLCYCLOPENTADIEN	12108-13-3	4	Mn	150.0	T	1.5	T	H QQ
METHYLCYCLOPENTADIEN	26519-91-5	4		48000.0	A	480.0	A M	RR
METHYLCYCLOPENTANE	00096-37-7	4		83000.0	A	8300.0	A L	RR
METHYLENE BISPH ISCY	00101-68-8	4		5.0	R	2.0E-02	E H	H
METHYLENEBIS4CYCLOHE	05124-30-1	4		5.4	T	1.3E-01	T H	
METHYLENECYCLOBUTANE	01120-56-5	4		---		1.0E-01	d M	
METHYLENEDIANILINE44	00101-77-9	4		190.0	T	1.9	T M	HB
METHYLETHYLBENZENE	25550-14-5	4		---		1.0E-01	d M	
METHYLISOAMYLKETONE	00110-12-3	4		55000.0	R	550.0	R	
METHYLISOBUTYLCARBIN	00108-11-2	4		25000.0	T	250.0	T	
METHYLISOPROPYLKETON	00563-80-4	4		170000.0	T	1700.0	T	
METHYLPYRROLE	00096-54-8	4		---		1.0E-01	d M	
METHYLTERTBUTYLETHER	01634-04-4	4		34000.0	T	50.0	E M	H
METHYLTRIMETHOXYSILA	01185-55-3	4		1600.0	A	160.0	A L	RR
METHYLVINYLTETRAMER	02554-06-5	4		1600.0	A	160.0	A L	RR
METRIBUZIN	21087-64-9	4		1200.0	T	12.0	T	
MEVINPHOS	07786-34-7	4		22.0	T	2.2E-01	T	
MICA	12001-26-2	1		380.0	s	7.1	T	I
MIREX	02385-85-5	4		---		3.0E-08	* H	
MOLYBDENUM	Mo*INSOLUB	1	Mo	380.0	s	24.0	T	
MOLYBDENUM (8CI9CI)	07439-98-7	1	Mo	380.0	s	12.0	T	K
MONOCHLOROBENZENE	00108-90-7	4		11000.0	T	20.0	E M	H
MONOCROTOPHOS	06923-22-4	4		60.0	T	6.0E-01	T	
MONOMETHYL HYDRAZINE	00060-34-4	4		4.5	T	4.5E-02	T M	H C
MONOSODIUM PHOSPHATE	07558-80-7	1		---		50.0	S L	
MORPHOLINE C4H9O	00110-91-8	4		17000.0	T	170.0	T	
MYRJ 53 EMULSIFIER	09004-99-3	6		---		3100.0	D L	
Methyl pentane, 2-	00107-83-5	4		83000.0	A	4200.0	T M	R
N,N-DIETHYL ANILINE	00091-66-7	4		520.0	A	5.2	A M	RR
N-ETHYLANILINE	00103-69-5	4		520.0	A	5.2	A M	RR
N-PROPYLBENZENE	00103-65-1	4		---		1.0E-01	d M	
NADIC METHYLANHYDRID	25134-21-8	4		---		750.0	D L	
NALED (DIBROM)	00300-76-5	4		710.0	T	7.1	T	
NAPHTHA HEAVY	64742-94-5	4		---		1.0E-01	d M	
NAPHTHA LIGHT	64742-95-4	4		---		1.0E-01	d M	
NAPHTHALELEDIISOCYAN	03173-72-6	4		8.3	R	8.3E-02	R	
NAPHTHALENE	00091-20-3	4		12000.0	T	120.0	T M	H
NAPHTHYLAMINE, @ -	00134-32-7	4		---		1.0E-01	d M	
NAPHTHYLAMINE, B-	00091-59-8	4		---		3.0E-08	* H	A
NAPTHA (COAL TAR)	08030-30-6	4		83000.0	R	830.0	R	
NAPTHA (HEAVY)	64742-49-9	4		100000.0	A	300.0	A M	RR
NEON	07440-01-9	6		---	X	9999999.0	X	G
NICKEL	07440-02-0	1	Ni	5.0	P	4.0E-03	H H U	HAI
NICKEL (+2) SULFATE	07786-81-4	6	Ni	4.0	R	1.1E-02	H H U H	RRQQ
NICKEL (INORGANIC)	Ni*INORG**	1	Ni	1.5	R	4.0E-03	H H U	HAI
NICKEL (Ni 059)	NY059-28-0	6	Ni	1.5	A	4.0E-03	A H U H	RR
NICKEL (Ni 063)	NY063-28-0	6	Ni	1.5	A	4.0E-03	A H U H	RR
NICKEL (Ni 065)	NY065-28-0	6	Ni	1.5	A	4.0E-03	A H U H	RR
NICKEL ACETATE	00373-02-4	4	Ni	15.0	P	1.2E-02	H H U H	RRQQ
NICKEL AZO YELLOW	51931-46-5	4	Ni	56.0	P	4.5E-02	H H U H	RRQQ
NICKEL BORIDE	12007-02-2	1	Ni3	1.6	R	4.2E-03	H H U H	RRQQ

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
NICKEL BROMIDE	13462-88-9	1	Ni	5.6	R	1.5E-02	H H U H RRQQ
NICKEL CARBIDE	12710-36-0	1	Ni	2.1	R	5.6E-03	H H U H RRQQ
NICKEL CARBONYL	13463-39-3	6	Ni	2.0	R	1.2E-02	H H U H R QQ
NICKEL CHLORIDE	07718-54-9	1	Ni	3.3	R	8.8E-03	H H U H RRQQ
NICKEL CYANIDE	00557-19-7	1	Ni	380.0	s	7.5E-03	H H U H RRQQ
NICKEL DIACETATE TET	06018-89-9	1	Ni	21.0	P	1.7E-02	H H U H RRQQ
NICKEL HYDROXIDE	12504-48-7	1	Ni	2.4	R	6.3E-03	H H U H RRQQ
NICKEL NITRATE	13138-45-9	1	Ni	4.7	R	1.3E-02	H H U H RRQQ
NICKEL OXIDE	01313-99-1	1	Ni	1.9	R	5.1E-03	H H U H RRQQ
NICKEL OXIDE	01314-06-3	1	Ni2	2.1	R	5.6E-03	H H U H RRQQ
NICKEL PHOSPHATE	10381-36-9	1	Ni3	3.2	R	8.5E-03	H H U H RRQQ
NICKEL SULFAMATE	13710-89-3	1	Ni	6.5	R	1.7E-02	H H U H RRQQ
NICKEL SULFAMIDE	13770-89-3	1	Ni	4.0	R	1.1E-02	H H U H RRQQ
NICKEL SULFATE.6H2O	10101-97-0	1	Ni	6.8	R	1.8E-02	H H U H RRQQ
NICKEL SULFIDE NI3S2	12035-72-2	1	Ni3	2.0	R	5.5E-03	H H U H RRQQ
NICKEL TITANATE	12653-76-8	1	Ni	4.0	R	1.1E-02	H H U H RRQQ
NICKEL,BIS(1-(4-DIME	38465-55-3	6	Ni	54.0	P	4.3E-02	H H U H RRQQ
NICOTINE	00054-11-5	4		120.0	T	1.2	T
NITRAPYRIN	01929-82-4	4		2400.0	T	24.0	T
NITRIC ACID MIST	07697-37-2	6		1200.0	R	12.0	R M
NITRIC ACID,LEADSALT	10099-74-8	6	Pb	16.0	T	9.8E-01	s H RRQQ
NITRILOTRIACETIC ACI	00139-13-9	4		---		1.0E-01	d M
NITROANILINE, P-	00100-01-6	4		710.0	T	6.0	H M
NITROBENZENE	00098-95-3	4		1200.0	T	2.0	I M H
NITRODIPHENYL, 4-	00092-93-3	4		---		3.0E-08	* H HA
NITROETHANE	00079-24-3	4		73000.0	T	730.0	T
NITROGEN	07727-37-9	6		---	X	9999999.0	X G
NITROGEN DIOXIDE	10102-44-0	3		180.0	R	100.0	S C
NITROGEN MUSTARD	00051-75-2	4		---		3.0E-08	* H
NITROGEN OXIDE NO	10102-43-9	3		7100.0	R	71.0	R
NITROGEN TRIFLUORIDE	07783-54-2	6		8.9	s	5.0E-01	s RRQQ
NITROGEN, ISOTOPE-13	13981-22-1	6		---		1.0E-01	d H
NITROGLYCERINE	00055-63-0	4		10.0	R	2.4E-01	R M C
NITROMETHANE	00075-52-5	4		12000.0	T	120.0	T
NITROPHENOL, P-	00100-02-7	4		---		1.0E-01	d M H
NITROPROPANE, 1-	00108-03-2	4		22000.0	T	220.0	T M
NITROPROPANE, 2-	00079-46-9	4		3600.0	T	20.0	I H HB
NITROSO-N-BUTYLAMINE	00924-16-3	4		---		6.3E-04	u U
NITROSO-N-METHYLUREA	00684-93-5	4		---		1.0E-01	d M H
NITROSODIETHYLAMINE	00055-18-5	4		---		2.3E-05	u U
NITROSODIMETHYLAMINE	00062-75-9	4		---		7.0E-05	E H U HB
NITROSOMORPHOLINE,N	00059-89-2	4		---		1.0E-01	d M H
NITROSOPHENOL, P-	00104-91-6	4		---		1.0E-01	d M
NITROSOPYRROLIDINE	00930-55-2	4		---		1.6E-03	u U
NITROTOLUENE, M-	00099-08-1	4		2600.0	T	26.0	T
NITROTOLUENE, O-	00088-72-2	4		2600.0	T	26.0	T
NITROTOLUENE, P-	00099-99-0	4		2600.0	T	26.0	T M
NITROUS OXIDE	10024-97-2	6		11000.0	R	110.0	R
NONANE C9H20	00111-84-2	4		250000.0	T	25000.0	T L
NONANETHIOL, 1-	01455-21-6	4		330.0	R	7.9	R C
OCTACHLORONAPHTHALEN	02234-13-1	4		24.0	T	2.4E-01	T M
OCTADECANETHIOL, 1-	02885-00-9	4		590.0	R	14.0	R C
OCTANE	00111-65-9	4		83000.0	R	830.0	R

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
OCTANETHIOL, 1-	00111-88-6	4		300.0	R	7.1	R C
OCTYL ACETATE	00103-09-3	4		---		140.0	D L
OIL MIST (MINERAL)	08012-95-1	6		48.0	P	4.8E-01	P M AK
OLEIC ACID	00112-80-1	4		---		3500.0	D L
OSMIUM TETROXIDE	20816-12-0	1	Os	5.1E-01	T	5.1E-03	T QQ
OXALIC ACID	00144-62-7	4		240.0	T	2.4	T M
OXOPHENYL ARSINE	00637-03-6	4	As	---		5.2E-04	E H U H R Q
OXYGEN DIFLUORIDE	07783-41-7	6		10.0	s	5.7E-01	s C RRQQ
OXYGEN, ISOTOPE-15	13982-43-9	6		---		1.0E-01	d H
OZONE	10028-15-6	6		240.0	S	2.4E-01	P
Oxo-hexyl acetate	88230-35-7	4		---		140.0	A L R
PAH(s)	13049829-2	4		---		2.0E-02	H H H
PARAFFIN WAX	08002-74-2	4		480.0	T	4.8	T
PARAQUAT	04685-14-7	4		24.0	T	2.4E-01	T M K
PARAQUAT DICHLORIDE	01910-42-5	4		24.0	T	2.4E-01	T M K
PARAQUAT DIMETHYLSUL	02074-50-2	4		24.0	T	2.4E-01	T K
PARATHION	00056-38-2	4		5.0	R	1.2E-01	R H H
PARTICULATE	NY075-00-0	1		380.0	s	50.0	S K
PCB	01336-36-3	4		1.0E-01	R	4.5E-04	E H U H C
PENTABORANE	19624-22-7	4		3.1	T	3.1E-02	T
PENTACHLOROBENZENE	00608-93-5	4		---		1.1	o
PENTACHLORONAPHTHALE	01321-64-8	4		120.0	T	1.2	T
PENTACHLORONITROBENZ	00082-68-8	4		120.0	T	1.2	T H
PENTACHLOROPHENOL	00087-86-5	4		120.0	T	1.2	T M H
PENTAERYTHRITOL	00115-77-5	4		2400.0	T	24.0	T
PENTAFLUORO-ARSORANE	07784-36-3	6	As	4.5E-01	R	5.2E-04	E H U H RRQQ
PENTANE	00109-66-0	4		83000.0	R	830.0	R
PENTANOL	00071-41-0	4		---		1.0	d L
PERCHLORMETHMERCAPTN	00594-42-3	4		180.0	T	1.8	T
PERCHLORYL FLUORIDE	07616-94-6	6		38.0	s	2.2	s RRQQ
PERFLUOROISOBUTYLENE	00382-21-8	4		8.2	T	2.0E-01	T C
PERLITE	93763-70-3	1		380.0	s	24.0	T I
PERMETHRIN	52645-53-1	4		1200.0	A	12.0	A M RR
PETROLEUM DISTILLATE	08002-05-9	4		---		1.0E-01	d M
PETROLEUM SULFONATE	68425-94-5	4		330000.0	A	33000.0	A L RR
PHENANTHRENE	00085-01-8	4		---		2.0E-02	A H H R
PHENARSINE OXIDE	00058-36-6	1	As2	---		7.7E-04	E H U H R Q
PHENOL	00108-95-2	4		4500.0	T	9.6	H M H
PHENOL POLYMER	25036-25-3	1		---		1.0E-01	d M
PHENOL TRIDIMETHAMIN	00090-72-2	4		---		1.0E-01	d M
PHENOTHIAZINE	00092-84-2	4		1200.0	T	12.0	T
PHENY GLYCIDYL ETHER	00122-60-1	4		140.0	T	1.4	T M C
PHENYL DICHLOROARSIN	00696-28-6	4	As	---		6.8E-04	E H U H R Q
PHENYL ETHER	00101-84-8	4		1700.0	T	17.0	T
PHENYL MERCAPTAN	00108-98-5	4		50.0	R	1.2	R C
PHENYLEIETHANOLAMINE	00120-07-0	4		---		47.0	D M
PHENYLENEDIAMINE, M-	00108-45-2	4		24.0	T	2.4E-01	T M
PHENYLENEDIAMINE, O-	00095-54-5	4		24.0	T	2.4E-01	T B
PHENYLENEDIAMINE, P-	00106-50-3	4		24.0	T	2.4E-01	T M H
PHENYLHYDRAZINE	00100-63-0	4		100.0	T	1.0	T M B C
PHENYLMERCURICACETAT	00062-38-4	4	Hg	1.6	T	3.7E-02	T H H RRQQ
PHENYLPHOSPHINE	00638-21-1	4		23.0	T	5.5E-01	T C
PHENYLXYLYLETHANE	06196-95-8	4		---		100.0	D L

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
PHORATE	00298-02-2	4		12.0	T	1.2E-01	T
PHOSGENE	00075-44-5	4		95.0	T	9.5E-01	T M H
PHOSPH OXYCHLORIDE	10025-87-3	6		150.0	T	1.5	T
PHOSPH PENTACHLORIDE	10026-13-8	1		200.0	T	2.0	T
PHOSPH PENTASULFIDE	01314-80-3	1		240.0	T	2.4	T

PHOSPHINE	07803-51-2	6		100.0	T	3.0E-02	I	M	H		
PHOSPHORIC ACID MIST	07664-38-2	6		240.0	T	10.0	E	M			
PHOSPHORIC ACID,RX P	92203-02-6	6		---		1.0E-01	d		H		
PHOSPHOROUS TRICHLOR	07719-12-2	6		260.0	T	2.6	T				
PHOSPHORUS (YELLOW)	07723-14-0	1		24.0	T	2.4E-01	T	M	H		
PHTHALIC ANHYDRIDE	00085-44-9	4		1500.0	T	15.0	T		H		
PHTHALODINITRILE, M-	00626-17-5	4		1200.0	T	12.0	T				
PICLORAM	01918-02-1	4		2400.0	T	24.0	T				
PICRIC ACID (8CI)	00088-89-1	4		24.0	T	2.4E-01	T	M			
PINDONE	00083-26-1	4		24.0	T	2.4E-01	T				
PIPERAZINE DIHYDROCH	00142-64-3	4		1200.0	T	12.0	T				
PLATINUM	07440-06-4	1	Pt	240.0	T	2.4	T		K		
PLATINUM PT	Pt*SOLSALT	1	Pt	4.8E-01	T	4.8E-03	T				
POLY TEREPHTHALATE	25038-59-9	4		---		1.0E-01	d	M			
POLYACRYLIC ACID	09003-01-4	4		1400.0	A	1.0	A	M			RR
POLYETHER POLYOL	68541-81-1	4		---		4.8	D	M			
POLYETHYLENE GLYCOL	25322-68-3	4		---		1.0E-01	d	M			
POLYETHYLENEGLYCOLDI	24991-55-7	4		4300.0	A	200.0	A	M			RR
POLYMERIC ESTER S412	68238-77-7	4		---		80.0	D	L			
POLYOXYPROPYLENE	25791-96-2	4		4300.0	A	200.0	A	M			RR
POLYPHENYLENE ESTER	09016-87-9	4		5.4	A	1.3E-01	A	H			RR
POLYPROPYLENE	09003-07-0	1		---		50.0	D	L			
POLYSTYRENE DUST	09003-53-6	1		380.0	s	50.0	S	M			RR
POLYVINYL ALCOHOL	09002-89-5	1		---		50.0	D	L			
POLYVINYLIDENEFLUORI	24937-79-9	4		---		1.0E-01	d	M			
PORTLAND CEMENT	65997-15-1	1		380.0	s	24.0	T		I		
POTASSIUM ARSENITE	10124-50-2	1	As	4.4E-01	R	5.1E-04	E	H	U	H	RRQQ
POTASSIUM CHROMATE	07789-00-6	1	Cr	3.8E-01	R	7.5E-05	H	H	U	H	RRQQ
POTASSIUM CYANATE	00590-28-3	4		5000.0	A	50.0	A	M		H	RR
POTASSIUM CYANIDE	00151-50-8	1	CN	380.0	s	30.0	T	H		HC	RRQQ
POTASSIUM DICHROMAT	07778-50-9	1	Cr2	2.8E-01	R	5.7E-05	H	H	U	H	RRQQ
POTASSIUM HYDROXIDE	01310-58-3	6		200.0	T	4.8	T			C	
POTASSIUM NICKELCYN	14220-17-8	1	Ni	6.2	R	1.6E-02	H	H	U	H	RRQQ
POTASSIUM PERMANGANA	07722-64-7	1		48.0	A	34.0	D	M		H	R
POTASSIUM SILVER CYA	00506-61-6	1		---		50.0	S				
POTASSIUMGOLDCYANIDE	14263-59-3	1	CN	380.0	s	50.0	S	H		H	RRQQ
PRIMIDONE	00125-33-7	4		---		3.6	D	M			
PROPANE (8CI9CI)	00074-98-6	4		---	X	9999999.0	X	L		G	
PROPANE SULTONE	01120-71-4	4		---		1.0E-01	d	M		HB	
PROPANEDIOL-1,2	00057-55-6	4		88000.0	A	2000.0	A	L			RR
PROPANOIC ACID	00079-09-4	4		7100.0	T	71.0	T				
PROPANOL	00071-23-8	4		120000.0	T	1200.0	T				
PROPANOL-2,PROPOXY-1	01569-01-3	4		88000.0	A	2000.0	A	M			RR
PROPARGYL ALCOHOL	00107-19-7	4		550.0	T	5.5	T				
PROPIOLACTONE,BETA-	00057-57-8	4		360.0	T	3.6	T	M		HB	
PROPIONALDEHYDE	00123-38-6	4		---		1.0E-01	d			H	
PROPIONITRILE	00107-12-0	4		3300.0	R	33.0	R				
PROPOXUR (BAYGON)	00114-26-1	4		120.0	T	1.2	T			H	

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
PROPYL ACETATE	00109-60-4	4		200000.0	T	20000.0	T L
PROPYL MERCAPTAN, N-	00107-03-9	4		160.0	R	3.8	R C
PROPYL NITRATE, N-	00627-13-4	6		25000.0	T	250.0	T
PROPYLENE	00115-07-1	4		---	X	9999999.0	X G
PROPYLENE CARBONATE	00108-32-7	4		200000.0	A	20000.0	A L RR
PROPYLENE DICHLORIDE	00078-87-5	4		83000.0	T	1.5E-01	D M H
PROPYLENE GLYCOL DIN	06423-43-4	4		81.0	T	8.1E-01	T H
PROPYLENE GLYCOL MON	00107-98-2	4		88000.0	T	2000.0	E M
PROPYLENE IMINE	00075-55-8	4		1100.0	T	11.0	T HB
PROPYLENE OXIDE, 1,2	00075-56-9	4		11000.0	T	3.0E-01	E M H

PYRENE	00129-00-0	4		---		2.0E-02	A	H	H		R
PYRETHRIN	00121-29-9	4		1200.0	A	12.0	A	M			RR
PYRETHRUM	08003-34-7	4		1200.0	T	12.0	T	M			
PYRIDINE	00110-86-1	4		3800.0	T	2.0	H	L			
QUINOLINE	00091-22-5	4		---		1.0E-01	d	M	H		
QUINONE	00106-51-4	4		100.0	T	1.0	T	M	H		
RESORCINOL	00108-46-3	4		11000.0	T	1100.0	T	L			
RHODIUM RH	07440-16-6	1	Rh	240.0	T	2.4	T		K		
RHODIUM RH	Rh*SOLCOMP	1	Rh	2.4	T	2.4E-02	T				
RONNEL	00299-84-3	4		2400.0	T	24.0	T				
ROTENONE	00083-79-4	1		380.0	s	12.0	T	M			
SELENIOUS ACID	07783-00-8	1		---		11.0	o		H		
SELENIUM	07782-49-2	1	Se	48.0	T	4.8E-01	T	M	H		
SELENIUM CHLORIDE	10026-03-6	1	Se	130.0	T	1.3	T		H		RRQQ
SELENIUM HEXAFLUORID	07783-79-1	1	Se	12.0	s	6.8E-01	s		H		RRQQ
SELENIUM SULFIDE	07488-56-4	1	Se	86.0	T	8.6E-01	T	M	H		RRQQ
SELENOUREA	00630-10-4	1	Se	74.0	T	7.4E-01	T		H		RRQQ
SESONE	00136-78-7	4		2400.0	T	24.0	T				
SILANE, CHLORETHENYL	01719-58-0	4		1600.0	A	16.0	A	M			RR
SILICA - AMORPHOUS	61790-53-2	1		380.0	s	7.1	T		K		
SILICA - CRYSTALLINE	14464-46-1	1		12.0	T	1.2E-01	T		I		
SILICA - FUSED(RESP)	60676-86-0	1		24.0	T	2.4E-01	T		I		
SILICA - QUARTZ	14808-60-7	1		24.0	T	2.4E-01	T		HI		
SILICA - TRIDYMITE	15468-32-3	1		12.0	T	1.2E-01	T		I		
SILICA - TRIPOLI	01317-95-9	1		24.0	T	2.4E-01	T		I		
SILICA FUMES - AMORP	69012-64-2	1		380.0	s	4.8	T		I		
SILICON	07440-21-3	1		380.0	s	24.0	T		I		
SILICON CARBIDE	00409-21-2	1		380.0	s	24.0	T		I		
SILICON TETRAHYDRIDE	07803-62-5	6		1600.0	T	16.0	T	M			
SILOXANESSILICONDIME	63148-62-9	1		380.0	s	14.0	A	M			RR
SILVER	07440-22-4	1		24.0	T	2.4E-01	T		K		
SILVER	Ag*SOLCOMP	1	Ag	2.4	T	2.4E-02	T				
SILVER CYANIDE	00506-64-9	1		380.0	s	50.0	S	H	H		R Q
SODIUM ARSENATE	07631-89-2	1	As	4.4E-01	R	5.1E-04	E	H	U	H	RRQQ
SODIUM ARSENITE	07784-46-5	1	As	3.5E-01	R	4.0E-04	E	H	U	H	RRQQ
SODIUM AZIDE N3NA	26628-22-8	1		29.0	T	6.9E-01	T		C		
SODIUM BISULFITE	07631-90-5	4		1200.0	T	12.0	T				
SODIUM CARBONATE	00497-19-8	1		---		50.0	S	L			
SODIUM CHLORATE	07775-09-9	1		---		2.8	D	M			
SODIUM CHROMATE(VI)	10034-82-9	1	Cr	4.5E-01	R	9.1E-05	H	H	U	H	RRQQ
SODIUM CYANIDE	00143-33-9	1	CN	380.0	s	22.0	T	H		HC	RRQQ
SODIUM DICHROMATE	10588-01-9	1	Cr2	2.5E-01	R	5.1E-05	H	H	U	H	RRQQ
SODIUM FERRICYANIDE	14217-21-1	1	C6N6	380.0	s	21.0	T	H		H	RRQQ

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
SODIUM FERROCYANIDE	13601-19-9	1	C6N6	380.0	s	23.0	T H H RRQQ
SODIUM FLUOROACETATE	00062-74-8	4		12.0	T	1.2E-01	T
SODIUM HYDROXIDE	01310-73-2	1		200.0	T	4.8	T C C
SODIUM ISOCYANATE	00917-61-3	4		5000.0	A	50.0	A M H RR
SODIUM METABISULFITE	07681-57-4	1		380.0	s	12.0	T
SODIUM NITRATE	07631-99-4	1		---		50.0	S M
SODIUM NITRITE	07632-00-0	1		---		4.1	D H
SODIUM NITROBENZSULF	00127-68-4	4		1200.0	A	2.0	A M RR
SODIUM PERSULFATE	07775-27-1	6	S2O8	1900000.0	D	190.0	D L QQ
SODIUM XYLENESULFNTE	01300-72-7	4		100000.0	A	300.0	A L RR
SODIUM ZINC CYANIDE	15333-24-1	1	C4N4	380.0	s	25.0	T H H RRQQ
SODIUMACODYLATE	00124-65-2	1	As	---		4.9E-04	E H U H R Q
SODIUMALUMINUMSILICA	01344-00-9	1		---		1.0E-01	d M
SOLVASOL	08042-52-2	4		---		1.0E-01	d H
STARCH	09005-25-8	1		380.0	s	24.0	T

STIBINE	07803-52-3	1		120.0	T	1.2	T H		
STODDARD SOLVENT.	08052-41-3	4		83000.0	R	830.0	R		
STRONTIUM CHROMATE	07789-06-2	1	Cr	4.0E-01	R	7.9E-05	H H U HB		RRQQ
STRYCHNINE	00057-24-9	4		36.0	T	3.6E-01	T		
STRYENE OXIDE	00096-09-3	4		---		3.0E-08	* H H		
STYRENE	00100-42-5	4		20000.0	P	1000.0	I M H		
SUBTILISINS	01395-21-7	1		6.0E-03	T	1.4E-04	T H C		
SUBTILISINS	09014-01-1	1		6.0E-03	T	1.4E-04	T H C		
SUCCINONITRILE	00110-61-2	4		4800.0	R	48.0	R		
SUCROSE SUGAR	00057-50-1	1		380.0	s	24.0	T		
SULF ACID,Cr,K SALT	10141-00-1	1	Cr	380.0	s	3.6E-01	H H		RRQQ
SULFOMETURON METHYL	74222-97-2	4		1200.0	T	12.0	T		
SULFOMIC ACID	14017-41-5	6	Co2	8.7	T	8.7E-02	T H		RRQQ
SULFOTEP	03689-24-5	4		48.0	T	4.8E-01	T		
SULFUR DIOXIDE	07446-09-5	2		1400.0	s	80.0	S		
SULFUR HEXAFLUORIDE	02551-62-4	6		9.1	s	5.1E-01	s		RRQQ
SULFUR MONOCHLORIDE	10025-67-9	1		380.0	s	13.0	T C		
SULFUR PENTAFLUORIDE	05714-22-7	6		9.5	s	5.4E-01	s C		RRQQ
SULFUR TETRAFLUORIDE	07783-60-0	6		10.0	s	5.7E-01	s C		RRQQ
SULFURIC ACI,CADMIUM	07790-84-3	6	Cd	3.7E-01	T	9.4E-04	H H U H		RRQQ
SULFURIC ACID	07664-93-9	6		240.0	T	2.4	T M		
SULFURYL FLUORIDE	02699-79-8	6		19.0	s	1.1	s		RRQQ
SULPROFOS	35400-43-2	4		240.0	T	2.4	T		
SURFYNOL 104E	00126-86-3	4		12000.0	A	2900.0	A L		RR
SYSTHANE	88671-89-0	4		---		76.0	D M		
Sulfonated oleic aci	68443-05-0	6		---		3500.0	A L		R
TALC	14807-96-6	1		380.0	s	4.8	T I		
TANTALUM TA	07440-25-7	1	Ta	380.0	s	12.0	T		
TANTALUM OXIDE	01314-61-0	1	Ta2	380.0	s	15.0	T		QQ
TCDDIOXIN, 2,3,7,8-	01746-01-6	4		---		3.0E-08	E H U H		
TCDFURAN, 2,3,7,8-	51207-31-9	4		---		3.0E-08	* H H		
TELLURIUM	13494-80-9	1	Te	24.0	T	2.4E-01	T		
TELLURIUM HEXAFLUORI	07783-80-4	6	Te	15.0	s	8.5E-01	s		RRQQ
TEMEPHOS (ABATE)	03383-96-8	4		2400.0	T	24.0	T		
TEPP	00107-49-3	4		11.0	T	1.1E-01	T		
TEREPHTHALIC ACID	00100-21-0	4		2400.0	T	24.0	T		
TERPHENYLS	26140-60-3	4		500.0	T	12.0	T C		
TERPINEOL-ALPHA	00098-55-5	4		130000.0	A	13000.0	A L		RR

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
TETRACHL22DIFLUORETH	00076-11-9	4		990000.0	T	9900.0	T
TETRACHLOROBENZE1245	00095-94-3	4		---		1.1	o
TETRACHLOROETHAN1122	00079-34-5	4		1600.0	T	2.0E-02	E M U H
TETRACHLOROETHYLENE	00127-18-4	4		40000.0	T	1.2	D M U H
TETRACHLORONAPHTHALE	01335-88-2	4		480.0	T	4.8	T
TETRACHLOROPHENO2346	00058-90-2	4		---		110.0	o
TETRADECYLGLYCIDYLET	38954-75-5	4		---		1.0E-01	d M
TETRAETHYL LEAD	00078-00-2	4	Pb	37.0	T	3.7E-01	T HI QQ
TETRAFLUOROETHANE	00811-97-2	6		---		80000.0	E L
TETRAHYDROFURAN	00109-99-9	4		140000.0	T	14000.0	T L
TETRAMETHYL LEAD	00075-74-1	4	Pb	46.0	T	4.6E-01	T HI QQ
TETRAMETHYL SUCCINON	03333-52-6	4		670.0	T	6.7	T C
TETRANITROMETHANE	00509-14-8	4		9.5	T	9.5E-02	T B
TETRASODIUM PYROPHOS	07722-88-5	1		380.0	s	12.0	T
TETROCHL12DIFLUORETH	00076-12-0	4		990000.0	T	9900.0	T
TETRYL	00479-45-8	4		360.0	T	3.6	T
THALLIUM	07440-28-0	1	Tl	24.0	T	2.4E-01	T M
THALLIUM ACETATE	00563-68-8	6		---		3.2E-01	o
THALLIUM CARBONATE	06533-73-9	1		---		2.8E-01	o
THALLIUM CHLORIDE	07791-12-0	1		---		2.8E-01	o

THALLIUM NITRATE	10102-45-1	1		---		3.2E-01	o	
THALLIUM OXIDE	01314-32-5	1	Tl	53.0	T	5.3E-01	T M	RRQQ
THALLIUM SELENITE	12039-52-0	1	Tl	33.0	T	3.3E-01	T M H	RRQQ
THALLIUM SULFATE	07446-18-6	1	Tl2	30.0	T	3.0E-01	T M	RRQQ
THIOBISTERTBUTYLCRES	00096-69-5	4		2400.0	T	24.0	T	
THIOGLYCOLIC ACID	00068-11-1	4		900.0	T	9.0	T	
THIONYL CHLORIDE	07719-09-7	1		380.0	s	12.0	T C	
THIOUREA	00062-56-6	4		---		1.0E-01	d M	
THIRAM	00137-26-8	4		240.0	T	2.4	T M	
TIN	07440-31-5	1	Sn	380.0	s	4.8	T K	
TIN	Sn*ORGANIC	1	Sn	24.0	T	2.4E-01	T	
TITANIUM DIOXIDE	13463-67-7	1		380.0	s	24.0	T	
TITANIUM TETRACHLOR.	07550-45-0	1		---		1.0E-01	d H	
TNT	00118-96-7	4		120.0	T	1.2	T	
TOLIDINE, O-	00119-93-7	4		2.0	R	4.8E-02	R HB C	
TOLUENE	00108-88-3	4		45000.0	T	400.0	E L H	
TOLUENE 2,4-DIAMINE	00095-80-7	4		3.5	A	6.2E-02	A H U H	RR
TOLUENE DIISOCYANATE	26471-62-5	4		3.5	A	8.3E-02	R H H	R
TOLUENE24DIISOCYANAT	00584-84-9	4		3.5	R	6.2E-02	D H U H	
TOLUIDINE, M-	00108-44-1	4		2100.0	T	21.0	T	
TOLUIDINE, O-	00095-53-4	4		880.0	T	21.0	T H HB	
TOLUIDINE, P-	00106-49-0	4		2100.0	T	21.0	T B	
TOLYLDIETHNLAMINE,O-	28005-74-5	4		---		47.0	A M	R
TOTAL TCDD	01745-01-7	4		---		3.0E-08	A H U H	R
TRIBUTYL PHOSPHATE	00126-73-8	4		520.0	T	5.2	T	
TRICALCIUM PHOSPHATE	07758-87-4	6		---		1.0	d L	
TRICH112 (FREON 113)	00076-13-1	4		1800000.0	T	30000.0	I L	
TRICHLORO BENZENE	00120-82-1	4		3700.0	T	9.0	E H HC	
TRICHLOROACETIC ACID	00076-03-9	4		1600.0	T	16.0	T	
TRICHLOROETHANE,112	00079-00-5	4		13000.0	T	6.0E-02	E M U H	
TRICHLOROETHYLENE	00079-01-6	4		33000.0	R	4.5E-01	D M U H	
TRICHLOROFLUOROMETHA	00075-69-4	6		560000.0	T	700.0	E L C	
TRICHLORONAPHTHALENE	01321-65-9	4		1200.0	T	12.0	T	

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
TRICHLOROPHENOL,245	00095-95-4	4		---		350.0	o H
TRICHLOROPHENOL,246	00088-06-2	4		---		3.2E-01	u U H
TRICHLORPROPAN,123	00096-18-4	4		14000.0	T	140.0	T
TRIDECANE	00629-50-5	4		250000.0	A	18000.0	D L R
TRIETHANOLAMINE	00102-71-6	4		1200.0	T	12.0	T
TRIETHYLAMINE	00121-44-8	4		980.0	T	9.8	T H
TRIETHYLENE GLYCOL	00112-27-6	4		7100.0	A	330.0	A M H RR MM
TRIETHYLENETETRAMINE	00112-24-3	4		1000.0	A	10.0	A M RR
TRIFLUOROBROMOMETHAN	00075-63-8	4		1500000.0	T	15000.0	T
TRIFLURALIN	01582-09-8	4		---		1.0E-01	d M H
TRIMELLITIC ANHYDRID	00552-30-7	4		4.0	T	9.5E-02	T C
TRIMETHOXYSILANE	02487-90-3	4		1400.0	A	14.0	A M RR
TRIMETHYL BENZENE	25551-13-7	4		29000.0	T	290.0	T M
TRIMETHYL PHOSPHITE	00121-45-9	4		2400.0	T	24.0	T
TRIMETHYLAMINE	00075-50-3	4		2900.0	T	29.0	T
TRIORTHOCRESYL PHOSP	00078-30-8	4		24.0	T	2.4E-01	T
TRIOXOBIS CHROMIUM	20492-50-6	1	Cr	380.0	s	5.0E-01	H H RRQQ
TRIPHENYL AMINE	00603-34-9	4		1200.0	T	12.0	T
TRIPHENYL ARSINE	00603-32-7	4	As	---		9.4E-04	E H U H R Q
TRIPHENYL As OXIDE	01153-05-5	4	As	---		9.9E-04	E H U H R Q
TRIPHENYL PHOSPHATE	00115-86-6	4		710.0	T	7.1	T
TRITON X114 APA	09036-19-5	4		---		200.0	D L
TUNGSTEN W	07440-33-7	1	W	240.0	T	2.4	T K
TUNGSTEN W	W*INSOLUBL	1	W	380.0	s	12.0	T
TURPENTINE	08006-64-2	4		130000.0	T	13000.0	T L

ULTEM	61128-46-9	4		---		1.0E-01	d	M	
URANIUM	07440-61-1	1	U	48.0	T	4.8E-01	T		
UREA	00057-13-6	4		---		1.0E-01	d	M	
URETHANE	00051-79-6	4		---		1.0E-01	d	M	H
VALERALDEHYDE	00110-62-3	4		42000.0	T	420.0	T		
VANADIUM	07440-62-2	1		100.0	R	2.0E-01	H	H	
VANADIUM CARBIDE	11130-21-5	1		240.0	R	2.4	R		
VANADIUM OXIDE V2O5	01314-62-1	1		12.0	T	1.2E-01	T		I
VINYL ACETATE	00108-05-4	4		1500.0	R	36.0	R		H C
VINYL BROMIDE	00593-60-2	4		2200.0	T	3.0E-02	E	H	U HB
VINYL CHLORIDE	00075-01-4	4		1300.0	T	2.0E-02	E	H	U HA
VINYL CYCLOHEXENE	00100-40-3	4		95.0	T	380.0	D	M	
VINYL CYCLOHEXENE DI	00106-87-6	4		140.0	P	1.4	P		
VINYL FLUORIDE	00075-02-5	4		5200.0	A	23.0	D	M	R
VINYL PYRROLIDINONE	00088-12-0	4		---		70.0	D	L	
VINYL TOLUENE	25013-15-4	4		58000.0	T	580.0	T		
VINYLIDENE CHLORIDE	00075-35-4	4		2000.0	T	2.0E-02	E	H	U H
VM&P NAPHTHA	08032-32-4	4		330000.0	T	33000.0	T	L	
WARFARIN	00081-81-2	4		24.0	T	2.4E-01	T		
XYLENE @,@-DIAMINE:M	01477-55-0	4		10.0	T	2.4E-01	T		C
XYLENE,M,O&P MIXT.	01330-20-7	4		100000.0	T	300.0	I	M	H
XYLENE,M-	00108-38-3	4		100000.0	T	700.0	E	M	H
XYLENE,O-	00095-47-6	4		100000.0	T	700.0	E	M	H
XYLENE,P-	00106-42-3	4		100000.0	T	300.0	E	M	H
XYLIDINE	01300-73-8	4		600.0	T	6.0	T	M	B
YTTRIUM Y	07440-65-5	1	Y	240.0	T	2.4	T		
ZINC	07440-66-6	1		---		50.0	S	L	
ZINC BROMIDE	07699-45-8	1		240.0	A	2.4	A	M	RR

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W	T	-----codes----- 111111 123456789012345
ZINC CHLORIDE	07646-85-7	1		240.0	T	2.4	T	M	
ZINC CHROMATE	11103-86-9	1	Cr2	4.0E-01	R	8.1E-05	H	H	U HA RRQQ
ZINC CHROMATE	13530-65-9	1	Cr	3.5E-01	R	7.1E-05	H	H	U HA RRQQ
ZINC CHROMATE	37300-23-5	1	Cr4	4.2E-01	R	8.4E-05	H	H	U HA RRQQ
ZINC CHROMATES	01308-13-0	1	Cr	3.5E-01	R	7.1E-05	H	H	U H RRQQ
ZINC CHROMITE	01328-67-2	1	Cr	3.5E-01	R	7.1E-05	H	H	U H RRQQ
ZINC CYANIDE	00557-21-1	6		1100.0	T	27.0	T	H	H RRQQ
ZINC OXIDE	01314-13-2	1		380.0	s	50.0	H	M	K
ZINC PHOSPHIDE	01314-84-7	6		---		9.5E-01	D	M	
ZINC, DIETHYL	00557-20-0	6		1200.0	A	50.0	A	M	RR
ZIRCONIUM ZR	07440-67-7	1	Zr	380.0	s	12.0	T		
cis-DICHLOROETHYLENE	00156-59-2	4		190000.0	A	1900.0	A	M	RR
g-AMINOPROPYLTRIETSI	00919-30-2	4		1600.0	A	160.0	A	L	RR
gamma-BUTYROLACTONE	00096-48-0	4		360.0	A	3.6	A	M	RR
m-DICHLOROBENZENE	00541-73-1	4		36000.0	A	200.0	A	M	RR
tranDICHLOROETHYLENE	00156-60-5	4		---		360.0	D	M	

TOXICITY (T):
- (H) HIGH Toxicity Contaminant.
- (M) MODERATE Toxicity Contaminant.
- (L) LOW Toxicity Contaminant.

HOW (W):
- (A) AGC/SGC based upon NYSDEC "Analogy".
- (D) NYSDEC derived AGC/SGC.
- (E) AGC/SGC based upon EPA derivation.
- (H) NYSDOH derived AGC/SGC.
- (I) AGC/SGC based upon HEAST Inhalation RfC (RFC).
- (P) AGC/SGC based upon PROPOSED ACGIH TLV.
- (R) AGC/SGC based upon NIOSH REL.

(S) AGC/SGC listed is FEDERAL or NYS Standard.
(T) AGC/SGC based upon ACGIH TLV.
(d) AGC assigned "de minimis" limit.
( ) There is no SGC for this compound.

HOW (W) - Special AGC/SGC Interim Assignments:
(o) AGC/SGC based upon HEAST Oral RfD (RFD).
(s) AGC/SGC based upon Equivalent FEDERAL or NYS Standard.
(u) AGC/SGC based upon HEAST Inhalation Unit Risk Factor.
(*) AGC assigned special computer HIGH Toxicity "de minimis" limit.
(X) Compound EXEMPT from AG-1 (simple asphyxiant).

-----codes-----
111111
123456789012345:

codes, (Position 1):
(U) AGC equivalent to "one in a million risk".

codes, (Position 3):
(H) HAP identified by 1990 CAAA.

codes, (Positions 4 & 5):
(A) ACGIH Human Carcinogen.
(B) ACGIH Suspected Human Carcinogen.
(C) ACGIH Ceiling Limit.
(G) ACGIH Simple Asphxiant. Assign "D" Rating. Computer will assume AGC = 9999999. ug/m3.
(I) Refer to ACGIH Handbook.
(K) Multiple TLVs assigned in ACGIH Handbook.

codes, (Positions 6 & 7):
(C) NIOSH Ceiling Limit.

codes, (Position 8):
(Q) REFERENCED AGC adjusted for elemental assignment.

codes, (Position 9):
(Q) REFERENCED SGC adjusted for elemental assignment.

codes, (Position 10):
(R) AGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 11):
(R) SGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 12):
(Q) AGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 13):

(Q) SGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 14):
(M) REFERENCED AGC adjusted for MOLECULAR WEIGHTS.

codes, (Position 15):
(M) REFERENCED SGC adjusted for MOLECULAR WEIGHTS.

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
FLUORIDE NY STANDARD	*FLUORIDE*	1	F	7.1	s	4.0E-01	s
FORMALDEHYDE	00050-00-0	4		30.0	H	6.0E-02	H H U HBC
DDT	00050-29-3	4		50.0	R	1.2	R C
B A P	00050-32-8	4		---		2.0E-03	H H U HB
DINITROPHENOL, 2,4-	00051-28-5	4		---		7.0	o H
NITROGEN MUSTARD	00051-75-2	4		---		3.0E-08	* H
URETHANE	00051-79-6	4		---		1.0E-01	d M H
DIBENZ(a,h)ANTHRACEN	00053-70-3	4		---		7.1E-05	u U
ACETYLAMINOFLUOR,2-	00053-96-3	4		---		1.0E-01	d M H
NICOTINE	00054-11-5	4		120.0	T	1.2	T
NITROSODIETHYLAMINE	00055-18-5	4		---		2.3E-05	u U
FENTHION	00055-38-9	4		48.0	T	4.8E-01	T
NITROGLYCERINE	00055-63-0	4		10.0	R	2.4E-01	R M C
CARBON TETRACHLORIDE	00056-23-5	4		1300.0	R	7.0E-02	E H U H C
PARATHION	00056-38-2	4		5.0	R	1.2E-01	R H H
DIETHYLSTILBESTROL	00056-53-1	4		---		7.7E-06	u H U
BENZO(A)ANTHRACENE	00056-55-3	4		---		2.0E-02	A H HB R
GLYCERIN	00056-81-5	4		2400.0	T	240.0	T L I
CYANIDE (8CI9CI)	00057-12-5	4	CN	500.0	T	12.0	T H H
UREA	00057-13-6	4		---		1.0E-01	d M
DIMETHYL HYDRAZINE	00057-14-7	4		6.0	T	6.0E-02	T M H C
STRYCHNINE	00057-24-9	4		36.0	T	3.6E-01	T
SUCROSE SUGAR	00057-50-1	1		380.0	s	24.0	T
PROPANEDIOL-1,2	00057-55-6	4		88000.0	A	2000.0	A L RR
PROPIOLACTONE,BETA-	00057-57-8	4		360.0	T	3.6	T M HB
CHLORDANE	00057-74-9	4		50.0	T	1.2	T H H
PHENARSINE OXIDE	00058-36-6	1	As2	---		7.7E-04	E H U H R Q
LINDANE, GAMMA-	00058-89-9	4		120.0	T	6.0E-04	E M U H
TETRACHLOROPHENO2346	00058-90-2	4		---		110.0	o
NITROSOMORPHOLINE,N	00059-89-2	4		---		1.0E-01	d M H
DIMETHYLAMINOAZOBENZ	00060-11-7	4		---		1.0E-01	d M H
ETHYL ETHER	00060-29-7	4		290000.0	T	29000.0	T L
MONOMETHYL HYDRAZINE	00060-34-4	4		4.5	T	4.5E-02	T M H C
ACETAMIDE	00060-35-5	4		---		1.0E-01	d M H
DIMETHOATE	00060-51-5	4		---		7.0E-01	o
DIELDRIN	00060-57-1	4		60.0	T	6.0E-01	T
AMITROLE	00061-82-5	4		48.0	T	4.8E-01	T
PHENYLMERCURICACETAT	00062-38-4	4	Hg	1.6	T	3.7E-02	T H H RRQQ
ANILINE	00062-53-3	4		760.0	T	6.0E-01	D H U H
THIOUREA	00062-56-6	4		---		1.0E-01	d M
DICHLORVOS	00062-73-7	4		210.0	T	5.0E-01	E M H
SODIUM FLUOROACETATE	00062-74-8	4		12.0	T	1.2E-01	T
NITROSODIMETHYLAMINE	00062-75-9	4		---		7.0E-05	E H U HB
CARBARYL	00063-25-2	4		1200.0	T	12.0	T H
ETHANOL	00064-17-5	4		450000.0	T	45000.0	T L
FORMIC ACID	00064-18-6	4		2200.0	T	22.0	T M
ACETIC ACID	00064-19-7	4		6000.0	T	60.0	T
DIETHYL SULFATE	00064-67-5	4		---		3.0E-08	* H H
METHANOL	00067-56-1	4		62000.0	T	620.0	T H
ISOPROPYL ALCOHOL	00067-63-0	4		230000.0	T	2300.0	T M
ACETONE	00067-64-1	4		140000.0	R	14000.0	R L
CHLOROFORM	00067-66-3	4		980.0	R	4.0E-02	E M U HB C
HEXACHLOROETHANE	00067-72-1	4		2300.0	T	23.0	T HB

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	111111 W T 123456789012345
THIOGLYCOLIC ACID	00068-11-1	4		900.0	T	9.0	T
DIMETHYLFORMAMIDE	00068-12-2	4		7100.0	T	30.0	E M H
HEXACHLOROPHENE	00070-30-4	4		---		1.1	o
PROPANOL	00071-23-8	4		120000.0	T	1200.0	T
BUTYL ALCOHOL, N-	00071-36-3	4		7600.0	P	1800.0	P L C
PENTANOL	00071-41-0	4		---		1.0	d L
BENZENE	00071-43-2	4		32.0	R	1.2E-01	E H U HA
METHYL CHLOROFORM	00071-55-6	6		450000.0	T	1000.0	E L H C
ENDRIN	00072-20-8	4		24.0	T	2.4E-01	T
METHOXYCHLOR	00072-43-5	4		2400.0	T	24.0	T H
DDE	00072-55-9	4		---		1.0E-01	d H
METHANE	00074-82-8	6		---	X	9999999.0	X G
METHYL BROMIDE	00074-83-9	4		4500.0	T	5.0	D M H
ETHANE	00074-84-0	6		---	X	9999999.0	X L G
ETHYLENE	00074-85-1	4		---	X	9999999.0	X G
ACETYLENE	00074-86-2	4		---	X	9999999.0	X G C
CHLOROMETHANE	00074-87-3	4		22000.0	D	770.0	D M H
METHYL IODIDE	00074-88-4	4		2900.0	T	29.0	T HB
METHYLAMINE	00074-89-5	4		1500.0	T	15.0	T M
HYDROGEN CYANIDE	00074-90-8	1		380.0	s	3.0	E H H C
METHYL MERCAPTAN	00074-93-1	4		230.0	T	2.3	T M C
ETHYL BROMIDE	00074-96-4	4		5200.0	T	52.0	T B
CHLOROBROMOMETHAN	00074-97-5	4		250000.0	T	2500.0	T
PROPANE (8CI9CI)	00074-98-6	4		---	X	9999999.0	X L G
METHYL ACETYLENE	00074-99-7	4		390000.0	T	3900.0	T M
ETHYL CHLORIDE	00075-00-3	4		63000.0	T	13000.0	E L H
VINYL CHLORIDE	00075-01-4	4		1300.0	T	2.0E-02	E H U HA
VINYL FLUORIDE	00075-02-5	4		5200.0	A	23.0	D M R
ETHYL AMINE	00075-04-7	4		2200.0	T	22.0	T
ACETONITRILE	00075-05-8	4		8100.0	R	50.0	E M H
ACETALDEHYDE	00075-07-0	4		4500.0	T	110.0	T M HC
ETHYL MERCAPTAN	00075-08-1	4		310.0	T	3.1	T M C
DICHLOROMETHANE	00075-09-2	6		41000.0	T	27.0	D M U HB
FORMAMIDE	00075-12-7	4		4300.0	T	43.0	T M
CARBON DISULFIDE	00075-15-0	6		710.0	R	10.0	I M H
DIMETHYL SULFIDE	00075-18-3	4		14.0	A	1.0	A M RR
ETHYLENE OXIDE	00075-21-8	4		18.0	D	1.9E-02	D H U HB
BROMOFORM	00075-25-2	4		1200.0	T	9.0E-01	E M H
BROMODICHLOROMETHANE	00075-27-4	4		---		2.0E-02	D H
ISOBUTANE	00075-28-5	4		450000.0	A	28000.0	D L R
ISOPROPYLAMINE	00075-31-0	4		2900.0	T	29.0	T M
DICHLOROETHANE, 1,1	00075-34-3	4		96000.0	T	500.0	E L H
VINYLIDENE CHLORIDE	00075-35-4	4		2000.0	T	2.0E-02	E H U H
ACETYL CHLORIDE	00075-36-5	4		---		6.4E-01	D H
DIFLUOROETHANE	00075-37-6	4		---		40000.0	E L
DICHLOROFLUOROMETHAN	00075-43-4	4		10000.0	T	100.0	T
PHOSGENE	00075-44-5	4		95.0	T	9.5E-01	T M H
CHLORODIFLUOROMETHAN	00075-45-6	6		840000.0	T	8400.0	T
IODOFORM	00075-47-8	4		2400.0	T	24.0	T
TRIMETHYLAMINE	00075-50-3	4		2900.0	T	29.0	T
NITROMETHANE	00075-52-5	4		12000.0	T	120.0	T
PROPYLENE IMINE	00075-55-8	4		1100.0	T	11.0	T HB
PROPYLENE OXIDE, 1,2	00075-56-9	4		11000.0	T	3.0E-01	E M H

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
DIFLUORDIBROMOMETHAN	00075-61-6	4		200000.0	T	2000.0	T
TRIFLUOROBROMOMETHAN	00075-63-8	4		1500000.0	T	15000.0	T

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 111111 123456789012345
BUTYL ALCOHOL; TERT	00075-65-0	4		72000.0	T	720.0	T
CHLORO DIFLUOROETHAN	00075-68-3	4		---		50000.0	E L
TRICHLOROFLUOROMETHA	00075-69-4	6		560000.0	T	700.0	E L C
DICHLORODIFLUOROMETH	00075-71-8	6		1200000.0	T	200.0	I
FREON 13	00075-72-9	4		560000.0	A	700.0	A L RR
TETRAMETHYL LEAD	00075-74-1	4	Pb	46.0	T	4.6E-01	T HI QQ
METHANESULFONIC ACID	00075-75-2	4		150.0	A	20.0	A L RR
DIMETHYLDICHLOROSILA	00075-78-5	4		1600.0	A	16.0	A M RR
Dimethylbutane, 2,2-	00075-83-2	4		83000.0	A	4200.0	T M R
ACETONE CYANOHYDRIN	00075-86-5	4		400.0	R	9.5	R H C
CHLORAL	00075-87-6	4		---		7.0	o
DICHLOROPROPIONICACI	00075-99-0	4		1400.0	T	14.0	T
TRICHLOROACETIC ACID	00076-03-9	4		1600.0	T	16.0	T
CHLOROPICRIN	00076-06-2	4		160.0	T	1.6	T
TETRACHL22DIFLUORETH	00076-11-9	4		990000.0	T	9900.0	T
TETROCHL12DIFLUORETH	00076-12-0	4		990000.0	T	9900.0	T
TRICH112 (FREON 113)	00076-13-1	4		1800000.0	T	30000.0	I L
DICHLORTETRAFLUORETH	00076-14-2	6		1700000.0	T	17000.0	T
CHLOROPENTAFLUOROETH	00076-15-3	6		1500000.0	T	15000.0	T
CAMPHOR	00076-22-2	4		2900.0	T	29.0	T
HEPTACHLOR	00076-44-8	1		5.0	T	8.0E-04	E H U H
HEXCHLORCYCPENTDIENE	00077-47-4	4		26.0	T	7.0E-02	E M H
DICYCLOPENTADIENE	00077-73-6	4		6400.0	T	64.0	T
DIMETHYL SULFATE	00077-78-1	4		52.0	T	1.2	T H HB
TETRAETHYL LEAD	00078-00-2	4	Pb	37.0	T	3.7E-01	T HI QQ
ETHYL SILICATE	00078-10-4	4		20000.0	T	200.0	T
TRIORTHOCRESYL PHOSP	00078-30-8	4		24.0	T	2.4E-01	T
DIOXATHION	00078-34-2	4		48.0	T	4.8E-01	T
ISOPHORONE	00078-59-1	4		5500.0	R	55.0	R M HC
ISO-PENTANE	00078-78-4	4		83000.0	A	8300.0	A L RR
ISOBUTYRONITRILE	00078-82-0	4		5200.0	R	52.0	R
ISOBUTYL ALCOHOL	00078-83-1	4		36000.0	T	360.0	T
2-METHYLPROPANAL	00078-84-2	4		---		12.0	D M
PROPYLENE DICHLORIDE	00078-87-5	4		83000.0	T	1.5E-01	D M H
BUTANOL, SEC (9CI)	00078-92-2	4		72000.0	T	720.0	T
METHYL ETHYL KETONE	00078-93-3	4		140000.0	T	300.0	E M H
CHLOROACETONE	00078-95-5	4		380.0	T	9.0	T C
TRICHLOROETHANE,112	00079-00-5	4		13000.0	T	6.0E-02	E M U H
TRICHLOROETHYLENE	00079-01-6	4		33000.0	R	4.5E-01	D M U H
CHLOROACETYLCHLORIDE	00079-04-9	4		55.0	T	5.5E-01	T
ACRYLAMIDE	00079-06-1	4		3.0	T	8.0E-04	E H U HB
PROPANOIC ACID	00079-09-4	4		7100.0	T	71.0	T
ACRYLIC ACID	00079-10-7	6		1400.0	T	1.0	E M H
CHLOROACETIC ACID	00079-11-8	4		---		3.0E-08	* H H
METHYL ACETATE	00079-20-9	4		140000.0	T	1400.0	T
NITROETHANE	00079-24-3	4		73000.0	T	730.0	T
ACETYLENE TETRABROM	00079-27-6	4		3300.0	T	33.0	T
DIMETHYLBUTANE, 2,3-	00079-29-8	4		420000.0	T	4200.0	T
TETRACHLOROETHAN1122	00079-34-5	4		1600.0	T	2.0E-02	E M U H
CHLOROTRIFLUORETHENE	00079-38-9	4		---		1.0E-01	d M
METHACRYLIC ACID 8CI	00079-41-4	4		17000.0	T	170.0	T

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 111111 123456789012345
DIMETHYLCARBMYLCHLOR	00079-44-7	4		---		1.0E-01	d M HB
NITROPROPANE, 2-	00079-46-9	4		3600.0	T	20.0	I H HB
METH ACRY AC METH ES	00080-62-6	4		98000.0	T	980.0	T M H
WARFARIN	00081-81-2	4		24.0	T	2.4E-01	T
PENTACHLORONITROBENZ	00082-68-8	4		120.0	T	1.2	T H
PINDONE	00083-26-1	4		24.0	T	2.4E-01	T
ROTENONE	00083-79-4	1		380.0	s	12.0	T M

DIETHYL PHTHALATE	00084-66-2	4	1200.0	T	12.0	T	M			
DIBUTYL PHTHALATE	00084-74-2	4	1200.0	T	12.0	T		H		
DIQUAT	00085-00-7	1	24.0	A	2.4E-01	A				RR
PHENANTHRENE	00085-01-8	4	---		2.0E-02	A	H	H		R
PHTHALIC ANHYDRIDE	00085-44-9	4	1500.0	T	15.0	T		H		
BUTYL BENZYL PHTHALA	00085-68-7	4	1200.0	A	12.0	A	M			RR
BUTYL PHTHALATE GLYC	00085-70-1	4	1200.0	A	12.0	A	M			RR
AZINPHOS-METHYL	00086-50-0	4	48.0	T	4.8E-01	T				
ANTU	00086-88-4	4	71.0	T	7.1E-01	T				
HEXACHLOROBUTADIENE	00087-68-3	4	50.0	T	5.0E-02	E	M	U	HB	
PENTACHLOROPHENOL	00087-86-5	4	120.0	T	1.2	T	M		H	
TRICHLOROPHENOL,246	00088-06-2	4	---		3.2E-01	u		U	H	
VINYL PYRROLIDINONE	00088-12-0	4	---		70.0	D	L			
NITROTOLUENE, O-	00088-72-2	4	2600.0	T	26.0	T				
DINOSEB	00088-85-7	4	---		3.5	o				
PICRIC ACID (8CI)	00088-89-1	4	24.0	T	2.4E-01	T	M			
BUTYLPHENOL,O-SEC	00089-72-5	4	7400.0	T	74.0	T				
ANISIDINE,O	00090-04-0	4	120.0	T	1.2	T	M		H	
PHENOL TRIDIMETHAMIN	00090-72-2	4	---		1.0E-01	d	M			
NAPHTHALENE	00091-20-3	4	12000.0	T	120.0	T	M		H	
QUINOLINE	00091-22-5	4	---		1.0E-01	d	M		H	
NAPHTHYLAMINE, B-	00091-59-8	4	---		3.0E-08	*	H		A	
N,N-DIETHYL ANILINE	00091-66-7	4	520.0	A	5.2	A	M			RR
DICHLOROBENZIDINE33'	00091-94-1	4	---		1.0E-01	H	H		HB	
BIPHENYL	00092-52-4	4	310.0	T	3.1	T	M		H	
AMINODIPHENYL, P-	00092-67-1	4	---		3.0E-08	*	H		HA	
PHENOTHIAZINE	00092-84-2	4	1200.0	T	12.0	T				
BENZIDINE	00092-87-5	4	---		1.5E-05	E	H	U	HA	
NITRODIPHENYL, 4-	00092-93-3	4	---		3.0E-08	*	H		HA	
2,4,5-T	00093-76-5	4	2400.0	T	24.0	T				
BENZOYL PEROXIDE	00094-36-0	4	1200.0	T	12.0	T				
2,4-D	00094-75-7	4	2400.0	T	24.0	T		H		
INDENE	00095-13-6	4	11000.0	T	110.0	T				
XYLENE,O-	00095-47-6	4	100000.0	T	700.0	E	M		H	
CRESOL, O-	00095-48-7	4	2400.0	A	24.0	A	M		H	RR
CHLOROTOLUENE,ORTHO	00095-49-8	4	62000.0	T	620.0	T				
DICHLOROBENZENE, O-	00095-50-1	4	36000.0	T	200.0	E	M			
TOLUIDINE, O-	00095-53-4	4	880.0	T	21.0	T	H		HB	
PHENYLENEDIAMINE, O-	00095-54-5	4	24.0	T	2.4E-01	T			B	
DIAMINO TOLUENE,2,5	00095-70-5	4	---		1.0E-01	d	M			
TOLUENE-2,4-DIAMINE	00095-80-7	4	3.5	A	6.2E-02	A	H	U	H	RR
2,5-DICHLOROANILINE	00095-82-9	4	1800.0	A	6.0E-01	A	M	U		RR
TETRACHLOROBENZE1245	00095-94-3	4	---		1.1	o				
TRICHLOROPHENOL,245	00095-95-4	4	---		350.0	o			H	
STRYENE OXIDE	00096-09-3	4	---		3.0E-08	*	H		H	
DIBROMOCHLOROPROPANE	00096-12-8	4	24.0	R	2.4E-01	R			H	

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T	111111 123456789012345
METHYLBUTANONE	00096-17-3	4		---		1.0E-01	d M	
TRICHLORPROPAN,123	00096-18-4	4		14000.0	T	140.0	T	
DIETHYL KETONE	00096-22-0	4		170000.0	T	1700.0	T	
METHYL ETHYLKETOXINE	00096-29-7	4		140000.0	A	300.0	A M	RR
METHYL ACRYLATE	00096-33-3	4		1700.0	P	17.0	P M	
METHYLCYCLOPENTANE	00096-37-7	4		83000.0	A	8300.0	A L	RR
ETHYLENE THIOUREA	00096-45-7	4		---		3.0E-08	* H	H
gamma-BUTYROLACTONE	00096-48-0	4		360.0	A	3.6	A M	RR
METHYLPYRROLE	00096-54-8	4		---		1.0E-01	d M	
THIOBISTERTBUTYLCRES	00096-69-5	4		2400.0	T	24.0	T	
DISULFIRAM	00097-77-8	4		480.0	T	4.8	T	
ISOBUTYL-ISOBUTYRATE	00097-85-8	4		---		45000.0	D L	

ALUMINUM, TRIETHYL	00097-93-8	6	Al	850.0	T	20.0	T H	RRQQ
FURFURYL ALCOHOL	00098-00-0	4		9500.0	T	95.0	T M	
FURFURAL	00098-01-1	4		1900.0	T	50.0	E M	
BENZENEARSONIC ACID	00098-05-5	1	As	---		6.2E-04	E H U H	R Q
BENZOTRICHLORIDE	00098-07-7	4		---		3.0E-08	* H H	
BUTYLTOLUENE,P-TERT	00098-51-1	4		1500.0	T	15.0	T	
TERPINEOL-ALPHA	00098-55-5	4		130000.0	A	13000.0	A L	RR
CUMENE (8CI)	00098-82-8	4		59000.0	T	9.0	I H	
METHYL STYRENE, @	00098-83-9	4		58000.0	T	580.0	T	
ACETOPHENONE	00098-86-2	4		12000.0	T	2.0E-02	I H	
BENZOYL CHLORIDE	00098-88-4	4		280.0	T	6.7	T C	
NITROBENZENE	00098-95-3	4		1200.0	T	2.0	I M H	
NITROTOLUENE, M-	00099-08-1	4		2600.0	T	26.0	T	
DINITROBENZENE, M-	00099-65-0	4		240.0	T	2.4	T M	
NITROTOLUENE, P-	00099-99-0	4		2600.0	T	26.0	T M	
CHLORONITROBENZENE,P	00100-00-5	4		150.0	T	1.5	T M	
NITROANILINE, P-	00100-01-6	4		710.0	T	6.0	H M	
NITROPHENOL, P-	00100-02-7	4		---		1.0E-01	d M H	
TEREPHTHALIC ACID	00100-21-0	4		2400.0	T	24.0	T	
DINITROBENZENE	00100-25-4	4		240.0	T	2.4	T	
DIETHYLAMINOETHANOL	00100-37-8	4		2300.0	T	23.0	T	
VINYL CYCLOHEXENE	00100-40-3	4		95.0	T	380.0	D M	
ETHYL BENZENE	00100-41-4	4		100000.0	T	1000.0	E M H	
STYRENE	00100-42-5	4		20000.0	P	1000.0	I M H	
BENZYL CHLORIDE	00100-44-7	4		500.0	R	2.0E-02	E H U H C	
METHYL ANILINE	00100-61-8	4		520.0	T	5.2	T M	
PHENYLHYDRAZINE	00100-63-0	4		100.0	T	1.0	T M B C	
ETHYLMORPHOLINE,N-	00100-74-3	4		5700.0	T	57.0	T	
METH BIS-O-CHLORANIL	00101-14-4	4		7.1E-01	R	7.1E-03	R HB	
METHYLENE BISPH ISCY	00101-68-8	4		5.0	R	2.0E-02	E H H	
METHYLENEDIANILINE44	00101-77-9	4		190.0	T	1.9	T M HB	
PHENYL ETHER	00101-84-8	4		1700.0	T	17.0	T	
DIPHENYL CARBONATE	00102-09-0	4		310.0	A	3.1	A M	RR
DICYCPENTDIENYL IRON	00102-54-5	4		2400.0	T	24.0	T	
TRIETHANOLAMINE	00102-71-6	4		1200.0	T	12.0	T	
DIBUTYLAMINOETOL,2-N	00102-81-8	4		830.0	T	8.3	T	
OCTYL ACETATE	00103-09-3	4		---		140.0	D L	
DIOCTYL ADIPATE	00103-23-1	4		1200.0	A	12.0	A M	RR
N-PROPYLBENZENE	00103-65-1	4		---		1.0E-01	d M	
N-ETHYLANILINE	00103-69-5	4		520.0	A	5.2	A M	RR
NITROSOPHENOL, P-	00104-91-6	4		---		1.0E-01	d M	

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
ANISIDINE, P-	00104-94-9	4		120.0	T	1.2	T M
BUTYL ACETATE, SEC-	00105-46-4	4		230000.0	T	2300.0	T
CAPROLACTAM	00105-60-2	4		240.0	T	2.4	T HK
ETHYL BUTYL KETONE	00106-35-4	4		56000.0	T	560.0	T
XYLENE,P-	00106-42-3	4		100000.0	T	300.0	E M H
CRESOL, P-	00106-44-5	4		2400.0	A	24.0	A M H RR
DICHLOROBENZENE,P-	00106-46-7	4		14000.0	T	700.0	D M H
CHLOROANILINE, P-	00106-47-8	4		---		6.0	H M
TOLUIDINE, P-	00106-49-0	4		2100.0	T	21.0	T B
PHENYLENEDIAMINE, P-	00106-50-3	4		24.0	T	2.4E-01	T M H
QUINONE	00106-51-4	4		100.0	T	1.0	T M H
ETHYL AMYL KETONE	00106-68-3	4		31000.0	A	310.0	A RR
VINYL CYCLOHEXENE DI	00106-87-6	4		140.0	P	1.4	P
ETHYL OXIRANE	00106-88-7	4		3000.0	D	20.0	D M H
EPICHLOROHYDRIN	00106-89-8	4		450.0	P	8.0E-01	E M U HB
ALLYL GLYCIDYL ETHER	00106-92-3	4		5500.0	T	55.0	T C
DIBROMOETHANE, 1,2-	00106-93-4	4		38.0	R	5.0E-03	E H U HB

BUTANE	00106-97-8	4		450000.0	T	45000.0	T L
BUTADIENE, 1,3	00106-99-0	4		440.0	T	3.6E-03	E H U HB
ACROLEIN	00107-02-8	4		23.0	T	2.0E-02	I H H
PROPYL MERCAPTAN, N-	00107-03-9	4		160.0	R	3.8	R C
ALLYL CHLORIDE	00107-05-1	4		710.0	T	1.0	E M H
DICHLOROETHANE	00107-06-2	4		950.0	R	3.9E-02	E M U H
ETHYLENE CHLOROHYDRN	00107-07-3	4		330.0	T	7.9	T C
PROPIONITRILE	00107-12-0	4		3300.0	R	33.0	R
ACRYLONITRILE	00107-13-1	4		220.0	R	1.0E-02	E H U HB
ETHYLENE DIAMINE	00107-15-3	4		6000.0	T	60.0	T M
GLYCOLONITRILE	00107-16-4	4		500.0	R	12.0	R C
ALLYL ALCOHOL	00107-18-6	4		480.0	T	11.0	T H
PROPARGYL ALCOHOL	00107-19-7	4		550.0	T	5.5	T
CHLOROACETALDEHYDE	00107-20-0	4		320.0	T	7.6	T C
ETHYLENE GLYCOL	00107-21-1	4		10000.0	T	240.0	T HC
METHYL CHLOROMETHETH	00107-30-2	4		---		1.0E-01	d M HB
METHYL FORMATE	00107-31-3	4		59000.0	T	590.0	T M
HEXYLENE GLYCOL	00107-41-5	4		12000.0	T	2900.0	T L C
HEXAMETHYLDISILOXANE	00107-46-0	4		1600.0	A	220.0	D M R
TEPP	00107-49-3	4		11.0	T	1.1E-01	T
DIBUTYL PHOSPHATE	00107-66-4	4		2000.0	T	20.0	T
Methyl pentane, 2-	00107-83-5	4		83000.0	A	4200.0	T M R
METHYL PROPYL KETONE	00107-87-9	4		130000.0	R	1300.0	R
CYANOACETAMIDE	00107-91-5	4	CN	3800.0	T	38.0	T M H RRQQ
PROPYLENE GLYCOL MON	00107-98-2	4		88000.0	T	2000.0	E M
2-DIMETHYL AMINO ETH	00108-01-0	4		---		410.0	D L
NITROPROPANE, 1-	00108-03-2	4		22000.0	T	220.0	T M
VINYL ACETATE	00108-05-4	4		1500.0	R	36.0	R H C
METHYL ISOBUTYL KETO	00108-10-1	4		48000.0	R	480.0	R M H
METHYLISOBUTYLCARBIN	00108-11-2	4		25000.0	T	250.0	T
DIISOPROPYLAMINE	00108-18-9	4		5000.0	T	50.0	T
ISOPROPYL ETHER	00108-20-3	4		250000.0	T	2500.0	T
ISOPROPYL ACETATE	00108-21-4	4		250000.0	T	2500.0	T
ACETIC ANHYDRIDE	00108-24-7	4		5000.0	T	50.0	T M
MALEIC ANHYDRIDE	00108-31-6	4		240.0	T	2.4	T M H
PROPYLENE CARBONATE	00108-32-7	4		200000.0	A	20000.0	A L RR

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
XYLENE,M-	00108-38-3	4		100000.0	T	700.0	E M H
CRESOL, M-	00108-39-4	4		2400.0	A	24.0	A M H RR
TOLUIDINE, M-	00108-44-1	4		2100.0	T	21.0	T
PHENYLENEDIAMINE, M-	00108-45-2	4		24.0	T	2.4E-01	T M
RESORCINOL	00108-46-3	4		11000.0	T	1100.0	T L
DIVINYL BENZENE	00108-57-6	4		13000.0	A	130.0	A RR
METHOXYPROPYLACETATE	00108-65-6	4		88000.0	A	2000.0	A L RR
MESITYENE	00108-67-8	4		29000.0	A	290.0	A M RR
DIISOBUTYL KETONE	00108-83-8	4		33000.0	R	330.0	R
HEXYL ACETATE, SEC-	00108-84-9	4		70000.0	T	7000.0	T L
METHYLCYCLOHEXANE	00108-87-2	4		380000.0	T	3800.0	T M
TOLUENE	00108-88-3	4		45000.0	T	400.0	E L H
MONOCHLOROBENZENE	00108-90-7	4		11000.0	T	20.0	E M H
CYCLOHEXYLAMINE	00108-91-8	4		9800.0	T	98.0	T
CYCLOHEXANOL C6H12O	00108-93-0	4		49000.0	T	490.0	T
CYCLOHEXANONE	00108-94-1	4		24000.0	T	240.0	T M
PHENOL	00108-95-2	4		4500.0	T	9.6	H M H
PHENYL MERCAPTAN	00108-98-5	4		50.0	R	1.2	R C
DIBUTYL SEBACATE	00109-43-3	4		---		80.0	A L R
ISOPROPOXYETHANOL,2-	00109-59-1	4		25000.0	T	250.0	T
PROPYL ACETATE	00109-60-4	4		200000.0	T	20000.0	T L
PENTANE	00109-66-0	4		83000.0	R	830.0	R

1-PENTENE	00109-67-1	4		---		1.0E-01	d	M						
BUYYLAMINE, N-	00109-73-9	4		1500.0	T	36.0	T	M		C				
BUTYRONITRILE, N-	00109-74-0	4		5200.0	R	52.0	R							
1,3-PROPANEDIAMINE	00109-76-2	4		6000.0	A	30.0	D	M					R	
MALONONITRILE	00109-77-3	1		380.0	s	19.0	R							
BUTYL MERCAPTAN	00109-79-5	4		430.0	T	4.3	T	M			C			
METHYL CELLOSOLVE	00109-86-4	4		3800.0	T	20.0	E	M		H				
METHYLAL	00109-87-5	4		740000.0	T	7400.0	T							
DIETHYLAMINE	00109-89-7	4		3600.0	T	36.0	T							
ETHYL FORMATE	00109-94-4	4		72000.0	T	720.0	T							
TETRAHYDROFURAN	00109-99-9	4		140000.0	T	14000.0	T	L						
METHYLISOAMYLKETONE	00110-12-3	4		55000.0	R	550.0	R							
ISOBUTYL ACETATE	00110-19-0	4		170000.0	T	17000.0	T	L		H				
METHYL AMYL KETONE	00110-43-0	4		55000.0	T	550.0	T							
METHOXYETHYL ACET,2-	00110-49-6	4		5700.0	T	57.0	T							
HEXANE	00110-54-3	4		42000.0	T	240.0	E	M		H				
SUCCINONITRILE	00110-61-2	4		4800.0	R	48.0	R							
VALERALDEHYDE	00110-62-3	4		42000.0	T	420.0	T							
AMYL MERCAPTAN	00110-66-7	4		210.0	R	5.0	R				C			
GLYCOL MONOETHYLETHR	00110-80-5	4		4300.0	T	200.0	E	M		H				
CYCLOHEXANE	00110-82-7	4		250000.0	T	25000.0	T	L						
CYCLOHEXENE MIXTURE	00110-83-8	4		240000.0	T	2400.0	T							
PYRIDINE	00110-86-1	4		3800.0	T	2.0	H	L						
MORPHOLINE C4H9O	00110-91-8	4		17000.0	T	170.0	T							
ETHOXYETHYL ACETATE2	00111-15-9	4		6400.0	T	64.0	T	M		H				
GLUTARALDEHYDE	00111-30-8	4		20.0	P	4.8E-01	P			C				
HEXANETHIOL, 1-	00111-31-9	4		240.0	R	5.7	R			C				
3-ETHOXYPROPANOL	00111-35-3	4		88000.0	A	2000.0	A	M					RR	
DIETHYLENE TRIAMINE	00111-40-0	4		1000.0	T	10.0	T	M						
DIETHANOLAMINE	00111-42-2	4		480.0	T	4.8	T			H				
DICHLOROETHYL ETHER	00111-44-4	4		6900.0	T	69.0	T			H				

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W	T	-----codes----- 123456789012345
ETHYLENE GYLCOL MONO	00111-45-5	4		---		1.0E-01	d	M	H
GLYCOL ETHER	00111-46-6	4		---		1.0E-01	d		H
OCTANE	00111-65-9	4		83000.0	R	830.0	R		
ADIPONITRILE	00111-69-3	4		2100.0	T	21.0	T		
BUTOXYETHANOL, 2-	00111-76-2	4		29000.0	T	290.0	T	M	H
METHYL CARBITOL	00111-77-3	4		6000.0	A	32.0	A	M	RR MM
NONANE C9H20	00111-84-2	4		250000.0	T	25000.0	T	L	
OCTANETHIOL, 1-	00111-88-6	4		300.0	R	7.1	R		C
CARBITOL CELLOSOLVE	00111-90-0	4		4300.0	A	7000.0	D	M	H R
DIETHYLENEDIMETHYLET	00111-96-6	4		6700.0	A	35.0	A	M	RR MM
HEPTYL ACETATE	00112-06-1	4		70000.0	A	7000.0	A	L	RR
BUTOXYETHYL ACETATE	00112-07-2	4		29000.0	A	290.0	A	M	H RR
TRIETHYLENETETRAMINE	00112-24-3	4		1000.0	A	10.0	A	M	RR
TRIETHYLENE GLYCOL	00112-27-6	4		7100.0	A	330.0	A	M	H RR MM
BUTYL CARBITOL	00112-34-5	4		7700.0	A	360.0	A	M	H RR MM
DIETHYL CARBITOL	00112-36-7	4		4300.0	A	200.0	A	M	H RR
HEXYL CARBITOL	00112-59-4	4		9000.0	A	420.0	A	M	H RR MM
DIBUTYL CARBITOL	00112-73-2	4		10000.0	A	480.0	A	M	H RR MM
OLEIC ACID	00112-80-1	4		---		3500.0	D	L	
PROPOXUR (BAYGON)	00114-26-1	4		120.0	T	1.2	T		H
PROPYLENE	00115-07-1	4		---	X	9999999.0	X		G
DIMETHYL ETHER	00115-10-6	4		290000.0	A	29000.0	A	L	RR
ISOBUTYLENE	00115-11-7	4		---		1.0E-01	d	M	
2METHYL-3-BUTYN-2-OL	00115-19-5	4		---		260.0	D	M	
ENDOSULFAN	00115-29-7	4		24.0	T	2.4E-01	T		
KELTHANE	00115-32-2	4		---		1.0E-01	d	M	
PENTAERYTHRITOL	00115-77-5	4		2400.0	T	24.0	T		

TRIPHENYL PHOSPHATE	00115-86-6	4		710.0	T	7.1	T					
FENSULFOTHION	00115-90-2	4		24.0	T	2.4E-01	T					
ALDICARB	00116-06-3	4		---		2.0	H	H				
DICHLONE	00117-80-6	4		---		1.0E-01	d	M				
DIOCTYL PHTHALATE	00117-81-7	4		1200.0	T	12.0	T	M		H		
DICHLORDIMEHYDANTOIN	00118-52-5	4		48.0	T	4.8E-01	T					
HEXACHLOROBENZENE	00118-74-1	4		2.5	T	2.2E-03	E	H	U	H		
TNT	00118-96-7	4		120.0	T	1.2	T					
METHYL SALICYLATE	00119-36-8	4		---		52000.0	D	L				
DIANISIDINE, O-	00119-90-4	4		---		2.0E-01	H	M		H		
TOLIDINE, O-	00119-93-7	4		2.0	R	4.8E-02	R			HB	C	
PHENYLEIETHANOLAMINE	00120-07-0	4		---		47.0	D	M				
ANTHRACENE	00120-12-7	4		---		2.0E-02	A	H		H		R
CATECHOL	00120-80-9	4		5500.0	T	55.0	T			H		
TRICHLORO BENZENE	00120-82-1	4		3700.0	T	9.0	E	H		HC		
DICHLOROPHENOL, 2,4-	00120-83-2	1		---		11.0	o					
DINITROTOLUENE,2,4-	00121-14-2	4		---		3.0E-08	*	H		H		
PYRETHRIN	00121-29-9	4		1200.0	A	12.0	A	M				RR
TRIETHYLAMINE	00121-44-8	4		980.0	T	9.8	T			H		
TRIMETHYL PHOSPHITE	00121-45-9	4		2400.0	T	24.0	T					
DIMETHYLANILINE	00121-69-7	4		520.0	A	60.0	T	M		H		R
MALATHION	00121-75-5	4		2400.0	T	24.0	T	M				
CYCLONITE	00121-82-4	4		360.0	T	3.6	T					
CHLORO NITROANILINE	00121-87-9	4		710.0	A	6.0	A	M				RR
DIPHENYLAMINE	00122-39-4	4		2400.0	T	24.0	T					
DODECANETHIOL, 1-	00122-55-0	4		410.0	R	9.8	R				C	

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
PHENY GLYCIDYL ETHER	00122-60-1	4		140.0	T	1.4	T M C
DIOCTYL SEBACATE	00122-62-3	4		---		80.0	D L
DIPHENYL HYDRAZINE	00122-66-7	4		2.5	A	4.5E-03	E H U H R
ETHANOL,2-PHENOXY-	00122-99-6	4		6600.0	A	310.0	A M H RR MM
DODECYL BENZENE	00123-01-3	4		---		18000.0	D L
DIPROPYL KETONE	00123-19-3	4		55000.0	T	550.0	T
HYDROQUINONE	00123-31-9	4		480.0	T	4.8	T M H C
PROPIONALDEHYDE	00123-38-6	4		---		1.0E-01	d H
DIACETONE ALCOHOL	00123-42-2	4		57000.0	T	570.0	T M
ISOAMYL ALCOHOL	00123-51-3	6		86000.0	T	8600.0	T L
CROTONALDEHYDE	00123-73-9	4		1400.0	A	14.0	A RR
BUTYL ACETATE	00123-86-4	4		23000.0	P	2300.0	P L
DIOXANE	00123-91-1	4		360.0	R	8.6	R M H C
ISOAMYL ACETATE	00123-92-2	4		130000.0	T	13000.0	T L
ADIPIC ACID	00124-04-9	4		1200.0	T	12.0	T
HEXANEDIAMINE, 1,6-	00124-09-4	4		550.0	T	5.5	T M
DECANE C10H22	00124-18-5	4		---		1.0E-01	d M
CARBON DIOXIDE	00124-38-9	6		2100000.0	T	21000.0	T
DIMETHYL AMINE	00124-40-3	4		2200.0	T	22.0	T
CHLORODIBROMOMETHANE	00124-48-1	4		---		1.0E-01	d M
SODIUMACODYLATE	00124-65-2	1	As	---		4.9E-04	E H U H R Q
ISOBUTANOLAMINE	00124-68-5	4		1800.0	A	18.0	A M RR
PRIMIDONE	00125-33-7	4		---		3.6	D M
TRIBUTYL PHOSPHATE	00126-73-8	4		520.0	T	5.2	T
SURFYNOL 104E	00126-86-3	4		12000.0	A	2900.0	A L RR
METHYLACRYLONITRILE	00126-98-7	4		640.0	T	6.4	T
CHLOROPRENE, B-	00126-99-8	4		360.0	R	7.0	I H C
TETRACHLOROETHYLENE	00127-18-4	4		40000.0	T	1.2	D M U H
DIMETHYLACETAMIDE	00127-19-5	4		8600.0	T	86.0	T
SODIUM NITROBENZSULF	00127-68-4	4		1200.0	A	2.0	A M RR
DITERT BUTLY-P-CRES	00128-37-0	4		2400.0	T	240.0	T L
PYRENE	00129-00-0	4		---		2.0E-02	A H H R

DIMETHYL PHTHALATE	00131-11-3	4	1200.0	T	12.0	T	H	
DIBENZOFURANS	00132-64-9	4	---		3.0E-08	* H	H	
CAPTAN	00133-06-2	4	1200.0	T	12.0	T	H	
CHLORAMBEN	00133-90-4	1	---		1.0E-01	d	H	
NAPHTHYLAMINE, @ -	00134-32-7	4	---		1.0E-01	d M		
SESONE	00136-78-7	4	2400.0	T	24.0	T		
METHYL CYANOACRYLATE	00137-05-3	4	2200.0	T	22.0	T		
THIRAM	00137-26-8	4	240.0	T	2.4	T M		
BUTYL LACTATE, N-	00138-22-7	4	7100.0	T	71.0	T		
LIMONENE (ALPHA)	00138-86-3	4	---		210.0	D M		
NITRILOTRIACETIC ACI	00139-13-9	4	---		1.0E-01	d M		
BENZYL ACETATE	00140-11-4	4	15000.0	T	150.0	T		
ETHYL ACRYLATE	00140-88-5	4	4800.0	T	48.0	T	HB	
BUTYL ACRYLATE, N-	00141-32-2	4	12000.0	T	120.0	T		
ETHANOLAMINE	00141-43-5	4	1800.0	T	18.0	T M		
DICROTOPHOS	00141-66-2	4	60.0	T	6.0E-01	T		
ETHYL ACETATE	00141-78-6	4	340000.0	T	34000.0	T L		
MESITYL OXIDE	00141-79-7	4	9500.0	R	95.0	R		
PIPERAZINE DIHYDROCH	00142-64-3	4	1200.0	T	12.0	T		
HEPTANE, N-	00142-82-5	4	83000.0	R	830.0	R M		
DECANETHIOL, 1-	00143-10-2	4	360.0	R	8.6	R	C	

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
SODIUM CYANIDE	00143-33-9	1	CN	380.0	s	22.0	T H HC RRQQ
CHLORDECONE	00143-50-0	4		1.0E-01	R	2.4E-03	R H
OXALIC ACID	00144-62-7	4		240.0	T	2.4	T M
DINITRO-O-TOLUAMIDE	00148-01-6	4		1200.0	T	12.0	T
METHOXYPHENOL, 4-	00150-76-5	4		1200.0	T	12.0	T
POTASSIUM CYANIDE	00151-50-8	1	CN	380.0	s	30.0	T H HC RRQQ
ETHYLENEIMINE	00151-56-4	4		88.0	T	2.1	T H H
HALOTHANE	00151-67-7	4		96000.0	T	960.0	T
cis-DICHLOROETHYLENE	00156-59-2	4		190000.0	A	1900.0	A M RR
tranDICHLOROETHYLENE	00156-60-5	4		---		360.0	D M
CALCIUM CYANAMIDE	00156-62-7	1		120.0	T	1.2	T H
CHRYSENE	00218-01-9	4		---		2.0E-02	A H H R
DIQUAT	00231-36-7	1		24.0	T	2.4E-01	T K
CYCLOPENTANE	00287-92-3	4		410000.0	T	4100.0	T
METHYL PARATHION	00298-00-0	4		48.0	T	4.8E-01	T
PHORATE	00298-02-2	4		12.0	T	1.2E-01	T
DISULFOTON	00298-04-4	4		24.0	T	2.4E-01	T
RONNEL	00299-84-3	4		2400.0	T	24.0	T
CRUFORMATE	00299-86-5	1		380.0	s	12.0	T
NALED (DIBROM)	00300-76-5	4		710.0	T	7.1	T
HYDRAZINE	00302-01-2	4		1.3	T	2.0E-04	E H U H C
ALDRIN	00309-00-2	4		60.0	T	6.0E-01	T
BROMACIL	00314-40-9	4		2400.0	T	24.0	T
LINDANE, ALPHA-	00319-84-6	4		120.0	A	6.0E-04	A M U H RR
LINDANE, BETA-	00319-85-7	4		120.0	A	2.0E-03	E M U H R
DIURON	00330-54-1	4		2400.0	T	24.0	T
DIAZINON	00333-41-5	1		24.0	T	2.4E-01	T
DIAZOMETHANE	00334-88-3	4		81.0	T	8.1E-01	T M H
CARBONYL FLUORIDE	00353-50-4	4		12.0	s	6.9E-01	s RRQQ
NICKEL ACETATE	00373-02-4	4	Ni	15.0	P	1.2E-02	H H U H RRQQ
PERFLUOROISOBUTYLENE	00382-21-8	4		8.2	T	2.0E-01	T C
SILICON CARBIDE	00409-21-2	1		380.0	s	24.0	T I
CYANAMIDE	00420-04-2	4		480.0	T	4.8	T M
CYANOGEN	00460-19-5	4		5000.0	T	50.0	T M
KETENE	00463-51-4	4		200.0	T	2.0	T M
CARBONYL SULFIDE	00463-58-1	6		---		1.0E-01	d H
TETRYL	00479-45-8	4		360.0	T	3.6	T

SODIUM CARBONATE	00497-19-8	1		---		50.0	S L	
AMINOPYRIDINE, 2-	00504-29-0	4		450.0	T	4.5	T	
POTASSIUM SILVER CYA	00506-61-6	1		---		50.0	S	
SILVER CYANIDE	00506-64-9	1		380.0	s	50.0	S H H	R Q
CYANOGEN BROMIDE	00506-68-3	4		---		320.0	o	
CYANOGEN CHLORIDE	00506-77-4	4		75.0	T	1.8	T C	
TETRANITROMETHANE	00509-14-8	4		9.5	T	9.5E-02	T B	
CHLOROBENZILATE	00510-15-6	4		---		1.0E-01	d H	
COBALT CARBONATE	00513-79-1	1	Co	9.8	T	9.8E-02	T H	RRQQ
ACETOIN	00513-86-0	4		140000.0	A	300.0	A M	RR
DINITROBENZENE	00528-29-0	4		240.0	T	2.4	T	
CHLOROACETOPHENONE,2	00532-27-4	4		76.0	T	3.0E-02	E M H	
2-METHYLFURAN	00534-22-5	4		23.0	A	2.0E-02	A H	RR
DINITRO-O-CRESOL	00534-52-1	4		48.0	T	4.8E-01	T H	
DICHLOROETHYLENE, 12	00540-59-0	4		190000.0	T	1900.0	T M	
ISO-OCTANE	00540-84-1	4		83000.0	A	830.0	A M H	RR

Date Created: 10-06-95

AIR GUIDE-1 AGCs/SGCs (NUMERICAL Sort by CAS Number) Page 11

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
BUTYL ACETATE, TERT-	00540-88-5	4		230000.0	T	2300.0	T
DECAMETHYLCYCLOPENTA	00541-02-6	4		---		550.0	D L
m-DICHLOROBENZENE	00541-73-1	4		36000.0	A	200.0	A M RR
ETHYL AMYL KETONE	00541-85-5	4		31000.0	T	310.0	T
BARIUM CYANIDE	00542-62-1	1	Ba	380.0	s	6.9E-01	E H H RRQQ
DICHLOROPROPENE, 1,3	00542-75-6	4		1100.0	T	20.0	I H
CADMIUM CYANIDE	00542-83-6	1	Cd	380.0	s	7.3E-04	H H U H RRQQ
CHLOROMETHYL ETH,BIS	00542-88-1	4		4.7E-01	T	1.6E-05	E H U HA
CYCLOPENTADIENE, 1,3	00542-92-7	4		48000.0	T	480.0	T M
COPPER CYANIDE	00544-92-3	1		380.0	s	41.0	T H H RRQQ
MAGNESITE	00546-93-0	1		380.0	s	24.0	T I
TRIMELLITIC ANHYDRID	00552-30-7	4		4.0	T	9.5E-02	T C
GOLD POTASSIUM CYAN	00554-07-4	4	C2N2	2800.0	T	66.0	T H H RRQQ
GLYCIDOL	00556-52-5	4		1500.0	P	15.0	P
METHYL TETRAMER	00556-67-2	6		---		550.0	D L
NICKEL CYANIDE	00557-19-7	1	Ni	380.0	s	7.5E-03	H H U H RRQQ
ZINC, DIETHYL	00557-20-0	6		1200.0	A	50.0	A M RR
ZINC CYANIDE	00557-21-1	6		1100.0	T	27.0	T H H RRQQ
CARBON TETRABROMIDE	00558-13-4	4		330.0	T	3.3	T
3,3-DIMETHYLBUTENE	00558-37-2	4		---		1.0E-01	d M
ETHION	00563-12-2	1		95.0	T	9.5E-01	T
THALLIUM ACETATE	00563-68-8	6		---		3.2E-01	o
METHYLISOPROPYLKETON	00563-80-4	4		170000.0	T	1700.0	T
METHYLCYCLOHEXANON,O	00583-60-8	4		55000.0	T	550.0	T
TOLUENE24DIISOCYANAT	00584-84-9	4		3.5	R	6.2E-02	D H U H
DIPHENYL MERCURY	00587-85-9	4	Hg	1.8	T	4.2E-02	T H H RRQQ
3-METHYL-1-PENTANOL	00589-35-5	4		---		1.0E-01	d M
POTASSIUM CYANATE	00590-28-3	4		5000.0	A	50.0	A M H RR
METHYL N-BUTYL KETON	00591-78-6	4		950.0	R	9.5	R
CALCIUM CYANIDE	00592-01-8	1		380.0	s	50.0	S H H R Q
VINYL BROMIDE	00593-60-2	4		2200.0	T	3.0E-02	E H U HB
PERCHLORMETHMERCAPTN	00594-42-3	4		180.0	T	1.8	T
DICHLORONITROETHANE	00594-72-9	4		2900.0	T	29.0	T
LEAD CARBONATE	00598-63-0	1	Pb	15.0	T	9.7E-01	s H RRQQ
CHLOROPROPIONICACI,2	00598-78-7	4		100.0	T	1.0	T
CHLORO NITROPROPANE	00600-25-9	4		2400.0	T	24.0	T
TRIPHENYL ARSINE	00603-32-7	4	As	---		9.4E-04	E H U H R Q
TRIPHENYL AMINE	00603-34-9	4		1200.0	T	12.0	T
PENTACHLOROBENZENE	00608-93-5	4		---		1.1	o
ETHANOL,2-(PHENYLMET	00622-08-2	4		---		1.0E-01	d H
METHYL ISOCYANATE	00624-83-9	4		4.7	T	1.1E-01	T H H
DIMETHYL DISULFIDE	00624-92-0	4		14.0	A	1.0	A M RR

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
4-PENTEN-2-OL	00625-31-0	4		480.0	A	11.0	A H RR
2,5-DIMETHYLFURAN	00625-86-5	4		9500.0	A	95.0	A M RR
PHTHALODINITRILE, M-	00626-17-5	4		1200.0	T	12.0	T
AMYL ACETATE, SEC-	00626-38-0	4		160000.0	T	1600.0	T
PROPYL NITRATE, N-	00627-13-4	6		25000.0	T	250.0	T
AMYL ACETATE, N-	00628-63-7	4		130000.0	T	1300.0	T
ETHYLENEGLYCOLDINITR	00628-96-6	4		10.0	R	2.4E-01	R C
TRIDECANE	00629-50-5	4		250000.0	A	18000.0	D L R
ALPHA OLEFIN	00629-73-2	4		---		220.0	D M
CARBON MONOXIDE	00630-08-0	5		40000.0	S	69.0	T
SELENOUREA	00630-10-4	1	Se	74.0	T	7.4E-01	T H RRQQ

Date Created: 10-06-95

AIR GUIDE-1 AGCs/SGCs (NUMERICAL Sort by CAS Number) Page 12

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
OXOPHENYL ARSINE	00637-03-6	4	As	---		5.2E-04	E H U H R Q
PHENYLPHOSPHINE	00638-21-1	4		23.0	T	5.5E-01	T C
DIOXOLANE	00646-06-0	4		---		140.0	D L
HEXAMETHYLPHOSPHORAM	00680-31-9	4		---		1.0E-01	d M HB
METHYL SILICATE	00681-84-5	4		1400.0	T	14.0	T M
HEXAFLUOROACETONE	00684-16-2	4		160.0	T	1.6	T
NITROSO-N-METHYLUREA	00684-93-5	4		---		1.0E-01	d M H
ET HEXYLMETHACRYLATE	00688-84-6	4		1700.0	A	17.0	A M RR
PHENYL DICHLOROARSIN	00696-28-6	4	As	---		6.8E-04	E H U H R Q
ETHYL 4-OXAHEXANOATE	00763-69-9	4		6400.0	A	64.0	A M RR
DIMETHYLHEXADIENE	00764-13-6	4		390000.0	A	3900.0	A M RR
DICHLORO-2-BUTENE,14	00764-41-0	4		6.0	T	6.0E-02	T B
GLYCIDALDEHYDE	00765-34-4	4		---		1.0	E M
ISOPROPYLANILINE, N-	00768-52-5	4		2600.0	T	26.0	T
TETRAFLUOROETHANE.	00811-97-2	6		---		80000.0	E L
HEXAMETHYLENE DIISOC	00822-06-0	4		3.4	T	1.0E-02	E H H
DIMETHOXANE	00828-00-2	4		360.0	A	8.6	A M RR
METHYL PYRROLIDONE	00872-50-4	4		---		580.0	D M
SODIUM ISOCYANATE	00917-61-3	4		5000.0	A	50.0	A M H RR
g-AMINOPROPYLTRIETSI	00919-30-2	4		1600.0	A	160.0	A L RR
INDIUM, TRIETHYL	00923-34-2	6	In	18.0	T	4.2E-01	T H RRQQ
NITROSO-N-BUTYLAMINE	00924-16-3	4		---		6.3E-04	u U
NITROSOPYRROLIDINE	00930-55-2	4		---		1.6E-03	u U
FONOFOS	00944-22-9	4		24.0	T	2.4E-01	T
DIALLYLAMALEATE	00999-21-3	4		240.0	A	2.4	A M RR
HYDROXYPROPYLACRYLAT	00999-61-1	4		670.0	T	6.7	T
HEPTACHLOR EPOXIDE	01024-57-3	1		12.0	T	1.2E-01	T
1-TETRADECENE	01120-36-1	4		250000.0	A	18000.0	D L R
METHYLENECYCLOBUTANE	01120-56-5	4		---		1.0E-01	d M
PROPANE SULTONE	01120-71-4	4		---		1.0E-01	d M HB
TRIPHENYL As OXIDE	01153-05-5	4	As	---		9.9E-04	E H U H R Q
METHYLTRIMETHOXYSILA	01185-55-3	4		1600.0	A	160.0	A L RR
BUTYL CHROMATE, TERT	01189-85-1	4	CrO3	4.4E-01	R	8.9E-05	H H U H RRQQ
SODIUM XYLENESULFNTE	01300-72-7	4		100000.0	A	300.0	A L RR
XYLIDINE	01300-73-8	4		600.0	T	6.0	T M B
EMERY	01302-74-5	1		380.0	s	24.0	T I
GALLIUM ARSENIDE	01303-00-0	1	As	3.9E-01	R	4.4E-04	E H U H C RRQQ
ARSENIC PENTOXIDE	01303-28-2	1	As2	3.1E-01	R	3.5E-04	E H U H RRQQ
BORON OXIDE	01303-86-2	1		380.0	s	24.0	T
BORAX	01303-96-4	1		240.0	T	2.4	T K
BERYLLIUM OXIDE	01304-56-9	1	Be	1.4E-01	R	1.1E-03	E H U H RRQQ
BISMUTH TELLURIDE	01304-82-1	1		380.0	s	24.0	T K
CALCIUM HYDROXIDE	01305-62-0	1		380.0	s	12.0	T
CALCIUM OXIDE	01305-78-8	1		380.0	s	4.8	T
CADMIUM OXIDE	01306-19-0	1	Cd	2.3E-01	T	5.7E-04	H H U H RRQQ
CADMIUM SULFIDE	01306-23-6	1	Cd	2.6E-01	T	6.4E-04	H H U H RRQQ
CADMIUM SELENIDE	01306-24-7	1	Cd	3.4E-01	T	8.5E-04	H H U H RRQQ

COBALT OXIDE	01307-96-6	1		4.8	A	4.8E-02	A M H	RR
COBALT OXIDE(Co 3Q4)	01308-06-1	1	Co3	6.5	T	6.5E-02	T H	RRQQ
ZINC CHROMATES	01308-13-0	1	Cr	3.5E-01	R	7.1E-05	H H U H	RRQQ
CHROMIUM HYDROXIDE	01308-14-1	1	Cr	240.0	T	2.0E-01	H H	RRQQ
CHROMIUM OXIDE	01308-38-9	1	Cr2	170.0	T	1.5E-01	H M H	RRQQ
IRON OXIDE	01309-37-1	1	Fe2	380.0	s	17.0	T	QQ

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T	-----codes----- 111111 123456789012345
MAGNESIUM OXIDE	01309-48-4	1		380.0	s	24.0	T	
LEAD OXIDE	01309-60-0	1	Pb	14.0	T	8.7E-01	s H	RRQQ
ANTIMONY TRIOXIDE	01309-64-4	1	Sb2	140.0	T	1.4	T M HB	QQ
POTASSIUM HYDROXIDE	01310-58-3	6		200.0	T	4.8	T C	
SODIUM HYDROXIDE	01310-73-2	1		200.0	T	4.8	T C C	
MANGANESE OXIDE	01313-13-9	1	Mn	370.0	T	3.8E-01	I H	RRQQ
NICKEL OXIDE	01313-99-1	1	Ni	1.9	R	5.1E-03	H H U H	RRQQ
NICKEL OXIDE	01314-06-3	1	Ni2	2.1	R	5.6E-03	H H U H	RRQQ
ZINC OXIDE	01314-13-2	1		380.0	s	50.0	H M K	
THALLIUM OXIDE	01314-32-5	1	Tl	53.0	T	5.3E-01	T M	RRQQ
LEAD TETROXIDE	01314-41-6	1	Pb3	13.0	T	8.3E-01	s H	RRQQ
TANTALUM OXIDE	01314-61-0	1	Ta2	380.0	s	15.0	T	QQ
VANADIUM OXIDE V2O5	01314-62-1	1		12.0	T	1.2E-01	T I	
PHOSPH PENTASULFIDE	01314-80-3	1		240.0	T	2.4	T	
ZINC PHOSPHIDE	01314-84-7	6		---		9.5E-01	D M	
MANGANESE OXIDE	01317-34-6	1	Mn2	68.0	T	7.2E-02	I H	RRQQ
MANGANESE TETROXIDE	01317-35-7	1	Mn3	66.0	T	6.9E-02	I H	RRQQ
LEAD OXIDE	01317-36-8	1	Pb	13.0	T	8.1E-01	s H	RRQQ
COBALT SULFIDE	01317-42-6	1	Co	7.4	T	7.4E-02	T M H	RRQQ
CALCIUM CARBONATE	01317-65-3	1		380.0	s	24.0	T I	
SILICA - TRIPOLI	01317-95-9	1		24.0	T	2.4E-01	T I	
BASIC LEAD CARBONATE	01319-46-6	1	Pb3	15.0	T	9.4E-01	s H	RRQQ
CRESOL	01319-77-3	4		2400.0	R	24.0	R M H	
PENTACHLORONAPHTHALE	01321-64-8	4		120.0	T	1.2	T	
TRICHLORONAPHTHALENE	01321-65-9	4		1200.0	T	12.0	T	
DIVINYL BENZENE	01321-74-0	4		13000.0	T	130.0	T	
ARSENIC ACID	01327-52-2	4	As	3.8E-01	R	4.4E-04	E H U H	RRQQ
ARSENIC TRIOXIDE	01327-53-3	1	As2	2.6E-01	R	3.0E-04	E H U H	RRQQ
ZINC CHROMITE	01328-67-2	1	Cr	3.5E-01	R	7.1E-05	H H U H	RRQQ
XYLENE,M,O&P MIXT.	01330-20-7	4		100000.0	T	300.0	I M H	
ASBESTOS	01332-21-4	1		---		3.0E-08	* H HAI	
KAOLIN (CLAY)	01332-58-7	1		380.0	s	4.8	T I	
HYDROGEN	01333-74-0	6		---	X	9999999.0	X G	
CHROMIUM OXIDE	01333-82-0	1	Cr	1.9E-01	R	3.8E-05	H H U H	RRQQ
CARBON BLACK	01333-86-4	1		380.0	s	8.3	T M	
LEAD OXIDE	01335-25-7	1	Pb	13.0	T	8.1E-01	s H	RRQQ
LEAD ACETATE	01335-32-6	1		---		1.0E-01	d M H	
HEXACHLORONAPTHALENE	01335-87-1	4		48.0	T	4.8E-01	T M	
TETRACHLORONAPHTHALE	01335-88-2	4		480.0	T	4.8	T	
AQUA AMMONIA	01336-21-6	6		4000.0	A	100.0	A L	RR
PCB	01336-36-3	4		1.0E-01	R	4.5E-04	E H U H C	
MEK PEROXIDE	01338-23-4	4		150.0	T	3.6	T C	
SODIUMALUMINUMSILICA	01344-00-9	1		---		1.0E-01	d M	
ALUMINUM OXIDE	01344-28-1	1	Al2	380.0	s	45.0	T I	QQ
MERCURY SULFIDE	01344-48-5	1	Hg	6.9	T	3.5E-01	E H	RRQQ
CALCIUM SILICATE	01344-95-2	1		380.0	s	24.0	T I	
ANTIMONY TRISULFIDE	01345-04-6	1	Sb2	170.0	T	1.7	T H	RRQQ
CADMIUMMERCURYSULFID	01345-09-1	4	Cd	6.1E-01	T	1.5E-03	H H U H	RRQQ
COBALT ALUMINATE	01345-16-0	1	Co	14.0	T	1.4E-01	T H	RRQQ
SUBTILISINS	01395-21-7	1		6.0E-03	T	1.4E-04	T H C	
NONANETHIOL, 1-	01455-21-6	4		330.0	R	7.9	R C	
XYLENE @,@-DIAMINE:M	01477-55-0	4		10.0	T	2.4E-01	T C	

CARBOFURAN	01563-66-2	4		24.0	T	2.4E-01	T M											

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
PROPANOL-2,PROPOXY-1	01569-01-3	4		88000.0	A	2000.0	A M RR
CYCLOHEXANETHIOL	01569-69-3	4		240.0	R	5.7	R C
TRIFLURALIN	01582-09-8	4		---		1.0E-01	d M H
METHYLTERTBUTYLETHER	01634-04-4	4		34000.0	T	50.0	E M H
HEPTANETHIOL, 1-	01639-09-4	4		270.0	R	6.4	R C
ARSENOZO III	01668-00-4	1	As2	---		1.1E-03	E H U H R Q
SILANE, CHLORETHENYL	01719-58-0	4		1600.0	A	16.0	A M RR
TOTAL TCDD	01745-01-7	4		---		3.0E-08	A H U H R
TCDDIOXIN, 2,3,7,8-	01746-01-6	4		---		3.0E-08	E H U H
PARAQUAT DICHLORIDE	01910-42-5	4		24.0	T	2.4E-01	T M K
ATRAZINE	01912-24-9	1		380.0	s	12.0	T
PICLORAM	01918-02-1	4		2400.0	T	24.0	T
NITRAPYRIN	01929-82-4	4		2400.0	T	24.0	T
CHLOROSTYRENE, O-	02039-87-4	4		67000.0	T	670.0	T
PARAQUAT DIMETHYLSUL	02074-50-2	4		24.0	T	2.4E-01	T K
EPN	02104-64-5	4		24.0	T	2.4E-01	T
ALLYL PROPYL DISULFI	02179-59-1	4		2900.0	T	29.0	T
CADMIUM STEARATE	02223-93-0	4	Cd2	7.1E-01	T	1.8E-03	H H U H RRQQ
OCTACHLORONAPHTHALEN	02234-13-1	4		24.0	T	2.4E-01	T M
ETHYL MERCURIC PHOSP	02235-25-8	1	Hg	1.6	T	3.9E-02	T H H RRQQ
DIGLYCIDYL ETHER	02238-07-5	4		130.0	T	1.3	T C
MIREX	02385-85-5	4		---		3.0E-08	* H
EPOXIDE 4221	02386-87-0	4		---		210.0	D M
CAPTAFOL	02425-06-1	4		24.0	T	2.4E-01	T
BUTYL GLYCIDYL ETHER	02426-08-6	4		3000.0	R	71.0	R C
DODECYLGLYCIDYLETHER	02461-18-9	4		---		1.0E-01	d M
AURAMINE	02465-27-2	6		---		3.0E-08	* H
TRIMETHOXYSILANE	02487-90-3	4		1400.0	A	14.0	A M RR
DIBUTYL PHENYL PHOSP	02528-36-1	4		830.0	T	8.3	T
SULFUR HEXAFLUORIDE	02551-62-4	6		9.1	s	5.1E-01	s RRQQ
METHYLVINYLTETRAMER	02554-06-5	4		1600.0	A	160.0	A L RR
CHLORBENZMALONONIT,O	02698-41-1	4		39.0	T	9.3E-01	T C
SULFURYL FLUORIDE	02699-79-8	6		19.0	s	1.1	s RRQQ
ETHYLENEGLY MONOPR E	02807-30-9	4		---		70.0	D M
OCTADECANETHIOL, 1-	02885-00-9	4		590.0	R	14.0	R C
HEXADECANETHIOL, 1-	02917-26-2	4		530.0	R	13.0	R C
CHLORPYRIFOS	02921-88-2	4		48.0	T	4.8E-01	T
CLOPIDOL	02971-90-6	4		2400.0	T	24.0	T
NAPHTHALELEDIISOCYAN	03173-72-6	4		8.3	R	8.3E-02	R
TETRAMETHYL SUCCINON	03333-52-6	4		670.0	T	6.7	T C
CARBONIC ACID N1 SLT	03333-67-3	1	N1	9.0	P	7.2E-03	H H U H RRQQ
TEMEPHOS (ABATE)	03383-96-8	4		2400.0	T	24.0	T
SULFOTEP	03689-24-5	4		48.0	T	4.8E-01	T
AMMONIUM PERFLUOROOC	03825-26-1	6		2.4	T	2.4E-02	T
ISOPROPYLGLYCIDYLETH	04016-14-2	4		57000.0	T	570.0	T C
ISOPHORONE DIISOCYAN	04098-71-9	4		11.0	T	1.1E-01	T
CROTONALDEHYDE	04170-30-3	4		1400.0	T	14.0	T
PARAQUAT	04685-14-7	4		24.0	T	2.4E-01	T M K
METHOXY BUTYLACETATE	04935-53-4	4		---		200.0	D M
DIGLYCID AMINO...	05026-74-4	4		140.0	A	1.4	A M RR
METHYLENEBIS4CYCLOHE	05124-30-1	4		5.4	T	1.3E-01	T H
SULFUR PENTAFLUORIDE	05714-22-7	6		9.5	s	5.4E-01	s C RRQQ
NICKEL DIACETATE TET	06018-89-9	1	N1	21.0	P	1.7E-02	H H U H RRQQ

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
Diethoxyacetophenone	06175-45-7	4		---		270.0	D M
PHENYLXYLYLETHANE	06196-95-8	4		---		100.0	D L
DIQUAT	06385-62-2	1		24.0	A	2.4E-01	A RR
PROPYLENE GLYCOL DIN	06423-43-4	4		81.0	T	8.1E-01	T H
THALLIUM CARBONATE	06533-73-9	1		---		2.8E-01	o
MONOCROTOPHOS	06923-22-4	4		60.0	T	6.0E-01	T
LEAD STEARATE SALT	07428-48-0	1	Pb	28.0	T	1.8	s H RRQQ
ALUMINUM	07429-90-5	1	Al	380.0	s	24.0	T K
LEAD	07439-92-1	1	Pb	12.0	T	7.5E-01	s H
MANGANESE	07439-96-5	1	Mn	48.0	T	5.0E-02	I M HI
MERCURY	07439-97-6	1	Hg	6.0	T	3.0E-01	E M HK
MOLYBDENUM (8CI9CI)	07439-98-7	1	Mo	380.0	s	12.0	T K
NEON	07440-01-9	6		---	X	9999999.0	X G
NICKEL	07440-02-0	1	Ni	5.0	P	4.0E-03	H H U HAI
PLATINUM	07440-06-4	1	Pt	240.0	T	2.4	T K
RHODIUM RH	07440-16-6	1	Rh	240.0	T	2.4	T K
SILICON	07440-21-3	1		380.0	s	24.0	T I
SILVER	07440-22-4	1		24.0	T	2.4E-01	T K
TANTALUM TA	07440-25-7	1	Ta	380.0	s	12.0	T
THALLIUM	07440-28-0	1	Tl	24.0	T	2.4E-01	T M
TIN	07440-31-5	1	Sn	380.0	s	4.8	T K
TUNGSTEN W	07440-33-7	1	W	240.0	T	2.4	T K
ANTIMONY	07440-36-0	1	Sb	120.0	T	1.2	T M H
ARGON AR	07440-37-1	6		---	X	9999999.0	X G
ARSENIC	07440-38-2	1	As	2.0E-01	R	2.3E-04	E H U HAIC
BARIUM	07440-39-3	1	Ba	120.0	T	5.0E-01	E M
BERYLLIUM	07440-41-7	1	Be	5.0E-02	R	4.0E-04	E H U HB C
CADMIUM	07440-43-9	1	Cd	2.0E-01	T	5.0E-04	H H U HBK
CHROMIUM	07440-47-3	1	Cr	1.0E-01	R	2.0E-05	H H U HAK
COBALT	07440-48-4	1	Co	4.8	T	4.8E-02	T M H
COPPER	07440-50-8	1	Cu	48.0	T	4.8E-01	T M K
HAFNIUM HF	07440-58-6	1		120.0	T	1.2	T
HELIUM HE	07440-59-7	6		---	X	9999999.0	X G
URANIUM	07440-61-1	1	U	48.0	T	4.8E-01	T
VANADIUM	07440-62-2	1		100.0	R	2.0E-01	H H
YTTRIUM Y	07440-65-5	1	Y	240.0	T	2.4	T
ZINC	07440-66-6	1		---		50.0	S L
ZIRCONIUM ZR	07440-67-7	1	Zr	380.0	s	12.0	T
INDIUM IN	07440-74-6	1	In	10.0	T	2.4E-01	T H
SULFUR DIOXIDE	07446-09-5	2		1400.0	s	80.0	S
THALLIUM SULFATE	07446-18-6	1	Tl2	30.0	T	3.0E-01	T M RRQQ
LEAD PHOSPHATE SALT	07446-27-7	1	Pb2	17.0	T	1.0	s H RRQQ
MERCURY CHLORIDE	07487-94-7	1	Hg	8.1	T	4.1E-01	E H RRQQ
SELENIUM SULFIDE	07488-56-4	1	Se	86.0	T	8.6E-01	T M H RRQQ
CADMIUM IODIDE	07490-80-9	1	Cd	6.5E-01	T	1.6E-03	H H U H RRQQ
TITANIUM TETRACHLOR.	07550-45-0	1		---		1.0E-01	d H
IODINE	07553-56-2	1		100.0	T	24.0	T L C
MONOSODIUM PHOSPHATE	07558-80-7	1		---		50.0	S L
DICHLOROACETYLENE	07572-29-4	4		39.0	T	9.3E-01	T C
LITHIUM HYDRIDE LIH	07580-67-8	4		6.0	T	6.0E-02	T
PERCHLORYL FLUORIDE	07616-94-6	6		38.0	s	2.2	s RRQQ
SODIUM ARSENATE	07631-89-2	1	As	4.4E-01	R	5.1E-04	E H U H RRQQ
SODIUM BISULFITE	07631-90-5	4		1200.0	T	12.0	T

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345

SODIUM NITRATE	07631-99-4	1		---		50.0	S	M						
SODIUM NITRITE	07632-00-0	1		---		4.1	D	H						
BORON TRIFLUORIDE	07637-07-2	6		8.5	s	4.8E-01	s			C				RRQQ
LEAD ARSENATE	07645-25-2	1	As	9.3E-01	R	1.1E-03	E	H	U	H				RRQQ
COBALT CHLORINE	07646-79-9	1	Co	10.0	T	1.0E-01	T			H				RRQQ
ZINC CHLORIDE	07646-85-7	1		240.0	T	2.4	T	M						
HYDROGEN CHLORIDE	07647-01-0	6		150.0	E	20.0	E	L		HC				
PHOSPHORIC ACID MIST	07664-38-2	6		240.0	T	10.0	E	M						
HYDROGEN FLUORIDE	07664-39-3	6	F	7.5	s	4.2E-01	s	M		HC				RRQQ
AMMONIA	07664-41-7	6		4000.0	T	100.0	E	L			C			
SULFURIC ACID	07664-93-9	6		240.0	T	2.4	T	M						
SODIUM METABISULFITE	07681-57-4	1		380.0	s	12.0	T							
NITRIC ACID MIST	07697-37-2	6		1200.0	R	12.0	R	M						
ZINC BROMIDE	07699-45-8	1		240.0	A	2.4	A	M						RR
NICKEL CHLORIDE	07718-54-9	1	Ni	3.3	R	8.8E-03	H	H	U	H				RRQQ
THIONYL CHLORIDE	07719-09-7	1		380.0	s	12.0	T			C				
PHOSPHOROUS TRICHLOR	07719-12-2	6		260.0	T	2.6	T							
POTASSIUM PERMANGANA	07722-64-7	1		48.0	A	34.0	D	M		H				R
HYDROGEN PEROXIDE	07722-84-1	6		330.0	T	3.3	T							
TETRASODIUM PYROPHOS	07722-88-5	1		380.0	s	12.0	T							
PHOSPHORUS (YELLOW)	07723-14-0	1		24.0	T	2.4E-01	T	M		H				
BROMINE	07726-95-6	6		160.0	T	1.6	T	M						
NITROGEN	07727-37-9	6		---	X	9999999.0	X			G				
BARIUM SULFATE	07727-43-7	1		380.0	s	24.0	T	M		I				
CHROMIC (VI) ACID	07738-94-5	1	Cr	2.3E-01	R	4.5E-05	H	H	U	H				RRQQ
TRICALCIUM PHOSPHATE	07758-87-4	6		---		1.0	d	L						
LEAD CHLORIDE	07758-95-4	1	Pb	16.0	T	1.0	s			H				RRQQ
LEAD CHROMATE	07758-97-6	1	Cr	6.2E-01	R	1.2E-04	H	H	U	HB				RRQQ
AMMONIUM SULFAMATE	07773-06-0	4		2400.0	T	240.0	T	L						
MERCURY IODINE	07774-29-0	1	Hg	13.0	T	6.8E-01	E			H				RRQQ
SODIUM CHLORATE	07775-09-9	1		---		2.8	D	M						
CHROMIC ACID,Na SALT	07775-11-3	1	Cr	3.2E-01	R	6.3E-05	H	H	U	H				RRQQ
SODIUM PERSULFATE	07775-27-1	6	S208	1900000.0	D	190.0	D	L						QQ
CALCIUM SULFATE	07778-18-9	1		380.0	s	24.0	T			I				
CALCIUM ARSENATE	07778-44-1	1	As2	5.4E-01	R	6.2E-04	E	H	U	H				RRQQ
POTASSIUM DICHROMAT	07778-50-9	1	Cr2	2.8E-01	R	5.7E-05	H	H	U	H				RRQQ
FLUORINE	07782-41-4	6		380.0	T	3.8	T	M						
GRAPHITE	07782-42-5	1		380.0	s	4.8	T			I				
SELENIUM	07782-49-2	1	Se	48.0	T	4.8E-01	T	M		H				
CHLORINE	07782-50-5	6		350.0	R	3.5	R	M		H				
GERMANIUMTETRAHYDRID	07782-65-2	1		150.0	T	1.5	T							
SELENIOUS ACID	07783-00-8	1		---		11.0	o			H				
HYDROGEN SULFIDE	07783-06-4	6		14.0	S	1.0	E	M			C			
HYDROGEN SELENIDE	07783-07-5	1	Se	39.0	T	3.9E-01	T			H				QQ
AMMONIUM SULFATE	07783-20-2	6		2400.0	A	240.0	A	L						RR
OXYGEN DIFLUORIDE	07783-41-7	6		10.0	s	5.7E-01	s			C				RRQQ
NITROGEN TRIFLUORIDE	07783-54-2	6		8.9	s	5.0E-01	s							RRQQ
SULFUR TETRAFLUORIDE	07783-60-0	6		10.0	s	5.7E-01	s			C				RRQQ
SELENIUM HEXAFLUORID	07783-79-1	1	Se	12.0	s	6.8E-01	s			H				RRQQ
TELLURIUM HEXAFLUORI	07783-80-4	6	Te	15.0	s	8.5E-01	s							RRQQ
ARSENOUS TRICHLORIDE	07784-34-1	1	As	4.8E-01	R	5.6E-04	E	H	U	H				RRQQ
ARSENOUS TRIFLUORIDE	07784-35-2	6	As	3.5E-01	R	4.1E-04	E	H	U	H				RRQQ
PENTAFLUORO-ARSORANE	07784-36-3	6	As	4.5E-01	R	5.2E-04	E	H	U	H				RRQQ

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
LEAD ARSENATE	07784-40-9	1		2.4	R	2.8E-03	E H U H . RRQQ
ARSINE	07784-42-1	6		2.0E-01	R	2.4E-04	E H U H C
SODIUM ARSENITE	07784-46-5	1	As	3.5E-01	R	4.0E-04	E H U H RRQQ
MANGANESE SULFATE	07785-87-7	1	Mn	130.0	T	1.4E-01	I H RRQQ
MEVINPHOS	07786-34-7	4		22.0	T	2.2E-01	T

NICKEL (+2) SULFATE	07786-81-4	6	Ni	4.0	R	1.1E-02	H	H	U	H		RRQQ
BERYLLIUM FLUORIDE	07787-49-7	1	Be	2.6E-01	R	2.1E-03	E	H	U	H		RRQQ
CHROMYL FLUORIDE	07788-96-7	1	Cr	2.3E-01	R	4.7E-05	H	H	U	H		RRQQ
POTASSIUM CHROMATE	07789-00-6	1	Cr	3.8E-01	R	7.5E-05	H	H	U	H		RRQQ
STRONTIUM CHROMATE	07789-06-2	1	Cr	4.0E-01	R	7.9E-05	H	H	U	H	B	RRQQ
CHROMIC ACID, DIAMMO	07789-09-5	1	Cr2	2.4E-01	R	4.8E-05	H	H	U	H		RRQQ
CHROMIC ACID, DISODI	07789-12-0	6	Cr2	2.6E-01	R	5.2E-05	H	H	U	H		RRQQ
BROMINE PENTAFLUORID	07789-30-2	1		13.0	s	7.4E-01	s					RRQQ
CADMIUM CHLORIDE HYD	07790-78-5	1	Cd	3.3E-01	T	8.2E-04	H	H	U	H		RRQQ
CADMIUM IODIDE	07790-80-9	1	Cd	6.5E-01	T	1.6E-03	H	H	U	H		RRQQ
SULFURIC ACI,CADMIUM	07790-84-3	6	Cd	3.7E-01	T	9.4E-04	H	H	U	H		RRQQ
CHLORINE TRIFLUORIDE	07790-91-2	6		12.0	s	6.5E-01	s			C		RRQQ
THALLIUM CHLORIDE	07791-12-0	1		---		2.8E-01	o					
PHOSPHINE	07803-51-2	6		100.0	T	3.0E-02	I	M		H		
STIBINE	07803-52-3	1		120.0	T	1.2	T			H		
SILICON TETRAHYDRIDE	07803-62-5	6		1600.0	T	16.0	T	M				
CHLORINATED CAMPHENE	08001-35-2	4		50.0	T	1.2	T	H		H		
PETROLEUM DISTILLATE	08002-05-9	4		---		1.0E-01	d	M				
PARAFFIN WAX	08002-74-2	4		480.0	T	4.8	T					
PYRETHRUM	08003-34-7	4		1200.0	T	12.0	T	M				
GASOLINE	08006-61-9	4		210000.0	T	2100.0	T			H		
TURPENTINE	08006-64-2	4		130000.0	T	13000.0	T	L				
KEROSENE	08008-20-6	4		24000.0	R	2400.0	R	L				
OIL MIST (MINERAL)	08012-95-1	6		48.0	P	4.8E-01	P	M		AK		
FISH OIL	08016-13-5	6		48.0	A	4.8	A	L				RR
METHYL DEMETON	08022-00-2	4		120.0	T	1.2	T					
NAPTHA (COAL TAR)	08030-30-6	4		83000.0	R	830.0	R					
VM&P NAPHTHA	08032-32-4	4		330000.0	T	33000.0	T	L				
SOLVASOL	08042-52-2	4		---		1.0E-01	d			H		
STODDARD SOLVENT	08052-41-3	4		83000.0	R	830.0	R					
ASPHALT	08052-42-4	4		1200.0	T	12.0	T				C	
DEMETON	08065-48-3	4		26.0	T	2.6E-01	T					
POLYVINYL ALCOHOL	09002-89-5	1		---		50.0	D	L				
BRIJ 30	09002-92-0	4		---		48.0	D	M				
POLYACRYLIC ACID	09003-01-4	4		1400.0	A	1.0	A	M				RR
POLYPROPYLENE	09003-07-0	1		---		50.0	D	L				
POLYSTYRENE DUST	09003-53-6	1		380.0	s	50.0	S	M				RR
CELLULOSE	09004-34-6	1		380.0	s	24.0	T					
CELLULOSE ETHYL ETHR	09004-57-3	1		---		50.0	D	L				
MYRJ 53 EMULSIFIER	09004-99-3	6		---		3100.0	D	L				
STARCH	09005-25-8	1		380.0	s	24.0	T					
MANGANESE ROSINATE	09008-34-8	1		---		1.0E-01	d			H		
SUBTILISINS	09014-01-1	1		6.0E-03	T	1.4E-04	T	H		C		
POLYPHENYLENE ESTER	09016-87-9	4		5.4	A	1.3E-01	A	H				RR
TRITON X114 APA	09036-19-5	4		---		200.0	D	L				
ACRYLIC MONOMERS	09081-82-7	4		98000.0	A	9.8	D	M				R
NITROUS OXIDE	10024-97-2	6		11000.0	R	110.0	R					
SULFUR MONOCHLORIDE	10025-67-9	1		380.0	s	13.0	T			C		

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
CHROMIUM CHLORIDE	10025-73-7	1	Cr	360.0	T	3.0E-01	H H RRQQ
PHOSPH OXYCHLORIDE	10025-87-3	6		150.0	T	1.5	T
ANTIMONY TRICHLORIDE	10025-91-9	1	Sb	220.0	T	2.2	T H RRQQ
SELENIUM CHLORIDE	10026-03-6	1	Se	130.0	T	1.3	T H RRQQ
PHOSPH PENTACHLORIDE	10026-13-8	1		200.0	T	2.0	T
COBALT TRIFLUORIDE	10026-18-3	1	Co	9.4	T	9.4E-02	T H RRQQ
OZONE	10028-15-6	6		240.0	S	2.4E-01	P
FERRIC SULFATE	10028-22-5	6		240.0	A	24.0	A L RR
SODIUM CHROMATE(VI)	10034-82-9	1	Cr	4.5E-01	R	9.1E-05	H H U H RRQQ
HYDROGEN BROMIDE	10035-10-6	6		990.0	T	240.0	T L C

MERCURY NITRATE	10045-94-0	1	Hg	9.7	T	4.9E-01	E		H		RRQQ
CHLORINE DIOXIDE	10049-04-4	6		67.0	T	2.0E-01	E	M			
CHROMIUM CHLORIDE	10060-12-5	1	Cr	360.0	T	3.0E-01	H		H		RRQQ
NITRIC ACID,LEADSALT	10099-74-8	6	Pb	16.0	T	9.8E-01	s		H		RRQQ
CHROMIUM SULFATE	10101-53-8	1	Cr	340.0	T	2.9E-01	H		H		RRQQ
NICKEL SULFATE.6H2O	10101-97-0	1	Ni	6.8	R	1.8E-02	H	H U	H		RRQQ
NITROGEN OXIDE NO	10102-43-9	3		7100.0	R	71.0	R				
NITROGEN DIOXIDE	10102-44-0	3		180.0	R	100.0	S			C	
THALLIUM NITRATE	10102-45-1	1		---		3.2E-01	o				
CADMIUM CHLORIDE	10108-64-2	1	Cd	3.3E-01	T	8.2E-04	H	H U	H		RRQQ
CADMIUM SULFATE	10124-36-4	1	Cd	3.7E-01	T	9.4E-04	H	H U	H		RRQQ
COBALT SULFATE	10124-43-3	6	Co	13.0	T	1.3E-01	T		H		RRQQ
POTASSIUM ARSENITE	10124-50-2	1	As	4.4E-01	R	5.1E-04	E	H U	H		RRQQ
MANGANESE PHOSPHATE	10124-54-6	1	Mn	130.0	T	1.4E-01	I		H		RRQQ
SULF ACID,Cr,K SALT	10141-00-1	1	Cr	380.0	s	3.6E-01	H		H		RRQQ
LEAD MOLYBDATE	10190-55-3	1	Pb	21.0	T	1.3	s		H		RRQQ
COBALT CARBONYL	10210-68-1	1	Co2	14.0	T	1.4E-01	T		H		RRQQ
BORON TRIBROMIDE	10294-33-4	1		380.0	s	24.0	T			C	
BARIUM CHROMATE	10294-40-3	1	Cr	4.9E-01	R	9.8E-05	H	H U	H		RRQQ
CADMIUM NITRATE	10325-94-7	1	Cd	4.2E-01	T	1.1E-03	H	H U	H		RRQQ
MANGANESE NITRATE	10377-66-9	1	Mn	100.0	T	1.1E-01	I		H		RRQQ
NICKEL PHOSPHATE	10381-36-9	1	Ni3	3.2	R	8.5E-03	H	H U	H		RRQQ
SODIUM DICHROMATE	10588-01-9	1	Cr2	2.5E-01	R	5.1E-05	H	H U	H		RRQQ
CARBENDAZIM	10605-21-7	4		24.0	A	2.4E-01	A	M			RR
CHLORODIPHENYL	11097-69-1	4		120.0	T	1.2	T				
ZINC CHROMATE	11103-86-9	1	Cr2	4.0E-01	R	8.1E-05	H	H U	HA		RRQQ
CHROMIC ACID	11115-74-5	1	Cr	2.3E-01	R	4.5E-05	H	H U	H		RRQQ
LEAD SILICATE	11120-22-2	1	Pb3	15.0	T	9.5E-01	s		H		RRQQ
VANADIUM CARBIDE	11130-21-5	1		240.0	R	2.4	R				
MICA	12001-26-2	1		380.0	s	7.1	T			I	
CROCIDOLITE	12001-28-4	1		---		3.0E-08	*	H	HAI		
CHRYSOTILE	12001-29-5	1		---		3.0E-08	*	H	HAI		
MERCURY "NUCLEATE"	12002-19-6	1		---		1.0E-01	d		H		
NICKEL BORIDE	12007-02-2	1	Ni3	1.6	R	4.2E-03	H	H U	H		RRQQ
CHROMIUM DIOXIDE	12018-01-8	1	Cr	190.0	T	1.6E-01	H		H		RRQQ
CHROMIUM ZINC OXIDE	12018-19-8	1	Cr	340.0	T	2.9E-01	H		H		RRQQ
NICKEL SULFIDE NI3S2	12035-72-2	1	Ni3	2.0	R	5.5E-03	H	H U	H		RRQQ
THALLIUM SELENITE	12039-52-0	1	Tl	33.0	T	3.3E-01	T	M	H		RRQQ
LEAD TITANIUM OXIDE	12060-00-3	1	Pb	17.0	T	1.1	s		H		RRQQ
LEAD ZIRCONIUM OXIDE	12060-01-4	1	Pb	20.0	T	1.3	s		H		RRQQ
MANGANESECYCLOPENTAD	12079-65-1	4	Mn	88.0	T	8.8E-01	T		H		QQ
METHYLCYCLOPENTADIEN	12108-13-3	4	Mn	150.0	T	1.5	T		H		QQ
AMMONIUM BROMIDE	12124-97-9	1		380.0	s	24.0	A	M			RR

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
AMMONIUM CHLORIDE	12125-02-9	1		380.0	s	24.0	T M
AMOSITE	12172-73-5	1		---		3.0E-08	* H HAI
LEAD OXIDE SULFATE	12202-17-4	1	Pb	20.0	T	1.3	s H RRQQ
CADMIUM ZINC SULFATE	12442-27-2	1	Cd	3.7E-01	T	9.3E-04	H H U H RRQQ
NICKEL HYDROXIDE	12504-48-7	1	Ni	2.4	R	6.3E-03	H H U H RRQQ
FERROVANADIUM DUST	12604-58-9	1		240.0	T	2.4	T
LEAD TITANATE ZIRCON	12626-81-2	1		---		1.0E-01	d H
NICKEL TITANATE	12653-76-8	1	Ni	4.0	R	1.1E-02	H H U H RRQQ
NICKEL CARBIDE	12710-36-0	1	Ni	2.1	R	5.6E-03	H H U H RRQQ
PAH(s)	13049829-2	4		---		2.0E-02	H H H
CYHEXATIN	13121-70-5	4		1200.0	T	12.0	T
NICKEL NITRATE	13138-45-9	1	Ni	4.7	R	1.3E-02	H H U H RRQQ
NICKEL BROMIDE	13462-88-9	1	Ni	5.6	R	1.5E-02	H H U H RRQQ
NICKEL CARBONYL	13463-39-3	6	Ni	2.0	R	1.2E-02	H H U H R QQ
IRON PENTACARBONYL	13463-40-6	1	Fe	190.0	T	1.9	T QQ

TITANIUM DIOXIDE	13463-67-7	1		380.0	s	24.0	T	
TELLURIUM	13494-80-9	1	Te	24.0	T	2.4E-01	T	
BE ETHYL DIAM CL	13497-34-2	1	Be	1.1	R	8.9E-03	E H U H	RRQQ
BERYLLIUM SULFATE	13510-49-1	1	Be	5.8E-01	R	4.7E-03	E H U H	RRQQ
ZINC CHROMATE	13530-65-9	1	Cr	3.5E-01	R	7.1E-05	H H U HA	RRQQ
CHROMIC ACID	13530-68-2	6	Cr2	2.1E-01	R	4.2E-05	H H U H	RRQQ
SODIUM FERROCYANIDE	13601-19-9	1	C6N6	380.0	s	23.0	T H H	RRQQ
NICKEL SULFAMATE	13710-89-3	1	Ni	6.5	R	1.7E-02	H H U H	RRQQ
CALCIUM CHROMATE	13765-19-0	1	Cr	3.0E-01	R	6.1E-05	H H U HB	RRQQ
NICKEL SULFAMIDE	13770-89-3	1	Ni	4.0	R	1.1E-02	H H U H	RRQQ
DEUTERIUM SULFATE	13813-19-9	6		240.0	A	2.4	A M	RR
LEAD FLUOROBORATE	13814-96-5	1	Pb	17.0	T	1.1	s H	RRQQ
ENFLURANE	13838-16-9	4		130000.0	T	1300.0	T	
CHROMATE	13907-45-4	1	Cr	2.2E-01	R	4.5E-05	H H U H	RRQQ
NITROGEN, ISOTOPE-13	13981-22-1	6		---		1.0E-01	d H	
OXYGEN, ISOTOPE-15	13982-43-9	6		---		1.0E-01	d H	
SULFOMIC ACID	14017-41-5	6	Co2	8.7	T	8.7E-02	T H	RRQQ
SODIUM FERRICYANIDE	14217-21-1	1	C6N6	380.0	s	21.0	T H H	RRQQ
POTASSIUM NICKELCYN	14220-17-8	1	Ni	6.2	R	1.6E-02	H H U H	RRQQ
CD DIETHDITHIOCARB	14239-68-0	1	Cd	7.3E-01	T	1.8E-03	H H U H	RRQQ
POTASSIUMGOLDCYANIDE	14263-59-3	1	CN	380.0	s	50.0	S H H	RRQQ
CHROMIC ACID, DILITH	14307-35-8	1	Cr	2.5E-01	R	5.1E-05	H H U H	RRQQ
CARBON, ISOTOPE-11	14333-33-6	6		---		1.0E-01	d H	
SILICA - CRYSTALLINE	14464-46-1	1		12.0	T	1.2E-01	T I	
FERBAM	14484-64-1	1		380.0	s	24.0	T	
TALC	14807-96-6	1		380.0	s	4.8	T I	
SILICA - QUARTZ	14808-60-7	1		24.0	T	2.4E-01	T HI	
DIMTHYLETHOXYSILANE	14857-34-2	1		380.0	s	5.0	P	
CHROMYL CHLORIDE	14977-61-8	1	Cr	3.0E-01	R	6.0E-05	H H U H	RRQQ
SODIUM ZINC CYANIDE	15333-24-1	1	C4N4	380.0	s	25.0	T H H	RRQQ
SILICA - TRIDYMITE	15468-32-3	1		12.0	T	1.2E-01	T I	
CHROMIUM III	16065-83-1	1	Cr	120.0	T	1.0E-01	H M H	
ETHYLIDENENORBORNENE	16219-75-3	4		2500.0	T	60.0	T C	
METHOMYL	16752-77-5	4		600.0	T	6.0	T	
COBALT HYDROCARBONYL	16842-03-8	4	Co	14.0	T	1.4E-01	T H	RRQQ
DECABORANE(14)	17702-41-9	4		60.0	T	6.0E-01	T	
BENOMYL	17804-35-2	4		2400.0	T	24.0	T	
DI(ME)TETRA(MEO)DISI	18186-97-5	4		1400.0	A	14.0	A M	RR

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
LEAD CHROMATE OXIDE	18454-12-1	1	Cr	1.1	R	2.1E-04	H H U H RRQQ
DIBORANE(6) B2H6	19287-45-7	4		26.0	T	2.6E-01	T
PENTABORANE	19624-22-7	4		3.1	T	3.1E-02	T
TRIOXOBIS CHROMIUM	20492-50-6	1	Cr	380.0	s	5.0E-01	H H RRQQ
OSMIUM TETROXIDE	20816-12-0	1	Os	5.1E-01	T	5.1E-03	T QQ
ALUMINUM PHOSPHIDE	20859-73-8	1		---		1.4	o
METRIBUZIN	21087-64-9	4		1200.0	T	12.0	T
CESIUM HYDROXIDE	21351-79-1	1		380.0	s	4.8	T
FENAMIPHOS	22224-92-6	6		24.0	T	2.4E-01	T
MERCURY	22967-92-6	4	Hg	1.0	A	2.4E-02	A H H RR
POLYVINYLIDENEFLUORI	24937-79-9	4		---		1.0E-01	d M
POLYETHYLENEGLYCOLDI	24991-55-7	4		4300.0	A	200.0	A M RR
VINYL TOLUENE	25013-15-4	4		58000.0	T	580.0	T
PHENOL POLYMER	25036-25-3	1		---		1.0E-01	d M
POLY TEREPHTHALATE	25038-59-9	4		---		1.0E-01	d M
CHLORTRIFLETH POLYM	25101-45-5	4		---		1.0	d L
NADIC METHYLANHYDRID	25134-21-8	4		---		750.0	D L
DIPROPYLENE GLYCOL	25265-71-8	4		88000.0	A	2000.0	A L RR
DINITROTOLUENE	25321-14-6	4		36.0	T	3.6E-01	T B
POLYETHYLENE GLYCOL	25322-68-3	4		---		1.0E-01	d M

LEAD CARBONATE	25510-11-6	1	Pb	15.0	T	9.7E-01	s	H	RRQQ
METHYLETHYLBENZENE	25550-14-5	4		---		1.0E-01	d M		
TRIMETHYL BENZENE	25551-13-7	4		29000.0	T	290.0	T M		
METHYLCYCLOHEXANOL	25639-42-3	4		56000.0	T	560.0	T		
POLYOXYPROPYLENE	25791-96-2	4		4300.0	A	200.0	A M		RR
HEXMETHDODEC POLYMER	26098-55-5	4		---		1.0E-01	d M		
TERPHENYLS	26140-60-3	4		500.0	T	12.0	T	C	
BENZ METHBIS ISOCYAN	26447-40-5	4		5.0	A	2.0E-02	A H	H	RR
TOLUENE DIISOCYANATE	26471-62-5	4		3.5	A	8.3E-02	R H	H	R
METHYLCYCLOPENTADIEN	26519-91-5	4		48000.0	A	480.0	A M		RR
5-ACETOACETAMIDO-2-B	26576-46-5	4		---		1.0E-01	d M		
SODIUM AZIDE N3NA	26628-22-8	1		29.0	T	6.9E-01	T	C	
DIISODECYL PHTHALATE	26761-40-0	4		1200.0	A	12.0	A M		RR
ISOOCTYL ALCOHOL	26952-21-6	4		63000.0	T	630.0	T		
DIISOOCTYLPHTHALATE	27554-26-3	4		1200.0	A	12.0	A M		RR
HYDROXYPROPYLMETHACR	27813-02-1	4		98000.0	A	980.0	A M		RR
TOLYLDIETHNLAMINE,O-	28005-74-5	4		---		47.0	A M		R
BROMADIOLONE	28772-56-7	4		---		3.0E-08	* H		
ANISIDINE	29191-52-4	4		120.0	T	1.2	T M		
METHYLCYCLOHEXADIENE	30640-46-1	4		390000.0	A	3900.0	A M		RR
DIPROPGLYCOLMETHETHR	34590-94-8	4		140000.0	T	1400.0	T		
SULPROFOS	35400-43-2	4		240.0	T	2.4	T		
GOLD CYANIDE	37187-64-7	1	CN	380.0	s	50.0	S H	H	RRQQ
ZINC CHROMATE	37300-23-5	1	Cr4	4.2E-01	R	8.4E-05	H H U	HA	RRQQ
NICKEL,BIS(1-(4-DIME	38465-55-3	6	Ni	54.0	P	4.3E-02	H H U	H	RRQQ
TETRADECYLGLYCIDYLET	38954-75-5	4		---		1.0E-01	d M		
DIALKYL PHTHALATES	39393-37-8	4		1200.0	A	12.0	A M		RR
BARIUM LEAD SULFATE	42579-89-5	1	Pb	25.0	T	1.6	s	H	RRQQ
CHROMIUM ZINC OXIDE	50922-29-7	1	Cr2	2.2E-01	R	4.5E-05	H H U	H	RRQQ
TCDFURAN, 2,3,7,8-	51207-31-9	4		---		3.0E-08	* H	H	
BASIC LEAD ACETATE	51404-69-4	1		---		1.0E-01	d	H	
NICKEL AZO YELLOW	51931-46-5	4	Ni	56.0	P	4.5E-02	H H U	H	RRQQ
CYPERMETHRIN	52315-07-8	4		1200.0	A	12.0	A M		RR

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	codes W T	123456789012345
PERMETHRIN	52645-53-1	4		1200.0	A	12.0	A M	RR
COBALT COMPLEX	53108-50-2	1		---		1.0E-01	d	H
CHLORODIPHENYL	53469-21-9	4		240.0	T	2.4	T	
Cd CYCLOHEXANE BUTY	55700-14-6	4	Cd	5.0E-01	T	1.3E-03	H H U	H RRQQ
CHLOR DIPHENYL OXIDE	55720-99-5	4		120.0	T	1.2	T	
DIBASIC LEADSTEARATE	56189-09-4	1		---		1.0E-01	d	H
DIETHYLEN GLYCOL ADP	58984-19-3	4		---		1.0E-01	d	H
SILICA - FUSED(RESP)	60676-86-0	1		24.0	T	2.4E-01	T	I
ULTEM	61128-46-9	4		---		1.0E-01	d M	
HYDROGENATED TERPHEN	61788-32-7	4		1200.0	T	12.0	T	
COBALT NAPTHA	61789-51-3	6		---		1.0E-01	d	H
LEAD NAPHTHENATE	61790-14-5	6		---		1.0E-01	d	H
SILICA - AMORPHOUS	61790-53-2	1		380.0	s	7.1	T	K
SILOXANESSILICONDIME	63148-62-9	1		380.0	s	14.0	A M	RR
NAPTHA (HEAVY)	64742-49-9	4		100000.0	A	300.0	A M	RR
NAPHTHA HEAVY	64742-94-5	4		---		1.0E-01	d M	
NAPHTHA LIGHT	64742-95-4	4		---		1.0E-01	d M	
COAL TAR PITCH VOLAT	65996-93-2	4		24.0	R	2.4E-01	R	AI
PORTLAND CEMENT	65997-15-1	1		380.0	s	24.0	T	I
ALPHAMETHRIN	67375-30-8	4		1200.0	A	12.0	A M	RR
1,2,4-BENZENETRICARB	67989-23-5	4		---		1.0E-01	d M	
CHROME TANNED COWHID	68131-98-6	1	Cr	1.0E-01	A	2.0E-05	A H U	H RR
POLYMERIC ESTER S412	68238-77-7	4		---		80.0	D L	
PETROLEUM SULFONATE	68425-94-5	4		330000.0	A	33000.0	A L	RR
Sulfonated oleic aci	68443-05-0	6		---		3500.0	A L	R

LIQUIFIED GAS	68476-85-7	4		430000.0	T	4300.0	T	
POLYETHER POLYOL	68541-81-1	4		---		4.8	D M	
MELAMINEFORMALDEHYDE	68891-01-0	4		30.0	A	6.0E-02	A M U	RR
LEAD,BENZENEDICARBOX	69011-06-9	4		---		1.0E-01	d H	
LEAD ALLOY,SN ,DROSS	69011-60-5	1		---		1.0E-01	d H	
SILICA FUMES - AMORP	69012-64-2	1		380.0	s	4.8	T I	
BUTADIENE POLYMER	69102-90-5	4		440.0	A	3.6E-03	A H U	RR
SULFOMETURON METHYL	74222-97-2	4		1200.0	T	12.0	T	
Ethoxylated alcohols	74432-13-6	4		---		48.0	A M	R
BIFENTHRIN	82657-04-3	4		1200.0	A	12.0	A M	RR
Oxo-hexyl acetate	88230-35-7	4		---		140.0	A L	R
SYSTHANE	88671-89-0	4		---		76.0	D M	
PHOSPHORIC ACID,RX P	92203-02-6	6		---		1.0E-01	d H	
HELOXY WC-8006	92529-64-1	4		---		1.0E-01	d M	
PERLITE	93763-70-3	1		380.0	s	24.0	T I	
ALKANES (C5-C8)	ALKANES****	4		83000.0	R	830.0	R	
SILVER	Ag*SOLCOMP	1	Ag	2.4	T	2.4E-02	T	
ALUMINUM (PYRO,FUME)	Al*POWDFUM	1	Al	380.0	s	12.0	T	
ALUMINUM (SALTS,ALK)	Al*SALTALK	1	Al	380.0	s	4.8	T	
ARSENIC (ORGANIC)	As*ORGANIC	1	As	---		2.3E-04	E H U H	
COPPER	Cu*DUSMIST	1	Cu	240.0	T	2.4	T M K	
IRON SALTS	Fe*SOLSALT	1	Fe	240.0	T	2.4	T	
MERCURY	Hg**ARYL**	1	Hg	24.0	T	2.4E-01	T H	
MERCURY	Hg*ALKYL**	1	Hg	2.4	T	2.4E-02	T H	
MOLYBDENUM	Mo*INSOLUB	1	Mo	380.0	s	24.0	T	
BERYLLIUM (Be 007)	NY007-04-0	6	Be	5.0E-02	A	4.0E-04	A H U H	RR
COBALT (Co 57)	NY057-27-0	6	Co	4.8	A	4.8E-02	A H	RR
COBALT (Co 58)	NY058-27-0	6	Co	4.8	A	4.8E-02	A H	RR

CHEMICAL NAME	CAS NUMBER	AIRS CODE	TOXIC ELEMENT	SGC ug/m3	W	AGC ug/m3	W T	codes 111111 123456789012345
NICKEL (Ni 059)	NY059-28-0	6	Ni	1.5	A	4.0E-03	A H U H	RR
COBALT (Co 60)	NY060-27-0	6	Co	4.8	A	4.8E-02	A H	RR
NICKEL (Ni 063)	NY063-28-0	6	Ni	1.5	A	4.0E-03	A H U H	RR
NICKEL (Ni 065)	NY065-28-0	6	Ni	1.5	A	4.0E-03	A H U H	RR
ARSENIC (AS 073)	NY073-33-0	6	As	2.0E-01	A	2.3E-04	A H U H	RR
ARSENIC (AS 074)	NY074-33-0	6	As	2.0E-01	A	2.3E-04	A H U H	RR
PARTICULATE	NY075-00-0	1		380.0	s	50.0	S K	
ARSENIC (AS 076)	NY076-33-0	6	As	2.0E-01	A	2.3E-04	A H U H	RR
ARSENIC (AS 077)	NY077-33-0	6	As	2.0E-01	A	2.3E-04	A H U H	RR
CADMIUM (CD 109)	NY109-48-0	6	Cd	2.0E-01	A	5.0E-04	A H U H	RR
CADMIUM (CD 115)	NY115-48-0	6	Cd	2.0E-01	A	5.0E-04	A H U H	RR
NICKEL (INORGANIC)	Ni*INORG**	1	Ni	1.5	R	4.0E-03	H H U HAI	
PLATINUM PT	Pt*SOLSALT	1	Pt	4.8E-01	T	4.8E-03	T	
RHODIUM RH	Rh*SOLCOMP	1	Rh	2.4	T	2.4E-02	T	
TIN	Sn*ORGANIC	1	Sn	24.0	T	2.4E-01	T	
TUNGSTEN W	W*INSOLUBL	1	W	380.0	s	12.0	T	

TOXICITY (T):
- (H) HIGH Toxicity Contaminant.
- (M) MODERATE Toxicity Contaminant.
- (L) LOW Toxicity Contaminant.

HOW (W):
- (A) AGC/SGC based upon NYSDEC "Analogy".
- (D) NYSDEC derived AGC/SGC.
- (E) AGC/SGC based upon EPA derivation.
- (H) NYSDOH derived AGC/SGC.
- (I) AGC/SGC based upon HEAST Inhalation RfC (RFC).
- (P) AGC/SGC based upon PROPOSED ACGIH TLV.
- (R) AGC/SGC based upon NIOSH REL.

(S) AGC/SGC listed is FEDERAL or NYS Standard.
(T) AGC/SGC based upon ACGIH TLV.
(d) AGC assigned "de minimis" limit.
( ) There is no SGC for this compound.

HOW (W) - Special AGC/SGC Interim Assignments:
(o) AGC/SGC based upon HEAST Oral RfD (RFD).
(s) AGC/SGC based upon Equivalent FEDERAL or NYS Standard.
(u) AGC/SGC based upon HEAST Inhalation Unit Risk Factor.
(*) AGC assigned special computer HIGH Toxicity "de minimis" limit.
(X) Compound EXEMPT from AG-1 (simple asphyxiant).

-----codes-----
111111
123456789012345:

codes, (Position 1):
(U) AGC equivalent to "one in a million risk".

codes, (Position 3):
(H) HAP identified by 1990 CAAA.

codes, (Positions 4 & 5):
(A) ACGIH Human Carcinogen.
(B) ACGIH Suspected Human Carcinogen.
(C) ACGIH Ceiling Limit.
(G) ACGIH Simple Asphxiant. Assign "D" Rating. Computer will assume AGC = 9999999. ug/m3.
(I) Refer to ACGIH Handbook.
(K) Multiple TLVs assigned in ACGIH Handbook.

codes, (Positions 6 & 7):
(C) NIOSH Ceiling Limit.

codes, (Position 8):
(Q) REFERENCED AGC adjusted for elemental assignment.

codes, (Position 9):
(Q) REFERENCED SGC adjusted for elemental assignment.

codes, (Position 10):
(R) AGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 11):
(R) SGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 12):
(Q) AGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 13):

(Q) SGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 14):
(M) REFERENCED AGC adjusted for MOLECULAR WEIGHTS.

codes, (Position 15):
(M) REFERENCED SGC adjusted for MOLECULAR WEIGHTS.

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
2,4-D	00094-75-7		4		C8H6C1203	2400.0	T	24.0	T H
ACETALDEHYDE	00075-07-0		4		C2H4O	4500.0	T	110.0	T M HC
ACETAMIDE	00060-35-5		4		C2H5NO	---		1.0E-01	d M H
ACETONITRILE	00075-05-8		4		C2H3N	8100.0	R	50.0	E M H
ACETOPHENONE	00098-86-2		4		C8H8O	12000.0	T	2.0E-02	I H
ACETYLAMINOFLUOR,2-	00053-96-3		4		C15H13NO	---		1.0E-01	d M H
ACROLEIN	00107-02-8		4		C3H4O	23.0	T	2.0E-02	I H H
ACRYLAMIDE	00079-06-1		4		C3H5NO	3.0	T	8.0E-04	E H U HB
ACRYLIC ACID	00079-10-7		6		C3H4O2	1400.0	T	1.0	E M H
ACRYLONITRILE	00107-13-1		4		C3H3N	220.0	R	1.0E-02	E H U HB
ALLYL CHLORIDE	00107-05-1		4		C3H5C1	710.0	T	1.0	E M H
AMINODIPHENYL, P-	00092-67-1		4		C12H11N	---		3.0E-08	* H HA
AMOSITE	12172-73-5		1		**********	---		3.0E-08	* H HAI
ANILINE	00062-53-3		4		C6H7N	760.0	T	6.0E-01	D H U H
ANISIDINE,O	00090-04-0		4		C7H9NO	120.0	T	1.2	T M H
ANTHRACENE	00120-12-7	13049829-2	4		C14H10	---		2.0E-02	A H H R
ANTIMONY	07440-36-0		1	Sb	Sb	120.0	T	1.2	T M H
ANTIMONY TRICHLORIDE	10025-91-9	07440-36-0	1	Sb	C13Sb	220.0	T	2.2	T H RRQQ
ANTIMONY TRIOXIDE	01309-64-4		1	Sb2	Sb2O3	140.0	T	1.4	T M HB QQ
ANTIMONY TRISULFIDE	01345-04-6	07440-36-0	1	Sb2	S3Sb2	170.0	T	1.7	T H RRQQ
ARSENIC	07440-38-2		1	As	As	2.0E-01	R	2.3E-04	E H U HAIC
ARSENIC (AS 073)	NY073-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (AS 074)	NY074-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (AS 076)	NY076-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (AS 077)	NY077-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H RR
ARSENIC (ORGANIC)	As*ORGANIC		1	As	As	---		2.3E-04	E H U H
ARSENIC ACID	01327-52-2	07440-38-2	4	As	AsH3O4	3.8E-01	R	4.4E-04	E H U H RRQQ
ARSENIC PENTOXIDE	01303-28-2	07440-38-2	1	As2	As2O5	3.1E-01	R	3.5E-04	E H U H RRQQ
ARSENIC TRIOXIDE	01327-53-3	07440-38-2	1	As2	As2O3	2.6E-01	R	3.0E-04	E H U H RRQQ
ARSENOUS TRICHLORIDE	07784-34-1	07440-38-2	1	As	AsC13	4.8E-01	R	5.6E-04	E H U H RRQQ
ARSENOUS TRIFLUORIDE	07784-35-2	07440-38-2	6	As	AsF3	3.5E-01	R	4.1E-04	E H U H RRQQ
ARSENOZO III	01668-00-4	As*ORGANIC	1	As2	C22H18As2N4O14S	---		1.1E-03	E H U H R Q
ARSINE	07784-42-1		6		AsH3	2.0E-01	R	2.4E-04	E H U H C
ASBESTOS	01332-21-4		1		**********	---		3.0E-08	* H HAI
B A P	00050-32-8		4		C20H20	---		2.0E-03	H H U HB
BARIUM CHROMATE	10294-40-3	07440-47-3	1	Cr	BaCrH2O4	4.9E-01	R	9.8E-05	H H U H RRQQ
BARIUM CYANIDE	00542-62-1	07440-39-3	1	Ba	C2BaN2	380.0	s	6.9E-01	E H H RRQQ
BARIUM LEAD SULFATE	42579-89-5	07439-92-1	1	Pb	BaH2O4SPb	25.0	T	1.6	s H RRQQ
BASIC LEAD ACETATE	51404-69-4		1		**********	---		1.0E-01	d H
BASIC LEAD CARBONATE	01319-46-6	07439-92-1	1	Pb3	C2H2O8Pb3	15.0	T	9.4E-01	s H RRQQ
BE ETHYL DIAM CL	13497-34-2	07440-41-7	1	Be	C4H16BeN4C12	1.1	R	8.9E-03	E H U H RRQQ
BENZ METHBIS ISOCYAN	26447-40-5	00101-68-8	4		C15H10N2O2	5.0	A	2.0E-02	A H H RR
BENZENE	00071-43-2		4		C6H6	32.0	R	1.2E-01	E H U HA
BENZENEARSONIC ACID	00098-05-5	As*ORGANIC	1	As	C6H7AsO3	---		6.2E-04	E H U H R Q
BENZIDINE	00092-87-5		4		C12H12N2	---		1.5E-05	E H U HA
BENZO(A)ANTHRACENE	00056-55-3	13049829-2	4		C18H12	---		2.0E-02	A H HB R
BENZOTRICHLORIDE	00098-07-7		4		C7H5C13	---		3.0E-08	* H H
BENZYL CHLORIDE	00100-44-7		4		C7H7C1	500.0	R	2.0E-02	E H U H C
BERYLLIUM	07440-41-7		1	Be	Be	5.0E-02	R	4.0E-04	E H U HB C
BERYLLIUM (Be 007)	NY007-04-0	07440-41-7	6	Be	Be	5.0E-02	A	4.0E-04	A H U H RR
BERYLLIUM FLUORIDE	07787-49-7	07440-41-7	1	Be	BeF2	2.6E-01	R	2.1E-03	E H U H RRQQ
BERYLLIUM OXIDE	01304-56-9	07440-41-7	1	Be	BeO	1.4E-01	R	1.1E-03	E H U H RRQQ
BERYLLIUM SULFATE	13510-49-1	07440-41-7	1	Be	BeSO4	5.8E-01	R	4.7E-03	E H U H RRQQ

CHEMICAL NAME	CAS NUMBER	ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	W T 123456789012345
BIPHENYL	00092-52-4		4		C12H10	310.0	T	3.1	T M H
BROMOFORM	00075-25-2		4		CHBr3	1200.0	T	9.0E-01	E M H
BUTADIENE, 1,3	00106-99-0		4		C4H6	440.0	T	3.6E-03	E H U HB
BUTOXYETHANOL, 2-	00111-76-2		4		C6H1402	29000.0	T	290.0	T M H
BUTOXYETHYL ACETATE	00112-07-2	00111-76-2	4		C8H1603	29000.0	A	290.0	A M H RR
BUTYL CARBITOL	00112-34-5	00110-80-5M	4		C8H1803	7700.0	A	360.0	A M H RR MM
BUTYL CHROMATE, TERT	01189-85-1		4	Cr03	C8H18Cr04	4.4E-01	R	8.9E-05	H H U H RRQQ
CADMIUM	07440-43-9		1	Cd	Cd	2.0E-01	T	5.0E-04	H H U HBK
CADMIUM (CD 109)	NY109-48-0	07440-43-9	6	Cd	Cd	2.0E-01	A	5.0E-04	A H U H RR
CADMIUM (CD 115)	NY115-48-0	07440-43-9	6	Cd	Cd	2.0E-01	A	5.0E-04	A H U H RR
CADMIUM CHLORIDE	10108-64-2	07440-43-9	1	Cd	CdC12	3.3E-01	T	8.2E-04	H H U H RRQQ
CADMIUM CHLORIDE HYD	07790-78-5	07440-43-9	1	Cd	CdC12	3.3E-01	T	8.2E-04	H H U H RRQQ
CADMIUM CYANIDE	00542-83-6	07440-43-9	1	Cd	CdC2N2	380.0	s	7.3E-04	H H U H RRQQ
CADMIUM IODIDE	07790-80-9	07440-43-9	1	Cd	CdI2	6.5E-01	T	1.6E-03	H H U H RRQQ
CADMIUM IODIDE	07790-80-9	07440-43-9	1	Cd	CdI2	6.5E-01	T	1.6E-03	H H U H RRQQ
CADMIUM NITRATE	10325-94-7	07440-43-9	1	Cd	CdH2N206	4.2E-01	T	1.1E-03	H H U H RRQQ
CADMIUM OXIDE	01306-19-0	07440-43-9	1	Cd	CdO	2.3E-01	T	5.7E-04	H H U H RRQQ
CADMIUM SELENIDE	01306-24-7	07440-43-9	1	Cd	CdSe	3.4E-01	T	8.5E-04	H H U H RRQQ
CADMIUM STEARATE	02223-93-0	07440-43-9	4	Cd2	Cd2C36H7204	7.1E-01	T	1.8E-03	H H U H RRQQ
CADMIUM SULFATE	10124-36-4	07440-43-9	1	Cd	CdH204S	3.7E-01	T	9.4E-04	H H U H RRQQ
CADMIUM SULFIDE	01306-23-6	07440-43-9	1	Cd	CdS	2.6E-01	T	6.4E-04	H H U H RRQQ
CADMIUM ZINC SULFATE	12442-27-2	07440-43-9	1	Cd	CdSZn	3.7E-01	T	9.3E-04	H H U H RRQQ
CADMIUMMERCURYSULFID	01345-09-1	07440-43-9	4	Cd	CdHgS	6.1E-01	T	1.5E-03	H H U H RRQQ
CALCIUM ARSENATE	07778-44-1	07440-38-2	1	As2	Ca3As2H608	5.4E-01	R	6.2E-04	E H U H RRQQ
CALCIUM CHROMATE	13765-19-0	07440-47-3	1	Cr	CaCrH204	3.0E-01	R	6.1E-05	H H U HB RRQQ
CALCIUM CYANAMIDE	00156-62-7		1		CH2N2Ca	120.0	T	1.2	T H
CALCIUM CYANIDE	00592-01-8		1		C2CaN2	380.0	s	50.0	S H H R Q
CAPROLACTAM	00105-60-2		4		C6H11NO	240.0	T	2.4	T HK
CAPTAN	00133-06-2		4		C9H8C13N02S	1200.0	T	12.0	T H
CARBARYL	00063-25-2		4		C12H11N02	1200.0	T	12.0	T H
CARBITOL CELLOSOLVE	00111-90-0	00110-80-5	4		C6H1403	4300.0	A	7000.0	D M H R
CARBON DISULFIDE	00075-15-0		6		CS2	710.0	R	10.0	I M H
CARBON TETRACHLORIDE	00056-23-5		4		CC14	1300.0	R	7.0E-02	E H U H C
CARBON, ISOTOPE-11	14333-33-6		6		C	---		1.0E-01	d H
CARBONIC ACID Ni SLT	03333-67-3	07440-02-0	1	Ni	CH302Ni	9.0	P	7.2E-03	H H U H RRQQ
CARBONYL SULFIDE	00463-58-1		6		COS	---		1.0E-01	d H
CATECHOL	00120-80-9		4		C6H602	5500.0	T	55.0	T H
CD DIETHDITHIOCARB	14239-68-0	07440-43-9	1	Cd	C10H20CdN2S4	7.3E-01	T	1.8E-03	H H U H RRQQ
CHLORAMBEN	00133-90-4		1		C7H5C12N02	---		1.0E-01	d H
CHLORDANE	00057-74-9		4		C10H6C18	50.0	T	1.2	T H H
CHLORINATED CAMPHENE	08001-35-2		4		C10H10C18	50.0	T	1.2	T H H
CHLORINE	07782-50-5		6		C12	350.0	R	3.5	R M H
CHLOROACETIC ACID	00079-11-8		4		C2H3C102	---		3.0E-08	* H H
CHLOROACETOPHENONE,2	00532-27-4		4		C8H7C10	76.0	T	3.0E-02	E M H
CHLOROBENZILATE	00510-15-6		4		C16H14C1203	---		1.0E-01	d H
CHLOROFORM	00067-66-3		4		CHC13	980.0	R	4.0E-02	E M U HB C
CHLOROMETHANE	00074-87-3		4		CH3C1	22000.0	D	770.0	D M H
CHLOROMETHYL ETH,BIS	00542-88-1		4		C2C12H40	4.7E-01	T	1.6E-05	E H U HA
CHLOROPRENE, B-	00126-99-8		4		C4H5C1	360.0	R	7.0	I H C
CHROMATE	13907-45-4	07440-47-3	1	Cr	Cr04	2.2E-01	R	4.5E-05	H H U H RRQQ
CHROME TANNED COWHID	68131-98-6	07440-47-3	1	Cr	**********	1.0E-01	A	2.0E-05	A H U H RR
CHROMIC (VI) ACID	07738-94-5	07440-47-3	1	Cr	CrH204	2.3E-01	R	4.5E-05	H H U H RRQQ
CHROMIC ACID	11115-74-5	07440-47-3	1	Cr	CrH204	2.3E-01	R	4.5E-05	H H U H RRQQ

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	-----codes----- W T 123456789012345
CHROMIC ACID	13530-68-2	07440-47-3	6	Cr2	Cr2H207	2.1E-01	R	4.2E-05	H H U H RRQQ
CHROMIC ACID, DIAMMO	07789-09-5	07440-47-3	1	Cr2	H8Cr207N2	2.4E-01	R	4.8E-05	H H U H RRQQ

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T	codes 123456789012345
CHROMIC ACID, DILITH	14307-35-8	07440-47-3	1	Cr	H2CrO4Li2	2.5E-01	R	5.1E-05	H H U H	RRQQ
CHROMIC ACID, DISODI	07789-12-0	07440-47-3	6	Cr2	H8Cr2O7Na2	2.6E-01	R	5.2E-05	H H U H	RRQQ
CHROMIC ACID,Na SALT	07775-11-3	07440-47-3	1	Cr	CrH2O4Na2	3.2E-01	R	6.3E-05	H H U H	RRQQ
CHROMIUM	07440-47-3		1	Cr	Cr	1.0E-01	R	2.0E-05	H H U HAK	
CHROMIUM CHLORIDE	10025-73-7	16065-83-1	1	Cr	Cl3Cr	360.0	T	3.0E-01	H H	RRQQ
CHROMIUM CHLORIDE	10060-12-5	16065-83-1	1	Cr	CrCl3	360.0	T	3.0E-01	H H	RRQQ
CHROMIUM DIOXIDE	12018-01-8	16065-83-1	1	Cr	CrO2	190.0	T	1.6E-01	H H	RRQQ
CHROMIUM HYDROXIDE	01308-14-1	16065-83-1	1	Cr	CrH3O3	240.0	T	2.0E-01	H H	RRQQ
CHROMIUM III	16065-83-1		1	Cr	Cr	120.0	T	1.0E-01	H M H	
CHROMIUM OXIDE	01308-38-9	16065-83-1	1	Cr2	Cr2O3	170.0	T	1.5E-01	H M H	RRQQ
CHROMIUM OXIDE	01333-82-0	07440-47-3	1	Cr	CrO3	1.9E-01	R	3.8E-05	H H U H	RRQQ
CHROMIUM SULFATE	10101-53-8	16065-83-1	1	Cr	CrH2O4S	340.0	T	2.9E-01	H H	RRQQ
CHROMIUM ZINC OXIDE	12018-19-8	16065-83-1	1	Cr	CrO2Zn	340.0	T	2.9E-01	H H	RRQQ
CHROMIUM ZINC OXIDE	50922-29-7	07440-47-3	1	Cr2	Cr2O4Zn	2.2E-01	R	4.5E-05	H H U H	RRQQ
CHROMYL CHLORIDE	14977-61-8	07440-47-3	1	Cr	CrO2Cl2	3.0E-01	R	6.0E-05	H H U H	RRQQ
CHROMYL FLUORIDE	07788-96-7	07440-47-3	1	Cr	CrF2O2	2.3E-01	R	4.7E-05	H H U H	RRQQ
CHRYSENE	00218-01-9	13049829-2	4		C18H12	---		2.0E-02	A H H	R
CHRYSOTILE	12001-29-5		1		**********	---		3.0E-08	* H HAI	
COBALT	07440-48-4		1	Co	Co	4.8	T	4.8E-02	T M H	
COBALT (Co 57)	NY057-27-0	07440-48-4	6	Co	Co	4.8	A	4.8E-02	A H	RR
COBALT (Co 58)	NY058-27-0	07440-48-4	6	Co	Co	4.8	A	4.8E-02	A H	RR
COBALT (Co 60)	NY060-27-0	07440-48-4	6	Co	Co	4.8	A	4.8E-02	A H	RR
COBALT ALUMINATE	01345-16-0	07440-48-4	1	Co	Al2CoO4	14.0	T	1.4E-01	T H	RRQQ
COBALT CARBONATE	00513-79-1	07440-48-4	1	Co	CH2O3Co	9.8	T	9.8E-02	T H	RRQQ
COBALT CARBONYL	10210-68-1	07440-48-4	1	Co2	C8Co2O8	14.0	T	1.4E-01	T H	RRQQ
COBALT CHLORINE	07646-79-9	07440-48-4	1	Co	Cl2Co	10.0	T	1.0E-01	T H	RRQQ
COBALT COMPLEX	53108-50-2		1		C6H6CoNO6H	---		1.0E-01	d H	
COBALT HYDROCARBONYL	16842-03-8	07440-48-4	4	Co	HCoC4O4	14.0	T	1.4E-01	T H	RRQQ
COBALT NAPTHA	61789-51-3		6		**********	---		1.0E-01	d H	
COBALT OXIDE	01307-96-6	07440-48-4	1		CoO	4.8	A	4.8E-02	A M H	RR
COBALT OXIDE(Co 304)	01308-06-1	07440-48-4	1	Co3	Co3O4	6.5	T	6.5E-02	T H	RRQQ
COBALT SULFATE	10124-43-3	07440-48-4	6	Co	CoH2O4S	13.0	T	1.3E-01	T H	RRQQ
COBALT SULFIDE	01317-42-6	07440-48-4	1	Co	CoS	7.4	T	7.4E-02	T M H	RRQQ
COBALT TRIFLUORIDE	10026-18-3	07440-48-4	1	Co	CoF3	9.4	T	9.4E-02	T H	RRQQ
COPPER CYANIDE	00544-92-3		1		CCuN	380.0	s	41.0	T H H	RRQQ
CRESOL	01319-77-3		4		C7H8O	2400.0	R	24.0	R M H	
CRESOL, M-	00108-39-4	01319-77-3	4		C7H8O	2400.0	A	24.0	A M H	RR
CRESOL, O-	00095-48-7	01319-77-3	4		C7H8O	2400.0	A	24.0	A M H	RR
CRESOL, P-	00106-44-5	01319-77-3	4		C7H8O	2400.0	A	24.0	A M H	RR
CROCIDOLITE	12001-28-4		1		**********	---		3.0E-08	* H HAI	
CUMENE (8CI)	00098-82-8		4		C9H12	59000.0	T	9.0	I H	
CYANIDE (8CI9CI)	00057-12-5		4	CN	CN	500.0	T	12.0	T H H	
CYANOACETAMIDE	00107-91-5	00057-12-5	4	CN	C3H4N2O	3800.0	T	38.0	T M H	RRQQ
Cd CYCLOHEXANE BUTY	55700-14-6	07440-43-9	4	Cd	C10H18O2Cd	5.0E-01	T	1.3E-03	H H U H	RRQQ
DDE	00072-55-9		4		**********	---		1.0E-01	d H	
DIANISIDINE, O-	00119-90-4		4		C14H16N2O2	---		2.0E-01	H M H	
DIAZOMETHANE	00334-88-3		4		CH2N2	81.0	T	8.1E-01	T M H	
DIBASIC LEADSTEARATE	56189-09-4		1		C36H70O6Pb2	---		1.0E-01	d H	
DIBENZOFURANS	00132-64-9		4		C12H8O	---		3.0E-08	* H H	
DIBROMOCHLOROPROPANE	00096-12-8		4		C3H5Br2Cl	24.0	R	2.4E-01	R H	
DIBROMOETHANE, 1,2-	00106-93-4		4		C2H4Br2	38.0	R	5.0E-03	E H U HB	

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T	codes 123456789012345
DIBUTYL CARBITOL	00112-73-2	00110-80-5M	4		C12H26O3	10000.0	A	480.0	A M H	RR MM
DIBUTYL PHTHALATE	00084-74-2		4		C16H22O4	1200.0	T	12.0	T H	
DICHLOROBENZENE,P-	00106-46-7		4		C6H4Cl2	14000.0	T	700.0	D M H	
DICHLOROBENZIDINE33'	00091-94-1		4		C12H10Cl2N2	---		1.0E-01	H H HB	
DICHLOROETHANE	00107-06-2		4		C2H4Cl2	950.0	R	3.9E-02	E M U H	
DICHLOROETHANE, 1,1	00075-34-3		4		C2H4Cl2	96000.0	T	500.0	E L H	
DICHLOROETHYL ETHER	00111-44-4		4		C4H8Cl2O	6900.0	T	69.0	T H	

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
DICHLOROMETHANE	00075-09-2		6		CH2C12	41000.0	T	27.0	D M U HB
DICHLOROPROPENE, 1,3	00542-75-6		4		C3H4C12	1100.0	T	20.0	I H
DICHLORVOS	00062-73-7		4		C4H7C1204P	210.0	T	5.0E-01	E M H
DIETHANOLAMINE	00111-42-2		4		C4H11N02	480.0	T	4.8	T H
DIETHYL CARBITOL	00112-36-7	00110-80-5	4		C8H1803	4300.0	A	200.0	A M H RR
DIETHYL SULFATE	00064-67-5		4		C4H1004S	---		3.0E-08	* H H
DIETHYLEN GLYCOL ADP	58984-19-3		4		**********	---		1.0E-01	d H
DIMETHYL HYDRAZINE	00057-14-7		4		C2H8N2	6.0	T	6.0E-02	T M H C
DIMETHYL PHTHALATE	00131-11-3		4		C10H1004	1200.0	T	12.0	T H
DIMETHYL SULFATE	00077-78-1		4		C2H604S	52.0	T	1.2	T H HB
DIMETHYLAMINOAZOBENZ	00060-11-7		4		C14H15N3	---		1.0E-01	d M H
DIMETHYLANILINE	00121-69-7	00100-61-8	4		C8H11N	520.0	A	60.0	T M H R
DIMETHYLCARBMYLCHLOR	00079-44-7		4		C3H6C1NO	---		1.0E-01	d M HB
DIMETHYLFORMAMIDE	00068-12-2		4		C3H7NO	7100.0	T	30.0	E M H
DINITRO-O-CRESOL	00534-52-1		4		C7H6N205	48.0	T	4.8E-01	T H
DINITROPHENOL, 2,4-	00051-28-5		4		C6H7N205	---		7.0	o H
DINITROTOLUENE,2,4-	00121-14-2		4		C7H6N204	---		3.0E-08	* H H
DIOCTYL PHTHALATE	00117-81-7		4		C24H3804	1200.0	T	12.0	T M H
DIOXANE	00123-91-1		4		C4H802	360.0	R	8.6	R M H C
DIPHENYL HYDRAZINE	00122-66-7	00057-14-7	4		C12H12N2	2.5	A	4.5E-03	E H U H R
DIPHENYL MERCURY	00587-85-9	Hg*ALKYL**	4	Hg	C12H10Hg	1.8	T	4.2E-02	T H H RRQQ
EPICHLOROHYDRIN	00106-89-8		4		C3H5C10	450.0	P	8.0E-01	E M U HB
ETHANOL,2-(PHENYLMET	00622-08-2		4		C9H1202	---		1.0E-01	d H
ETHANOL,2-PHENOXY-	00122-99-6	00110-80-5M	4		C8H1002	6600.0	A	310.0	A M H RR MM
ETHOXYETHYL ACETATE2	00111-15-9		4		C6H1203	6400.0	T	64.0	T M H
ETHYL ACRYLATE	00140-88-5		4		C5H802	4800.0	T	48.0	T HB
ETHYL BENZENE	00100-41-4		4		C8H10	100000.0	T	1000.0	E M H
ETHYL CHLORIDE	00075-00-3		4		C2H5C1	63000.0	T	13000.0	E L H
ETHYL MERCURIC PHOSP	02235-25-8	Hg*ALKYL**	1	Hg	C2H7Hg04P	1.6	T	3.9E-02	T H H RRQQ
ETHYL OXIRANE	00106-88-7		4		C4H80	3000.0	D	20.0	D M H
ETHYLENE GLYCOL	00107-21-1		4		C2H602	10000.0	T	240.0	T HC
ETHYLENE GYLCOL MONO	00111-45-5		4		C5H1002	---		1.0E-01	d M H
ETHYLENE OXIDE	00075-21-8		4		C2H40	18.0	D	1.9E-02	D H U HB
ETHYLENE THIOUREA	00096-45-7		4		C3H6N2S	---		3.0E-08	* H H
ETHYLENEIMINE	00151-56-4		4		C2H5N	88.0	T	2.1	T H H
FORMALDEHYDE	00050-00-0		4		H2C0	30.0	H	6.0E-02	H H U HBC
GALLIUM ARSENIDE	01303-00-0	07440-38-2	1	As	GaAs	3.9E-01	R	4.4E-04	E H U H C RRQQ
GASOLINE	08006-61-9		4		**********	210000.0	T	2100.0	T H
GLYCOL ETHER	00111-46-6		4		C4H1003	---		1.0E-01	d H
GLYCOL MONOETHYLETHR	00110-80-5		4		C4H1002	4300.0	T	200.0	E M H
GOLD CYANIDE	37187-64-7	00057-12-5	1	CN	CNAu	380.0	s	50.0	S H H RRQQ
GOLD POTASSIUM CYAN	00554-07-4	00057-12-5	4	C2N2	C2AuKN2	2800.0	T	66.0	T H H RRQQ
HEPTACHLOR	00076-44-8		1		C10H5C17	5.0	T	8.0E-04	E H U H
HEXACHLOROBENZENE	00118-74-1		4		C6C16	2.5	T	2.2E-03	E H U H
HEXACHLOROBUTADIENE	00087-68-3		4		C4C16	50.0	T	5.0E-02	E M U HB
HEXACHLOROETHANE	00067-72-1		4		C2C16	2300.0	T	23.0	T HB
HEXAMETHYLENE DIISOC	00822-06-0		4		C8H12N202	3.4	T	1.0E-02	E H H
HEXAMETHYLPHOSPHORAM	00680-31-9		4		C6H18N3OP	---		1.0E-01	d M HB
HEXANE	00110-54-3		4		C6H14	42000.0	T	240.0	E M H
HEXCHLORCYCPENTDIENE	00077-47-4		4		C5C16	26.0	T	7.0E-02	E M H
HEXYL CARBITOL	00112-59-4	00110-80-5M	4		C10H2203	9000.0	A	420.0	A M H RR MM
HYDRAZINE	00302-01-2		4		H4N2	1.3	T	2.0E-04	E H U H C
HYDROGEN CHLORIDE	07647-01-0		6		C1H	150.0	E	20.0	E L HC
HYDROGEN CYANIDE	00074-90-8		1		CHN	380.0	s	3.0	E H H C
HYDROGEN FLUORIDE	07664-39-3		6	F	FH	7.5	s	4.2E-01	s M HC RRQQ
HYDROGEN SELENIDE	07783-07-5		1	Se	H2Se	39.0	T	3.9E-01	T H QQ
HYDROQUINONE	00123-31-9		4		C6H602	480.0	T	4.8	T M H C
ISO-OCTANE	00540-84-1	ALKANES****	4		C8H18	83000.0	A	830.0	A M H RR

Date Created: 10-06-95

ISOBUTYL ACETATE	00110-19-0		4		C6H1202	170000.0	T	17000.0	T L	H	
ISOPHORONE	00078-59-1		4		C9H140	5500.0	R	55.0	R M	HC	
LEAD	07439-92-1		1	Pb	Pb	12.0	T	7.5E-01	s	H	
LEAD ACETATE	01335-32-6		1		C4H1008Pb3	---		1.0E-01	d M	H	
LEAD ALLOY,SN ,DROSS	69011-60-5		1		**********	---		1.0E-01	d	H	
LEAD ARSENATE	07645-25-2	07440-38-2	1	As	AsH304Pb	9.3E-01	R	1.1E-03	E H U	H	RRQQ
LEAD ARSENATE	07784-40-9		1		Pb3As208	2.4	R	2.8E-03	E H U	H	RRQQ
LEAD CARBONATE	00598-63-0	07439-92-1	1	Pb	CH203Pb	15.0	T	9.7E-01	s	H	RRQQ
LEAD CARBONATE	25510-11-6	07439-92-1	1	Pb	CH203Pb	15.0	T	9.7E-01	s	H	RRQQ
LEAD CHLORIDE	07758-95-4	07439-92-1	1	Pb	C12Pb	16.0	T	1.0	s	H	RRQQ
LEAD CHROMATE	07758-97-6	07440-47-3	1	Cr	PbCr04	6.2E-01	R	1.2E-04	H H U	HB	RRQQ
LEAD CHROMATE OXIDE	18454-12-1	07440-47-3	1	Cr	CrH405Pb2	1.1	R	2.1E-04	H H U	H	RRQQ
LEAD FLUOROBORATE	13814-96-5	07439-92-1	1	Pb	BF4Pb	17.0	T	1.1	s	H	RRQQ
LEAD MOLYBDATE	10190-55-3	07439-92-1	1	Pb	Mo04Pb	21.0	T	1.3	s	H	RRQQ
LEAD NAPHTHENATE	61790-14-5		6		**********	---		1.0E-01	d	H	
LEAD OXIDE	01309-60-0	07439-92-1	1	Pb	Pb02	14.0	T	8.7E-01	s	H	RRQQ
LEAD OXIDE	01317-36-8	07439-92-1	1	Pb	PbO	13.0	T	8.1E-01	s	H	RRQQ
LEAD OXIDE	01335-25-7	07439-92-1	1	Pb	PbO	13.0	T	8.1E-01	s	H	RRQQ
LEAD OXIDE SULFATE	12202-17-4	07439-92-1	1	Pb	Pb03S04	20.0	T	1.3	s	H	RRQQ
LEAD PHOSPHATE SALT	07446-27-7	07439-92-1	1	Pb2	H304P3Pb2	17.0	T	1.0	s	H	RRQQ
LEAD SILICATE	11120-22-2	07439-92-1	1	Pb3	Pb303Si204	15.0	T	9.5E-01	s	H	RRQQ
LEAD STEARATE SALT	07428-48-0	07439-92-1	1	Pb	C18H3602Pb	28.0	T	1.8	s	H	RRQQ
LEAD TETROXIDE	01314-41-6	07439-92-1	1	Pb3	Pb304	13.0	T	8.3E-01	s	H	RRQQ
LEAD TITANATE ZIRCON	12626-81-2		1		**********	---		1.0E-01	d	H	
LEAD TITANIUM OXIDE	12060-00-3	07439-92-1	1	Pb	PbTi03	17.0	T	1.1	s	H	RRQQ
LEAD ZIRCONIUM OXIDE	12060-01-4	07439-92-1	1	Pb	PbZr03	20.0	T	1.3	s	H	RRQQ
LEAD,BENZENEDICARBOX	69011-06-9		4		C8H406Pb3	---		1.0E-01	d	H	
LINDANE, ALPHA-	00319-84-6	00058-89-9	4		C6H6C16	120.0	A	6.0E-04	A M U	H	RR
LINDANE, BETA-	00319-85-7	00058-89-9	4		C6H6C16	120.0	A	2.0E-03	E M U	H	R
LINDANE, GAMMA-	00058-89-9		4		C6H6C16	120.0	T	6.0E-04	E M U	H	
MALEIC ANHYDRIDE	00108-31-6		4		C4H203	240.0	T	2.4	T M	H	
MANGANESE	07439-96-5		1	Mn	Mn	48.0	T	5.0E-02	I M	HI	
MANGANESE NITRATE	10377-66-9	07439-96-5	1	Mn	HN03Mn	100.0	T	1.1E-01	I	H	RRQQ
MANGANESE OXIDE	01313-13-9	07439-96-5	1	Mn	Mn023	370.0	T	3.8E-01	I	H	RRQQ
MANGANESE OXIDE	01317-34-6	07439-96-5	1	Mn2	Mn203	68.0	T	7.2E-02	I	H	RRQQ
MANGANESE PHOSPHATE	10124-54-6	07439-96-5	1	Mn	H304PMn	130.0	T	1.4E-01	I	H	RRQQ
MANGANESE ROSINATE	09008-34-8		1		**********	---		1.0E-01	d	H	
MANGANESE SULFATE	07785-87-7	07439-96-5	1	Mn	H204SMn	130.0	T	1.4E-01	I	H	RRQQ
MANGANESE TETROXIDE	01317-35-7	07439-96-5	1	Mn3	Mn304	66.0	T	6.9E-02	I	H	RRQQ
MANGANESECYCLOPENTAD	12079-65-1		4	Mn	C8H5Mn03	88.0	T	8.8E-01	T	H	QQ
MERCURY	07439-97-6		1	Hg	Hg	6.0	T	3.0E-01	E M	HK	

Date Created: 10-06-95

HAPs IDENTIFIED BY 1990 CAAA (ALPHABETICALLY by Contaminant Name)

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
MERCURY	22967-92-6	Hg*ALKYL**	4	Hg	Hg	1.0	A	2.4E-02	A H H RR
MERCURY	Hg**ARYL**		1	Hg	Hg	24.0	T	2.4E-01	T H
MERCURY	Hg*ALKYL**		1	Hg	Hg	2.4	T	2.4E-02	T H
MERCURY "NUCLEATE"	12002-19-6		1		**********	---		1.0E-01	d H
MERCURY CHLORIDE	07487-94-7	07439-97-6	1	Hg	HgC12	8.1	T	4.1E-01	E H RRQQ
MERCURY IODINE	07774-29-0	07439-97-6	1	Hg	HgI2	13.0	T	6.8E-01	E H RRQQ
MERCURY NITRATE	10045-94-0	07439-97-6	1	Hg	HgH2N206	9.7	T	4.9E-01	E H RRQQ
MERCURY SULFIDE	01344-48-5	07439-97-6	1	Hg	HgS	6.9	T	3.5E-01	E H RRQQ
METH ACRY AC METH ES	00080-62-6		4		C5H802	98000.0	T	980.0	T M H
METH BIS-O-CHLORANIL	00101-14-4		4		C13H12C12N2	7.1E-01	R	7.1E-03	R HB
METHANOL	00067-56-1		4		CH40	62000.0	T	620.0	T H
METHOXYCHLOR	00072-43-5		4		C16H15C1302	2400.0	T	24.0	T H
METHYL BROMIDE	00074-83-9		4		CH3Br	4500.0	T	5.0	D M H
METHYL CELLOSOLVE	00109-86-4		4		C3H802	3800.0	T	20.0	E M H
METHYL CHLOROFORM	00071-55-6		6		C2H3C13	450000.0	T	1000.0	E L H C
METHYL CHLOROMETHETH	00107-30-2		4		C2H5C10	---		1.0E-01	d M HB
METHYL ETHYL KETONE	00078-93-3		4		C4H80	140000.0	T	300.0	E M H

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W	T	111111 123456789012345
METHYL IODIDE	00074-88-4		4		CH3I	2900.0	T	29.0	T	HB	
METHYL ISOBUTYL KETO	00108-10-1		4		C6H12O	48000.0	R	480.0	R M	H	
METHYL ISOCYANATE	00624-83-9		4		C2H3NO	4.7	T	1.1E-01	T H	H	
METHYLCYCLOPENTADIEN	12108-13-3		4	Mn	C9H8Mn	150.0	T	1.5	T	H	QQ
METHYLENE BISPH ISCY	00101-68-8		4		C15H10N2O2	5.0	R	2.0E-02	E H	H	
METHYLENEDIANILINE44	00101-77-9		4		C13H14N2	190.0	T	1.9	T M	HB	
METHYLTERTBUTYLETHER	01634-04-4		4		C5H12O	34000.0	T	50.0	E M	H	
MONOCHLOROBENZENE	00108-90-7		4		C6H5Cl	11000.0	T	20.0	E M	H	
MONOMETHYL HYDRAZINE	00060-34-4		4		CH6N2	4.5	T	4.5E-02	T M	H C	
NAPHTHALENE	00091-20-3		4		C10H8	12000.0	T	120.0	T M	H	
NICKEL	07440-02-0		1	Ni	Ni	5.0	P	4.0E-03	H H U	HAI	
NICKEL (+2) SULFATE	07786-81-4	Ni*INORG**	6	Ni	NiH2O4S	4.0	R	1.1E-02	H H U	H	RRQQ
NICKEL (INORGANIC)	Ni*INORG**		1	Ni	Ni	1.5	R	4.0E-03	H H U	HAI	
NICKEL (Ni 059)	NY059-28-0	Ni*INORG**	6	Ni	Ni	1.5	A	4.0E-03	A H U	H	RR
NICKEL (Ni 063)	NY063-28-0	Ni*INORG**	6	Ni	Ni	1.5	A	4.0E-03	A H U	H	RR
NICKEL (Ni 065)	NY065-28-0	Ni*INORG**	6	Ni	Ni	1.5	A	4.0E-03	A H U	H	RR
NICKEL ACETATE	00373-02-4	07440-02-0	4	Ni	NiC4H8O4	15.0	P	1.2E-02	H H U	H	RRQQ
NICKEL AZO YELLOW	51931-46-5	07440-02-0	4	Ni	C30H18C12N6NiO4	56.0	P	4.5E-02	H H U	H	RRQQ
NICKEL BORIDE	12007-02-2	Ni*INORG**	1	Ni3	Ni3B	1.6	R	4.2E-03	H H U	H	RRQQ
NICKEL BROMIDE	13462-88-9	Ni*INORG**	1	Ni	NiBr2	5.6	R	1.5E-02	H H U	H	RRQQ
NICKEL CARBIDE	12710-36-0	Ni*INORG**	1	Ni	NiC2	2.1	R	5.6E-03	H H U	H	RRQQ
NICKEL CARBONYL	13463-39-3	Ni*INORG**	6	Ni	NiC4O4	2.0	R	1.2E-02	H H U	H	R QQ
NICKEL CHLORIDE	07718-54-9	Ni*INORG**	1	Ni	NiC12	3.3	R	8.8E-03	H H U	H	RRQQ
NICKEL CYANIDE	00557-19-7	Ni*INORG**	1	Ni	C2N2Ni	380.0	s	7.5E-03	H H U	H	RRQQ
NICKEL DIACETATE TET	06018-89-9	07440-02-0	1	Ni	NiC4H16O8	21.0	P	1.7E-02	H H U	H	RRQQ
NICKEL HYDROXIDE	12504-48-7	Ni*INORG**	1	Ni	H2NiO2	2.4	R	6.3E-03	H H U	H	RRQQ
NICKEL NITRATE	13138-45-9	Ni*INORG**	1	Ni	NiH2N2O6	4.7	R	1.3E-02	H H U	H	RRQQ
NICKEL OXIDE	01313-99-1	Ni*INORG**	1	Ni	NiO	1.9	R	5.1E-03	H H U	H	RRQQ
NICKEL OXIDE	01314-06-3	Ni*INORG**	1	Ni2	Ni2O3	2.1	R	5.6E-03	H H U	H	RRQQ
NICKEL PHOSPHATE	10381-36-9	Ni*INORG**	1	Ni3	Ni3H6O8P2	3.2	R	8.5E-03	H H U	H	RRQQ
NICKEL SULFAMATE	13770-89-3	Ni*INORG**	1	Ni	NiH6N2O6S2	6.5	R	1.7E-02	H H U	H	RRQQ
NICKEL SULFAMIDE	13770-89-3	Ni*INORG**	1	Ni	H3NO3SNi	4.0	R	1.1E-02	H H U	H	RRQQ
NICKEL SULFATE.6H2O	10101-97-0	Ni*INORG**	1	Ni	NiH14O10S	6.8	R	1.8E-02	H H U	H	RRQQ
NICKEL SULFIDE NI3S2	12035-72-2	Ni*INORG**	1	Ni3	Ni3S2	2.0	R	5.5E-03	H H U	H	RRQQ
NICKEL TITANATE	12653-76-8	Ni*INORG**	1	Ni	NiO3Ti	4.0	R	1.1E-02	H H U	H	RRQQ
NICKEL,BIS(1-(4-DIME	38465-55-3	07440-02-0	6	Ni	NiC32H30N2S4	54.0	P	4.3E-02	H H U	H	RRQQ

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W	T	111111 123456789012345
NITRIC ACID,LEADSALT	10099-74-8	07439-92-1	6	Pb	HNO3Pb	16.0	T	9.8E-01	s	H	RRQQ
NITROBENZENE	00098-95-3		4		C6H5NO2	1200.0	T	2.0	I M	H	
NITRODIPHENYL, 4-	00092-93-3		4		C12H9NO2	---		3.0E-08	* H	HA	
NITROGEN, ISOTOPE-13	13981-22-1		6		**********	---		1.0E-01	d	H	
NITROPHENOL, P-	00100-02-7		4		C6H5NO3	---		1.0E-01	d M	H	
NITROPROPANE, 2-	00079-46-9		4		C3H7NO2	3600.0	T	20.0	I H	HB	
NITROSO-N-METHYLUREA	00684-93-5		4		C2H5N3O2	---		1.0E-01	d M	H	
NITROSODIMETHYLAMINE	00062-75-9		4		C2H6N2O	---		7.0E-05	E H U	HB	
NITROSOMORPHOLINE,N	00059-89-2		4		C4H8N2O2	---		1.0E-01	d M	H	
OXOPHENYL ARSINE	00637-03-6	As*ORGANIC	4	As	C6H5AsO	---		5.2E-04	E H U	H	R Q
OXYGEN, ISOTOPE-15	13982-43-9		6		**********	---		1.0E-01	d	H	
PAH(s)	13049829-2		4		**********	---		2.0E-02	H H	H	
PARATHION	00056-38-2		4		C10H14NO5PS	5.0	R	1.2E-01	R H	H	
PCB	01336-36-3	11097-69-1	4		**********	1.0E-01	R	4.5E-04	E H U	H C	
PENTACHLORONITROBENZ	00082-68-8		4		C6C15NO2	120.0	T	1.2	T	H	
PENTACHLOROPHENOL	00087-86-5		4		C6HC15O	120.0	T	1.2	T M	H	
PENTAFLUORO-ARSORANE	07784-36-3	07440-38-2	6	As	AsF5	4.5E-01	R	5.2E-04	E H U	H	RRQQ
PHENANTHRENE	00085-01-8	13049829-2	4		C14H10	---		2.0E-02	A H	H	R
PHENARSINE OXIDE	00058-36-6	As*ORGANIC	1	As2	C24H16As2O3	---		7.7E-04	E H U	H	R Q
PHENOL	00108-95-2		4		C6H6O	4500.0	T	9.6	H M	H	
PHENYL DICHLOROARSIN	00696-28-6	As*ORGANIC	4	As	C6H5AsCl2	---		6.8E-04	E H U	H	R Q
PHENYLENEDIAMINE, P-	00106-50-3		4		C6H8N2	24.0	T	2.4E-01	T M	H	

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
PHENYLMERCURICACETAT	00062-38-4	Hg*ALKYL**	4	Hg	C6H8HgO2	1.6	T	3.7E-02	T H H RRQQ
PHOSGENE	00075-44-5		4		CCl2O	95.0	T	9.5E-01	T M H
PHOSPHINE	07803-51-2		6		PH3	100.0	T	3.0E-02	I M H
PHOSPHORIC ACID,RX P	92203-02-6		6		**********	---		1.0E-01	d H
PHOSPHORUS (YELLOW)	07723-14-0		1		P4	24.0	T	2.4E-01	T M H
PHTHALIC ANHYDRIDE	00085-44-9		4		C8H4O3	1500.0	T	15.0	T H
POTASSIUM ARSENITE	10124-50-2	07440-38-2	1	As	AsH3O3K	4.4E-01	R	5.1E-04	E H U H RRQQ
POTASSIUM CHROMATE	07789-00-6	07440-47-3	1	Cr	CrH2O4K2	3.8E-01	R	7.5E-05	H H U H RRQQ
POTASSIUM CYANATE	00590-28-3	00460-19-5	4		CNHOK	5000.0	A	50.0	A M H RR
POTASSIUM CYANIDE	00151-50-8	00057-12-5	1	CN	CNK	380.0	s	30.0	T H HC RRQQ
POTASSIUM DICHROMAT	07778-50-9	07440-47-3	1	Cr2	Cr2H2O7K2	2.8E-01	R	5.7E-05	H H U H RRQQ
POTASSIUM NICKELCYN	14220-17-8	Ni*INORG**	1	Ni	C4N4N1K2	6.2	R	1.6E-02	H H U H RRQQ
POTASSIUM PERMANGANA	07722-64-7	07439-96-5	1		HMnO4K	48.0	A	34.0	D M H R
POTASSIUMGOLDCYANIDE	14263-59-3	00057-12-5	1	CN	C4N4AuK	380.0	s	50.0	S H H RRQQ
PROPANE SULTONE	01120-71-4		4		C3H6O3S	---		1.0E-01	d M HB
PROPIOLACTONE,BETA-	00057-57-8		4		C3H4O2	360.0	T	3.6	T M HB
PROPIONALDEHYDE	00123-38-6		4		C3H6O	---		1.0E-01	d H
PROPOXUR (BAYGON)	00114-26-1		4		C11H15NO3	120.0	T	1.2	T H
PROPYLENE DICHLORIDE	00078-87-5		4		C3H6Cl2	83000.0	T	1.5E-01	D M H
PROPYLENE GLYCOL DIN	06423-43-4		4		C3H6N2O6	81.0	T	8.1E-01	T H
PROPYLENE IMINE	00075-55-8		4		C3H7N	1100.0	T	11.0	T HB
PROPYLENE OXIDE, 1,2	00075-56-9		4		C3H6O	11000.0	T	3.0E-01	E M H
PYRENE	00129-00-0	13049829-2	4		C16H10	---		2.0E-02	A H H R
QUINOLINE	00091-22-5		4		C9H7N	---		1.0E-01	d M H
QUINONE	00106-51-4		4		C6H4O2	100.0	T	1.0	T M H
SELENIOUS ACID	07783-00-8		1		H2O3Se	---		11.0	o H
SELENIUM	07782-49-2		1	Se	Se	48.0	T	4.8E-01	T M H
SELENIUM CHLORIDE	10026-03-6	07782-49-2	1	Se	SeCl4	130.0	T	1.3	T H RRQQ
SELENIUM HEXAFLUORID	07783-79-1		1	Se	SeF6	12.0	s	6.8E-01	s H RRQQ
SELENIUM SULFIDE	07488-56-4	07782-49-2	1	Se	SeS2	86.0	T	8.6E-01	T M H RRQQ
SELENOUREA	00630-10-4	07782-49-2	1	Se	CH4N2Se	74.0	T	7.4E-01	T H RRQQ

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
SILICA - QUARTZ	14808-60-7		1		SiO2	24.0	T	2.4E-01	T HI
SILVER CYANIDE	00506-64-9		1		CAgN	380.0	s	50.0	S H H R Q
SODIUM ARSENATE	07631-89-2	07440-38-2	1	As	AsH3O4Na	4.4E-01	R	5.1E-04	E H U H RRQQ
SODIUM ARSENITE	07784-46-5	07440-38-2	1	As	AsHO2Na	3.5E-01	R	4.0E-04	E H U H RRQQ
SODIUM CHROMATE(VI)	10034-82-9	07440-47-3	1	Cr	CrH10O8Na2	4.5E-01	R	9.1E-05	H H U H RRQQ
SODIUM CYANIDE	00143-33-9	00057-12-5	1	CN	CNNa	380.0	s	22.0	T H HC RRQQ
SODIUM DICHROMATE	10588-01-9	07440-47-3	1	Cr2	Cr2H2O7Na2	2.5E-01	R	5.1E-05	H H U H RRQQ
SODIUM FERRICYANIDE	14217-21-1	00057-12-5	1	C6N6	C6FeN6Na3	380.0	s	21.0	T H H RRQQ
SODIUM FERROCYANIDE	13601-19-9	00057-12-5	1	C6N6	C6FeN6Na4	380.0	s	23.0	T H H RRQQ
SODIUM ISOCYANATE	00917-61-3	00460-19-5	4		CNHONa	5000.0	A	50.0	A M H RR
SODIUM ZINC CYANIDE	15333-24-1	00057-12-5	1	C4N4	C4N4ZnNa2	380.0	s	25.0	T H H RRQQ
SODIUMACODYLATE	00124-65-2	As*ORGANIC	1	As	C2H7AsO2Na	---		4.9E-04	E H U H R Q
SOLVASOL	08042-52-2		4		**********	---		1.0E-01	d H
STIBINE	07803-52-3		1		SbH3	120.0	T	1.2	T H
STRONTIUM CHROMATE	07789-06-2	07440-47-3	1	Cr	CrH2O4Sr	4.0E-01	R	7.9E-05	H H U HB RRQQ
STYRENE OXIDE	00096-09-3		4		C8H8O	---		3.0E-08	* H H
STYRENE	00100-42-5		4		C8H8	20000.0	P	1000.0	I M H
SULFAMIC ACID,Cr,K SALT	10141-00-1	16065-83-1	1	Cr	CrH2SO4K	380.0	s	3.6E-01	H H RRQQ
SULFOMIC ACID	14017-41-5	07440-48-4	6	Co2	Co2H3NO3S	8.7	T	8.7E-02	T H RRQQ
SULFURIC ACI,CADMIUM	07790-84-3	07440-43-9	6	Cd	CdH2SO4	3.7E-01	T	9.4E-04	H H U H RRQQ
TCDDIOXIN, 2,3,7,8-	01746-01-6		4		C12H4Cl4O2	---		3.0E-08	E H U H
TCDFURAN, 2,3,7,8-	51207-31-9		4		C12H4Cl4O	---		3.0E-08	* H H
TETRACHLOROETHAN1122	00079-34-5		4		C2H2Cl4	1600.0	T	2.0E-02	E M U H
TETRACHLOROETHYLENE	00127-18-4		4		C2Cl4	40000.0	T	1.2	D M U H
TETRAETHYL LEAD	00078-00-2		4	Pb	PbC8H20	37.0	T	3.7E-01	T HI QQ
TETRAMETHYL LEAD	00075-74-1		4	Pb	C4H12Pb	46.0	T	4.6E-01	T HI QQ
THALLIUM SELENITE	12039-52-0	07440-28-0	1	Tl	SeTl	33.0	T	3.3E-01	T M H RRQQ

TITANIUM TETRACHLOR.	07550-45-0		1		C14T1	---		1.0E-01	d		H				
TOLIDINE, O-	00119-93-7		4		C14H16N2	2.0	R	4.8E-02	R		HB	C			
TOLUENE	00108-88-3		4		C7H8	45000.0	T	400.0	E	L		H			
TOLUENE 2,4-DIAMINE	00095-80-7	00584-84-9	4		C7H10N2	3.5	A	6.2E-02	A	H	U	H		RR	
TOLUENE DIISOCYANATE	26471-62-5	00584-84-9	4		C9H6N2O2	3.5	A	8.3E-02	R	H		H		R	
TOLUENE24DIISOCYANAT	00584-84-9		4		C9H6N2O2	3.5	R	6.2E-02	D	H	U	H			
TOLUIDINE, O-	00095-53-4		4		C7H9N	880.0	T	21.0	T	H		HB			
TOTAL TCDD	01745-01-7	01746-01-6	4		**********	---		3.0E-08	A	H	U	H		R	
TRICHLORO BENZENE	00120-82-1		4		C6H3C13	3700.0	T	9.0	E	H		HC			
TRICHLOROETHANE,112	00079-00-5		4		C2H3C13	13000.0	T	6.0E-02	E	M	U	H			
TRICHLOROETHYLENE	00079-01-6		4		C2HC13	33000.0	R	4.5E-01	D	M	U	H			
TRICHLOROPHENOL,245	00095-95-4		4		C6H3C13O	---		350.0	o			H			
TRICHLOROPHENOL,246	00088-06-2		4		C6H3C13O	---		3.2E-01	u		U	H			
TRIETHYLAMINE	00121-44-8		4		C6H15N	980.0	T	9.8	T			H			
TRIETHYLENE GLYCOL	00112-27-6	00110-80-5M	4		C6H14O4	7100.0	A	330.0	A	M		H		RR	MM
TRIFLURALIN	01582-09-8		4		C13H16F3N2O4	---		1.0E-01	d	M		H			
TRIOXOBIS CHROMIUM	20492-50-6	16065-83-1	1	Cr	C10H10CrN2O3	380.0	s	5.0E-01	H			H		RRQQ	
TRIPHENYL ARSINE	00603-32-7	As*ORGANIC	4	As	C18H15As	---		9.4E-04	E	H	U	H		R Q	
TRIPHENYL As OXIDE	01153-05-5	As*ORGANIC	4	As	C18H15AsO	---		9.9E-04	E	H	U	H		R Q	
URETHANE	00051-79-6		4		C3H7NO2	---		1.0E-01	d	M		H			
VINYL ACETATE	00108-05-4		4		C4H6O2	1500.0	R	36.0	R			H	C		
VINYL BROMIDE	00593-60-2		4		C2H3Br	2200.0	T	3.0E-02	E	H	U	HB			
VINYL CHLORIDE	00075-01-4		4		C2H3C1	1300.0	T	2.0E-02	E	H	U	HA			
VINYLIDENE CHLORIDE	00075-35-4		4		C2H2C12	2000.0	T	2.0E-02	E	H	U	H			
XYLENE,M,O&P MIXT.	01330-20-7		4		C8H10	100000.0	T	300.0	I	M		H			
XYLENE,M-	00108-38-3		4		C8H10	100000.0	T	700.0	E	M		H			

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
XYLENE,O-	00095-47-6		4		C8H10	100000.0	T	700.0	E M H
XYLENE,P-	00106-42-3		4		C8H10	100000.0	T	300.0	E M H
ZINC CHROMATE	11103-86-9	07440-47-3	1	Cr2	Cr2H09Zn2K	4.0E-01	R	8.1E-05	H H U HA RRQQ
ZINC CHROMATE	13530-65-9	07440-47-3	1	Cr	CrH2O4Zn	3.5E-01	R	7.1E-05	H H U HA RRQQ
ZINC CHROMATE	37300-23-5	07440-47-3	1	Cr4	Cr4H6Zn4K2O20	4.2E-01	R	8.4E-05	H H U HA RRQQ
ZINC CHROMATES	01308-13-0	07440-47-3	1	Cr	CrH2O4Zn	3.5E-01	R	7.1E-05	H H U H RRQQ
ZINC CHROMITE	01328-67-2	07440-47-3	1	Cr	CrH2O4Zn	3.5E-01	R	7.1E-05	H H U H RRQQ
ZINC CYANIDE	00557-21-1		6		C2N2Zn	1100.0	T	27.0	T H H RRQQ

TOXICITY (T):
- (H) HIGH Toxicity Contaminant.
- (M) MODERATE Toxicity Contaminant.
- (L) LOW Toxicity Contaminant.

HOW (W):
- (A) AGC/SGC based upon NYSDEC "Analogy".
- (D) NYSDEC derived AGC/SGC.
- (E) AGC/SGC based upon EPA derivation.
- (H) NYSDOH derived AGC/SGC.
- (I) AGC/SGC based upon HEAST Inhalation RfC (RFC).
- (P) AGC/SGC based upon PROPOSED ACGIH TLV.
- (R) AGC/SGC based upon NIOSH REL.
- (S) AGC/SGC listed is FEDERAL or NYS Standard.
- (T) AGC/SGC based upon ACGIH TLV.
- (d) AGC assigned "de minimis" limit.
- ( ) There is no SGC for this compound.

HOW (W) - Special AGC/SGC Interim Assignments:
- (o) AGC/SGC based upon HEAST Oral RfD (RFD).
- (s) AGC/SGC based upon Equivalent FEDERAL or NYS Standard.
- (u) AGC/SGC based upon HEAST Inhalation Unit Risk Factor.
- (*) AGC assigned special computer HIGH Toxicity "de minimis" limit.

(X) Compound EXEMPT from AG-1 (simple asphyxiant).


```
-----codes-----
        111111
123456789012345:
```

codes, (Position 1):
(U) AGC equivalent to "one in a million risk".

codes, (Position 3):
(H) HAP identified by 1990 CAAA.

codes, (Positions 4 & 5):
(A) ACGIH Human Carcinogen.
(B) ACGIH Suspected Human Carcinogen.
(C) ACGIH Ceiling Limit.
(G) ACGIH Simple Asphxiant. Assign "D" Rating. Computer will assume AGC = 9999999. ug/m3.
(I) Refer to ACGIH Handbook.
(K) Multiple TLVs assigned in ACGIH Handbook.

codes, (Positions 6 & 7):
(C) NIOSH Ceiling Limit.

codes, (Position 8):
(Q) REFERENCED AGC adjusted for elemental assignment.

codes, (Position 9):
(Q) REFERENCED SGC adjusted for elemental assignment.

codes, (Position 10):
(R) AGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 11):
(R) SGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 12):
(Q) AGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 13):
(Q) SGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 14):
(M) REFERENCED AGC adjusted for MOLECULAR WEIGHTS.

codes, (Position 15):
(M) REFERENCED SGC adjusted for MOLECULAR WEIGHTS.

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
FORMALDEHYDE	00050-00-0		4		H2CO	30.0	H	6.0E-02	H H U HBC
B A P	00050-32-8		4		C20H20	---		2.0E-03	H H U HB
DINITROPHENOL, 2,4-	00051-28-5		4		C6H7N2O5	---		7.0	o H
URETHANE	00051-79-6		4		C3H7NO2	---		1.0E-01	d M H
ACETYLAMINOFLUOR,2-	00053-96-3		4		C15H13NO	---		1.0E-01	d M H
CARBON TETRACHLORIDE	00056-23-5		4		CCl4	1300.0	R	7.0E-02	E H U H C
PARATHION	00056-38-2		4		C10H14NO5PS	5.0	R	1.2E-01	R H H
BENZO(A)ANTHRACENE	00056-55-3	13049829-2	4		C18H12	---		2.0E-02	A H HB R
CYANIDE (8CI9CI)	00057-12-5		4	CN	CN	500.0	T	12.0	T H H
DIMETHYL HYDRAZINE	00057-14-7		4		C2H8N2	6.0	T	6.0E-02	T M H C
PROPIOLACTONE,BETA-	00057-57-8		4		C3H4O2	360.0	T	3.6	T M HB
CHLORDANE	00057-74-9		4		C10H6Cl8	50.0	T	1.2	T H H
PHENARSINE OXIDE	00058-36-6	As*ORGANIC	1	As2	C24H16As2O3	---		7.7E-04	E H U H R Q
LINDANE, GAMMA-	00058-89-9		4		C6H6Cl6	120.0	T	6.0E-04	E M U H
NITROSOMORPHOLINE,N	00059-89-2		4		C4H8N2O2	---		1.0E-01	d M H
DIMETHYLAMINOAZOBENZ	00060-11-7		4		C14H15N3	---		1.0E-01	d M H
MONOMETHYL HYDRAZINE	00060-34-4		4		CH6N2	4.5	T	4.5E-02	T M H C
ACETAMIDE	00060-35-5		4		C2H5NO	---		1.0E-01	d M H
PHENYLMERCURICACETAT	00062-38-4	Hg*ALKYL**	4	Hg	C6H8HgO2	1.6	T	3.7E-02	T H H RRQQ
ANILINE	00062-53-3		4		C6H7N	760.0	T	6.0E-01	D H U H
DICHLORVOS	00062-73-7		4		C4H7Cl2O4P	210.0	T	5.0E-01	E M H
NITROSODIMETHYLAMINE	00062-75-9		4		C2H6N2O	---		7.0E-05	E H U HB
CARBARYL	00063-25-2		4		C12H11NO2	1200.0	T	12.0	T H
DIETHYL SULFATE	00064-67-5		4		C4H10O4S	---		3.0E-08	* H H
METHANOL	00067-56-1		4		CH4O	62000.0	T	620.0	T H
CHLOROFORM	00067-66-3		4		CHCl3	980.0	R	4.0E-02	E M U HB C
HEXACHLOROETHANE	00067-72-1		4		C2Cl6	2300.0	T	23.0	T HB
DIMETHYLFORMAMIDE	00068-12-2		4		C3H7NO	7100.0	T	30.0	E M H
BENZENE	00071-43-2		4		C6H6	32.0	R	1.2E-01	E H U HA
METHYL CHLOROFORM	00071-55-6		6		C2H3Cl3	450000.0	T	1000.0	E L H C
METHOXYCHLOR	00072-43-5		4		C16H15Cl3O2	2400.0	T	24.0	T H
DDE	00072-55-9		4		**********	---		1.0E-01	d H
METHYL BROMIDE	00074-83-9		4		CH3Br	4500.0	T	5.0	D M H
CHLOROMETHANE	00074-87-3		4		CH3Cl	22000.0	D	770.0	D M H
METHYL IODIDE	00074-88-4		4		CH3I	2900.0	T	29.0	T HB
HYDROGEN CYANIDE	00074-90-8		1		CHN	380.0	s	3.0	E H H C
ETHYL CHLORIDE	00075-00-3		4		C2H5Cl	63000.0	T	13000.0	E L H
VINYL CHLORIDE	00075-01-4		4		C2H3Cl	1300.0	T	2.0E-02	E H U HA
ACETONITRILE	00075-05-8		4		C2H3N	8100.0	R	50.0	E M H
ACETALDEHYDE	00075-07-0		4		C2H4O	4500.0	T	110.0	T M HC
DICHLOROMETHANE	00075-09-2		6		CH2Cl2	41000.0	T	27.0	D M U HB
CARBON DISULFIDE	00075-15-0		6		CS2	710.0	R	10.0	I M H
ETHYLENE OXIDE	00075-21-8		4		C2H4O	18.0	D	1.9E-02	D H U HB
BROMOFORM	00075-25-2		4		CHBr3	1200.0	T	9.0E-01	E M H
DICHLOROETHANE, 1,1	00075-34-3		4		C2H4Cl2	96000.0	T	500.0	E L H
VINYLIDENE CHLORIDE	00075-35-4		4		C2H2Cl2	2000.0	T	2.0E-02	E H U H
PHOSGENE	00075-44-5		4		CCl2O	95.0	T	9.5E-01	T M H
PROPYLENE IMINE	00075-55-8		4		C3H7N	1100.0	T	11.0	T HB
PROPYLENE OXIDE, 1,2	00075-56-9		4		C3H6O	11000.0	T	3.0E-01	E M H
TETRAMETHYL LEAD	00075-74-1		4	Pb	C4H12Pb	46.0	T	4.6E-01	T HI QQ
HEPTACHLOR	00076-44-8		1		C10H5Cl7	5.0	T	8.0E-04	E H U H
HEXCHLORCYCPENTDIENE	00077-47-4		4		C5Cl6	26.0	T	7.0E-02	E M H
DIMETHYL SULFATE	00077-78-1		4		C2H6O4S	52.0	T	1.2	T H HB

CHEMICAL NAME	CAS NUMBER	ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	W T 123456789012345	111111
TETRAETHYL LEAD	00078-00-2		4	Pb	PbC8H20	37.0	T	3.7E-01	T HI	QQ
ISOPHORONE	00078-59-1		4		C9H14O	5500.0	R	55.0	R M HC	
PROPYLENE DICHLORIDE	00078-87-5		4		C3H6C12	83000.0	T	1.5E-01	D M H	
METHYL ETHYL KETONE	00078-93-3		4		C4H8O	140000.0	T	300.0	E M H	
TRICHLOROETHANE,112	00079-00-5		4		C2H3C13	13000.0	T	6.0E-02	E M U H	
TRICHLOROETHYLENE	00079-01-6		4		C2HC13	33000.0	R	4.5E-01	D M U H	
ACRYLAMIDE	00079-06-1		4		C3H5NO	3.0	T	8.0E-04	E H U HB	
ACRYLIC ACID	00079-10-7		6		C3H4O2	1400.0	T	1.0	E M H	
CHLOROACETIC ACID	00079-11-8		4		C2H3C1O2	---		3.0E-08	* H H	
TETRACHLOROETHAN1122	00079-34-5		4		C2H2C14	1600.0	T	2.0E-02	E M U H	
DIMETHYLCARBMYLCHLOR	00079-44-7		4		C3H6C1NO	---		1.0E-01	d M HB	
NITROPROPANE, 2-	00079-46-9		4		C3H7NO2	3600.0	T	20.0	I H HB	
METH ACRY AC METH ES	00080-62-6		4		C5H8O2	98000.0	T	980.0	T M H	
PENTACHLORONITROBENZ	00082-68-8		4		C6C15NO2	120.0	T	1.2	T H	
DIBUTYL PHTHALATE	00084-74-2		4		C16H22O4	1200.0	T	12.0	T H	
PHENANTHRENE	00085-01-8	13049829-2	4		C14H10	---		2.0E-02	A H H	R
PHTHALIC ANHYDRIDE	00085-44-9		4		C8H4O3	1500.0	T	15.0	T H	
HEXACHLOROBUTADIENE	00087-68-3		4		C4C16	50.0	T	5.0E-02	E M U HB	
PENTACHLOROPHENOL	00087-86-5		4		C6HC15O	120.0	T	1.2	T M H	
TRICHLOROPHENOL,246	00088-06-2		4		C6H3C13O	---		3.2E-01	u U H	
ANISIDINE,O	00090-04-0		4		C7H9NO	120.0	T	1.2	T M H	
NAPHTHALENE	00091-20-3		4		C10H8	12000.0	T	120.0	T M H	
QUINOLINE	00091-22-5		4		C9H7N	---		1.0E-01	d M H	
DICHLOROBENZIDINE33'	00091-94-1		4		C12H10C12N2	---		1.0E-01	H H HB	
BIPHENYL	00092-52-4		4		C12H10	310.0	T	3.1	T M H	
AMINODIPHENYL, P-	00092-67-1		4		C12H11N	---		3.0E-08	* H HA	
BENZIDINE	00092-87-5		4		C12H12N2	---		1.5E-05	E H U HA	
NITRODIPHENYL, 4-	00092-93-3		4		C12H9NO2	---		3.0E-08	* H HA	
2,4-D	00094-75-7		4		C8H6C1203	2400.0	T	24.0	T H	
XYLENE,O-	00095-47-6		4		C8H10	100000.0	T	700.0	E M H	
CRESOL, O-	00095-48-7	01319-77-3	4		C7H8O	2400.0	A	24.0	A M H	RR
TOLUIDINE, O-	00095-53-4		4		C7H9N	880.0	T	21.0	T H HB	
TOLUENE 2,4-DIAMINE	00095-80-7	00584-84-9	4		C7H10N2	3.5	A	6.2E-02	A H U H	RR
TRICHLOROPHENOL,245	00095-95-4		4		C6H3C13O	---		350.0	o H	
STRYENE OXIDE	00096-09-3		4		C8H8O	---		3.0E-08	* H H	
DIBROMOCHLOROPROPANE	00096-12-8		4		C3H5Br2C1	24.0	R	2.4E-01	R H	
ETHYLENE THIOUREA	00096-45-7		4		C3H6N2S	---		3.0E-08	* H H	
BENZENEARSONIC ACID	00098-05-5	As*ORGANIC	1	As	C6H7AsO3	---		6.2E-04	E H U H	R Q
BENZOTRICHLORIDE	00098-07-7		4		C7H5C13	---		3.0E-08	* H H	
CUMENE (8CI)	00098-82-8		4		C9H12	59000.0	T	9.0	I H	
ACETOPHENONE	00098-86-2		4		C8H8O	12000.0	T	2.0E-02	I H	
NITROBENZENE	00098-95-3		4		C6H5NO2	1200.0	T	2.0	I M H	
NITROPHENOL, P-	00100-02-7		4		C6H5NO3	---		1.0E-01	d M H	
ETHYL BENZENE	00100-41-4		4		C8H10	100000.0	T	1000.0	E M H	
STYRENE	00100-42-5		4		C8H8	20000.0	P	1000.0	I M H	
BENZYL CHLORIDE	00100-44-7		4		C7H7C1	500.0	R	2.0E-02	E H U H C	
METH BIS-O-CHLORANIL	00101-14-4		4		C13H12C12N2	7.1E-01	R	7.1E-03	R HB	
METHYLENE BISPH ISCY	00101-68-8		4		C15H10N2O2	5.0	R	2.0E-02	E H H	
METHYLENEDIANILINE44	00101-77-9		4		C13H14N2	190.0	T	1.9	T M HB	
CAPROLACTAM	00105-60-2		4		C6H11NO	240.0	T	2.4	T HK	
XYLENE,P-	00106-42-3		4		C8H10	100000.0	T	300.0	E M H	
CRESOL, P-	00106-44-5	01319-77-3	4		C7H8O	2400.0	A	24.0	A M H	RR
DICHLOROBENZENE,P-	00106-46-7		4		C6H4C12	14000.0	T	700.0	D M H	

Date Created: 10-06-95

HAPs IDENTIFIED BY 1990 CAAA (NUMERICAL Sort by CAS Number)

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	W T 123456789012345	-----codes----- 111111
PHENYLENEDIAMINE, P-	00106-50-3		4		C6H8N2	24.0	T	2.4E-01	T M H	
QUINONE	00106-51-4		4		C6H4O2	100.0	T	1.0	T M H	

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
ETHYL OXIRANE	00106-88-7		4		C4H8O	3000.0	D	20.0	D M H
EPICHLOROHYDRIN	00106-89-8		4		C3H5C1O	450.0	P	8.0E-01	E M U HB
DIBROMOETHANE, 1,2-	00106-93-4		4		C2H4Br2	38.0	R	5.0E-03	E H U HB
BUTADIENE, 1,3	00106-99-0		4		C4H6	440.0	T	3.6E-03	E H U HB
ACROLEIN	00107-02-8		4		C3H4O	23.0	T	2.0E-02	I H H
ALLYL CHLORIDE	00107-05-1		4		C3H5C1	710.0	T	1.0	E M H
DICHLOROETHANE	00107-06-2		4		C2H4C12	950.0	R	3.9E-02	E M U H
ACRYLONITRILE	00107-13-1		4		C3H3N	220.0	R	1.0E-02	E H U HB
ETHYLENE GLYCOL	00107-21-1		4		C2H6O2	10000.0	T	240.0	T HC
METHYL CHLOROMETHETH	00107-30-2		4		C2H5C1O	---		1.0E-01	d M HB
CYANOACETAMIDE	00107-91-5	00057-12-5	4	CN	C3H4N2O	3800.0	T	38.0	T M H RRQQ
VINYL ACETATE	00108-05-4		4		C4H6O2	1500.0	R	36.0	R H C
METHYL ISOBUTYL KETO	00108-10-1		4		C6H12O	48000.0	R	480.0	R M H
MALEIC ANHYDRIDE	00108-31-6		4		C4H2O3	240.0	T	2.4	T M H
XYLENE,M-	00108-38-3		4		C8H10	100000.0	T	700.0	E M H
CRESOL, M-	00108-39-4	01319-77-3	4		C7H8O	2400.0	A	24.0	A M H RR
TOLUENE	00108-88-3		4		C7H8	45000.0	T	400.0	E L H
MONOCHLOROBENZENE	00108-90-7		4		C6H5C1	11000.0	T	20.0	E M H
PHENOL	00108-95-2		4		C6H6O	4500.0	T	9.6	H M H
METHYL CELLOSOLVE	00109-86-4		4		C3H8O2	3800.0	T	20.0	E M H
ISOBUTYL ACETATE	00110-19-0		4		C6H12O2	170000.0	T	17000.0	T L H
HEXANE	00110-54-3		4		C6H14	42000.0	T	240.0	E M H
GLYCOL MONOETHYLETHR	00110-80-5		4		C4H10O2	4300.0	T	200.0	E M H
ETHOXYETHYL ACETATE2	00111-15-9		4		C6H12O3	6400.0	T	64.0	T M H
DIETHANOLAMINE	00111-42-2		4		C4H11NO2	480.0	T	4.8	T H
DICHLOROETHYL ETHER	00111-44-4		4		C4H8C12O	6900.0	T	69.0	T H
ETHYLENE GYLCOL MONO	00111-45-5		4		C5H10O2	---		1.0E-01	d M H
GLYCOL ETHER	00111-46-6		4		C4H10O3	---		1.0E-01	d H
BUTOXYETHANOL, 2-	00111-76-2		4		C6H14O2	29000.0	T	290.0	T M H
CARBITOL CELLOSOLVE	00111-90-0	00110-80-5	4		C6H14O3	4300.0	A	7000.0	D M H R
BUTOXYETHYL ACETATE	00112-07-2	00111-76-2	4		C8H16O3	29000.0	A	290.0	A M H RR
TRIETHYLENE GLYCOL	00112-27-6	00110-80-5M	4		C6H14O4	7100.0	A	330.0	A M H RR MM
BUTYL CARBITOL	00112-34-5	00110-80-5M	4		C8H18O3	7700.0	A	360.0	A M H RR MM
DIETHYL CARBITOL	00112-36-7	00110-80-5	4		C8H18O3	4300.0	A	200.0	A M H RR
HEXYL CARBITOL	00112-59-4	00110-80-5M	4		C10H22O3	9000.0	A	420.0	A M H RR MM
DIBUTYL CARBITOL	00112-73-2	00110-80-5M	4		C12H26O3	10000.0	A	480.0	A M H RR MM
PROPOXUR (BAYGON)	00114-26-1		4		C11H15NO3	120.0	T	1.2	T H
DIOCTYL PHTHALATE	00117-81-7		4		C24H38O4	1200.0	T	12.0	T M H
HEXACHLOROBENZENE	00118-74-1		4		C6C16	2.5	T	2.2E-03	E H U H
DIANISIDINE, O-	00119-90-4		4		C14H16N2O2	---		2.0E-01	H M H
TOLIDINE, O-	00119-93-7		4		C14H16N2	2.0	R	4.8E-02	R HB C
ANTHRACENE	00120-12-7	13049829-2	4		C14H10	---		2.0E-02	A H H R
CATECHOL	00120-80-9		4		C6H6O2	5500.0	T	55.0	T H
TRICHLORO BENZENE	00120-82-1		4		C6H3C13	3700.0	T	9.0	E H HC
DINITROTOLUENE,2,4-	00121-14-2		4		C7H6N2O4	---		3.0E-08	* H H
TRIETHYLAMINE	00121-44-8		4		C6H15N	980.0	T	9.8	T H
DIMETHYLANILINE	00121-69-7	00100-61-8	4		C8H11N	520.0	A	60.0	T M H R
DIPHENYL HYDRAZINE	00122-66-7	00057-14-7	4		C12H12N2	2.5	A	4.5E-03	E H U H R
ETHANOL,2-PHENOXY-	00122-99-6	00110-80-5M	4		C8H10O2	6600.0	A	310.0	A M H RR MM
HYDROQUINONE	00123-31-9		4		C6H6O2	480.0	T	4.8	T M H C
PROPIONALDEHYDE	00123-38-6		4		C3H6O	---		1.0E-01	d H

Date Created: 10-06-95

HAPs IDENTIFIED BY 1990 CAAA (NUMERICAL Sort by CAS Number)

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
DIOXANE	00123-91-1		4		C4H8O2	360.0	R	8.6	R M H C
SODIUMACODYLATE	00124-65-2	As*ORGANIC	1	As	C2H7AsO2Na	---		4.9E-04	E H U H R Q
CHLOROPRENE, B-	00126-99-8		4		C4H5C1	360.0	R	7.0	I H C
TETRACHLOROETHYLENE	00127-18-4		4		C2C14	40000.0	T	1.2	D M U H
PYRENE	00129-00-0	13049829-2	4		C16H10	---		2.0E-02	A H H R
DIMETHYL PHTHALATE	00131-11-3		4		C10H10O4	1200.0	T	12.0	T H
DIBENZOFURANS	00132-64-9		4		C12H8O	---		3.0E-08	* H H

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
CAPTAN	00133-06-2		4		C9H8C13NO2S	1200.0	T	12.0	T H
CHLORAMBEN	00133-90-4		1		C7H5C12NO2	---		1.0E-01	d H
ETHYL ACRYLATE	00140-88-5		4		C5H8O2	4800.0	T	48.0	T HB
SODIUM CYANIDE	00143-33-9	00057-12-5	1	CN	CNNa	380.0	s	22.0	T H HC RRQQ
POTASSIUM CYANIDE	00151-50-8	00057-12-5	1	CN	CNK	380.0	s	30.0	T H HC RRQQ
ETHYLENEIMINE	00151-56-4		4		C2H5N	88.0	T	2.1	T H H
CALCIUM CYANAMIDE	00156-62-7		1		CH2N2Ca	120.0	T	1.2	T H
CHRYSENE	00218-01-9	13049829-2	4		C18H12	---		2.0E-02	A H H R
HYDRAZINE	00302-01-2		4		H4N2	1.3	T	2.0E-04	E H U H C
LINDANE, ALPHA-	00319-84-6	00058-89-9	4		C6H6C16	120.0	A	6.0E-04	A M U H RR
LINDANE, BETA-	00319-85-7	00058-89-9	4		C6H6C16	120.0	A	2.0E-03	E M U H R
DIAZOMETHANE	00334-88-3		4		CH2N2	81.0	T	8.1E-01	T M H
NICKEL ACETATE	00373-02-4	07440-02-0	4	Ni	NiC4H8O4	15.0	P	1.2E-02	H H U H RRQQ
CARBONYL SULFIDE	00463-58-1		6		COS	---		1.0E-01	d H
SILVER CYANIDE	00506-64-9		1		CAgN	380.0	s	50.0	S H H R Q
CHLOROBENZILATE	00510-15-6		4		C16H14C12O3	---		1.0E-01	d H
COBALT CARBONATE	00513-79-1	07440-48-4	1	Co	CH2O3Co	9.8	T	9.8E-02	T H RRQQ
CHLOROACETOPHENONE,2	00532-27-4		4		C8H7ClO	76.0	T	3.0E-02	E M H
DINITRO-O-CRESOL	00534-52-1		4		C7H6N2O5	48.0	T	4.8E-01	T H
ISO-OCTANE	00540-84-1	ALKANES***	4		C8H18	83000.0	A	830.0	A M H RR
BARIUM CYANIDE	00542-62-1	07440-39-3	1	Ba	C2BaN2	380.0	s	6.9E-01	E H H RRQQ
DICHLOROPROPENE, 1,3	00542-75-6		4		C3H4Cl2	1100.0	T	20.0	I H
CADMIUM CYANIDE	00542-83-6	07440-43-9	1	Cd	CdC2N2	380.0	s	7.3E-04	H H U H RRQQ
CHLOROMETHYL ETH,BIS	00542-88-1		4		C2Cl2H4O	4.7E-01	T	1.6E-05	E H U HA
COPPER CYANIDE	00544-92-3		1		CCuN	380.0	s	41.0	T H H RRQQ
GOLD POTASSIUM CYAN	00554-07-4	00057-12-5	4	C2N2	C2AuKN2	2800.0	T	66.0	T H H RRQQ
NICKEL CYANIDE	00557-19-7	Ni*INORG**	1	Ni	C2N2Ni	380.0	s	7.5E-03	H H U H RRQQ
ZINC CYANIDE	00557-21-1		6		C2N2Zn	1100.0	T	27.0	T H H RRQQ
TOLUENE24DIISOCYANAT	00584-84-9		4		C9H6N2O2	3.5	R	6.2E-02	D H U H
DIPHENYL MERCURY	00587-85-9	Hg*ALKYL**	4	Hg	C12H10Hg	1.8	T	4.2E-02	T H H RRQQ
POTASSIUM CYANATE	00590-28-3	00460-19-5	4		CNHOK	5000.0	A	50.0	A M H RR
CALCIUM CYANIDE	00592-01-8		1		C2CaN2	380.0	s	50.0	S H H R Q
VINYL BROMIDE	00593-60-2		4		C2H3Br	2200.0	T	3.0E-02	E H U HB
LEAD CARBONATE	00598-63-0	07439-92-1	1	Pb	CH2O3Pb	15.0	T	9.7E-01	s H RRQQ
TRIPHENYL ARSINE	00603-32-7	As*ORGANIC	4	As	C18H15As	---		9.4E-04	E H U H R Q
ETHANOL,2-(PHENYLMET	00622-08-2		4		C9H12O2	---		1.0E-01	d H
METHYL ISOCYANATE	00624-83-9		4		C2H3NO	4.7	T	1.1E-01	T H H
SELENOUREA	00630-10-4	07782-49-2	1	Se	CH4N2Se	74.0	T	7.4E-01	T H RRQQ
OXOPHENYL ARSINE	00637-03-6	As*ORGANIC	4	As	C6H5AsO	---		5.2E-04	E H U H R Q
HEXAMETHYLPHOSPHORAM	00680-31-9		4		C6H18N3OP	---		1.0E-01	d M HB
NITROSO-N-METHYLUREA	00684-93-5		4		C2H5N3O2	---		1.0E-01	d M H
PHENYL DICHLOROARSIN	00696-28-6	As*ORGANIC	4	As	C6H5AsCl2	---		6.8E-04	E H U H R Q
HEXAMETHYLENE DIISOC	00822-06-0		4		C8H12N2O2	3.4	T	1.0E-02	E H H
SODIUM ISOCYANATE	00917-61-3	00460-19-5	4		CNHONa	5000.0	A	50.0	A M H RR
PROPANE SULTONE	01120-71-4		4		C3H6O3S	---		1.0E-01	d M HB
TRIPHENYL As OXIDE	01153-05-5	As*ORGANIC	4	As	C18H15AsO	---		9.9E-04	E H U H R Q

Date Created: 10-06-95

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345
BUTYL CHROMATE, TERT	01189-85-1		4	CrO3	C8H18CrO4	4.4E-01	R	8.9E-05	H H U H RRQQ
GALLIUM ARSENIDE	01303-00-0	07440-38-2	1	As	GaAs	3.9E-01	R	4.4E-04	E H U H C RRQQ
ARSENIC PENTOXIDE	01303-28-2	07440-38-2	1	As2	As2O5	3.1E-01	R	3.5E-04	E H U H RRQQ
BERYLLIUM OXIDE	01304-56-9	07440-41-7	1	Be	BeO	1.4E-01	R	1.1E-03	E H U H RRQQ
CADMIUM OXIDE	01306-19-0	07440-43-9	1	Cd	CdO	2.3E-01	T	5.7E-04	H H U H RRQQ
CADMIUM SULFIDE	01306-23-6	07440-43-9	1	Cd	CdS	2.6E-01	T	6.4E-04	H H U H RRQQ
CADMIUM SELENIDE	01306-24-7	07440-43-9	1	Cd	CdSe	3.4E-01	T	8.5E-04	H H U H RRQQ
COBALT OXIDE	01307-96-6	07440-48-4	1		CoO	4.8	A	4.8E-02	A M H RR
COBALT OXIDE(Co 304)	01308-06-1	07440-48-4	1	Co3	Co3O4	6.5	T	6.5E-02	T H RRQQ
ZINC CHROMATES	01308-13-0	07440-47-3	1	Cr	CrH2O4Zn	3.5E-01	R	7.1E-05	H H U H RRQQ
CHROMIUM HYDROXIDE	01308-14-1	16065-83-1	1	Cr	CrH3O3	240.0	T	2.0E-01	H H RRQQ
CHROMIUM OXIDE	01308-38-9	16065-83-1	1	Cr2	Cr2O3	170.0	T	1.5E-01	H M H RRQQ

LEAD OXIDE	01309-60-0	07439-92-1	1	Pb	PbO2	14.0	T	8.7E-01	s	H	RRQQ
ANTIMONY TRIOXIDE	01309-64-4		1	Sb2	Sb203	140.0	T	1.4	T M	HB	QQ
MANGANESE OXIDE	01313-13-9	07439-96-5	1	Mn	Mn023	370.0	T	3.8E-01	I	H	RRQQ
NICKEL OXIDE	01313-99-1	Ni*INORG**	1	Ni	NiO	1.9	R	5.1E-03	H H U	H	RRQQ
NICKEL OXIDE	01314-06-3	Ni*INORG**	1	Ni2	N1203	2.1	R	5.6E-03	H H U	H	RRQQ
LEAD TETROXIDE	01314-41-6	07439-92-1	1	Pb3	Pb304	13.0	T	8.3E-01	s	H	RRQQ
MANGANESE OXIDE	01317-34-6	07439-96-5	1	Mn2	Mn203	68.0	T	7.2E-02	I	H	RRQQ
MANGANESE TETROXIDE	01317-35-7	07439-96-5	1	Mn3	Mn304	66.0	T	6.9E-02	I	H	RRQQ
LEAD OXIDE	01317-36-8	07439-92-1	1	Pb	PbO	13.0	T	8.1E-01	s	H	RRQQ
COBALT SULFIDE	01317-42-6	07440-48-4	1	Co	CoS	7.4	T	7.4E-02	T M	H	RRQQ
BASIC LEAD CARBONATE	01319-46-6	07439-92-1	1	Pb3	C2H208Pb3	15.0	T	9.4E-01	s	H	RRQQ
CRESOL	01319-77-3		4		C7H80	2400.0	R	24.0	R M	H	
ARSENIC ACID	01327-52-2	07440-38-2	4	As	AsH304	3.8E-01	R	4.4E-04	E H U	H	RRQQ
ARSENIC TRIOXIDE	01327-53-3	07440-38-2	1	As2	As203	2.6E-01	R	3.0E-04	E H U	H	RRQQ
ZINC CHROMITE	01328-67-2	07440-47-3	1	Cr	CrH204Zn	3.5E-01	R	7.1E-05	H H U	H	RRQQ
XYLENE,M,O&P MIXT.	01330-20-7		4		C8H10	100000.0	T	300.0	I M	H	
ASBESTOS	01332-21-4		1		**********	---		3.0E-08	* H	HAI	
CHROMIUM OXIDE	01333-82-0	07440-47-3	1	Cr	Cr03	1.9E-01	R	3.8E-05	H H U	H	RRQQ
LEAD OXIDE	01335-25-7	07439-92-1	1	Pb	PbO	13.0	T	8.1E-01	s	H	RRQQ
LEAD ACETATE	01335-32-6		1		C4H1008Pb3	---		1.0E-01	d M	H	
PCB	01336-36-3	11097-69-1	4		**********	1.0E-01	R	4.5E-04	E H U	H C	
MERCURY SULFIDE	01344-48-5	07439-97-6	1	Hg	HgS	6.9	T	3.5E-01	E	H	RRQQ
ANTIMONY TRISULFIDE	01345-04-6	07440-36-0	1	Sb2	S3Sb2	170.0	T	1.7	T	H	RRQQ
CADMIUMMERCURYSULFID	01345-09-1	07440-43-9	4	Cd	CdHgS	6.1E-01	T	1.5E-03	H H U	H	RRQQ
COBALT ALUMINATE	01345-16-0	07440-48-4	1	Co	A12Co04	14.0	T	1.4E-01	T	H	RRQQ
TRIFLURALIN	01582-09-8		4		C13H16F3N204	---		1.0E-01	d M	H	
METHYLTERTBUTYLETHER	01634-04-4		4		C5H120	34000.0	T	50.0	E M	H	
ARSENOZO III	01668-00-4	As*ORGANIC	1	As2	C22H18As2N4014S	---		1.1E-03	E H U	H	R Q
TOTAL TCDD	01745-01-7	01746-01-6	4		**********	---		3.0E-08	A H U	H	R
TCDDIOXIN, 2,3,7,8-	01746-01-6		4		C12H4C1402	---		3.0E-08	E H U	H	
CADMIUM STEARATE	02223-93-0	07440-43-9	4	Cd2	Cd2C36H7204	7.1E-01	T	1.8E-03	H H U	H	RRQQ
ETHYL MERCURIC PHOSP	02235-25-8	Hg*ALKYL**	1	Hg	C2H7Hg04P	1.6	T	3.9E-02	T H	H	RRQQ
CARBONIC ACID Ni SLT	03333-67-3	07440-02-0	1	Ni	CH302Ni	9.0	P	7.2E-03	H H U	H	RRQQ
NICKEL DIACETATE TET	06018-89-9	07440-02-0	1	Ni	NiC4H1608	21.0	P	1.7E-02	H H U	H	RRQQ
PROPYLENE GLYCOL DIN	06423-43-4		4		C3H6N206	81.0	T	8.1E-01	T	H	
LEAD STEARATE SALT	07428-48-0	07439-92-1	1	Pb	C18H3602Pb	28.0	T	1.8	s	H	RRQQ
LEAD	07439-92-1		1	Pb	Pb	12.0	T	7.5E-01	s	H	
MANGANESE	07439-96-5		1	Mn	Mn	48.0	T	5.0E-02	I M	HI	
MERCURY	07439-97-6		1	Hg	Hg	6.0	T	3.0E-01	E M	HK	
NICKEL	07440-02-0		1	Ni	Ni	5.0	P	4.0E-03	H H U	HAI	
ANTIMONY	07440-36-0		1	Sb	Sb	120.0	T	1.2	T M	H	

Date Created: 10-06-95

HAPs IDENTIFIED BY 1990 CAAA (NUMERICAL Sort by CAS Number)

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345
ARSENIC	07440-38-2		1	As	As	2.0E-01	R	2.3E-04	E H U HAIC
BERYLLIUM	07440-41-7		1	Be	Be	5.0E-02	R	4.0E-04	E H U HB C
CADMIUM	07440-43-9		1	Cd	Cd	2.0E-01	T	5.0E-04	H H U HBK
CHROMIUM	07440-47-3		1	Cr	Cr	1.0E-01	R	2.0E-05	H H U HAK
COBALT	07440-48-4		1	Co	Co	4.8	T	4.8E-02	T M H
LEAD PHOSPHATE SALT	07446-27-7	07439-92-1	1	Pb2	H304P3Pb2	17.0	T	1.0	s H RRQQ
MERCURY CHLORIDE	07487-94-7	07439-97-6	1	Hg	HgC12	8.1	T	4.1E-01	E H RRQQ
SELENIUM SULFIDE	07488-56-4	07782-49-2	1	Se	SeS2	86.0	T	8.6E-01	T M H RRQQ
CADMIUM IODIDE	07490-80-9	07440-43-9	1	Cd	CdI2	6.5E-01	T	1.6E-03	H H U H RRQQ
TITANIUM TETRACHLOR.	07550-45-0		1		C14T1	---		1.0E-01	d H
SODIUM ARSENATE	07631-89-2	07440-38-2	1	As	AsH304Na	4.4E-01	R	5.1E-04	E H U H RRQQ
LEAD ARSENATE	07645-25-2	07440-38-2	1	As	AsH304Pb	9.3E-01	R	1.1E-03	E H U H RRQQ
COBALT CHLORINE	07646-79-9	07440-48-4	1	Co	C12Co	10.0	T	1.0E-01	T H RRQQ
HYDROGEN CHLORIDE	07647-01-0		6		C1H	150.0	E	20.0	E L HC
HYDROGEN FLUORIDE	07664-39-3		6	F	FH	7.5	s	4.2E-01	s M HC RRQQ
NICKEL CHLORIDE	07718-54-9	Ni*INORG**	1	Ni	NiC12	3.3	R	8.8E-03	H H U H RRQQ
POTASSIUM PERMANGANA	07722-64-7	07439-96-5	1		HMn04K	48.0	A	34.0	D M H R

PHOSPHORUS (YELLOW)	07723-14-0		1		P4	24.0	T	2.4E-01	T	M		H		
CHROMIC (VI) ACID	07738-94-5	07440-47-3	1	Cr	CrH2O4	2.3E-01	R	4.5E-05	H	H	U	H		RRQQ
LEAD CHLORIDE	07758-95-4	07439-92-1	1	Pb	Cl2Pb	16.0	T	1.0	s			H		RRQQ
LEAD CHROMATE	07758-97-6	07440-47-3	1	Cr	PbCrO4	6.2E-01	R	1.2E-04	H	H	U	H	B	RRQQ
MERCURY IODINE	07774-29-0	07439-97-6	1	Hg	HgI2	13.0	T	6.8E-01	E			H		RRQQ
CHROMIC ACID,Na SALT	07775-11-3	07440-47-3	1	Cr	CrH2O4Na2	3.2E-01	R	6.3E-05	H	H	U	H		RRQQ
CALCIUM ARSENATE	07778-44-1	07440-38-2	1	As2	Ca3As2H6O8	5.4E-01	R	6.2E-04	E	H	U	H		RRQQ
POTASSIUM DICHROMAT	07778-50-9	07440-47-3	1	Cr2	Cr2H2O7K2	2.8E-01	R	5.7E-05	H	H	U	H		RRQQ
SELENIUM	07782-49-2		1	Se	Se	48.0	T	4.8E-01	T	M		H		
CHLORINE	07782-50-5		6		Cl2	350.0	R	3.5	R	M		H		
SELENIOUS ACID	07783-00-8		1		H2O3Se	---		11.0	o			H		
HYDROGEN SELENIDE	07783-07-5		1	Se	H2Se	39.0	T	3.9E-01	T			H		QQ
SELENIUM HEXAFLUORID	07783-79-1		1	Se	SeF6	12.0	s	6.8E-01	s			H		RRQQ
ARSENOUS TRICHLORIDE	07784-34-1	07440-38-2	1	As	AsCl3	4.8E-01	R	5.6E-04	E	H	U	H		RRQQ
ARSENOUS TRIFLUORIDE	07784-35-2	07440-38-2	6	As	AsF3	3.5E-01	R	4.1E-04	E	H	U	H		RRQQ
PENTAFLUORO-ARSORANE	07784-36-3	07440-38-2	6	As	AsF5	4.5E-01	R	5.2E-04	E	H	U	H		RRQQ
LEAD ARSENATE	07784-40-9		1		Pb3As2O8	2.4	R	2.8E-03	E	H	U	H		RRQQ
ARSINE	07784-42-1		6		AsH3	2.0E-01	R	2.4E-04	E	H	U	H	C	
SODIUM ARSENITE	07784-46-5	07440-38-2	1	As	AsHO2Na	3.5E-01	R	4.0E-04	E	H	U	H		RRQQ
MANGANESE SULFATE	07785-87-7	07439-96-5	1	Mn	H2O4SMn	130.0	T	1.4E-01	I			H		RRQQ
NICKEL (+2) SULFATE	07786-81-4	Ni*INORG**	6	Ni	NiH2O4S	4.0	R	1.1E-02	H	H	U	H		RRQQ
BERYLLIUM FLUORIDE	07787-49-7	07440-41-7	1	Be	BeF2	2.6E-01	R	2.1E-03	E	H	U	H		RRQQ
CHROMYL FLUORIDE	07788-96-7	07440-47-3	1	Cr	CrF2O2	2.3E-01	R	4.7E-05	H	H	U	H		RRQQ
POTASSIUM CHROMATE	07789-00-6	07440-47-3	1	Cr	CrH2O4K2	3.8E-01	R	7.5E-05	H	H	U	H		RRQQ
STRONTIUM CHROMATE	07789-06-2	07440-47-3	1	Cr	CrH2O4Sr	4.0E-01	R	7.9E-05	H	H	U	H	B	RRQQ
CHROMIC ACID, DIAMMO	07789-09-5	07440-47-3	1	Cr2	H8Cr2O7N2	2.4E-01	R	4.8E-05	H	H	U	H		RRQQ
CHROMIC ACID, DISODI	07789-12-0	07440-47-3	6	Cr2	H8Cr2O7Na2	2.6E-01	R	5.2E-05	H	H	U	H		RRQQ
CADMIUM CHLORIDE HYD	07790-78-5	07440-43-9	1	Cd	CdCl2	3.3E-01	T	8.2E-04	H	H	U	H		RRQQ
CADMIUM IODIDE	07790-80-9	07440-43-9	1	Cd	CdI2	6.5E-01	T	1.6E-03	H	H	U	H		RRQQ
SULFURIC ACI,CADMIUM	07790-84-3	07440-43-9	6	Cd	CdH2SO4	3.7E-01	T	9.4E-04	H	H	U	H		RRQQ
PHOSPHINE	07803-51-2		6		PH3	100.0	T	3.0E-02	I	M		H		
STIBINE	07803-52-3		1		SbH3	120.0	T	1.2	T			H		
CHLORINATED CAMPHENE	08001-35-2		4		C10H10Cl8	50.0	T	1.2	T	H		H		
GASOLINE	08006-61-9		4		**********	210000.0	T	2100.0	T			H		
SOLVASOL	08042-52-2		4		**********	---		1.0E-01	d			H		
MANGANESE ROSINATE	09008-34-8		1		**********	---		1.0E-01	d			H		

Date Created: 10-06-95

HAPs IDENTIFIED BY 1990 CAAA (NUMERICAL Sort by CAS Number)

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W	T	123456789012345
CHROMIUM CHLORIDE	10025-73-7	16065-83-1	1	Cr	Cl3Cr	360.0	T	3.0E-01	H		H RRQQ
ANTIMONY TRICHLORIDE	10025-91-9	07440-36-0	1	Sb	Cl3Sb	220.0	T	2.2	T		H RRQQ
SELENIUM CHLORIDE	10026-03-6	07782-49-2	1	Se	SeCl4	130.0	T	1.3	T		H RRQQ
COBALT TRIFLUORIDE	10026-18-3	07440-48-4	1	Co	CoF3	9.4	T	9.4E-02	T		H RRQQ
SODIUM CHROMATE(VI)	10034-82-9	07440-47-3	1	Cr	CrH10O8Na2	4.5E-01	R	9.1E-05	H	H U H	RRQQ
MERCURY NITRATE	10045-94-0	07439-97-6	1	Hg	HgH2N2O6	9.7	T	4.9E-01	E		H RRQQ
CHROMIUM CHLORIDE	10060-12-5	16065-83-1	1	Cr	CrCl3	360.0	T	3.0E-01	H		H RRQQ
NITRIC ACID,LEADSALT	10099-74-8	07439-92-1	6	Pb	HNO3Pb	16.0	T	9.8E-01	s		H RRQQ
CHROMIUM SULFATE	10101-53-8	16065-83-1	1	Cr	CrH2O4S	340.0	T	2.9E-01	H		H RRQQ
NICKEL SULFATE.6H2O	10101-97-0	Ni*INORG**	1	Ni	NiH14O10S	6.8	R	1.8E-02	H	H U H	RRQQ
CADMIUM CHLORIDE	10108-64-2	07440-43-9	1	Cd	CdCl2	3.3E-01	T	8.2E-04	H	H U H	RRQQ
CADMIUM SULFATE	10124-36-4	07440-43-9	1	Cd	CdH2O4S	3.7E-01	T	9.4E-04	H	H U H	RRQQ
COBALT SULFATE	10124-43-3	07440-48-4	6	Co	CoH2O4S	13.0	T	1.3E-01	T		H RRQQ
POTASSIUM ARSENITE	10124-50-2	07440-38-2	1	As	AsH3O3K	4.4E-01	R	5.1E-04	E	H U H	RRQQ
MANGANESE PHOSPHATE	10124-54-6	07439-96-5	1	Mn	H3O4PMn	130.0	T	1.4E-01	I		H RRQQ
SULF ACID,Cr,K SALT	10141-00-1	16065-83-1	1	Cr	CrH2SO4K	380.0	s	3.6E-01	H		H RRQQ
LEAD MOLYBDATE	10190-55-3	07439-92-1	1	Pb	MoO4Pb	21.0	T	1.3	s		H RRQQ
COBALT CARBONYL	10210-68-1	07440-48-4	1	Co2	C8Co2O8	14.0	T	1.4E-01	T		H RRQQ
BARIUM CHROMATE	10294-40-3	07440-47-3	1	Cr	BaCrH2O4	4.9E-01	R	9.8E-05	H	H U H	RRQQ
CADMIUM NITRATE	10325-94-7	07440-43-9	1	Cd	CdH2N2O6	4.2E-01	T	1.1E-03	H	H U H	RRQQ
MANGANESE NITRATE	10377-66-9	07439-96-5	1	Mn	HNO3Mn	100.0	T	1.1E-01	I		H RRQQ
NICKEL PHOSPHATE	10381-36-9	Ni*INORG**	1	Ni3	Ni3H6O8P2	3.2	R	8.5E-03	H	H U H	RRQQ

SODIUM DICHROMATE	10588-01-9	07440-47-3	1	Cr2	Cr2H2O7Na2	2.5E-01	R	5.1E-05	H H U H	RRQQ
ZINC CHROMATE	11103-86-9	07440-47-3	1	Cr2	Cr2HO9Zn2K	4.0E-01	R	8.1E-05	H H U HA	RRQQ
CHROMIC ACID	11115-74-5	07440-47-3	1	Cr	CrH2O4	2.3E-01	R	4.5E-05	H H U H	RRQQ
LEAD SILICATE	11120-22-2	07439-92-1	1	Pb3	Pb3O3S1O4	15.0	T	9.5E-01	s H	RRQQ
CROCIDOLITE	12001-28-4		1		**********	---		3.0E-08	* H HAI	
CHRYSOTILE	12001-29-5		1		**********	---		3.0E-08	* H HAI	
MERCURY "NUCLEATE"	12002-19-6		1		**********	---		1.0E-01	d H	
NICKEL BORIDE	12007-02-2	Ni*INORG**	1	Ni3	Ni3B	1.6	R	4.2E-03	H H U H	RRQQ
CHROMIUM DIOXIDE	12018-01-8	16065-83-1	1	Cr	CrO2	190.0	T	1.6E-01	H H	RRQQ
CHROMIUM ZINC OXIDE	12018-19-8	16065-83-1	1	Cr	CrO2Zn	340.0	T	2.9E-01	H H	RRQQ
NICKEL SULFIDE NI3S2	12035-72-2	Ni*INORG**	1	Ni3	Ni3S2	2.0	R	5.5E-03	H H U H	RRQQ
THALLIUM SELENITE	12039-52-0	07440-28-0	1	Tl	SeTl	33.0	T	3.3E-01	T M H	RRQQ
LEAD TITANIUM OXIDE	12060-00-3	07439-92-1	1	Pb	PbTiO3	17.0	T	1.1	s H	RRQQ
LEAD ZIRCONIUM OXIDE	12060-01-4	07439-92-1	1	Pb	PbZrO3	20.0	T	1.3	s H	RRQQ
MANGANESECYCLOPENTAD	12079-65-1		4	Mn	C8H5MnO3	88.0	T	8.8E-01	T H	QQ
METHYLCYCLOPENTADIEN	12108-13-3		4	Mn	C9H8Mn	150.0	T	1.5	T H	QQ
AMOSITE	12172-73-5		1		**********	---		3.0E-08	* H HAI	
LEAD OXIDE SULFATE	12202-17-4	07439-92-1	1	Pb	PbO3SO4	20.0	T	1.3	s H	RRQQ
CADMIUM ZINC SULFATE	12442-27-2	07440-43-9	1	Cd	CdSZn	3.7E-01	T	9.3E-04	H H U H	RRQQ
NICKEL HYDROXIDE	12504-48-7	Ni*INORG**	1	Ni	H2N1O2	2.4	R	6.3E-03	H H U H	RRQQ
LEAD TITANATE ZIRCON	12626-81-2		1		**********	---		1.0E-01	d H	
NICKEL TITANATE	12653-76-8	Ni*INORG**	1	Ni	NiO3Ti	4.0	R	1.1E-02	H H U H	RRQQ
NICKEL CARBIDE	12710-36-0	Ni*INORG**	1	Ni	NiC2	2.1	R	5.6E-03	H H U H	RRQQ
PAH(s)	13049829-2		4		**********	---		2.0E-02	H H H	
NICKEL NITRATE	13138-45-9	Ni*INORG**	1	Ni	NiH2N2O6	4.7	R	1.3E-02	H H U H	RRQQ
NICKEL BROMIDE	13462-88-9	Ni*INORG**	1	Ni	NiBr2	5.6	R	1.5E-02	H H U H	RRQQ
NICKEL CARBONYL	13463-39-3	Ni*INORG**	6	Ni	NiC4O4	2.0	R	1.2E-02	H H U H	R QQ
BE ETHYL DIAM CL	13497-34-2	07440-41-7	1	Be	C4H16BeN4C12	1.1	R	8.9E-03	E H U H	RRQQ
BERYLLIUM SULFATE	13510-49-1	07440-41-7	1	Be	BeSO4	5.8E-01	R	4.7E-03	E H U H	RRQQ
ZINC CHROMATE	13530-65-9	07440-47-3	1	Cr	CrH2O4Zn	3.5E-01	R	7.1E-05	H H U HA	RRQQ
CHROMIC ACID	13530-68-2	07440-47-3	6	Cr2	Cr2H2O7	2.1E-01	R	4.2E-05	H H U H	RRQQ

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	codes W T 123456789012345	codes 111111
SODIUM FERROCYANIDE	13601-19-9	00057-12-5	1	C6N6	C6FeN6Na4	380.0	s	23.0	T H H	RRQQ
NICKEL SULFAMATE	13710-89-3	Ni*INORG**	1	Ni	NiH6N2O6S2	6.5	R	1.7E-02	H H U H	RRQQ
CALCIUM CHROMATE	13765-19-0	07440-47-3	1	Cr	CaCrH2O4	3.0E-01	R	6.1E-05	H H U HB	RRQQ
NICKEL SULFAMIDE	13770-89-3	Ni*INORG**	1	Ni	H3NO3SNi	4.0	R	1.1E-02	H H U H	RRQQ
LEAD FLUOROBORATE	13814-96-5	07439-92-1	1	Pb	BF4Pb	17.0	T	1.1	s H	RRQQ
CHROMATE	13907-45-4	07440-47-3	1	Cr	CrO4	2.2E-01	R	4.5E-05	H H U H	RRQQ
NITROGEN, ISOTOPE-13	13981-22-1		6		**********	---		1.0E-01	d H	
OXYGEN, ISOTOPE-15	13982-43-9		6		**********	---		1.0E-01	d H	
SULFOMIC ACID	14017-41-5	07440-48-4	6	Co2	Co2H3NO3S	8.7	T	8.7E-02	T H	RRQQ
SODIUM FERRICYANIDE	14217-21-1	00057-12-5	1	C6N6	C6FeN6Na3	380.0	s	21.0	T H H	RRQQ
POTASSIUM NICKELCYN	14220-17-8	Ni*INORG**	1	Ni	C4N4NiK2	6.2	R	1.6E-02	H H U H	RRQQ
CD DIETHDITHIOCARB	14239-68-0	07440-43-9	1	Cd	C10H20CdN2S4	7.3E-01	T	1.8E-03	H H U H	RRQQ
POTASSIUMGOLDCYANIDE	14263-59-3	00057-12-5	1	CN	C4N4AuK	380.0	s	50.0	S H H	RRQQ
CHROMIC ACID, DILITH	14307-35-8	07440-47-3	1	Cr	H2CrO4Li2	2.5E-01	R	5.1E-05	H H U H	RRQQ
CARBON, ISOTOPE-11	14333-33-6		6		C	---		1.0E-01	d H	
SILICA - QUARTZ	14808-60-7		1		SiO2	24.0	T	2.4E-01	T HI	
CHROMYL CHLORIDE	14977-61-8	07440-47-3	1	Cr	CrO2C12	3.0E-01	R	6.0E-05	H H U H	RRQQ
SODIUM ZINC CYANIDE	15333-24-1	00057-12-5	1	C4N4	C4N4ZnNa2	380.0	s	25.0	T H H	RRQQ
CHROMIUM III	16065-83-1		1	Cr	Cr	120.0	T	1.0E-01	H M H	
COBALT HYDROCARBONYL	16842-03-8	07440-48-4	4	Co	HCoC4O4	14.0	T	1.4E-01	T H	RRQQ
LEAD CHROMATE OXIDE	18454-12-1	07440-47-3	1	Cr	CrH4O5Pb2	1.1	R	2.1E-04	H H U H	RRQQ
TRIOXOBIS CHROMIUM	20492-50-6	16065-83-1	1	Cr	C10H10CrN2O3	380.0	s	5.0E-01	H H	RRQQ
MERCURY	22967-92-6	Hg*ALKYL**	4	Hg	Hg	1.0	A	2.4E-02	A H H	RR
LEAD CARBONATE	25510-11-6	07439-92-1	1	Pb	CH2O3Pb	15.0	T	9.7E-01	s H	RRQQ
BENZ METHBIS ISOCYAN	26447-40-5	00101-68-8	4		C15H10N2O2	5.0	A	2.0E-02	A H H	RR
TOLUENE DIISOCYANATE	26471-62-5	00584-84-9	4		C9H6N2O2	3.5	A	8.3E-02	R H H	R
GOLD CYANIDE	37187-64-7	00057-12-5	1	CN	CNAu	380.0	s	50.0	S H H	RRQQ

ZINC CHROMATE	37300-23-5	07440-47-3	1	Cr4	Cr4H6Zn4K2O20	4.2E-01	R	8.4E-05	H H U HA	RRQQ
NICKEL,BIS(1-(4-DIME	38465-55-3	07440-02-0	6	Ni	NiC32H30N2S4	54.0	P	4.3E-02	H H U H	RRQQ
BARIUM LEAD SULFATE	42579-89-5	07439-92-1	1	Pb	BaH2O4SPb	25.0	T	1.6	s H	RRQQ
CHROMIUM ZINC OXIDE	50922-29-7	07440-47-3	1	Cr2	Cr2O4Zn	2.2E-01	R	4.5E-05	H H U H	RRQQ
TCDFURAN, 2,3,7,8-	51207-31-9		4		C12H4Cl4O	---		3.0E-08	* H H	
BASIC LEAD ACETATE	51404-69-4		1		**********	---		1.0E-01	d H	
NICKEL AZO YELLOW	51931-46-5	07440-02-0	4	Ni	C30H18Cl2N6NiO4	56.0	P	4.5E-02	H H U H	RRQQ
COBALT COMPLEX	53108-50-2		1		C6H6CoNO6H	---		1.0E-01	d H	
Cd CYCLOHEXANE BUTY	55700-14-6	07440-43-9	4	Cd	C10H18O2Cd	5.0E-01	T	1.3E-03	H H U H	RRQQ
DIBASIC LEADSTEARATE	56189-09-4		1		C36H70O6Pb2	---		1.0E-01	d H	
DIETHYLEN GLYCOL ADP	58984-19-3		4		**********	---		1.0E-01	d H	
COBALT NAPTHA	61789-51-3		6		**********	---		1.0E-01	d H	
LEAD NAPHTHENATE	61790-14-5		6		**********	---		1.0E-01	d H	
CHROME TANNED COWHID	68131-98-6	07440-47-3	1	Cr	**********	1.0E-01	A	2.0E-05	A H U H	RR
LEAD,BENZENEDICARBOX	69011-06-9		4		C8H4O6Pb3	---		1.0E-01	d H	
LEAD ALLOY,SN ,DROSS	69011-60-5		1		**********	---		1.0E-01	d H	
PHOSPHORIC ACID,RX P	92203-02-6		6		**********	---		1.0E-01	d H	
ARSENIC (ORGANIC)	As*ORGANIC		1	As	As	---		2.3E-04	E H U H	
MERCURY	Hg**ARYL**		1	Hg	Hg	24.0	T	2.4E-01	T H	
MERCURY	Hg*ALKYL**		1	Hg	Hg	2.4	T	2.4E-02	T H	
BERYLLIUM (Be 007)	NY007-04-0	07440-41-7	6	Be	Be	5.0E-02	A	4.0E-04	A H U H	RR
COBALT (Co 57)	NY057-27-0	07440-48-4	6	Co	Co	4.8	A	4.8E-02	A H	RR
COBALT (Co 58)	NY058-27-0	07440-48-4	6	Co	Co	4.8	A	4.8E-02	A H	RR
NICKEL (Ni 059)	NY059-28-0	Ni*INORG**	6	Ni	Ni	1.5	A	4.0E-03	A H U H	RR
COBALT (Co 60)	NY060-27-0	07440-48-4	6	Co	Co	4.8	A	4.8E-02	A H	RR
NICKEL (Ni 063)	NY063-28-0	Ni*INORG**	6	Ni	Ni	1.5	A	4.0E-03	A H U H	RR

Date Created: 10-06-95

HAPs IDENTIFIED BY 1990 CAAA (NUMERICAL Sort by CAS Number)

CHEMICAL NAME	CAS NUMBER	CHEMICAL ASSIGNED TO:	AIRS CODE	AS	EMPIRICAL FORMULA	SGC ug/m3	W	AGC ug/m3	-----codes----- 111111 W T 123456789012345	
NICKEL (Ni 065)	NY065-28-0	Ni*INORG**	6	Ni	Ni	1.5	A	4.0E-03	A H U H	RR
ARSENIC (AS 073)	NY073-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H	RR
ARSENIC (AS 074)	NY074-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H	RR
ARSENIC (AS 076)	NY076-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H	RR
ARSENIC (AS 077)	NY077-33-0	07440-38-2	6	As	As	2.0E-01	A	2.3E-04	A H U H	RR
CADMIUM (CD 109)	NY109-48-0	07440-43-9	6	Cd	Cd	2.0E-01	A	5.0E-04	A H U H	RR
CADMIUM (CD 115)	NY115-48-0	07440-43-9	6	Cd	Cd	2.0E-01	A	5.0E-04	A H U H	RR.
NICKEL (INORGANIC)	Ni*INORG**		1	Ni	Ni	1.5	R	4.0E-03	H H U HAI	

TOXICITY (T):
- (H) HIGH Toxicity Contaminant.
- (M) MODERATE Toxicity Contaminant.
- (L) LOW Toxicity Contaminant.

HOW (W):
- (A) AGC/SGC based upon NYSDEC "Analogy".
- (D) NYSDEC derived AGC/SGC.
- (E) AGC/SGC based upon EPA derivation.
- (H) NYSDOH derived AGC/SGC.
- (I) AGC/SGC based upon HEAST Inhalation RfC (RFC).
- (P) AGC/SGC based upon PROPOSED ACGIH TLV.
- (R) AGC/SGC based upon NIOSH REL.
- (S) AGC/SGC listed is FEDERAL or NYS Standard.
- (T) AGC/SGC based upon ACGIH TLV.
- (d) AGC assigned "de minimis" limit.
- ( ) There is no SGC for this compound.

HOW (W) - Special AGC/SGC Interim Assignments:
- (o) AGC/SGC based upon HEAST Oral RfD (RFD).
- (s) AGC/SGC based upon Equivalent FEDERAL or NYS Standard.
- (u) AGC/SGC based upon HEAST Inhalation Unit Risk Factor.
- (*) AGC assigned special computer HIGH Toxicity "de minimis" limit.

(X) Compound EXEMPT from AG-1 (simple asphyxiant).


```
-----codes-----
        111111
123456789012345:
```

codes, (Position 1):
(U) AGC equivalent to "one in a million risk".

codes, (Position 3):
(H) HAP identified by 1990 CAAA.

codes, (Positions 4 & 5):
(A) ACGIH Human Carcinogen.
(B) ACGIH Suspected Human Carcinogen.
(C) ACGIH Ceiling Limit.
(G) ACGIH Simple Asphxiant. Assign "D" Rating. Computer will assume AGC = 9999999. ug/m3.
(I) Refer to ACGIH Handbook.
(K) Multiple TLVs assigned in ACGIH Handbook.

codes, (Positions 6 & 7):
(C) NIOSH Ceiling Limit.

codes, (Position 8):
(Q) REFERENCED AGC adjusted for elemental assignment.

codes, (Position 9):
(Q) REFERENCED SGC adjusted for elemental assignment.

codes, (Position 10):
(R) AGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 11):
(R) SGC ASSIGNED TO REFERENCED COMPOUND.

codes, (Position 12):
(Q) AGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 13):
(Q) SGC ASSIGNED AS DIFFERENT ELEMENT(s) & ADJUSTED.

codes, (Position 14):
(M) REFERENCED AGC adjusted for MOLECULAR WEIGHTS.

codes, (Position 15):
(M) REFERENCED SGC adjusted for MOLECULAR WEIGHTS.

Appendix D

APPENDIX D

NYSDEC TAGM NO. 4044 -
ACCELERATED REMEDIAL ACTIONS AT
CLASS 2 NON-RCRA REGULATED LANDFILLS

New York State Department of Environmental Conservation

MEMORANDUM

TO: Reg. Haz. Waste Remediation Engineers, Bur. Dir., & Section Chiefs
FROM: Michael J. O'Toole, Jr., Director, Div. of Haz. Waste Remediation
SUBJECT: DIVISION TECHNICAL AND ADMINISTRATIVE GUIDANCE MEMORANDUM: ACCELERATED REMEDIAL ACTIONS AT CLASS 2, NON-RCRA REGULATED LANDFILLS

DATE:

MAR - 9 1992

On January 14, 1992, Deputy Commissioner Sullivan signed the Strategic Plan: Accelerated Remedial Actions which provides guidance concerning Class 2, non-RCRA regulated landfills.

Since this Strategic Plan is an important element in the Division's program, it is also being issued as a Technical and Administrative Guidance Memorandum.

Attachment
cc: E. Sullivan
D. Markell
J. Eckl
R. Davies
R. Dana
C. Goddard
A. Carlson
E. McCandless
P. Counterman
A. Fossa
J. Kelleher
J. Colquhoun
D. Persson
M. Birmingham
D. Johnson
D. Ritter
Regional Directors
Regional Engineers
Regional Solid and Hazardous Waste Engineers
Regional Citizen Participation Specialists

January 14, 1992

STRATEGIC PLAN: ACCELERATED REMEDIAL ACTIONS

Issue: Accelerated Remedial Actions at Class 2, Non-RCRA Regulated Landfills

Priority: High

Responsible Person: Michael J. O'Toole, Jr.

OBJECTIVES:

The Department has adopted a policy favoring permanent remedies whenever feasibile at inactive hazardous waste sites. However, it is often obvious that major mixed waste landfills will not be amenable to complete permanent remedies and that a cap will be called for. In such cases, it may be appropriate to proceed rapidly to the design phase.

To mitigate the major source of contamination posed by Class 2 landfills as early as possible. The Remedial Investigation/Feasibility Study (RI/FS) process for Class 2 sites requires the identification of feasible remedial technologies which are screened and then organized into various remedial alternatives. For source control options at Class 2, non-RCRA regulated landfills, this process may be somewhat simplified and accelerated due to the typical large size and the composition of these landfills. Most Class 2 landfills are composed of substantial quantities of municipal solid waste (MSW) mixed with smaller quantities of hazardous waste (this is not true of pre-RCRA industrial landfills which are not addressed in this guidance). While a complete RI/FS is warranted at these sites to determine the full extent of contamination and any risks posed to human health and/or the environment, certain remedial measures should be evaluated very early in the RI/FS process for possible accelerated implementation based on historic data, early treatability tests, risk assessment or technologically based results with a bias for initiating appropriate remedial actions as early as possible in the remedial process.

STRATEGY:

Identify several remedial measures for Class 2, non-RCRA regulated landfills which would be evaluated, on a site-specific basis, for accelerated implementation. This document describes technical considerations which must be included in this evaluation. It is not intended to describe all remedial design considerations for these remedial actions, but rather to aid in making the decision to proceed with design. If accelerated remedial actions are identified prior to consent order negotiations, these remedial actions should be negotiated into the consent order with the appropriate timeframes for a focused FS or a Departmental analysis of alternatives, opportunity for public input including a public comment period, as appropriate, and Record of Decision.

GUIDANCE:

At some landfills, at least the first phase of RI work may need to be completed to evaluate the following technologies. In many instances, it may be possible to evaluate these technologies at the ver onset of the RI. If any accelerated remedial actions are implemented ithin the context of this document, those actions must be assessed in a focused Feasibility Study or Departmental analysis of alternatives.

I. Source Control Technology #1:

A. Placement of a final cover (capping) in accordance with 6NYCRR Part 360 will be a minimum requirement for all Class 2, non-RCRA regulated landfills unless the variance requirements under Part 360-1.7(c) are met. Since one component of the Part 360 cap is a gas venting system, these emissions must be addressed in the design of that cap.

B. Technical considerations to be evaluated under capping option:

1. RCRA capping requirements will be sufficiently addressed by a properly designed cap which, at a minimum, would meet the Part 360 capping requirements for a typical, non-RCRA regulated landfill. RCRA capping requirements are applicable or relevant to landfills which accept RCRA hazardous waste. Typical Class 2, non-RCRA regulated landfills accepted predominantly municipal/commercial waste along with a lesser amount of RCRA hazardous waste. Therefore, for most Class 2, non-RCRA regulated landfills, a properly designed cap which meets or exceeds the Part 360 capping requirements is appropriate but must consider the appropriateness of RCRA capping requirements. The design engineer must also consider frost penetration and its effect on the low permeability barrier, subsidence of the waste material, and run-off controls to minimize water erosion problems. NOTE: EPA handbook, "Remedial Action at Waste Disposal Sites", Sections 3.1, 3.3, 3.4 and 3.5 should be used as guidance for proper cap design.

2. Any areas or potential areas within the landfill mass (hot spots) which are amenable to on-site treatment or removal and treatment must be addressed prior to capping. Hot spots may be identified by past disposal practices (discrete areas for drum disposal), geophysical testing, soil gas surveys, soil borings/testing, test pits, etc. If hot spots are identified they should be evaluated to determine the feasibility of remediating them.

3. Any on-site or off-site areas (contaminated soils or sediments) which have the potential for consolidation into the main landfill must be addressed prior to

capping. These areas would be identified by geophysical testing, test pits, soil borings, and soil/sediment testing.

4. The entire landfill area must be adequately defined to allow the determination of final grades and elevations. This may be determined by past disposal practices, geophysical testing, test pits, and soil borings.

5. The capping should be phased to allow deposition onto an uncapped area of drilling/trench spoils from monitoring well installation, groundwater recovery well installation, or leachate/groundwater collection trench excavations providing the phasing doesn't prolong the overall capping schedule. This will be influenced by the size of the landfill and the timing and duration of remedial design.

II. Source Control Technology #2:

A. A leachate collection system will be required at most Class 2, non-RCRA regulated landfills. The design and construction of this system must be integrated with the design and construction of the cap.

B. Technical considerations to be evaluated under leachate collection option:

1. The depth of waste and areal extent of waste must be adequately defined to allow determination of final elevations and location of leachate collection system.

2. Any potential for on-site consolidation of wastes which may affect the final location of the leachate collection system must be considered.

3. The pathways for leachate must be adequately defined to aid in total capture.

4. The need for a vertical barrier to minimize the collection of uncontaminated groundwater must be assessed.

5. All reasonable steps should be taken to prevent or control the impacts of leachate on human health.

III. Treatment Technology #1:

A. Treatment of collected leachate to meet discharge standards will be required at all Class 2, non-RCRA regulated landfills which require a leachate collection system. The reason it is

considered separately from the leachate collection system in this guidance is due to the sequencing of events. While the design and construction of leachate collection systems must be integrated with the design and construction of the cap, the selection, design, and construction of a leachate treatment system may need to be done subsequent to cap construction. If a leachate treatment system is needed to coincide with the construction of the leachate collection system, the design and construction of a leachate treatment system should be concurrent with the cap design.

B. Technical considerations to be evaluated under leachate treatment option:

1. The leachate may have to be handled as a hazardous waste or it may be handled as any other non-hazardous, landfill leachate. If chemical analysis of the leachate reveals that there are no hazardous constituents in it which could have leached from or been derived from the known hazardous waste in the landfill and the leachate does not fail any RCRA characteristic tests (ignitable, corrosive, reactive, TCLP) or the leachate can be pretreated on site to those levels, then the leachate may be able to be handled as any other non-hazardous, landfill leachate.

2. The collected leachate should be economically treated in an environmentally sound manner in the short term until the final leachate/groundwater remedy is selected. One possibility would be to use a POTW for treatment if the POTW is willing to accept the leachate and can treat the contaminants contained in the leachate.

3. Leachate treatment options may need to be thoroughly evaluated in a feasibility study. This is perhaps the most important consideration in evaluating whether to proceed with the design of a leachate treatment option prior to completion of the RI/FS. Selection of a treatment technology which has been successful at other sites at the exclusion of other options could result in inefficiency or higher costs due to site-specific conditions and would not properly consider all available treatment technologies.

4. If treatment of contaminated groundwater is a strong possibility, it may make more sense to design one treatment system (after the Record of Decision) for both leachate and groundwater unless a modular leachate treatment system can be constructed such that it is easily expanded to treat groundwater or the leachate/groundwater contaminants and their concentrations are sufficiently different to warrant different treatment technologies.

5. The quantity of leachate requiring treatment must be considered along with available discharge points.

6. Provisions to reinject stabilized sludge from the leachate treatment system back into the landfill should be considered within the applicable regulatory and legal constraints.

IMPLEMENTATION PROCESS:

Source control measures described in this guidance when implemented must follow a clear, documented decision process as described below:

1. Recommendation of any or all of the above accelerated remedial actions will be made based on a careful evaluation of all technical considerations (at a minimum, the technical considerations in this guidance must be addressed).

2. A focused FS or Departmental analysis of alternatives must be performed to evaluate the feasibility of accelerating the construction of a cap/leachate system.

3. Any viable remedial actions which are identified in the focused FS or Departmental analysis of alternatives must be presented for public comment through the normal PRAP/ROD process in accordance with DHWR TAGM 4022 to the fullest extent possible.

The design of the early remedial measures should proceed as soon as possible after the responsiveness summary is mailed. Public participation during design and construction must, at a minimum, meet the requirements of the New York State Inactive Hazardous Waste Site Citizen Participation Plan.

An accelerated remedial action which is documented by a ROD must be tracked as a separate operable unit for that site, not as an IRM. However, the ROD will not be tracked as an RI/FS completion since there would only be a design and construction phase associated with that operable unit.

This Strategic Plan is hereby approved for use by the Division of Hazardous Waste Remediation.

Edward O. Sullivan