

**USARC GFPR
FINAL
RESIDUAL HUMAN HEALTH RISK ASSESSMENT
US Army Reserve Marion Local Training Area
Marion, Ohio
Contract # W911SO-04-F0017**

Submitted to:

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1. **Draft Final Removal Action Completion Report**
Section 3.1.1, page 13, line 31.

The document states:

“This additional sample was collected at the request of an oversight contractor representative...”

For clarification, please identify the organizational name of the oversight contractor.

Response: *The oversight contractor, Mr. Donald Casey, USACE, will be identified in the referenced report section. Mr. Casey was the Army’s designated construction oversight and signatory for the Marion LTA 2007 Non-Time-Critical Removal Action. The sentence will be reworded to state that the sample was collected “at request of Mr. Donald Casey, USACE, US Army construction oversight designee for the 2007 NTCRA.”*

2. **Draft Residual Human Health Risk Assessment**
Section 3.3.2, page 12 lines 5, 7, 9:

The document states:

“LADD / ADD = C x RAF x IS x CF x EF x ED x ET / BW x AT”

“LADD / ADD = C x RAF x ADH x SA x CF x EF x ED x ET / BW x AT”

“LADD / ADD = C x IR x PEF x CF x EF x ED x ET / BW x AT”

The solidus (symbol “/”) in mathematical equations implies “fraction” (division of numerator by denominator) and cannot be used to express “either LADD or ADD”.

Response: *The requested change will be made.*

3. **Draft Residual Human Health Risk Assessment**
Section 5.2, page 22, line 5:

The document states:

“For risk characterization and regulatory purposes, cancer risks of less than 1×10^{-6} are considered *de minimis* and no further action is deemed necessary. Cancer risks that fall in the range of 1×10^{-6} to 1×10^{-4} require regulatory scrutiny, but generally are considered “acceptable.” The acceptable regulatory risk range (1×10^{-6} to 1×10^{-4} or 0.0001% to 0.01% added risk) must also be viewed in terms of the background risk of cancer in the United States from all causes of 1 in 4 or 25%. Thus, if an estimated added cancer risk from a conservative exposure assessment and slope factor was completely accurate and was at the nominal acceptable regulatory risk (*i.e.*, 1×10^{-6}); the lifetime cancer risk incurred by the individual so exposed would increase from 25% to 25.0001%. Another way of looking at this estimate is that if one million people were exposed to a 1×10^{-6} risk over their lifetime, the number of cancers in that group would increase from 250,000 (the expected number) to no more than 250,001”

This seems to be a good discussion; however it does not belong in the section describing methodology of EOA paradigm of cancer risk assessment. Rather, it should be used in the Uncertainty Analysis section in order to put the actual finding of excess cancer risk to individuals

in the context of cancer morbidity in the population. Please move the above paragraph to the Uncertainty Analysis section. Refer to OEPA (2004) DERR guideline.

Also, the issue of magnitude of cancer risk that may be considered “acceptable,” depends upon specific circumstances and varies between regulatory agencies (e.g. OEPA would accept cumulative excess lifetime carcinogenic risk goal of 1E-5 but not 1E-4).

In the sub-sections following the introduction (5.2), the results of quantitative risk assessment should be objectively communicated as numerical values. Obviously, they may be interpreted and compared to the regulatory goals (e.g., OEPA, 2004)

References:

OEPA (2004) Human Health Cumulative Carcinogenic Risk and Non-Carcinogenic Hazard Goals for DERR Remedial Response and Office of Federal Facility Oversight. On line: <http://www.epa.state.oh.us/derr/rules/riskgoal.pdf>

Response: *The requested change will be made. A presentation of this argument will be added to the uncertainty section.*

4. **Draft Residual Human Health Risk Assessment
Section 5.2.5, page 23, line 33:**

The document states:

The potential ELCR for a Reservist exposed to site soil were within the USEPA target risk range of 1×10^{-4} to 1×10^{-6} and below the Ohio EPA target risk of 1×10^{-5} .

This statement implies that cancer risk to all receptors was evaluated. This seems misleading, because several potentially relevant receptors were not considered in this risk assessment, e.g., off-site residents.

Please modify this statement, e.g.; “The potential ELCRs for the evaluated receptors, with the exception of an industrial/commercial worker, were also below the Ohio EPA target risk goal of 1×10^{-5} .

Response: *The statement will be modified as: “With the exception of an industrial/commercial worker, the potential ELCRs for the evaluated receptors (as defined in the Final Marion LTA Residual Human Health Risk Assessment Work Plan) were also below the Ohio EPA target risk goal of 1×10^{-5} . The potential receptors were identified and evaluated in conformance to the approved HHRA Work Plan, which was developed based upon site data and standard US EPA risk assessment guidelines. Site data do not support evaluation of exposure off-site from on-site soils or other media.*

5. **Draft Residual Human Health Risk Assessment
Tables 2-1, 2-2, 3-1, 3-2, 6-1**

This document states:

The central column in the “Region 9 PRGs,” subtitled “1/10 PRG for Non-carcinogens” listed values for many carcinogenic chemicals (e.g., Arsenic, Chromium, Benzene, PAHs, etc).

As stated in the subtitle, according to OEPA-DERR (2004), for toxicity-based screening, the 1/20 PRG value levels should be applied to non-carcinogenic chemicals only (but not to carcinogens).

Please delete 1/10 PRG values in this column for all carcinogenic chemicals (those marked in the Region 9, U.S. EPA's PRG table as "ca"). Leave there, only 1/10 PRG values for non-carcinogenic chemicals (those marked in the Region 9 PRG table as "nc").

Reference:

OEPA-DERR (2004) Use of U.S. EPA Region 9 PRGs as screening Values in Human Health Risk Assessments. Technical Decision Compendium, 28 April 2004. On-line: <http://www.epa.gov.region09/waste/sfund/prg/index.htm>

Response: *The requested change will be made. However, it should be noted that the chemicals have both carcinogenic and non-carcinogenic properties which is why the values remained on the table.*

6. **Draft Residual Human Health Risk Assessment**

Table 4-2

In the column "Chemical", Trichloroethylene is marked with a superscript "d". This suggested that there should be a footnote "d" at the bottom of the table, but there is not.

Either add and explain the footnote "d" at the bottom of the table, or remove the superscript "d" from "Trichloroethylene".

Response: *The requested change will be made. The footnote will be removed.*

7. **Draft Residual Human Health Risk Assessment**

Table 7-1

In the column "Excess Lifetime Cancer Risk" the column subtitle reads: "**Result should be within 10^{-4} to 10^{-6} .**"

Since all the results in this column are less than 10^{-4} (but many are less than 10^{-6} clearly not "within" the stated range) it is not clear why the re-evaluation of the Exposure Unit 3b" was warranted. Without invoking OEPA (2004) cumulative excess lifetime carcinogenic risk goal of 1E-5 (see comment #3 above) this column is misleading.

Either substitute this subtitle with, "... **Result would be less than 10^{-5}** " and add a reference to OEPA (2004), or remove this subtitle altogether.

Reference:

OEPA (2004) Human Health Cumulative Carcinogenic Risk and Non-Carcinogenic Hazard Goals for DERR Remedial Response and Office of Federal Facility Oversight. On-line: <http://www.epa.state.oh.us.derr.rules.riskgoal.pdf>

Response: *The requested change will be made. The subtitle will be removed.*

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APPENDIX A – LTA-18 Laboratory Analytical Report

Acronyms

ADD	Averaged Daily Dose
ALM	Adult Lead Methodology
CalEPA	California Environmental Protection Agency
CDC	Centers for Disease Control and Prevention
CDI	Chronic Daily Intake
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COCs	Contaminants of Concern
CSM	Conceptual Site Model
ELCR	Excess Lifetime Cancer Risk
EPC	Exposure Point Concentration
GAF	Gastrointestinal Absorption Factor
HEAST	Health Effects Assessment Summary Tables
HHRA	Human Health Risk Assessment
HI	Hazard Index
HQ	Hazard Quotient
IRIS	Integrated Risk Information System
KEMRON	KEMRON Environmental Services, Inc.
LADD	Lifetime Average Daily Dose
LOAEL	Lowest Observed Adverse Effect Level
LTA	Local Training Area
MED	Marion Engineering Depot
MFs	Modifying Factors
mg/kg	Milligrams per kilogram
MWH	MWH Americas, Inc.
NCEA	National Center for Environmental Assessment
NOAEL	No Observed Adverse Effect Level
NTCRA	Non-Time-Critical Removal Action
Ohio EPA	Ohio Environmental Protection Agency
PAH	Polynuclear aromatic hydrocarbon
PCs	Permeability Constants
PEF	Particulate Emission Factor
RAGS	Risk Assessment Guidance for Superfund
RDA	Recommended Daily Allowance
RDI	Recommended Daily Intake
RfCs	Reference Concentrations
RfDs	Reference Doses
RGs	Remediation Goals
RME	Reasonable Maximum Exposure
RRC	Regional Readiness Command
SAIC	Science Applications International Corporation
SF	Slope Factor
SI	Site Inspection
SLRA	Screening Level Human Health Risk Assessment
TCE	Trichloroethene
UCL	Upper-Bound Confidence Limit

UFs	Uncertainty Factors
URs	Unit Risks
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Command
USARC	United States Army Reserve Command
USEPA	United States Environmental Protection Agency

1.0 INTRODUCTION

This Human Health Risk Assessment (HHRA) was prepared by KEMRON Environmental Services, Inc. (KEMRON) for the US Army Reserve Marion Local Training Area (LTA) in Marion, Ohio. The HHRA is being performed under KEMRON's USAEC GFPR contract. This HHRA provides an estimate of human health risks associated with the occurrence of residual contamination in site soil at the Marion LTA (the site). The HHRA is an analysis of the potential adverse human health effects that could result from future exposure to inorganic compounds, volatile organic compounds (VOCs), and polycyclic aromatic hydrocarbons (PAH) in the absence of any further action to remove or reduce such residues in site soils. This was accomplished by using the analytical data from environmental sampling performed at the site in combination with reasonable exposure assumptions that take into account the following to estimate the magnitude and sources of potential risk associated with the site:

- type and level of contamination,
- the location of the contamination,
- the current and future use of the property, and
- the surrounding population characteristics.

The risk assessment has been prepared in accordance with the Final Human Health Risk Assessment Work Plan, Marion LTA (17 May, 2007, Rev. 3.0). The risk assessment follows procedures common to both the United States Environmental Protection Agency (USEPA) and the Ohio Environmental Protection Agency (Ohio EPA). The analysis of health risks at the site was based on the information and data collected by the Army throughout its Site Investigation of the Marion LTA, which was conducted in several phases. The scope of the sampling and analytical program was reviewed and found to be acceptable for risk assessment purposes. The evaluation of data in support of this risk assessment was limited to soil. No groundwater impacts have been documented at the site and leaching from soil to groundwater is not a significant concern. As a result, potential impacts to groundwater were not considered in this risk assessment. Ecological risk was evaluated under separate cover and will not be re-addressed in this assessment (KEMRON, 6 November 2006, Rev. 1.0).

This risk assessment has been prepared as part of the evaluation of the Marion LTA under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The US Army is the lead agency for the Marion LTA under CERCLA.

1.1 Site Description and Background

The Marion Local Training Area (LTA) property, located at 2565 Harding Highway East in Marion, Ohio (Figure 1), consists of the southern 127.1 acres of the former Marion Engineer Depot (MED) facility.

The MED facility originally consisted of 653.2 acres of agricultural farmland acquired by the United States War Department between 1942 and 1947. The LTA property is located 52 miles north of Columbus, OH and three miles east of the City of Marion, OH between U.S. Route 23, 30, State Route 98, and Rural Route 176 (Patton Pike) in Caledonia Township, Marion County, at 2565 Harding Highway East. The LTA property is covered by the Marion East Quadrangle of

the USGS Survey 7.5 series topographic maps (Figure 1). The LTA property is owned and operated by the United States Army Reserve (USAR) 88th Regional Readiness Command (RRC) as a local training facility.

The original mission of the MED property was to serve as a reserve depot for engineer supplies and equipment and to repair heavy engineer equipment. The current LTA property also included a pistol firing range that was removed sometime in the early 1960s.

There is no specific historical documentation describing the disposal of hazardous materials or waste at MED, however, past site assessments and investigations have indicated that hazardous materials were handled and/or disposed of at MED. Based on the presence of these materials at MED and the historic use of the entire Marion parcel, site investigations at the Marion LTA parcel have assumed that a variety of hazardous materials may also have been handled/disposed of at the LTA portion of the property in the past. Previously prepared site assessment and investigation reports have indicated that hazardous materials that may have been handled at the property include: solvents, thinners, fuel and lubricants, waste lubrication oil and fuel, waste sandblast media, waste paint material, and steam cleaning residue. The CERCLA Site Investigation for the Marion LTA parcel, including the 2005-2006 Supplemental Site Investigation, have included sampling and laboratory analyses to determine the presence or absence of contaminants based on the potential for historic use of this wide suite of hazardous materials.

Following CERCLA

The entire MED was placed in inactive status in 1961 and the LTA property that is the subject of this report was transferred to USAR in 1962. The LTA property has been used for intermittent training activities since that time.

1.1.1 Land Use Restrictions

The future intended use of the Marion LTA property has been thoroughly evaluated by the Department of Defense. The 88th RRC and USAEC determined that future residential use was not applicable to the property, but rather like use was applicable. The site is intended to continue to be used for US Army Reservist training. Access to the facility is restricted by fencing and locked gates. When any intrusive action is proposed, such as periodic mowing or fence maintenance, the activities are coordinated through the US Army Reserve 88th RRC, Fort Snelling, Minnesota.

1.2 Methodology

The process used in preparing this risk assessment incorporates four fundamental components associated with the human health risk assessment process: (1) Data Evaluation; (2) Exposure Assessment; (3) Toxicity Assessment; and (4) Risk Characterization. The approach used generally follows accepted protocols for assessing human health risk including those outlined in the following guidance:

- Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual, Part A, 1989

- Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual, Supplemental Guidance, Standard Default Exposure Factors, 1991a
- Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual, (Part B, Development of Risk-Based Preliminary Remediation Goals), 1991b
- Risk Assessment Guidance for Superfund (RAGS), Standardized Planning, Reporting and Review of Superfund Risk Assessments, Part D, 1998
- Risk Assessment Guidance for Superfund (RAGS), Supplemental Guidance for Dermal Risk Assessment, Part E, 2001
- Methods for Evaluating the Attainment of Cleanup Standards, Volume I: Soils and Solid Media, 1989
- Guidance for Data Usability in Risk Assessment, 1992a
- Exposure Factors Handbook, 1997a

1.3 Report Organization

The remainder of the risk assessment presented herein is organized within Sections 2.0 through 8.0 as follows:

Section 2.0	Data Evaluation
Section 3.0	Exposure Assessment
Section 4.0	Toxicity Assessment
Section 5.0	Risk Characterization
Section 6.0	Uncertainty Analysis
Section 7.0	Summary/Conclusions
Section 8.0	References

2.0 DATA EVALUATION

The purpose of this section is to review available and applicable environmental data for the site and identify constituents of concern (COCs). Data for the site are summarized and constituents of concern are identified in Section 2.3.

2.1 Summary of Previous Investigations and Available/Applicable Data

Existing analytical data from previous soil sampling efforts at the site were utilized in the HHRA. The data set includes all CERCLA Site Investigation results for the Marion LTA, with the exclusion of the three areas in which a CERCLA Non-Time-Critical Removal Action (NTCRA) was conducted in 2007. The three areas of the site involved in the NTCRA were LTA-01, LTA-15 and LTA-16, which are addressed in the Removal Action Completion Report (RmACR), submitted in Draft Final form to Ohio EPA for its review and comment on 21 December 2007. As agreed by Ohio EPA in discussions regarding the Removal Action Work Plan, when risk-based removal action goals that met Ohio EPA guidelines were achieved as a result of the approved NTCRA, no further evaluation in those areas would be required. The data evaluated in this HHRA is limited to the LTAs outside of LTA-01, LTA-15 and LTA-16.

The data for the site excluding these three NTCRA areas were split into two distinct datasets as per the Final HHRA Work Plan (KEMRON, 17 May 2007), including a surface dataset from 0-4 foot below grade and a subsurface dataset from 4-12 foot below grade.

2.1.1 Soil Sampling

Soil sampling at the Marion LTA has been conducted in conformance to Ohio EPA reviewed and approved sampling and analysis plans and other site specific work plans. The data set utilized in this HHRA was developed via the Site Investigation work conducted by Montgomery Watson/SAIC and KEMRON, as documented in the Site Investigation Report (SAIC, 2004) and Final Supplemental Site Investigation Report (KEMRON, 2006). These documents, as well as the applicable work plans and sampling and analysis plans, are available in the Information Repository and the Administrative Record of the site work conducted under CERCLA authority. Sampling plans were developed to provide adequate delineation of soil contamination, and to evaluate the presence of reasonably expected contaminants of potential concern (COPCs) based on the site history, preliminary assessment and site investigation planning.

All sampling and analyses have been in accordance with US EPA established methodologies, and were conducted to achieve pre-determined data quality objectives outlined and established in Quality Assurance Project Plans (QAPPs). The QAPPs also were reviewed and approved by Ohio EPA prior to conduct of field work at the site.

2.2 Data Usability

A data usability analysis was conducted on the site dataset prior to acceptance and use of the available site data in the HHRA. The level of confidence associated with the site data affects the ability to answer and the uncertainty surrounding the four basic questions being addressed in the risk assessment:

1. What contamination is present and at what levels?
2. Are site concentrations significantly different from background?
3. Are all exposure pathways identified and examined?
4. Are all exposure pathways fully characterized?

Efforts have been made by KEMRON to confirm results in areas of elevated concentrations of various COCs at the site. Specifically, a sample in LTA-25 (sample ID LTSB0337 from LTA-25 SB006) revealed results indicating levels of multiple carcinogenic PAHs in the 100 mg/kg range. The original sample was collected by a former consultant at the site and original laboratory data sheets are not available for this sample. Field notes and the text of the Site Investigation Report (SAIC, 2004) indicate the sample was a surface sample. Numerous additional samples were collected in close proximity to the SB006 location (see Figure 3). The area in the vicinity of the sample in question also was carefully examined visually, in an attempt to identify any potential PAH source in LTA-25. No waste piles, evidence of surface or subsurface disposal or other potential source could be identified in all of LTA-25, and the high PAH result could not be reproduced despite collection of numerous samples. Therefore, the resulting data did not confirm the presence of PAHs at similar concentrations in surface soils and indicate that the single high PAH result is not representative of site conditions at LTA-25. At the request of Ohio EPA, this datapoint has not been eliminated from the site dataset. However, it is noted that in cases where original data has not been confirmed and a good faith effort has been made to duplicate sampling, USEPA guidance supports the elimination of unconfirmed data from the dataset. The inclusion of such data in the risk assessment dataset introduces the potential for overestimation of risk. The impact of this sample on the site risk estimates will be addressed in the uncertainty section of the HHRA (Section 6.0).

Two samples in LTA-18 (LTSB0139 and LTSB0140) were removed during the recent NTCRA at LTA-01, LTAA-15 and LTA-16. A small deposit of railroad ties was identified at LTA-18. This apparent source of PAHs was removed in conjunction with the NTCRA, with previous discussion with and agreement by Ohio EPA. While rail ties are not CERCLA wastes, the Army determined that their removal and disposal of the underlying soil during the conduct of the NTCRA would be appropriate. Therefore, the Army's contractor, KEMRON, disposed of the approximately 12-15 old railroad ties and the underlying approximately six (6) inches of soil in conjunction with soil and debris removed from LTA-01 during the NTCRA. Confirmatory soil samples were collected following disposal of the rail ties and underlying soil. The confirmatory samples in this area reveal non-detect results for all PAH compounds (data are included in Appendix A). The two (pre-removal) impacted samples have been included in the original dataset. The inclusion of such data in the risk assessment dataset introduces overestimation of risk, since the soil from which these data points were generated has been disposed off-site. The impact of these samples on the site risk estimates will be addressed in the uncertainty section of the HHRA (Section 6.0).

While US EPA risk assessment guidance would allow these LTA-25 and LTA-18 data points to be excluded from the data set used in the risk assessment, prior meetings with Ohio EPA indicated that the Agency desired all historic site data to be included in the risk assessment. In the spirit of partnering with the regulators, the Army has retained these data though their inclusion is not required by standard application of US EPA guidance for human health risk

assessment. The impact of these data points on the risk/hazard estimate for the site is quantitatively evaluated in Section 6.0.

The “site-specific” background values used as screening values in the determination of COCs for the site were the result of efforts made on an adjacent site (Former Marion Engineer Depot – River Valley School) and reported in an “Expanded Site Inspection” Report (December 2001) for that site. The background dataset is not included in this assessment. The representativeness of the original “background” dataset for the Marion LTA was not evaluated through a separate background data collection effort. On-going data collection at the adjacent River Valley School property indicate that the background values established in the referenced document are conservative. A site-specific background dataset is critically important to the evaluation and interpretation of site hazard and risk. If background estimates do not represent “actual” native soil levels of COCs for the site, compounds may be prematurely eliminated from consideration or carried through a risk calculation when, in fact, there is no risk above “baseline” or background levels.

The impact of the background levels on data evaluation at the site is particularly important for naturally occurring carcinogenic inorganic compounds such as arsenic. Similarly, PAH compounds are ubiquitous in the environment and accumulate in soils as a result of air deposition from daily combustion of fossil fuels via automobile engines, stormwater runoff from asphalt/paving materials, and numerous other anthropogenic sources. These compounds are also often environmental contaminants found in industrial waste. The “background” levels of these compounds must be accurately understood in order to determine the contribution of industrial risk to the total risk estimate (industrial plus background). The impact of the background values for arsenic and PAHs on the site risk estimates will be addressed in the uncertainty section of the HHRA (Section 6.0).

As summarized in the uncertainty section of this report, the distribution of multiple PAHs and inorganic compounds at the site with depth suggest that site-specific background levels presented in this assessment underestimate “true” background conditions. Arsenic, for example, has a background level of 18 mg/Kg for the site based on use of a value derived for the adjacent River Valley School property. Levels as high as 30 mg/Kg have been detected at depth at the site with no source of impact in the sample (and “clean” results in shallower soils). Values for arsenic in non-impacted soils at the site were consistently in the 20-22 mg/kg range. Multiple PAH compounds present similar data for site soils. Site-specific background levels for all PAHs were 0.33 mg/kg. The variability of PAHs in non-impacted site soils indicated the likelihood of actual site-specific background levels for PAHs at a level significantly above 0.33 mg/kg. In many cases, this may have determined whether a compound was considered a COC for the site or not. A number of these compounds are evaluated as COCs in the risk assessment when in fact they may be present at background levels in site soils.

Further, the Army has used Ohio EPA’s risk guidelines, as presented in its Technical Decision Compendium, which is more stringent than CERCLA standards that the Army is authorized to apply as the lead agency for this site.

2.3 Identification of Constituents of Concern

COCs were identified from the risk assessment data sets described in Section 2.1. The complete dataset was evaluated based upon detection frequency, comparison to site-specific background in soils, a comparison to available regulatory health-based screening levels, and toxicity considerations. COC selection for this assessment is summarized in Tables 2-1 and 2-2.

2.3.1 Low Detection Frequency

The frequency of detection was evaluated in site soils based upon the total number of samples collected, the sampling design and the total area sampled. In order to eliminate samples from further consideration at the site based upon a low detection frequency, it must first be concluded that the total number of samples for a particular compound was adequate to characterize the extent of contamination at the site. There is no established number for what constitutes a low frequency of detection. This number is also a function of sample size. In this assessment and as discussed in the Final HHRA Work Plan, a compound was not considered a COC if it was detected in less than 5% of samples.

2.3.2 Site-Specific Background

Site-specific background values were used as screening values in the determination of COCs for the site. As discussed in Section 2.2. above, the background values were the result of efforts made on an adjacent site (Former Marion Engineer Depot – River Valley School) and reported in an “Expanded Site Inspection” Report (December 2001) for that site.

A comparison of maximum concentrations to site-specific background estimates was also utilized as a screening tool for site data. Any compound with a maximum concentration detected below available background estimates was not considered a site COC.

2.3.3 Region IX PRGs

Maximum concentrations detected within each soil dataset were compared to Region IX preliminary remediation goals (PRGs) for carcinogenic compounds in soil (USEPA, 2002; Ohio EPA, 2004) and 1/10th Region IX PRGs for non-carcinogenic compounds (Ohio EPA, 2004). Although current and future potential receptors at the site do not include residents, Region IX residential screening values were used as a conservative approach to the selection of COCs. Any compound with a maximum concentration detected below the residential Region 9 PRGs, as described in above for carcinogenic and non-carcinogenic compounds, was not considered a site COC.

2.3.4 Essential Nutrients

Chemicals that are considered essential nutrients (calcium, chloride, iodine, iron, magnesium, potassium, phosphorus, and sodium) are an integral part of the human food supply and are often added to foods and supplements. U.S. EPA recommends that these chemicals not be evaluated as COCs as long as they are (1) present at low concentrations (i.e. only slightly elevated above naturally occurring levels) and (2) toxic at very high doses (i.e. much higher than those that could be associated with contact at the site). Calcium, iron, magnesium, potassium, and sodium were

detected in site samples. Recommended daily allowance (RDA) and recommended daily intake (RDI) values are available for these metals. Based on these RDA/RDI values, a receptor ingesting 100mg of soil per day would receive less than the RDA/RDI of calcium, magnesium, potassium, and sodium, even if the soil consisted of the pure mineral (i.e. soil concentrations > 1,000,000 mg/kg.). As a result, calcium, magnesium, potassium, and sodium did not merit consideration as COCs. Iron was selected as a COC.

All COCs identified as a result of this process are presented in Tables 2-1 and 2-2.

3.0 EXPOSURE ASSESSMENT

Exposure assessment is the process of estimating the magnitude, frequency, duration, and type of potential exposures to site-related chemicals. This process involves (1) an exposure analysis where exposure scenarios (*i.e.*, potentially exposed populations and complete exposure pathways) are identified (Section 3.1.2) and (2) a quantitative exposure assessment where exposure point concentrations are determined and chemical intake is calculated (Section 3.1.3).

3.1 Exposure Setting

Residual contamination was evaluated from a depth from the ground surface to approximately 12 feet below grade. Soils were analyzed in some cases to a depth of 30 feet below grade. Impacts to site soils above screening levels dropped significantly in the sub-surface soils as evidenced by the four inorganic compounds as the only COCs in the 4-12 foot depth soils. Exposure to soils below 12 foot is also not anticipated at the site, as is discussed in the Final HHRA Work Plan. The opportunity for future foreseeable exposure to residual soil contamination at the site is considered possible. In an effort to be health protective, direct contact with residual impacts were considered in this assessment.

3.1.1 Identification of Site Exposure Units

The first step in evaluating exposure at a site is to characterize the site with respect to its physical characteristics as well as those of human populations on and near the site. The site is over 127 acres in size and is unimproved with some secondary successional forest growth and open fields mixed with dense brush. Current use of the site is sporadic and limited to Reservist training exercises and periodic maintenance and mowing activities. Impacts to site soils outside of the NTCRA areas are limited and not associated with an obvious source or historical activity. As a result, sub-dividing the site into manageable and representative exposure units is somewhat subjective. There is no available historical information to support the site being evaluated in any particular way. Site data outside of the removal action areas does not indicate significant or identifiable impact patterns that may have resulted from historical activities. Opportunities for greater exposure in one area of the site versus another are not evident. Current use is not limited to certain areas of the site and future use will be restricted to “like use” which does not limit or designate exposure to specific areas of the site.

However, in an effort to avoid the “dilution” of potential risk at the site that would occur if the entire site were evaluated as one unit, the Marion LTA site dataset was split into three Exposure Units (Figure 4). An Exposure Unit is defined as a geographical area in which an individual may be exposed to contamination over time. As is presented in the Final HHRA Work Plan for the Marion LTA, Exposure Unit 1 includes the westernmost third of the site, 9 LTAs and 49 sample locations outside of the removal action area of LTA-1 (Table 3-0). Exposure Unit #2 includes the central third of the site, 9 LTAs and 15 sample locations outside of the removal action areas of LTA-15 and LTA-16. Exposure Unit #3 includes the easternmost third of the site, 6 LTAs and 41 sample locations. Separate datasets were developed for each Exposure Unit for the quantification of risk and hazard estimates.

3.2 Identification of Exposure Scenarios

The identification of the exposure scenarios to be quantitatively evaluated for this site included a consideration of (1) points of contact, (2) complete exposure pathways, and (3) potential receptors. To determine if a complete exposure pathway exists, it must be determined if there is a point of contact between an affected medium and a likely receptor. Exposure scenarios were developed based on assumptions regarding current and potential future land use. In this case, completion of exposure as described is extremely unlikely but is included for screening purposes. Potentially complete exposure pathways for the site are summarized below:

Current receptors at the LTA include industrial/commercial workers, construction workers, Reservists, and adolescent trespassers (7 – 17 years old). Specific activities of the receptors are discussed below.

- Industrial/Commercial Worker – Typical on-site workers engaged in routine activities at the site including gardening, maintenance, repairs, and indoor work
- Construction Worker – Typical construction work including grading and excavation of soils, building construction, etc.
- Reservists – Trainers and trainees who use the facility for training and other activities once every three months
- Adolescent Trespasser – Adolescent trespassers (7 to 17 years old)

Exposure scenarios were developed assuming all residual contamination exists in the surface soils.

A Conceptual Site Model (CSM) has been developed to aid in identification of potential exposure pathways, as shown in Figure 5. Industrial/commercial workers as well as Reservists involved in training activities could be exposed to potential soil contamination on the Marion LTA property. There are several residences located adjacent to the Marion LTA property, but a chain-link fence along the entire property boundary restricts access to the site. However, adult and adolescent trespassers may cross the fence and visit the site during the warmer season and they could be exposed to contamination on the site. Only the adolescent trespasser is proposed for evaluation because such receptors are expected to be exposed at a higher dose than the adult trespasser. Construction workers may also be exposed to soil contamination during potential future construction related activities.

Construction workers are not potential receptors under the current land-use conditions. Trespassers, Reservists, and hypothetical industrial/commercial workers are exposed to surface soil under the current land-use conditions. Under the future land-use conditions, it is assumed that construction work brings subsurface soil up to the surface and all receptors are exposed to a mix of surface and subsurface soils. The complete and potentially significant pathways are listed below.

- Subsurface soils: Ingestion, inhalation (particulate and volatile emissions), and dermal contact by construction workers and all future potential receptors

- Surface soils: Ingestion, inhalation (particulate and volatile emissions), and dermal contact by adolescent trespassers, Reservists, and industrial/commercial workers

3.3 Quantification of Exposure

3.3.1 Determination of Exposure Point Concentrations

The Exposure Point Concentration (EPC) is defined as the concentration of a COC that a human receptor can potentially come in contact with. EPCs were calculated using procedures described in Supplemental Guidance to RAGS: Calculating the Concentration Term (USEPA, 1992b). EPCs are typically estimates of the arithmetic average concentration of a contaminant in a specific medium. Due to uncertainties associated with estimating the true average concentration, the 95 percent upper-bound confidence limit (UCL) of the arithmetic mean concentration is used as a measure of the arithmetic average concentration.

To calculate the 95 percent UCL of the arithmetic mean concentration, the type of distribution of each data set (soil) was first determined because equations used to calculate EPCs vary for different probability distributions. The Las Vegas Technical Support Center of the USEPA has developed software (ProUCL) to support the calculation of UCLs, and the EPA Office of Solid Waste and Emergency Response (OSWER) has incorporated this software into their guidance (USEPA, 2002). The ProUCL software was utilized to compute site UCLs and where appropriate, EPCs. One half the value of the sample quantitation limit was used as a proxy value for non-detected samples.

Results of the ProUCL evaluation for site COCs are presented in attached report tables. A summary of the site EPCs is provided in Tables 3-1 and 3-2.

3.3.2 Pathway-Specific Intake Equations and Exposure Parameters

This section provides the equations used to quantify intake (or dose) for each COC. A description of the value used for each exposure parameter is also provided. Standard default assumptions from USEPA guidance documents were applied in the absence of site-specific information.

Estimates of average daily doses (ADDs) and Lifetime average daily doses (LADDs) are quantified. Unlike the LADD, the ADD is not averaged over an entire lifetime. The ADDs are used to calculate upper-bound estimates of the increased potential noncancer risks in the risk characterization (Section 5.0).

Intake Equations

The equations used for quantifying exposure to COCs in site media and the rationale for each point estimate value to be used are discussed below. Exposure parameter values (EPVs) are summarized in Table 3-3. Exposure parameter values were selected to provide upper-bound estimates of exposure. In general, exposure values were taken from established USEPA guidance documents including: RAGS (USEPA, 1989), Exposure Factors Handbook (USEPA,

1997), Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors (USEPA, 1991), and Dermal Exposure Assessment: Principles and Applications (USEPA, 1992). These documents provide guidance for the selection of exposure parameters.

Exposure Via Soil Ingestion:

$$(LADD) \text{ or } (ADD) = \frac{C \times RAF \times IS \times CF \times EF \times ED \times ET}{BW \times AT}$$

Exposure Via Dermal Contact with Soil:

$$(LADD) \text{ or } (ADD) = \frac{C \times RAF \times ADH \times SA \times CF \times EF \times ED \times ET}{BW \times AT}$$

Exposure Via Inhalation of Soil Particulates:

$$(LADD) \text{ or } (ADD) = \frac{C \times IR \times PEF \times CF \times EF \times ED \times ET}{BW \times AT}$$

where:

ADD *Average daily dose for noncarcinogens (mg/kg-day)* - Calculated dose for evaluating the potential for noncancer effects.

ADH *Soil adherence factor (mg/cm²)* - A value of 0.07 mg/cm² is selected for an industrial/commercial worker (USEPA 2001). This value is also assumed to apply to Reservists and trespassers. For construction workers, a value of 0.2 mg/cm² is applied (USEPA 2001).

AT *Averaging time (days)* - Seventy years was assumed to be the average lifetime for humans for the LADD calculations. For the ADDs calculations, the averaging time was set equal to the exposure duration (days multiplied by years).

BW *Body weight (kg)* - A recommended default value of 70 kilograms is used as the body weight for industrial/commercial workers, Reservists and construction workers (USEPA 1991a). For adolescent trespassers, the average body weight of males and females between the ages of 7 and 17 is used, which is 45 kilograms (USEPA 1997a).

- C Concentration of chemical in media (mg/kg or mg/L)* - The maximum concentration detected was used as the exposure point concentration for each COC in soil. Maximum concentrations detected in the most recent sampling round were used to assess groundwater.
- CF Conversion factor (kg/mg or L/cm³)* - For soil, the value of 1×10^{-6} was used to convert from milligrams to kilograms. Conversion factors were used in the process of dimensional analyses (unit checks) for each equation in the assessment.
- ED Exposure duration (years)* - The exposure duration for industrial/commercial worker is assumed to be 25 years (USEPA 1991a). Construction workers are assumed to work on the site for 1 year. For adolescent trespassers, the exposure duration is 11 years. Average tenure for Reservists at the LTA is 3 years (Kurt Zacharias 2002). As a conservative approach, exposure duration for Reservists is assumed to be 6 years.
- EF Exposure frequency (days/year)* - Construction workers are assumed to work on the contact-intensive phase of a project for 125 days per year (approximately 6 months) (Montgomery Watson 2002). The default value of 250 days per year is selected for industrial/commercial worker (USEPA 1991a). 250 days is considered a conservative estimate of the potential for exposure at the site. Under current use, no exposure at the site approaches 250 days per year. It is assumed that the adolescent trespassers use the site as a frequency of 2 days per week, 4 weeks per month, during the 8 warmer months (64 days per year). Reservists include trainers and trainees. The trainers are generally the senior enlisted members of the unit. They will spend some additional time (2-4 hours) for site/station prep before the trainees come in. If there are 4 days worth of training/year, the trainers may spend an additional 4 hours per event (two additional days per year) to conduct training. Exposure frequency for Reservists is selected as 6 days per year based on frequency of training related activities conducted by a trainer outdoor (Kurt Zacharias 2004).
- ET Exposure time (hrs/day)* - Construction workers, Reservists and industrial/commercial workers are assumed to do outdoor work on a full-time basis (8 hours per day) (USEPA 1991a) during the time they are on-site. Adolescent trespassers are assumed to use the site 3 hours per day of visit. This rate is based on activities such as walking/running/playing on the site for 3 hours each time they enter the site.
- IR Inhalation rate (m³/hr)* - For construction workers, the inhalation rate is selected to be $2.5 \text{ m}^3/\text{hr}$, which corresponds to the average value for outdoor workers engaged in heavy activity (UESPA 1997a). This value is also applied for industrial/commercial workers and Reservists. Adolescent trespassers are estimated to have an inhalation rate of $1.2 \text{ m}^3/\text{hr}$, corresponding to the mean inhalation rate for children performing moderate activities (USEPA 1997a).

- IS* *Ingestion rate for soil (mg/day)* - The recommended soil ingestion rate for an industrial/commercial worker is 100mg/day (USEPA 1991a). This value is also used for adolescent trespassers and Reservists. For construction workers, 480 mg/day is selected, considering intensive contact with soil (USEPA 1991a).
- IS_{frac}* *Soil Fraction Ingested (unitless fraction)* – This is an assumed value based upon activity patterns. The value is used to adjust for on-site soil ingestion versus off-site. An industrial/commercial worker and a Reservist were assumed to ingest 50% (0.5) of the total amount of soil ingested in a day from the site. 100% (1.0) of a construction workers soil ingested is assumed to result from the site. An adolescent trespasser was assumed to ingest 25% (0.25) of total soil ingested from the site.
- LADD* *Lifetime average daily dose for potential carcinogens (mg/kg-day)* -Calculated dose for evaluating the potential for cancer effects.
- PEF* *Particulate Emission Factor (ug/m³)* - A default value of $4.63 \times 10^9 \text{ m}^3/\text{kg}$ is used for all potential receptors: industrial/commercial workers, Reservists, and adolescent trespassers (USEPA 1991b, Montgomery Watson 2002).
- RAF* *Dermal Relative Absorption Factor (unitless fraction)* - The amount of chemical that is absorbed through the skin into the body from exposure to contaminated media is needed to estimate the dose resulting from dermal exposures. This parameter is termed the dermal absorption fraction, and is chemical-specific. Values have been established by USEPA (2001). These values are summarized in Table 3-4.
- SA* *Skin surface area (cm²/day)* - For industrial/commercial workers, the skin surface area is assumed to equal 5,700 cm², which is the default value for adults (USEPA 2001). For construction workers, Reservists, and trespassers, a skin surface area of 3,300 cm² was selected (USEPA 2001; Montgomery Watson 2002).

3.4 Results of the Dose Calculations

The ADDs and LADDs for the site COCs, calculated for the exposure scenarios identified above, are presented in Tables 3-5_{abc} through 3-12_{abc}.

4.0 TOXICITY ASSESSMENT

This section presents the chemical specific dose-response information used in the risk characterization. Toxicity values were selected based upon USEPA guidance (USEPA, 2003a) that provides a tiered approach to the evaluation of available toxicity data.

Tier 1 - Integrated Risk Information System (IRIS) - IRIS is an on-line data-base which provides toxicity values for chronic oral and inhalation exposures. All data contained in IRIS is verified by a USEPA work group and is updated monthly. As such, IRIS serves as a source of toxicity values for the risk characterization.

Tier 2 - USEPA Provisional Peer Reviewed Toxicity Values (PPRTVs) - Developed by the Office of Research and Development (ORD), the USEPA National Center for Environmental Assessment (NCEA), and the Superfund Health Risk Technical Support Center on a chemical-specific basis at the request of the Superfund program.

Tier 3 - Other Authoritative Sources - EPA and non-EPA sources of toxicity information. In the absence of values for a compound from the above two sources, toxicity criteria can be derived from other sources considered authoritative such as the World Health Organization, Health Effects Assessment Summary Tables (HEAST) and the California EPA (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA) Toxicity Criteria Database. Priority is given to the most current sources of information, the basis for which is transparent and publicly available, and which have been peer reviewed.

The toxicity values applied in this risk assessment for COCs are presented in Table 4-1.

4.1 Noncarcinogenic COCS

The potential noncarcinogenic health effects associated with exposure to COCs was evaluated using acceptable daily intake levels (*i.e.*, reference doses and concentrations) established by the USEPA (USEPA, 1996a, USEPA, 1997). It is widely accepted that most biological effects of chemicals occur only after a threshold dose is exceeded (Klaassen *et al.*, 1986; Paustenbach, 1989). For the purposes of establishing noncarcinogenic health criteria, this threshold dose is usually estimated from the no-observed adverse effect level (NOAEL) or lowest-observed adverse effect level (LOAEL) determined in animal or human studies. The NOAEL is defined as the exposure level at which there are no statistically or biologically significant increases in the frequency or severity of adverse effects (USEPA, 1989). The LOAEL is the lowest exposure level at which there are statistically or biologically significant increases in frequency or severity of adverse effects (USEPA, 1989). The LOAEL or NOAEL from the most sensitive animal or human study is used by the USEPA to establish long-term health criteria, termed reference doses (RfDs). An RfD is defined as an estimate (with uncertainty spanning perhaps an order of magnitude) of the dose of a chemical (expressed in mg/kg-day) which is likely to be without an appreciable risk of deleterious effects during a lifetime (USEPA, 1989). Similarly, a reference concentration (RfC) represents the concentration of a chemical in environmental media (mg/m³ for air) which is likely to be without an appreciable risk of deleterious effects during a life time

(USEPA, 1989). When deriving an RfD or RfC, a NOAEL value is used preferentially over a LOAEL value if both are available from the key study. The USEPA derives RfDs and RfCs by applying uncertainty factors to the NOAEL or LOAEL value to provide a margin of safety. The equation for deriving an RfD or RfC is shown below:

$$RfD \text{ or } RfC = (NOAEL \text{ or } LOAEL) / (UF \times MF)$$

where:

RfD	=	reference dose (mg/kg/day);
RfC	=	reference concentration (mg/m ³);
NOAEL	=	no-observed-adverse-effect-level;
LOAEL	=	lowest-observed-adverse-effect-level;
UF	=	uncertainty factor; and
MF	=	modifying factor.

Uncertainty factors can range from 1 to 10,000 and may include a factor of up to 10 to account for each of the following:

- variation in sensitivity within human populations;
- extrapolation of effects observed in animals to humans;
- extrapolation from less-than-lifetime exposures in the critical study to lifetime exposures; and
- extrapolation from a LOAEL to a NOAEL, if necessary.

In some cases, a modifying factor (usually ranging from 1 to 10) is also applied to the NOAEL/LOAEL. This value reflects a qualitative professional assessment of additional uncertainties in the critical study and in the entire database for the chemical not explicitly addressed by the above uncertainty factors (USEPA, 1989). Reference doses and concentrations can be interconverted using default exposure assumptions (*i.e.*, 70 kg body weight, 2 L/day water intake, 20 m³/hr breathing rate).

Although USEPA has not established noncarcinogenic toxicity values for dermal exposure, dermal values (*i.e.*, dermal reference doses) can be derived from oral RfDs to quantify risks associated with dermal exposure to chemicals in water and soil. A fundamental difference must be recognized, however, when deriving dermal toxicity values from oral toxicity values: oral and inhalation RfDs are generally expressed in terms of an administered dose, whereas the calculated dermal RfDs are expressed in terms of an absorbed dose. Dermal exposure is assessed by estimating the absorbed dermal dose. Because dermal exposure is assessed in terms of absorbed dose, the dermal toxicity values must also be expressed in terms of an absorbed dose. This is accomplished by multiplying the oral RfDs by available oral absorption fractions (Owen, 1990). In the absence of data, an oral absorption fraction of 1 is assumed (*i.e.*, 100% of the chemical is absorbed). It should be recognized that dermal RfDs are intended to be protective for systemic effects that may occur following dermal exposure, and may not necessarily be protective for effects occurring at the point of contact (*i.e.*, dermal sensitization, irritation).

Oral RfDs and the USEPA's confidence level in the values are presented in Table 4-2 for the chemicals detected at the site. In addition, the test species, critical effect, exposure media used in the key study, and source of the RfD are identified.

Dermal RfDs can be derived from oral RfDs using the following equation:

$$\text{Dermal RfD} = (\text{Oral RfD}) \times (\text{Af}_o)$$

where:

Oral RfD = chemical-specific oral reference dose in mg/kg/day; and
 Af_o = chemical-specific oral absorption fraction.

Dermal RfDs in this assessment were conservatively assumed to be equal to the oral RfD (*i.e.*, oral absorption fraction of 1).

4.1.1 Lead

The USEPA risk assessment of lead is unique because an RfD value for lead is not available. An RfD is typically derived from a concentration below which no adverse effects have been observed. There is evidence to suggest that adverse health effects occur even at very low exposures to lead. Because the toxicokinetics (absorption, distribution, metabolism and excretion) of lead are considered well understood, lead is now regulated based on blood lead concentration. USEPA and the Centers for Disease Control and Prevention (CDC) have determined that childhood blood lead concentrations at or above 10 micrograms of lead per deciliter of blood ($\mu\text{g}/\text{dL}$) present risks to children's health. The USEPA risk reduction goal for contaminated sites is to limit the probability of a child's blood lead concentration exceeding $10\mu\text{g}/\text{dL}$ to 5% or less after cleanup.

In areas of the site where lead is considered a COC, USEPA's (2003b) Adult Lead Methodology (ALM) was utilized. The ALM is protective of a fetus of a worker in a commercial/industrial setting who develops an assumed body burden as a result of non-residential exposure to lead.

Soil ingestion and exposure duration parameters were adjusted in the ALM to reflect the appropriate exposures at the site.

4.2 Carcinogenic COCS

Health risks from exposures to carcinogens are defined in terms of probabilities. These probabilities identify the likelihood of a carcinogenic response in an individual that receives a given dose of a particular compound. The slope factor (SF), expressed in units of $(\text{mg}/\text{kg}\cdot\text{day})^{-1}$, multiplied by the lifetime average daily dose of the chemical, provides an estimate of the theoretical excess cancer risk. Slope factors represent an upper-bound estimate of the probability of developing cancer per unit dose (expressed as risk per $\text{mg}/\text{kg}\cdot\text{day}$) of a chemical over time (USEPA, 1989). Similarly, unit risks (URs) represent an upper-bound estimate of the probability of developing cancer per unit concentration [expressed as risk per $(\mu\text{g}/\text{L})^{-1}$ for water; risk per $(\mu\text{g}/\text{m}^3)^{-1}$ for air] of a chemical over time. Slope factor and UR values can also be interconverted

using default exposure assumptions (*i.e.*, 70 kg body weight, 2 L/day water intake, 20 m³/hr breathing rate).

The cancer weight-of-evidence (WOE) classification is a qualitative descriptor that characterizes the quality and quantity of the data concerning the potential carcinogenicity of the chemicals. As defined by the USEPA (1989), there are six weight-of-evidence groups to which a chemical may be assigned:

- Group A** Human Carcinogen (sufficient evidence of carcinogenicity in humans),
- Group B1** Probable Human Carcinogen (limited evidence of carcinogenicity in humans),
- Group B2** Probable Human Carcinogen (sufficient evidence of carcinogenicity in animals with inadequate or lack of evidence in humans),
- Group C** Possible Human Carcinogen (limited evidence of carcinogenicity in animals or lack of human data),
- Group D** Not Classifiable as to Human Carcinogenicity (inadequate or no evidence), and
- Group E** Evidence of Non-Carcinogenicity for Humans (no evidence of carcinogenicity in adequate studies).

The available literature sources typically provide SFs for the ingestion and the inhalation pathways. For the dermal pathway, adjusted oral SFs are used. In accordance with USEPA (2001), for constituents with gastrointestinal absorption factor (GAF) greater than 50%, the oral SF is used as dermal SF without modification. For constituents with GAF less than 50%, the Dermal SF = Oral SF/GAF.

Consistent with USEPA guidelines (USEPA, 1989), chemicals assigned a weight-of-evidence classification of A, B1, or B2 have been quantitatively evaluated for carcinogenic dose-response in this risk assessment. Neither Tier I or Tier II toxicity values are available for trichloroethylene (TCE). As a result, Tier III values provided by the CalEPA Office of Environmental Health Hazard Assessment was be used to evaluate TCE. A slope factor for TCE is not available in IRIS as the available data and the carcinogenic status is currently under review.

5.0 RISK CHARACTERIZATION

This section characterizes the potential carcinogenic risk and noncarcinogenic hazard for the site. This risk characterization addresses potential exposure scenarios identified for this site: industrial/commercial worker, construction worker, Reservist, and adolescent trespasser. The potential health effects are characterized by comparing calculated dose or risk levels to maximum "acceptable" doses or risks. The potential noncarcinogenic health hazards are determined using the Hazard Quotient/Index approach that defines the relative hazard based on the ratio of the estimated ADD to the acceptable intake level (*i.e.*, the Reference Dose or RfD). Carcinogenic health risks are defined in terms of a probability that an individual may develop cancer as a result of exposure to a given chemical at a given concentration (USEPA, 1989). The theoretical excess cancer risk was determined for each potentially carcinogenic chemical using the total LADD from all pathways and cancer slope factors.

5.1 Noncarcinogenic Hazards

The potential noncarcinogenic health hazards posed to on-site and off-site receptors were evaluated using the hazard quotient/index approach. The hazard quotient (HQ) is the ratio of the calculated ADD to the maximally allowable "safe" dose (*i.e.*, USEPA reference levels such as the RfD or similar value). The equation used to calculate the hazard quotient for a chemical is presented below:

$$\text{Hazard Quotient} = \frac{\text{ADD}}{\text{RfD}}$$

An HQ of 1 or less indicates that the chemical-specific ADD for a particular pathway is below the level associated with an adverse health effect. Additive noncarcinogenic health effects can be evaluated when exposure to more than one chemical occurs by using the hazard index (HI) approach. The HI accounts for potential additivity of effects from chemicals which affect a similar biological endpoint, or target organ. It will be initially assumed that all effects are additive (*i.e.*, the HI approach will be used to assess the aggregate hazards from multiple chemicals). The risk characterization may also provide the justification for evaluating noncarcinogenic hazards on a target organ-specific basis, as needed. The simplified equation for calculating a generic HI is presented below:

$$\text{Hazard Index} = \frac{\text{ADD}_1}{\text{RfD}_1} + \frac{\text{ADD}_2}{\text{RfD}_2} + \dots + \frac{\text{ADD}_n}{\text{RfD}_n}$$

An HI of 1 or less indicates that levels of exposure are acceptable. Three types of HIs were calculated to assist in the evaluation of noncarcinogenic effects: (1) a chemical-specific HI which represents the summation of hazard quotients (HQs) for all relevant exposure pathways for a particular COC, (2) a pathway-specific HI which represents the summation of HQs for all COCs relevant to a particular pathway, and (3) a total HI which represents the summation of HQs for all COCs and all exposure pathways (*i.e.*, accounts for all chemicals and all pathways for a particular scenario). The total HI was calculated to provide an upper bound estimate of potential noncarcinogenic health hazards. The total HI is a conservative screening tool since it assumes

that all of the toxic effects for all of the noncarcinogenic COCs are additive (*i.e.*, all COCs have the same endpoint and target organ). USEPA guidance supports the segregation of HQs/HIs based upon an evaluation of target organs for each COC at a particular site. This refined approach to the evaluation of noncarcinogenic hazard is warranted at sites where an initial conservative evaluation (assuming additivity across COCs and target organs) indicates the potential for a significant hazard. Additionally, the total HI may be considered conservative since it also assumes the hazards posed by each exposure pathway are directly additive. As the USEPA (1989) notes:

There are two steps required to determine whether risks or hazard indices for two or more pathways should be combined for a single exposed individual or group of individuals. The first is to identify reasonable exposure pathway combinations. The second is to examine whether it is likely that the same individuals would consistently face exposure from more than one pathway.

Appropriate exposure scenarios were identified in Section 3.1.2; however, the probability of the same individual consistently facing site-wide exposure conditions was conservatively assumed to occur for the purposes of calculating the total HIs. This represents a conservative approach since the likelihood of the same individual experiencing exposure conditions for more than one pathway over the same period of time is considered remote.

In spite of the above conservatism, the total HI incorporated the aggregate hazards across all chemicals and exposure pathways. HQs and HIs were calculated using the ADDs presented in Tables 3-5_{abc} through 3-8_{abc}. The chemical-specific HQs and total HIs for each scenario are presented in Tables 5-1_{abc} through 5-4_{abc}.

5.1.1 Industrial/Commercial Worker

The potential for adverse effects to an industrial/commercial worker at the site and direct exposure to noncarcinogens in soil was determined to be insignificant. The highest total HI value for the three exposure units at the site in surface and sub-surface soil was 9.4×10^{-3} (Table 5-1_{abc}). This hazard is primarily the result of iron and arsenic in surface and sub-surface soils across the site. The industrial/commercial worker hazard for both surface and sub-surface soils is below the benchmark of 1 which would be considered acceptable by USEPA and Ohio EPA. The ALM lead body burden estimate for an industrial/commercial worker exposed to surface soils was within a range of 4.6 – 6.3 µg/dL for all three exposure units. This estimate is less than the USEPA benchmark of 10 µg/dL.

5.1.2 Construction Worker

The potential for adverse effects to a construction worker at the site and direct exposure to noncarcinogens in soil was determined to be insignificant. The highest total HI value for the three exposure units at the site in surface and sub-surface soil was 7.5×10^{-2} (Table 5-2_{abc}). This hazard is primarily the result of iron and arsenic in surface and sub-surface soils across the site. The construction worker hazard for both surface and sub-surface soils is below the benchmark of 1 which would be considered acceptable by USEPA and Ohio EPA. The ALM lead body burden

estimate for a construction worker exposed to surface soils was within a range of 4.7 – 9.6 µg/dL for all three exposure units. This estimate is less than the USEPA benchmark of 10 µg/dL.

5.1.3 Reservist

The potential for adverse effects to a Reservist at the site and direct exposure to noncarcinogens in soil was determined to be insignificant. The highest total HI value for the three exposure units at the site in surface and sub-surface soil was 1.7×10^{-4} (Table 5-3_{abc}). This hazard is primarily the result of iron and arsenic in surface and sub-surface soils across the site. The Reservist hazard for both surface and sub-surface soils is below the benchmark of 1 which would be considered acceptable by USEPA and Ohio EPA. The ALM lead body burden estimate was not quantified for a Reservist as their exposure is less than that of a commercial/industrial or construction worker. Quantification of lead exposure is not required considering that the estimate for the more severe exposures were less than the USEPA benchmark of 10 µg/dL.

5.1.4 Adolescent Trespasser

The potential for adverse effects to an adolescent trespasser at the site and direct exposure to noncarcinogens in soil was determined to be insignificant. The highest total HI value for the three exposure units at the site in surface and sub-surface soil was 7.7×10^{-4} (Table 5-4_{abc}). This hazard is primarily the result of iron and arsenic in surface and sub-surface soils across the site. The adolescent trespasser hazard for both surface and sub-surface soils is below the benchmark of 1 which would be considered acceptable by USEPA and Ohio EPA. The ALM lead body burden estimate was not quantified for an adolescent trespasser as their exposure is less than that of a commercial/industrial or construction worker. Quantification of lead exposure is not required considering that the estimate for the more severe exposures were less than the USEPA benchmark of 10 µg/dL.

5.1.5 Summary of Noncarcinogenic Hazards

A summary of the noncarcinogenic hazards calculated for the site are presented in Tables 7-1 and 7-2. The HIs calculated for all Exposure Unit scenarios did not exceed the regulatory criterion of 1. Therefore, as defined by CERCLA and the Final HHRA Work Plan for this site, no unacceptable risk for non-cancer COCs exists at the site.

5.2 Carcinogenic Risks

This section describes the theoretical carcinogenic health risks estimated for potential on-site receptors. Theoretical carcinogenic health risks are defined in terms of a probability that an individual may develop cancer as a result of exposure to a given chemical at a given concentration (USEPA, 1989). The incremental probability of developing cancer (*i.e.*, the theoretical excess lifetime cancer risk (ELCR)) is the additional risk above the cancer risk an individual would face in the absence of exposures characterized in this characterization. The theoretical ELCR was determined for each potentially carcinogenic chemical using the total LADD from all pathways and cancer slope factors as described below.

$$\text{Theoretical Risk} = \text{LADD} \times \text{SF}$$

where:

$$\begin{aligned}\text{LADD} &= \text{Lifetime average daily dose (mg/kg-day); and} \\ \text{SF} &= \text{Cancer slope factor (mg/kg-day)}^{-1}.\end{aligned}$$

For risk characterization and regulatory purposes, cancer risks of less than 1×10^{-6} are considered *de minimis* and no further action is deemed necessary. Cancer risks that fall in the range of 1×10^{-6} to 1×10^{-4} require regulatory scrutiny, but generally are considered "acceptable."

5.2.1 Industrial/Commercial Worker

The potential ELCR for an on-site industrial/commercial worker exposed to site soil were within the USEPA target risk range of 1×10^{-4} to 1×10^{-6} . The highest risk estimate for the three exposure units at the site in surface and sub-surface soil was 3.2×10^{-5} for Exposure Unit 3 (Table 5-5 abc). Risk estimates for surface and sub-surface soils in Exposure Units 1 and 2 and sub-surface soils in Exposure Unit 3, were below 1×10^{-5} . The carcinogenic risk in the surface soils of Exposure Units 1 and 3 was driven by benzo(a)pyrene. Risk estimates that result from an evaluation of the surface soils of Exposure Unit 2 were driven by arsenic. Sub-surface risk was driven by arsenic with a maximum risk estimate of 2.2×10^{-6} .

While the risk estimate in surface soils of Exposure Unit 3 exceeds the Ohio EPA target risk range of 1×10^{-5} , it should be noted that the industrial/commercial worker exposure is not complete at the site and is not intended as a potential future use of the site (exposure frequency of 250 days per year). In addition, three samples are driving the benzo(a)pyrene exposure point concentration for surface soils of Exposure Unit 3. One sample in LTA-25 (LTSB0337) revealed results indicating levels of multiple carcinogenic PAHs in the 100 mg/kg range. As explained in Section 2.2, confirmatory sampling efforts have not confirmed the presence of PAHs at similar concentrations in surface soils. The analytical results of the sampling conducted subsequent to collection of LTSB0337 indicates that the PAH result from this single sample is not representative of site conditions. At the request of Ohio EPA, this datapoint has not been eliminated from the site dataset. Similarly, in LTA-18, two PAH impacted surface samples were eliminated during recent removal action activities at the site (LTSB0139 and LTSB0140), as also discussed in Section 2.2 of this report. Confirmatory samples in the area of the removal revealed non-detect results for all PAH compounds. The inclusion of the LTA-18 pre-excavation data, as well as the non-representative LTA-25 sample, in the risk assessment dataset introduces the potential for overestimation of risk. The impact of these samples on the site risk estimates will be quantitatively addressed in the uncertainty section of the HHRA (Section 6.0).

5.2.2 Construction Worker

The potential ELCR for an on-site construction worker exposed to site soil were within the USEPA target risk range of 1×10^{-4} to 1×10^{-6} and below the Ohio EPA target risk of 1×10^{-5} . The highest risk estimate for the three exposure units at the site in surface and sub-surface soil

was 3.5×10^{-6} for Exposure Unit 3 (Table 5-6_{abc}). The carcinogenic risk in the surface soils of Exposure Units 1 and 3 was driven by benzo(a)pyrene. Risk estimates that result from an evaluation of the surface soils of Exposure Unit 2 were driven by arsenic. Sub-surface risk was driven by arsenic with a maximum risk estimate of 3.6×10^{-7} .

5.2.3 Reservist

The potential ELCR for a Reservist exposed to site soil were within the USEPA target risk range of 1×10^{-4} to 1×10^{-6} and below the Ohio EPA target risk of 1×10^{-5} . The highest risk estimate for the three exposure units at the site in surface and sub-surface soil was 1.4×10^{-7} for Exposure Unit 3 (Table 5-7_{abc}). The carcinogenic risk in the surface soils of Exposure Units 1 and 3 was driven by benzo(a)pyrene. Risk estimates that result from an evaluation of the surface soils of Exposure Unit 2 were driven by arsenic. Sub-surface risk was driven by arsenic with a maximum risk estimate of 1.2×10^{-8} .

5.2.4 Adolescent Trespasser

The potential ELCR for an adolescent trespasser exposed to site soil were within the USEPA target risk range of 1×10^{-4} to 1×10^{-6} and below the Ohio EPA target risk of 1×10^{-5} . The highest risk estimate for the three exposure units at the site in surface and sub-surface soil was 1.2×10^{-6} for Exposure Unit 3 (Table 5-8_{abc}). The carcinogenic risk in the surface soils of Exposure Units 1 and 3 was driven by benzo(a)pyrene. Risk estimates that result from an evaluation of the surface soils of Exposure Unit 2 were driven by arsenic. Sub-surface risk was driven by arsenic with a maximum risk estimate of 7.5×10^{-8} .

5.2.5 Summary of Carcinogenic Risks

A summary of the hypothetical cancer risks calculated for site are presented in Tables 7-1 and 7-2. The potential ELCRs for all receptors exposed to site soil in all three exposure units were within the USEPA target risk range of 1×10^{-4} to 1×10^{-6} . Therefore, no unacceptable risk as defined by CERLCA and the Final HHRA Work Plan for this site, exists at the Marion LTA for carcinogenic COCs.

With the exception of an industrial/commercial worker, the potential ELCR for the evaluated receptors (as defined in the Final Marion LTA Residual Human Health Risk Assessment Work Plan) were also below the Ohio EPA target risk goal of 1×10^{-5} . The potential receptors were identified and evaluated in conformance to the approved HHRA Work Plan, which was developed based upon site data and standard US EPA risk assessment guidelines. Site data do not support evaluation of exposure off-site from on-site soils or other media. The industrial/commercial worker result will be addressed quantitatively in the uncertainty section of the HHRA (Section 6.0).

6.0 UNCERTAINTY ANALYSIS

Uncertainty is an inherent component of risk assessment. Health risk estimates are calculated using the best scientific and site-specific information available, however, each factor used to generate the risk estimate contributes some portion of uncertainty to the result. It has the potential to result in under-protection or over-protection of the assessment's endpoint. Typically, a conservative approach is used in an effort to not underestimate potential human health risks. As a result, the health risk estimates are often conservatively high compared to the "actual" level of potential health risk associated with a site.

The exposure, toxicity and site use assumptions made in the risk assessment process are conditional estimates that introduce a degree of uncertainty into the HHRA. In order to place risk estimates into proper perspective, it is important to identify areas where the assumptions made have the potential to introduce uncertainty into the conclusions drawn in the assessment. It is known that the uncertainty around a numerical result in an HHRA is generally large (an order of magnitude or greater) (USEPA, 1989). Consequently, it is important to identify key site-related variables and assumptions that contribute most to the uncertainty. The following is a summary of site-specific data conditions, exposure assumptions, and toxicity factors applied in the risk assessment process that have contributed to the uncertainty of the resulting risk estimates.

Data Conditions: LTA-25

During the site investigation process, efforts have been made by KEMRON to confirm results in areas of elevated concentrations of various COCs at the site. Specifically, a sample in Exposure Unit 3, LTA-25 (LTSB0337) revealed results indicating levels of multiple carcinogenic PAHs in the 100 mg/kg range. The original sample was collected by a former consultant at the site and laboratory data sheets and field notes are not available for this sample. The depth within the soil column that the sample was taken was also not certain, although site files indicate that it was a surface sample. KEMRON attempted to confirm the representativeness of the original datapoint (Figure 3). As discussed in Section 2.2, no potential source for the elevated PAH result in this sample could be identified in all of LTA-25. Despite collection of multiple samples in the vicinity of the sample in question, resulting laboratory analytical data did not confirm the presence of PAHs at similar concentrations in surface soils, and indicate that the analytical results of sample LTSB0337 from SB006 are not representative of site conditions. At the request of Ohio EPA, this datapoint was not eliminated from the site dataset. However, it is noted that in cases where original data has not been confirmed and a good faith effort has been made to duplicate sampling, USEPA guidance supports the elimination of unconfirmed data from the dataset. The inclusion of such data in the risk assessment dataset introduces the potential for overestimation of risk. The initial result of carcinogenic risk in Exposure Unit 3 was within the USEPA range of 1×10^{-4} to 1×10^{-6} , however, was in excess of the 1×10^{-5} target defined by Ohio EPA's Technical Decision Compendium (OEPA, 2004).

As a result, two datasets were developed for Exposure Unit 3 (Table 6-1) and risk estimates were developed for the dataset without the unconfirmed sample to determine its impact on the risk estimate. A revised risk estimate of 6.4×10^{-6} was calculated and is below the target of 1×10^{-5} listed in the Ohio EPA Technical Decision Compendium.

Data Conditions: LTA-18

Two samples in LTA-18 (LTSB0139 and LTSB0140) were originally collected in soil that was removed in conjunction with the NTCRA as part of a recent removal action effort at the site. Confirmatory samples in this area reveal non-detect results for all PAH compounds. The two (pre-removal) impacted samples had been included in the original dataset. The inclusion of such data in the risk assessment dataset introduced overestimation of risk since the soil from which the two samples were collected have been removed and disposed off-site. As a result, the dataset developed for the re-evaluation of Exposure Unit 3 (Table 6-1) did not include the LTA-18 datapoints.

Data Conditions: Site-specific Background

The “site-specific” background values used as screening values in the determination of constituents of concern for the site were the result of efforts made on an adjacent site (Former Marion Engineer Depot – River Valley School) and reported in an “Expanded Site Inspection” Report (December 2001) for that site. The background dataset was not reviewed as part of this assessment. The representativeness of the original “background” dataset for the Marion LTA was not evaluated through a separate background data collection effort. On-going data collection at the adjacent River Valley School property has indicated that the background values established in the referenced document are conservative. A site-specific background dataset is critically important to the evaluation and interpretation of site hazard and risk. If background estimates do not represent “actual” native soil levels of COCs for the site, compounds may be prematurely eliminated from consideration or carried through a risk calculation when, in fact, there is no risk above “baseline” or background levels.

The impact of the background levels on data evaluation at the site is particularly important for naturally occurring carcinogenic inorganic compounds such as arsenic. Similarly, PAH compounds are ubiquitous in the environment and accumulate in soils as a result of air deposition from daily combustion of fossil fuels via automobile engines, home heating and numerous other anthropogenic sources. These compounds are also often environmental contaminants found in industrial waste. The “background” levels of these compounds must be accurately understood in order to determine the contribution of industrial risk to the total risk estimate (industrial plus background).

The distribution of multiple PAHs and inorganic compounds at the site with depth suggest that site-specific background levels presented in this assessment underestimate “true” background conditions. Arsenic, for example, has a background level of 18 mg/Kg for the site and levels as high as 30 mg/Kg have been detected at depth at the site with no source of impact in the sample (and “clean” results in shallower soils). Values for arsenic in non-impacted soils at the site were consistently in the 20-22 mg/kg range. Multiple PAH compounds present similar data for site soils. Site-specific background levels for all PAHs were 0.33 mg/kg. The variability of PAHs in non-impacted site soils indicated the likelihood of actual site-specific background levels for PAHs at a level significantly above 0.33 mg/kg. In many cases, this may have determined whether a compound was considered a COC for the site or not. A number of these compounds are evaluated as COCs in the risk assessment when in fact they may be present at background levels in site soils.

Exposure Assumptions

The exposure scenarios selected for quantification in this assessment were assumed to adequately reflect the potential risk associated with current and future site conditions. This is a reasonable assumption considering that future use at the site has been limited to “like use”. The commercial/industrial worker scenario assumes an exposure frequency of 250 days per year for 25 years. This is not an exposure that currently exists or is likely to exist under future use.

Exposure parameters have been used to “predict” human behavior. Reasonable maximum levels of exposure were assumed in most cases and have likely been overestimated for some parameters. Soil ingestion of 480 mg soil for a construction worker (daily for 125 days) is a possible overestimate of exposure for this receptor. An adolescent trespasser spending 64 days a year for 11 years at the site when access to the site is restricted by fencing is a possible overestimate of exposure for an individual trespasser. Each of these parameters are conservatively biased for the protection of a potential exposure at the site. Exposure at the levels evaluated in this assessment are not likely to occur at the severity or for the duration quantified in these estimates.

Risks within an exposure route are assumed to be additive across compounds. This approach often results in an overestimation of risk because target organs and health effects may vary among COCs. It should be noted, however, that this approach does not account for potentiation, antagonistic, or synergistic interactions among COCs and adding risks across compounds does have the potential to over- or underestimate risk.

Toxicity Values

Human toxicity values developed by the regulatory authorities have the potential to overestimate risk. Reference doses and slope factors incorporate maximum levels of conservative uncertainty factors in their development for the intentional protection of public health. Depending on the confidence level of the data supporting the toxicity value, modifying and uncertainty factors can be added that incorporate multiple orders of magnitude of uncertainty in the result (for the protection of human health).

Risk Estimates

For risk characterization and regulatory purposes, cancer risks of less than 1×10^{-6} are considered *de minimis* and no further action is deemed necessary. Cancer risks that fall in the range of 1×10^{-6} to 1×10^{-4} require regulatory scrutiny, but generally are considered “acceptable.” The acceptable regulatory risk range (1×10^{-6} to 1×10^{-4} or 0.0001% to 0.01% added risk) must also be viewed in terms of the background risk of cancer in the United States from all causes of 1 in 4 or 25%. Thus, if an estimated added cancer risk from a conservative exposure assessment and slope factor was completely accurate and was at the nominal acceptable regulatory risk (*i.e.*, 1×10^{-6}), the lifetime cancer risk incurred by the individual so exposed would increase from 25% to 25.0001%. Another way of looking at this estimate is that if one million people were exposed to a 1×10^{-6} risk over their lifetime, the number of cancers in that group would increase from 250,000 (the expected number) to no more than 250,001.

7.0 SUMMARY AND CONCLUSIONS

A risk assessment was conducted for the US Army Reserve Marion Local Training Area in Marion, Ohio to assess the potential for risk associated with the residual contamination in site soils. Residual contamination was evaluated from a depth from the ground surface to approximately 12 feet below grade, consistent with the Final HHRA Work Plan. Soils were analyzed in some cases to a depth of 30 feet below grade. Impacts to site soils above screening levels dropped significantly in the sub-surface soils as evidenced by the four inorganic compounds as the only COCs in the 4-12 foot depth soils. Exposure to soils below 12 foot is also not anticipated at the site.

The site dataset was divided into three Exposure Units and hazard/risk estimates were developed for each Exposure Unit. Four hypothetical exposure scenarios were developed for this property: a hypothetical on-site industrial/commercial worker, a potential future construction worker, a Reservist and a potential adolescent trespasser exposed to soils. These scenarios were developed assuming that all exposures would include direct contact with residual contamination and provide a very conservative estimate of the actual risk since they assume an exposure duration that most likely will never or rarely exist.

The highest risks associated with the hypothetical exposure scenarios quantified for the three exposure units are summarized below:

Hypothetical Receptor	Highest ^a Estimated Excess Lifetime Cancer Risk		Highest ^a Estimated Total Hazard Index	
	Surface Soil	Sub-surface Soil	Surface Soil	Sub-surface Soil
Industrial/Commercial Worker	3.2×10^{-5} ^b	2.2×10^{-6}	9.4×10^{-3}	9.0×10^{-3}
	6.4×10^{-6} ^c			
Construction Worker	3.5×10^{-6}	3.6×10^{-7}	6.6×10^{-2}	7.5×10^{-2}
Reservist	1.4×10^{-7}	1.2×10^{-8}	1.7×10^{-4}	1.7×10^{-4}
Adolescent Trespasser	1.2×10^{-6}	7.5×10^{-8}	7.7×10^{-4}	7.3×10^{-4}

^a Highest ELCR and HI of the estimates for the three Exposure Units at the site.

^b The 3.2×10^{-5} ELCR estimate includes data that could not be confirmed despite multiple efforts in the field. The uncertainty analysis (Section 6.0) included a quantitative evaluation of these data and resulted in an ELCR of 6.4×10^{-6} . See Table 7-1 for a complete summary of results by Exposure Unit.

^c This ELCR is the final highest ELCR following completion of the uncertainty analysis conducted per RAGS and the HHRA Work Plan. See Table 7-1.

The highest risk values in the above table were derived with a dataset that includes data points that have been evaluated in detail and determined to introduce overestimation of risk, as discussed in Section 6.0 of this report. Specifically, the dataset includes one anomalously high PAH soil concentration data point from LTA-25 SB006 that could not be reproduced through multiple samples, and data points from LTA-18 soil that is no longer on-site, but has been

excavated and disposed off-site. The uncertainty analysis conducted as part of this risk assessment, in conformance to the Final HHRA Work Plan and US EPA risk assessment guidance, demonstrates that the residual risk at the Marion LTA outside of the three work areas involved in the 2007 NTCRA meets the Ohio EPA Technical Decision Compendium risk goal of 1×10^{-5} for excess lifetime cancer risk. Specifically, the final revised risk estimate for Exposure Unit 3 for exposure of an Industrial/Commercial worker to surface soil, as presented in Section 6.0, is 6.4×10^{-6} . All hazard indices calculations have results below 1.

Receptors at the site are not anticipated to experience an exposure that would result in an unacceptable cancer or non-cancer health risk. The estimated risk values all conform to the CERCLA acceptable risk range of 1×10^{-4} to 1×10^{-6} and a Hazard Index below 1. Further, the residual risk at the site has been demonstrated to meet the Ohio EPA Technical Compendium Document human health carcinogenic compound risk goal of 1×10^{-5} for all potential future populations (including the commercial/industrial user). As demonstrated through the results of this risk assessment for all areas of the Marion LTA excluding the NTCRA work areas (LTA-01, LTA-15 and LTA-16), no unacceptable risk to human health, as defined by CERCLA and the HHRA Work Plan exists at the US Army Reserve Marion Local Training Area in Marion, Ohio.

8.0 REFERENCES

BHE Environmental for USACE, Kansas City District. *Wetland Delineation for Local Training Area, Marion Engineer Depot East 88th Regional Readiness Command, Marion County, Ohio.* March 2006.

BHE Environmental for USACE, Kansas City District. *Final Mist Net Surveys for Local Training Area, Marion Engineering Depot East 88th Regional Readiness Command, Marion County, Ohio.* September 2006.

Gilbert, R.O. 1987. Statistical Methods for Environmental Pollution Monitoring. Van Nostrand Reinhold.

Gilbert, R.O., T. LeGore, and R.F. O'Brien. 1996. *An Overview of Methods for Evaluating the Attainment of Cleanup Standards for Soils, Soil Media, and Groundwater, EPA Volumes 1, 2, and 3.* Prepared for the USEPA under contract DE-AC06-76R10 1830.

Illinois Environmental Protection Agency (IEPA), 1994. *Interim Default Values for the Estimation of the Dermal Absorption of Chemicals from Soil.*

Integrated Risk Information System (IRIS) Database <http://www.epa.gov/iris/>, searched November 2006.

JAYCOR Environmental, *Environmental Baseline Survey (EBS) Marion Outdoor Training Area (OTA), Marion, OH.* August 1996.

Jones Technologies Incorporated (JTI) *Marion LTA Drum Sampling, Marion, OH.* January 1999.

KEMRON Environmental Services, Inc. *Final Sampling and Analysis Plan, Marion, Ohio,* Revision 1.0 May 2005.

KEMRON Environmental Services, Inc. *USARC GFPR Quality Assurance Project Plan, Kings Mills, OH and Marion, OH,* Revision 3.0 November 29, 2005.

KEMRON Environmental Services, Inc. *USARC GFPR Supplemental Site Investigation Report, U.S. Army Reserve Local Training Area, Marion, Ohio, Contract # W911SO-04-F0017,* May 2006.

KEMRON Environmental Services, Inc. *USARC GFPR Final Scoping Level I Ecological Risk Assessment, Marion, OH,* Revision 1.0, November 2006.

KEMRON Environmental Services, Inc. *USARC GFPR Final Engineering Evaluation and Cost Analysis, Marion, OH,* Revision 2.0 March 19, 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Residual Human Health Risk Assessment Work Plan, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 3.0 May 17, 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Action Memorandum, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 2.0 June 13, 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Removal Action Work Plan, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 2.0 July 12, 2007.

KEMRON Environmental Services, Inc. *USARC GFPR Final Removal Action Completion Report, US Army Reserve, Marion Local Training Area, Marion, OH*, Revision 2.0 February 14, 2008.

Montgomery Watson, *Relative Risk Site Evaluation, U.S. Army Reserve Property, Former Marion Engineering Depot, Marion, OH*. November 1998.

Montgomery Watson, *U.S. Army Reserve Property, Marion, OH, Time Critical Drum Removal Action Final Report*. July 1999.

Montgomery Watson, 1999a. *Preliminary Investigation Data Package, Former Scioto Ordnance Plant Investigation, Marion, Ohio*.

Montgomery Watson, 1999b. *United States Army Reserve Drum Removal Project, Marion, Ohio*.

Montgomery Watson, 2002. *River Valley School, Operation Unit 1-Former Disposal Area, Remedial Investigation Report. Marion, Ohio*.

Montgomery Watson, *Screening Level Human Health Risk Assessment, U.S. Army Reserve Property, Marion, Ohio*. February 2004.

Montgomery Watson. *Technical Memorandum – Development of Background Levels in Soil and Groundwater – Operable Unit 1 Remedial Investigation, River Valley School, Former Marion Engineer Depot, Marion, Ohio*,

MWH Americas, Inc. 2004. *Screening Level Human Health Risk Assessment Report. Marion Local Training Area, Marion, Ohio*.

National Center for Environmental Assessment (NCEA), 2006. *Trichloroethylene Health Risk Assessment: Synthesis and Characterization, External Review Draft*.

Ohio EPA, *Technical Guidance Manual for Hydrogeologic Investigations and Groundwater Monitoring*. February 1995.

Ohio EPA, 2004. *Use of U.S. EPA Region 9 PRGs as Screening Values in Human Health Risk Assessments*. Ohio EPA Division of Emergency and Remedial Response. Technical Decision Compendium. April 28, 2004.

Ohio EPA, *Division of Emergency and Remedial Response, Technical Decision Compendium: Human Health Cumulative Carcinogenic Risk and Non-carcinogenic Hazard Goals for DERR Remedial Response and Office of Federal Facilities Oversight*. April 2004.

SAIC for USACE Louisville District and 88th Regional Support Command and USARC Headquarters. *Preliminary Assessment Report Marion Local Training Area Marion, Ohio*. October 2000.

SAIC, *Preliminary Assessment Report – Marion Local Training Area, Marion, OH*. October 2000.

SAIC for USACE Louisville District and 88th Regional Support Command and USARC Headquarters. *Draft Site Inspection Geophysical Investigation Report Marion Local Training Area Marion, Ohio*. August 2001.

SAIC, *Draft Site Inspection Report, Marion Local Training Area, Marion, Ohio*. May 2001.

SAIC, *Final Site Inspection Report, Marion Local Training Area, Marion, Ohio*. May 2004.

US Army Corps of Engineers (prepared for) *Environmental Baseline Survey (EBS) Marion Outdoor Training Area (OTA) Marion, Ohio*. August 1996.

US Army Corps of Engineers *Jurisdictional determination letter*, August 29, 2006.

US Environmental Protection Agency, *Superfund Removal Procedures, Action Memorandum Guidance*. EPA 540/p.90/004, OSWER Directive 9360.3-01, 12-1990

US Environmental Protection Agency, *Data Quality Objectives Process for Hazardous Waste Site Investigations*, EPA/600-R-00-007, 2000.

US Environmental Protection Agency, *Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA*. EPA540-R-93-057, 1993.

US Environmental Protection Agency, *Quality Assurance/Quality Control Guidance for Remedial Activities: Sampling QA/QC Plan and Data Validation Procedures*. EPA 540/G-90-004, 1990.

US Environmental Protection Agency, *RCRA Groundwater Monitoring: Draft Technical Guidance*. EPA 530-R-93-001. United States Environmental Protection Agency, November 1992.

US Environmental Protection Agency, *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods SW-846*, Third Edition, November 1986; Revision 1, July 1992; Revision 2, November 1992; Update II, September 1994; Update III, December 1996.

US Environmental Protection Agency, *Use of Non-Time Critical Removal Authority in Superfund Response Actions*. (Luftig, Steve, Breen, Barry, February 14, 2000 Memorandum to staff, 7 pages).

US Geological Survey, *Marion East Quadrangle, Ohio, 7.5 Minute Series Topographic Map*. 1982.

USEPA, 1991c. *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual Supplemental Guidance. Standard Default Exposure Factors*. OSWER Directive 9285.6-03. March 25, 1991.

USEPA, 1993. *Superfund Standard Default Exposure Factors for the Central Tendency and RME*. November, 1993.

USEPA, 1996. *Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil*. EPA-540-R-03-001.

USEPA, 1997a. *Exposure Factors Handbook Volume I-III*. Office of Research and Development, Washington, D.C. EPA/600/P-95/002Fa, Fb and Fc, August 1997.

USEPA, 1989a. *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part A)*, EPA/540/1-89/002.

USEPA, 1989b. *Methods for Evaluating the Attainment of Cleanup Standards, Volume I: Soils and Solid Media*. EPA 230/02-89-042. Office of Planning, Policy and Evaluation.

USEPA, 1991a. *Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part A), Supplemental Guidance, Standard Default Exposure Factors*, Office of Emergency and Remedial Response, Washington, D.C.

USEPA, 1991b. *Risk Assessment Guidance for Superfund (RAGS), Volume I: Human Health Evaluation Manual, (Part B, Development of Risk-Based Preliminary Remediation Goals)*.

USEPA, 1992a. *Guidance for Data Usability in Risk Assessment*. EPA/540/G-90/008. Office of Emergency and Remedial Response.

USEPA, 1992b. *Supplemental Guidance to RAGS: Calculating the Concentration Term*. OSWER 9285.6-10.

USEPA, 1995. *Supplemental Guidance to RAGS: Region 4 Bulletins, Human Health and Risk Assessment (Interim Guidance)*. Waste Management Division, Office of Health Assessment.

USEPA, 1996. *Soil Screening Guidance: Technical Background Document*. Office of Solid Waste and Emergency Response. EPA/540/R95/128.

USEPA, 1997a. *Exposure Factors Handbook Volume I – General Factors*. Office of Research and Development, Washington, D.C. EPA/600/P-95/002Fa.

USEPA, 1997b. *Health Effects Assessment Summary Tables. FY 1997 Update.* EPA/540/R-97/036.

USEPA, 1998. *Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments).* Publication 9285.7-01D.

USEPA, 2000. *Region IX Preliminary Remediation Goals (PRGs).*

USEPA, 2001. *Risk Assessment Guidance for Superfund: Volume I Human Health Evaluation Manual (Part E, Supplemental Guidance for Dermal Risk Assessments).* EPA/540/R/99/005.

USEPA, 2002. *Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites.* Office of Emergency and Remedial Response. OSWER 9285.6-10.

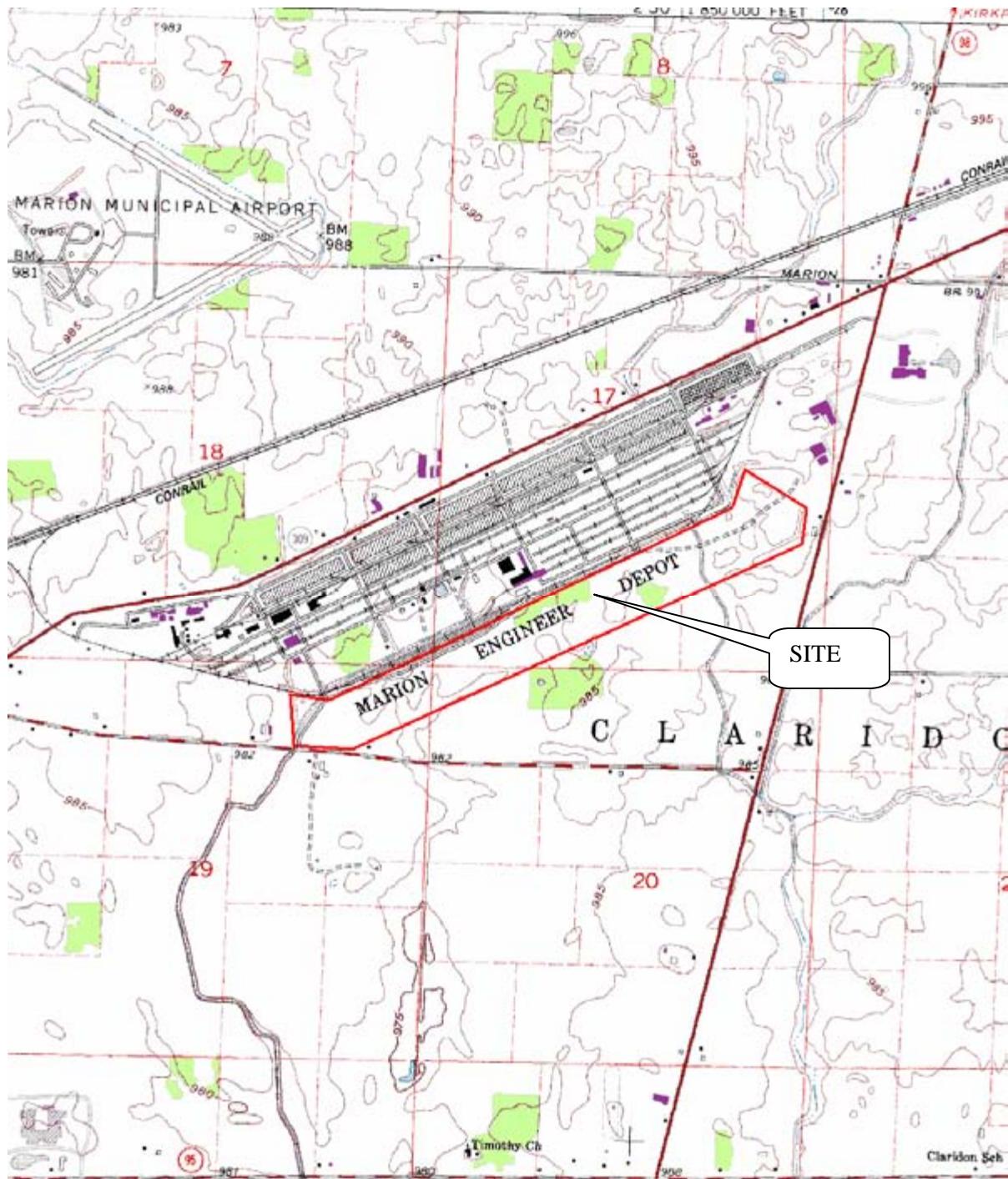
USEPA, 2003a. *Human Health Toxicity Values in Superfund Risk Assessments.* Memorandum by: Michael B. Cook. Office of Superfund Remediation and Technology Innovation. OSWER 9285.7-53. December 5, 2003.

USEPA, 2003b. *Recommendations for the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil.* EPA-540-R-03-001.

Zacharias, K. 2002. 88th Regional Support Command (RSC), U.S. Army Reserve. Personal communication with Pinaki Banerjee, MWH. October 22, 2002. As cited in: MWH Americas, Inc. Baseline Human Health Risk Assessment Work Plan. Marion Local Training Area, Marion, Ohio. February, 2004.

Zacharias, K. 2004. 88th Regional Support Command (RSC), U.S. Army Reserve. Personal communication with Pinaki Banerjee, MWH. February 10, 2004. As cited in: MWH Americas, Inc. Baseline Human Health Risk Assessment Work Plan. Marion Local Training Area, Marion, Ohio. February, 2004.

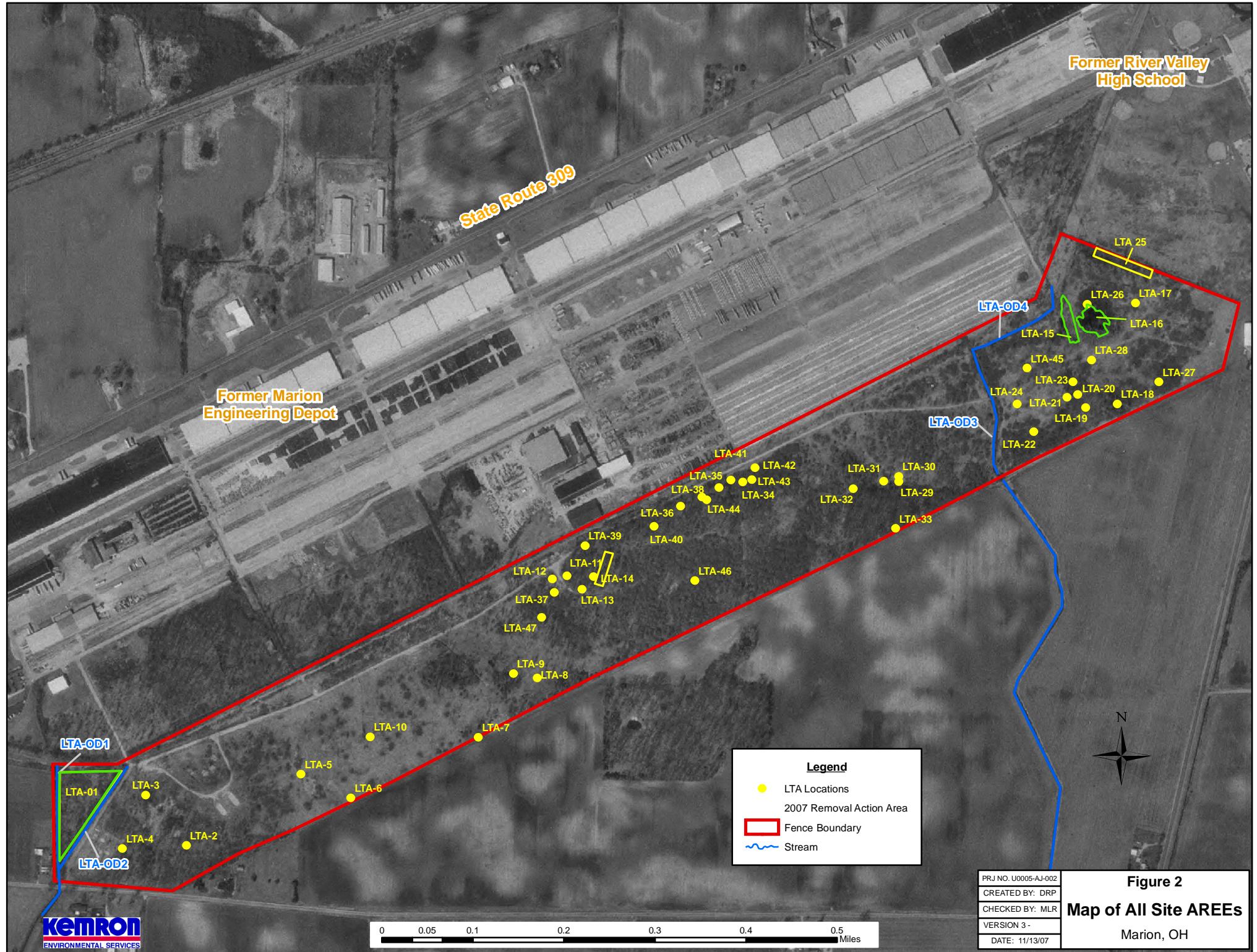
FIGURES



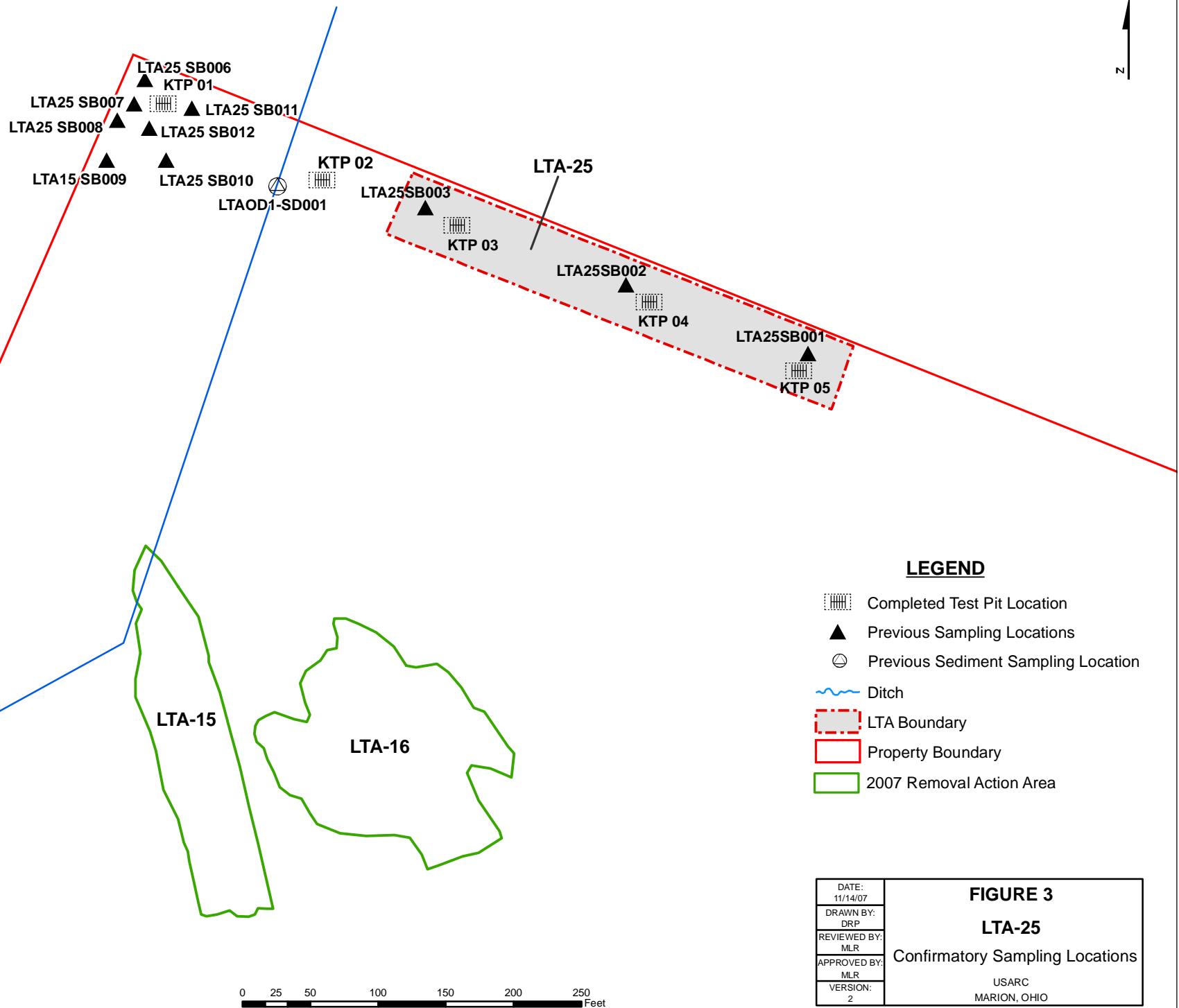
NORTH
MARION EAST, OH
QUADRANGLE
1:24,000
SCALE 1" = 2000'

FIGURE 1
SITE LOCATION MAP
MARION LTA USARC SITE
1565 HARDING HIGHWAY EAST
MARION, OH

PROJECT NUMBER:	U0005-AJ-002
PREPARED BY:	DAVE PITZER
REVIEWED BY:	MARY LOU ROCHOTTE
DATE:	11/13/07



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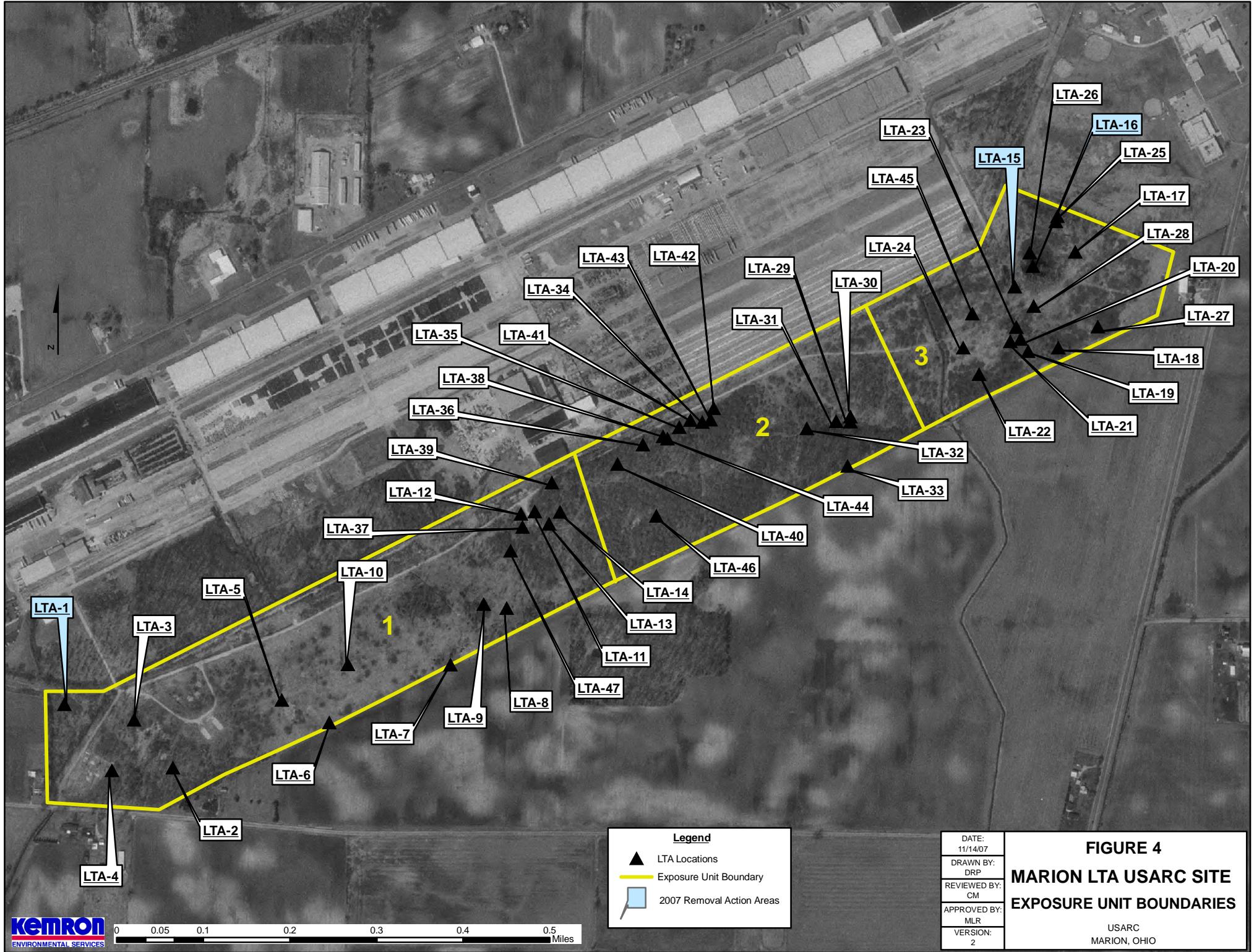
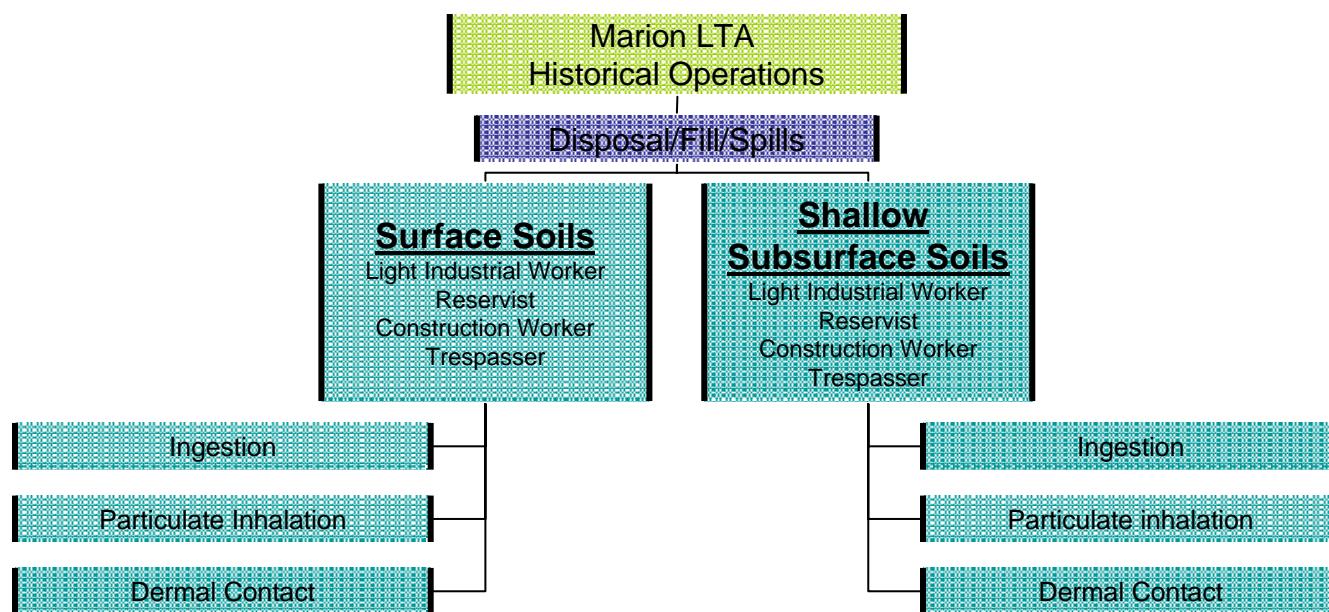


Figure 5
Conceptual Site Model
Marion LTA Site



TABLES

Table 2-1
Constituent Of Concern (COC) Analysis - Surface Soil (0-4') Dataset
Marion, Ohio

Detected Compounds (mg/kg)	Maximum Detected	Det Freq.	%	Bkgrd. Surface	Region 9 PRGs			COC?
					Industrial	Residential	1/10th PRG for Non- carcinogens (OEPA DERR, 2004)	
Inorganic Compounds								
Aluminum, Total	38986.00	107/107	100.00%	18404.00	100000	7600	76000	Yes
Antimony, Total	8.80	12/107	11.20%	13.00	410	3.1	31	No
Arsenic, Total	38.60	107/107	100.00%	18.00	1.6		0.39	Yes
Barium, Total	220.30	107/107	100.00%	146.00	67000	540	5400	No
Beryllium, Total	1.75	44/107	41.00%	1.20	1900	15	150	No
Cadmium, Total	4.30	47/107	44.00%	1.30	450		37	Yes
Calcium, Total	200550.00	107/107	100.00%					No
Chromium, Total	137.40	107/107	100.00%	22.00	450		210	No
Cobalt, Total	22.00	63/107	59.00%	13.00	1900	90	900	No
Copper, Total	49.70	107/107	100.00%	24.00	41000	310	3100	No
Iron, Total	41235.00	107/107	100.00%	25912.00	100000	2300	23000	Yes
Lead, Total	476.30	107/107	100.00%	28.00	800	40	400	Yes
Magnesium, Total	27067.00	107/107	100.00%					No
Manganese, Total	1750.00	107/107	100.00%	407.00	19000	180	1800	Yes
Mercury, Total	0.15	40/107	37.00%	0.13	310	2.3	23	No
Nickel, Total	54.70	107/107	100.00%	27.00	20000	160	1600	No
Potassium, Total	12000.00	107/107	100.00%					No
Selenium, Total	4.78	75/107	70.00%	2.80	5100	39	390	No
Silver, Total	2.10	27/107	25.00%	1.30	5100	39	390	No
Sodium, Total	939.90	107/107	100.00%					No
Thallium, Total	1.20	29/107	27.00%	2.30	67	0.52	5.2	No
Vanadium, Total	464.00	106/107	99.00%	32.00	1000	7.8	78	Yes
Zinc, Total	206.60	107/107	100.00%	95.00	100000	2300	23000	No
VOCs								
Acetone	0.67	15/103	14.60%		54000	1400	14000	No
Benzene	0.0700	4/103	3.90%		1.4		0.64	No
Toluene	0.0700	9/103	8.70%		520	52	520	No
Ethylbenzene	0.075	3/103	2.90%		400	40	400	No
1,2,4-trimethylbenzene	0.0034	3/88	3.40%		170	5.2	52	No
cis-1,2-Dichloroethene	0.016	3/20	15.00%		150	4.3	43	No
Bis(2-ethylhexyl)phthalate	0.880	22/97	22.70%		120		35	No
Carbon Disulfide	0.070	2/103	1.90%		720	36	360	No
Methylene Chloride	0.239	14/103	13.60%		21		9.1	No
N-propylbenzene	0.003	5/88	5.70%		240	24	240	No
p-isopropyltoluene	0.008	2/88	2.30%		NS	NS	NS	No
Tetrachloroethene	0.07	2/103	1.90%		1.3		0.48	No
Trichloroethene	12.00	16/103	15.50%		0.11		0.053	Yes
trans-1,2-Dichloroethene	0.0013	1/20	5.00%		230	6.9	69	No
Dibenzofuran	24.60	3/97	3.10%		1600	15	150	No
SVOCs								
2-Methylnaphthalene	10.30	2/97	2.10%	0.33	NS	NS	NS	No
Acenaphthene	37.90	5/97	5.20%	0.33	29000	370	3700	No
Acenaphthylene	5.36	2/97	2.10%	0.33	NS	NS	NS	No
Anthracene	61.80	6/97	6.20%	0.33	100000	2200	22000	No
Benzo(a)anthracene	105.00	12/97	12.40%	0.33	2.1		0.62	Yes
Benzo(a)pyrene	105.00	14/97	14.40%	0.33	0.21		0.062	Yes
Benzo(b)fluoranthene	125.00	27/97	27.80%	0.33	2.1		0.62	Yes
Benzo(g,h,i)Perylene	35.20	13/97	13.40%	0.33	NS	NS	NS	Yes
Benzo(k)fluoranthene	47.60	12/97	12.40%	0.33	21		6.2	Yes
Chrysene	102.00	14/97	14.40%	0.33	210	6.2	62	Yes
Dibenzo(a,h)anthracene	8.95	6/97	6.20%	0.33	0.21		0.062	Yes
Di-N-Butylphthalate	22.90	32/97	33.00%	0.33	25000	240	2400	No
Fluoranthene	258.00	17/97	17.50%	0.33	22000	230	2300	Yes
Fluorene	37.40	4/97	4.10%	0.33	26000	270	2700	No
Indeno(1,2,3-cd)pyrene	34.70	12/97	12.40%	0.33	2.1		0.62	Yes
Naphthalene	21.80	7/104	6.70%	0.33	190	5.6	56	Yes
Phenanthrene	242.00	9/97	9.30%	0.33	NS	NS	NS	Yes
Pyrene	238.00	14/97	14.40%	0.33	29000	230	2300	Yes

Legend	
Essential Nutrient	
Low Detection Frequency	
Does Not Exceed Bkrd.	
Does Not Exceed Res. PRG	

Table 2-2
Constituent of Concern (COC) Analysis - Subsurface Soil (4-12') Dataset
Marion, Ohio

Detected Compounds (mg/kg)	Maximum Detected	Det Freq.	%	Bkgrd. Subsurface	Region 9 PRGs			COC?
					Industrial	Residential	1/10th PRG for Non- carcinogens (OEPA DERR, 2004)	
Inorganic Compounds								
Aluminum, Total	30219.80	29/29	100.00%	8616.00	100000	7600	76000	Yes
Antimony, Total	ND			12.70	410	3.1	31	No
Arsenic, Total	30.12	29/29	100.00%	18.00	1.6		0.39	Yes
Barium, Total	274.07	29/29	100.00%	98.00	67000	540	5400	No
Beryllium, Total	1.15	2/29	6.90%	1.20	1900	15	150	No
Cadmium, Total	0.83	1/29	3.45%	1.30	450		37	No
Calcium, Total	162500.00	29/29	100.00%					No
Chromium, Total	40.50	29/29	100.00%	13.50	450		210	No
Cobalt, Total	22.70	16/29	55.20%	13.00	1900	90	900	No
Copper, Total	35.60	29/29	100.00%	27.00	41000	310	3100	No
Iron, Total	59432.00	29/29	100.00%	23852.00	100000	2300	23000	Yes
Lead, Total	30.30	29/29	100.00%	15.00	800	40	400	No
Magnesium, Total	27852.00	29/29	100.00%					No
Manganese, Total	1829.60	29/29	100.00%	452.00	19000	180	1800	Yes
Mercury, Total	ND			0.13	310	2.3	23	No
Nickel, Total	47.30	29/29	100.00%	36.00	20000	160	1600	No
Potassium, Total	9698.99	29/29	100.00%					No
Selenium, Total	6.63	17/29	58.60%	2.80	5100	39	390	No
Silver, Total	ND			1.30	5100	39	390	No
Sodium, Total	1060.34	29/29	100.00%					No
Thallium, Total	1.10	1/29	3.45%	2.50	67	0.52	5.2	No
Vanadium, Total	64.79	29/29	100.00%	17.00	1000	7.8	78	No
Zinc, Total	125.34	29/29	100.00%	112.00	100000	2300	23000	No
VOCs								
Acetone	0.10	2/29	6.90%		54000	1400	14000	No
Benzene	0.0060	9/29	31.00%		1.4		0.64	No
Toluene	0.0110	8/29	27.60%		520	52	520	No
Ethylbenzene	0.004	4/29	13.80%		400	40	400	No
1,2,4-trimethylbenzene	0.0023	1/28	3.57%		170	5.2	52	No
cis-1,2-Dichloroethene	ND				150	4.3	43	No
Bis(2-ethylhexyl)phthalate	0.470	8/29	27.60%		120		35	No
Carbon Disulfide	0.010	3/29	10.30%		720	36	360	No
Methylene Chloride	0.010	8/29	27.60%		21		9.1	No
N-propylbenzene	ND				240	24	240	No
p-isopropyltoluene	ND				NS		NS	No
Tetrachloroethene	ND				1.3		0.48	No
Trichloroethene	0.0019	1/29	3.50%		0.11		0.053	No
trans-1,2-Dichloroethene	NA				230	6.9	69	No
Dibenzofuran	ND				1600	15	150	No
SVOCs								
2-Methylnaphthalene	ND			0.33	NS		NS	No
Acenaphthene	ND			0.33	29000	370	3700	No
Acenaphthylene	ND			0.33	NS		NS	No
Anthracene	ND			0.33	100000	2200	22000	No
Benzo(a)anthracene	0.29	1/29	3.50%	0.33	2.1		0.62	No
Benzo(a)pyrene	0.29	1/29	3.50%	0.33	0.21		0.062	No
Benzo(b)fluoranthene	0.46	2/29	6.90%	0.33	2.1		0.62	No
Benzo(g,h,i)Perylene	ND			0.33	NS		NS	No
Benzo(k)fluoranthene	ND			0.33	21		6.2	No
Chrysene	0.29	1/29	3.45%	0.33	210	6.2	62	No
Dibenzo(a,h)anthracene	ND			0.33	0.21		0.062	No
Di-N-Butylphthalate	6.60	21/29	72.40%		25000	240	2400	No
Fluoranthene	0.09	1/29	3.50%	0.33	22000	230	2300	No
Fluorene	ND			0.33	26000	270	2700	No
Indeno(1,2,3-cd)pyrene	ND			0.33	2.1		0.62	No
Naphthalene	ND			0.33	190	5.6	56	No
Phenanthrene	0.88	1/29	3.50%	0.33	NS		NS	No
Pyrene	0.74	1/29	3.50%	0.33	29000	230	2300	No

Legend
Essential Nutrient
Low Detection Frequency
Does Not Exceed Bkgrd.
Does Not Exceed Res. PRG

Table 3-0
Exposure Unit Identification
 Marion Ohio Local Training Area
 Marion, Ohio

<u>Exposure Unit 1 LTAs</u>	<u>Exposure Unit 2 LTAs</u>	<u>Exposure Unit 3 LTAs</u>
1*	29	15*
2**	30	16*
3**	31	17
4**	32	18*
5**	33	19**
7	34**	20**
8	35**	21**
9	36**	22**
11	38	23**
12	40	24**
13	41**	25
14	42**	26
37	43**	27
39**	44	28
47	46	45

9 LTAs
 49 Samples

9 LTAs
 15 samples

6 LTAs
 41 samples

* - Removal Area Data
 ** - Subsurface Data Only

Table 3-1
Exposure Point Concentrations* - Surface Soil (0-4') Dataset
Marion, Ohio

Detected Compounds (mg/kg)	Exposure Unit 1			Exposure Unit 2			Exposure Unit 3			Region 9 PRGs			
	Mean	95%**	Max	Mean	95%**	Max	Mean	95%**	Max	Industrial	1/10th Residential PRG (OEPA DERR, 2004)	Residential	Bkgrd.
Inorganic Compounds													
Aluminum, Total	18306.91	20024.54	33813.30	22566.19	26399.21	36648.50	16212.36	18425.67	38986.40	100000	7600	76000	18404.00
Arsenic, Total	13.51	14.82	28.10	11.84	14.78	22.00	11.04	15.61	38.60	1.6		0.39	18.00
Cadmium, Total	0.94	1.58	4.30	ND	ND	ND	0.47	0.64	1.30	450		37	1.30
Iron, Total	23742.99	25360.60	40201.30	26310.49	29386.11	35740.90	20138.20	22290.03	41235.50	100000	2300	23000	25912.00
Lead, Total	47.80	88.44	407.00	25.58	53.56	113.82	57.87	129.49	476.32	800	40	400	28.00
Manganese, Total	263.74	417.58	1750.00	339.72	629.28	937.21	262.88	298.95	630.00	19000	180	1800	407.00
Vanadium, Total	50.56	89.99	464.00	44.37	53.03	76.25	36.13	51.56	122.00	1000	7.8	78	32.00
VOCs													
Trichloroethene	0.56	1.83	12.00	ND	ND	ND	0.0009	0.0014	0.0029	0.11		0.053	NA
SVOCs													
Benzo(a)anthracene	1.97	7.66	60.90	ND	ND	ND	2.94	26.18	105.00	2.1		0.62	0.33
Benzo(a)pyrene	1.69	6.22	47.10	ND	ND	ND	3.57	27.26	105.00	0.21		0.062	0.33
Benzo(b)fluoranthene	2.15	7.14	50.60	0.25	0.31	0.65	5.38	35.07	125.00	2.1		0.62	0.33
Benzo(g,h,i)Perylene	0.50	1.67	11.50	ND	ND	ND	1.47	5.13	35.20	NS	NS	NS	0.33
Benzo(k)fluoranthene	0.91	3.58	28.70	ND	ND	ND	1.93	6.79	47.60	21		6.2	0.33
Chrysene	1.82	7.19	55.20	ND	ND	ND	3.90	14.22	102.00	210	6.2	62	0.33
Dibenzo(a,h)anthracene	0.29	0.85	5.75	ND	ND	ND	0.48	2.75	8.95	0.21		0.062	0.33
Fluoranthene	4.40	17.97	144.00	ND	ND	ND	6.36	31.32	258.00	22000	230	2300	0.33
Indeno(1,2,3-cd)pyrene	0.70	2.30	16.10	ND	ND	ND	1.75	10.29	34.70	2.1		0.62	0.33
Naphthalene	0.69	2.68	21.80	ND	ND	ND	0.11	0.22	0.94	190	5.6	56	0.33
Phenanthrene	4.91	21.04	175.00	ND	ND	ND	5.60	29.02	242.00	NS	NS	NS	0.33
Pyrene	3.40	13.75	108.00	ND	ND	ND	6.04	29.05	238.00	29000	230	2300	0.33

Table 3-2
Exposure Point Concentrations* - Sub-Surface Soil (4-12') Dataset
Marion, Ohio

Detected Compounds (mg/kg)	Exposure Unit 1			Exposure Unit 2			Exposure Unit 3			Region 9 PRGs			
	Mean	95%**	Max	Mean	95%**	Max	Mean	95%*	Max	Industrial	1/10th Residential PRG (OEPA DERR, 2004)	Residential	Bkgrd.
Inorganic Compounds													
Aluminum, Total	18557.54	22666.72	26194.80	13734.15	16068.52	18976.30	21510.26	25983.39	30219.80	100000	7600	76000	18404.00
Arsenic, Total	13.67	19.60	30.12	11.48	14.25	15.62	17.88	21.27	24.98	1.6		0.39	18.00
Iron, Total	30568.46	39729.13	59432.10	25969.66	27261.72	29047.60	32922.34	35995.65	38983.70	100000	2300	23000	25912.00
Manganese, Total	641.95	1092.46	1829.63	441.24	566.54	761.36	522.87	780.62	1020.38	19000	180	1800	407.00

* - Statistical analysis conducted using USEPA ProUCL Version 3.0. Results presented in Appendix _.

** - 95% UCL of the mean for each exposure unit dataset was utilized as the EPC.

Table 3-3
Parameter Values for Exposure to Soil
Marion LTA Site

Exposure Factor	Units	Adolescent Trespasser	Reservist	Construction Worker	Industrial/Commercial Worker
General Parameters					
Exposure Frequency	days/year	64 a	6 b	125 c	250 d
Exposure Duration	years	11 a	6 b	1 b	25 d
Body Weight	kg	45 e	70 d	70 d	70 d
Averaging time _{carcinogenic effect}	days	25,550 f	25550 f	25,550 f	25,550 f
Averaging time _{non-carcinogenic effect}	days	4,015 g	2,190 g	125 c	9,125 g
Ingestion Parameters					
Soil Ingestion Rate	mg/day	100 d	100 d	480 d	100 d
Soil Fraction Ingested	unitless	0.25 h	0.5 h	1 h	0.5 h
Inhalation Parameters					
Inhalation Rate	m ³ /hour	1.2 i	2.5 j	2.5 j	2.5 j
Particulate Emission Factor	m ³ /kg	4.63E+09 k	4.63E+09 k	4.63E+09 k	4.63E+09 k
Volatilization Factor	m ³ /kg				
Exposure Rate	hours/day	3 b	8b	Chemical Specific	Chemical Specific
Dermal Contact Parameters					
Body Surface Area	cm ²	3,300 l	3,300 l	3,300 l	5,700 l
Dermal Absorbance Fraction	unitless				
Soil Adherence Factor	mg/cm ²	0.07 l	0.07 l	0.2 c	0.07 l

Notes:

a Assume adolescent trespassers use site 8 days per month during 8 warmer months. Exposure duration of 10 years (7-17 years old).

b Assumed value based on activity patterns.

c Montgomery Watson, 2002. River Valley School, Operation Unit 1-Former Disposal Area, Remedial Investigation Report, Marion, Ohio

d Supplemental Guidance to Risk Assessment Guidance for Superfund (RAGS) used to represent the RME (USEPA, 1991a).

e Exposure Factor Handbook, Table 7-3 (USEPA, 1997a), average body weight of females and males between 7 and 17 years old.

f The average time for carcinogenic effects is 70 years lifetime in units of days.

g The average time for noncarcinogenic effects equals to the exposure duration in units of days.

h Assumed value based on activity patterns. Soil fraction ingested is used to adjust for soil ingestion on-site compared to outside the site.

i Exposure Factor Handbook, Table 5-23 (USEPA, 1997a), mean inhalation rate for children performing moderate activities.

j Exposure Factor Handbook, Table 5-23 (USEPA, 1997a), mean inhalation rate for outdoor workers performing heavy activities.

k RAGS, Part B (USEPA, 1991b), default value.

l RAGS, Part E (USEPA, 2001), default value.

Table 3-4
Dermal Absorption Fraction from Soil^a
Marion LTA Site

Compound (COC)	Dermal Absorption Fraction
Iron	0.001 ^b
Manganese	0.001 ^b
Vanadium	0.001 ^b
Arsenic	0.03
Lead	0.001 ^b
Other Inorganics	0.001 ^b
Benzene	0.01 ^b
Trichloroethylene	0.01 ^b
Benzo(a)pyrene and other PAHs	0.13

Notes:

^a RAGS, Part E (USEPA, 2001), Exhibit 3-4, unless otherwise noted.

^b USEPA, 1995. Supplemental Guidance to RAGS: Region 4 Bulletins

TABLE 3-5a
Summary of ADDs for an Industrial/Commercial Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	3.2E-04	2.6E-05	3.5E-08	3.5E-04	
Arsenic	2.3E-06	5.7E-07	2.6E-11	2.8E-06	
Cadmium	2.6E-09	2.0E-09	2.8E-12	4.6E-09	
Iron	6.1E-04	3.3E-05	4.4E-08	6.5E-04	
Manganese	2.7E-06	5.4E-07	7.3E-10	3.2E-06	
Vanadium	1.5E-07	1.2E-07	1.6E-10	2.6E-07	
VOC's					
Trichloroethylene	1.5E-07	2.4E-08	3.2E-12	1.7E-07	
PAH's					
Benzo(a)anthracene	1.1E-06	1.3E-06	1.3E-11	2.4E-06	
Benzo(a)pyrene	8.9E-07	1.0E-06	1.1E-11	1.9E-06	
Benzo(b)fluoranthene	1.0E-06	1.2E-06	1.2E-11	2.2E-06	
Benzo(g,h,i)perylene	2.4E-07	2.8E-07	2.9E-12	5.2E-07	
Benzo(k)fluoranthene	5.1E-07	6.0E-07	6.2E-12	1.1E-06	
Chrysene	1.0E-06	1.2E-06	1.3E-11	2.2E-06	
Dibenzo(a,h)anthracene	1.2E-07	1.4E-07	1.5E-12	2.6E-07	
Fluoranthene	9.0E-07	3.0E-06	3.1E-11	3.9E-06	
Indeno(1,2,3-cd)pyrene	3.3E-07	3.9E-07	4.0E-12	7.2E-07	
Naphthalene	3.5E-07	4.5E-07	4.7E-12	8.0E-07	
Phenanthrene	3.0E-06	3.5E-06	3.7E-11	6.5E-06	
Pyrene	6.9E-07	2.3E-06	2.4E-11	3.0E-06	
Pathway-Specific Subtotal	9.5E-04	7.5E-05	8.0E-08	1.0E-03	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	3.7E-04	2.9E-05	4.0E-08	4.0E-04	
Arsenic	3.0E-06	7.6E-07	3.4E-11	3.8E-06	
Iron	9.6E-04	5.1E-05	6.9E-08	1.0E-03	
Manganese	7.1E-06	1.4E-06	1.9E-09	8.5E-06	
Pathway-Specific Subtotal	1.3E-03	8.3E-05	1.1E-07	1.4E-03	

TABLE 3-5b
Summary of ADDs for an Industrial/Commercial Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	4.3E-04	3.4E-05	4.6E-08	4.6E-04	
Arsenic	2.3E-06	5.7E-07	2.6E-11	2.8E-06	
Cadmium					
Iron	7.1E-04	3.8E-05	5.1E-08	7.5E-04	
Manganese	4.1E-06	8.1E-07	1.1E-09	4.9E-06	
Vanadium	8.6E-08	6.8E-08	9.2E-11	1.5E-07	
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	4.5E-08	5.2E-08	5.4E-13	9.6E-08	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	1.1E-03	7.3E-05	9.8E-08	1.2E-03	
<hr/>					
Exposure Unit 2 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	2.6E-04	2.1E-05	2.8E-08	2.8E-04	
Arsenic	2.2E-06	5.5E-07	2.5E-11	2.7E-06	
Iron	6.6E-04	3.5E-05	4.8E-08	7.0E-04	
Manganese	3.7E-06	7.3E-07	9.9E-10	4.4E-06	
Pathway-Specific Subtotal	9.3E-04	5.7E-05	7.7E-08	9.8E-04	
<hr/>					

TABLE 3-5c
Summary of ADDs for an Industrial/Commercial Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	3.0E-04	2.4E-05	3.2E-08	3.2E-04	
Arsenic	2.4E-06	6.0E-07	2.7E-11	3.0E-06	
Cadmium	1.0E-09	8.2E-10	1.1E-12	1.9E-09	
Iron	5.4E-04	2.9E-05	3.9E-08	5.7E-04	
Manganese	1.9E-06	3.9E-07	5.2E-10	2.3E-06	
Vanadium	8.3E-08	6.6E-08	9.0E-11	1.5E-07	
VOC's					
Trichloroethylene	1.1E-10	1.8E-11	2.4E-15	1.3E-10	
PAH's					
Benzo(a)anthracene	3.8E-06	4.4E-06	4.6E-11	8.1E-06	
Benzo(a)pyrene	3.9E-06	4.6E-06	4.8E-11	8.5E-06	
Benzo(b)fluoranthene	5.0E-06	5.9E-06	6.1E-11	1.1E-05	
Benzo(g,h,i)perylene	7.4E-07	8.6E-07	8.9E-12	1.6E-06	
Benzo(k)fluoranthene	9.8E-07	1.1E-06	1.2E-11	2.1E-06	
Chrysene	2.0E-06	2.4E-06	2.5E-11	4.4E-06	
Dibenzo(a,h)anthracene	4.0E-07	4.6E-07	4.8E-12	8.6E-07	
Fluoranthene	1.6E-06	5.2E-06	5.5E-11	6.8E-06	
Indeno(1,2,3-cd)pyrene	1.5E-06	1.7E-06	1.8E-11	3.2E-06	
Naphthalene	2.8E-08	3.7E-08	3.8E-13	6.5E-08	
Phenanthrene	4.2E-06	4.9E-06	5.1E-11	9.0E-06	
Pyrene	1.5E-06	4.9E-06	5.1E-11	6.3E-06	
Pathway-Specific Subtotal	8.7E-04	9.0E-05	7.2E-08	9.6E-04	

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	4.2E-04	3.3E-05	4.5E-08	4.5E-04	
Arsenic	3.3E-06	8.2E-07	3.7E-11	4.1E-06	
Iron	8.7E-04	4.6E-05	6.3E-08	9.2E-04	
Manganese	5.0E-06	1.0E-06	1.4E-09	6.0E-06	
Pathway-Specific Subtotal	1.3E-03	8.2E-05	1.1E-07	1.4E-03	

TABLE 3-6a
Summary of ADDs for a Construction Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	4.5E-03	6.2E-05	5.1E-08	4.6E-03	
Arsenic	3.2E-05	1.4E-06	3.8E-11	3.3E-05	
Cadmium	3.6E-08	4.9E-09	4.0E-12	4.1E-08	
Iron	8.6E-03	7.9E-05	6.5E-08	8.7E-03	
Manganese	3.8E-05	1.3E-06	1.1E-09	3.9E-05	
Vanadium	2.0E-06	2.8E-07	2.3E-10	2.3E-06	
VOC's					
Trichloroethylene	2.1E-06	5.7E-08	4.7E-12	2.1E-06	
PAH's					
Benzo(a)anthracene	1.5E-05	3.1E-06	1.9E-11	1.9E-05	
Benzo(a)pyrene	1.3E-05	2.5E-06	1.6E-11	1.5E-05	
Benzo(b)fluoranthene	1.4E-05	2.9E-06	1.8E-11	1.7E-05	
Benzo(g,h,i)perylene	3.4E-06	6.8E-07	4.3E-12	4.0E-06	
Benzo(k)fluoranthene	7.2E-06	1.4E-06	9.1E-12	8.7E-06	
Chrysene	1.4E-05	2.9E-06	1.8E-11	1.7E-05	
Dibenzo(a,h)anthracene	1.7E-06	3.4E-07	2.2E-12	2.1E-06	
Fluoranthene	1.3E-05	7.3E-06	4.6E-11	2.0E-05	
Indeno(1,2,3-cd)pyrene	4.6E-06	9.3E-07	5.9E-12	5.6E-06	
Naphthalene	4.9E-06	1.1E-06	6.8E-12	5.9E-06	
Phenanthrene	4.2E-05	8.5E-06	5.4E-11	5.1E-05	
Pyrene	9.6E-06	5.6E-06	3.5E-11	1.5E-05	
Pathway-Specific Subtotal	1.3E-02	1.8E-04	1.2E-07	1.4E-02	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	2.8E-05	2.6E-06	2.9E-09	3.0E-05	
Arsenic	2.3E-07	6.6E-08	2.5E-12	2.9E-07	
Iron	7.3E-05	4.5E-06	5.0E-09	7.7E-05	
Manganese	5.3E-07	1.2E-07	1.4E-10	6.6E-07	
Pathway-Specific Subtotal	1.0E-04	7.2E-06	8.0E-09	1.1E-04	

TABLE 3-6b
Summary of ADDs for a Construction Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	6.0E-03	8.2E-05	6.7E-08	6.1E-03	
Arsenic	3.2E-05	1.4E-06	3.8E-11	3.3E-05	
Cadmium					
Iron	1.0E-02	9.1E-05	7.5E-08	1.0E-02	
Manganese	5.7E-05	2.0E-06	1.6E-09	5.9E-05	
Vanadium	1.2E-06	1.6E-07	1.3E-10	1.4E-06	
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	6.2E-07	1.3E-07	7.9E-13	7.5E-07	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	1.6E-02	1.8E-04	1.4E-07	1.6E-02	
Exposure Unit 2 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	3.6E-03	5.0E-05	4.1E-08	3.7E-03	
Arsenic	3.1E-05	1.3E-06	3.6E-11	3.2E-05	
Iron	9.3E-03	8.5E-05	6.9E-08	9.3E-03	
Manganese	5.1E-05	1.8E-06	1.4E-09	5.3E-05	
Pathway-Specific Subtotal	1.3E-02	1.4E-04	1.1E-07	1.3E-02	

TABLE 3-6c
Summary of ADDs for a Construction Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	4.2E-03	5.7E-05	4.7E-08	4.2E-03	
Arsenic	3.4E-05	1.5E-06	4.0E-11	3.5E-05	
Cadmium	1.4E-08	2.0E-09	1.6E-12	1.6E-08	
Iron	7.6E-03	6.9E-05	5.7E-08	7.6E-03	
Manganese	2.7E-05	9.3E-07	7.6E-10	2.8E-05	
Vanadium	1.2E-06	1.6E-07	1.3E-10	1.3E-06	
VOC's					
Trichloroethylene	1.6E-09	4.4E-11	3.6E-15	1.6E-09	
PAH's					
Benzo(a)anthracene	5.3E-05	1.1E-05	6.7E-11	6.3E-05	
Benzo(a)pyrene	5.5E-05	1.1E-05	6.9E-11	6.6E-05	
Benzo(b)fluoranthene	7.1E-05	1.4E-05	8.9E-11	8.5E-05	
Benzo(g,h,i)perylene	1.0E-05	2.1E-06	1.3E-11	1.2E-05	
Benzo(k)fluoranthene	1.4E-05	2.7E-06	1.7E-11	1.6E-05	
Chrysene	2.9E-05	5.8E-06	3.6E-11	3.4E-05	
Dibenzo(a,h)anthracene	5.5E-06	1.1E-06	7.0E-12	6.7E-06	
Fluoranthene	2.2E-05	1.3E-05	8.0E-11	3.5E-05	
Indeno(1,2,3-cd)pyrene	2.1E-05	4.2E-06	2.6E-11	2.5E-05	
Naphthalene	4.0E-07	8.9E-08	5.6E-13	4.9E-07	
Phenanthrene	5.8E-05	1.2E-05	7.4E-11	7.0E-05	
Pyrene	2.0E-05	1.2E-05	7.4E-11	3.2E-05	
Pathway-Specific Subtotal	1.2E-02	2.2E-04	1.1E-07	1.2E-02	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	5.9E-03	8.1E-05	6.6E-08	6.0E-03	
Arsenic	4.6E-05	2.0E-06	5.4E-11	4.8E-05	
Iron	1.2E-02	1.1E-04	9.2E-08	1.2E-02	
Manganese	7.1E-05	2.4E-06	2.0E-09	7.3E-05	
Pathway-Specific Subtotal	1.8E-02	2.0E-04	1.6E-07	1.8E-02	

TABLE 3-7a
Summary of ADDs for a Reservist
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	7.8E-06	3.6E-07	8.4E-10	8.1E-06	
Arsenic	5.5E-08	8.0E-09	6.2E-13	6.3E-08	
Cadmium	6.1E-11	2.8E-11	6.6E-14	9.0E-11	
Iron	1.5E-05	4.5E-07	1.1E-09	1.5E-05	
Manganese	6.5E-08	7.5E-09	1.7E-11	7.2E-08	
Vanadium	3.5E-09	1.6E-09	3.8E-12	5.1E-09	
VOC's					
Trichloroethylene	3.5E-09	3.3E-10	7.7E-14	3.9E-09	
PAH's					
Benzo(a)anthracene	2.6E-08	1.8E-08	3.2E-13	4.4E-08	
Benzo(a)pyrene	2.1E-08	1.4E-08	2.6E-13	3.6E-08	
Benzo(b)fluoranthene	2.5E-08	1.7E-08	3.0E-13	4.1E-08	
Benzo(g,h,i)perylene	5.8E-09	3.9E-09	7.0E-14	9.6E-09	
Benzo(k)fluoranthene	1.2E-08	8.3E-09	1.5E-13	2.1E-08	
Chrysene	2.5E-08	1.7E-08	3.0E-13	4.2E-08	
Dibenzo(a,h)anthracene	2.9E-09	2.0E-09	3.6E-14	4.9E-09	
Fluoranthene	2.2E-08	4.2E-08	7.5E-13	6.3E-08	
Indeno(1,2,3-cd)pyrene	7.9E-09	5.4E-09	9.6E-14	1.3E-08	
Naphthalene	8.3E-09	6.2E-09	1.1E-13	1.5E-08	
Phenanthrene	7.3E-08	4.9E-08	8.8E-13	1.2E-07	
Pyrene	1.7E-08	3.2E-08	5.8E-13	4.9E-08	
Pathway-Specific Subtotal	2.3E-05	1.0E-06	1.9E-09	2.4E-05	

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	8.8E-06	4.1E-07	9.5E-10	9.2E-06	
Arsenic	7.2E-08	1.1E-08	8.2E-13	8.3E-08	
Iron	2.3E-05	7.1E-07	1.7E-09	2.4E-05	
Manganese	1.7E-07	2.0E-08	4.6E-11	1.9E-07	
Pathway-Specific Subtotal	3.2E-05	1.1E-06	2.7E-09	3.3E-05	

TABLE 3-7b
Summary of ADDs for a Reservist
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	1.0E-05	4.7E-07	1.1E-09	1.1E-05	
Arsenic	5.4E-08	7.9E-09	6.2E-13	6.2E-08	
Cadmium					
Iron	1.7E-05	5.3E-07	1.2E-09	1.8E-05	
Manganese	9.8E-08	1.1E-08	2.6E-11	1.1E-07	
Vanadium	2.1E-09	9.5E-10	2.2E-12	3.0E-09	
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	1.1E-09	7.2E-10	1.3E-14	1.8E-09	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	2.7E-05	1.0E-06	2.4E-09	2.8E-05	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	6.2E-06	2.9E-07	6.7E-10	6.5E-06	
Arsenic	5.2E-08	7.7E-09	6.0E-13	6.0E-08	
Iron	1.6E-05	4.9E-07	1.1E-09	1.6E-05	
Manganese	8.8E-08	1.0E-08	2.4E-11	9.8E-08	
Pathway-Specific Subtotal	2.2E-05	7.9E-07	1.8E-09	2.3E-05	

TABLE 3-7c
Summary of ADDs for a Reservist
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	7.1E-06	3.3E-07	7.7E-10	7.5E-06	
Arsenic	5.7E-08	8.4E-09	6.5E-13	6.6E-08	
Cadmium	2.5E-11	1.1E-11	2.7E-14	3.6E-11	
Iron	1.3E-05	4.0E-07	9.3E-10	1.3E-05	
Manganese	4.6E-08	5.4E-09	1.3E-11	5.2E-08	
Vanadium	2.0E-09	9.2E-10	2.2E-12	2.9E-09	
VOC's					
Trichloroethylene	2.7E-12	2.5E-13	5.9E-17	3.0E-12	
PAH's					
Benzo(a)anthracene	9.0E-08	6.1E-08	1.1E-12	1.5E-07	
Benzo(a)pyrene	9.4E-08	6.3E-08	1.1E-12	1.6E-07	
Benzo(b)fluoranthene	1.2E-07	8.2E-08	1.5E-12	2.0E-07	
Benzo(g,h,i)perylene	1.8E-08	1.2E-08	2.1E-13	3.0E-08	
Benzo(k)fluoranthene	2.3E-08	1.6E-08	2.8E-13	3.9E-08	
Chrysene	4.9E-08	3.3E-08	6.0E-13	8.2E-08	
Dibenzo(a,h)anthracene	9.5E-09	6.4E-09	1.2E-13	1.6E-08	
Fluoranthene	3.8E-08	7.3E-08	1.3E-12	1.1E-07	
Indeno(1,2,3-cd)pyrene	3.5E-08	2.4E-08	4.3E-13	5.9E-08	
Naphthalene	6.8E-10	5.1E-10	9.2E-15	1.2E-09	
Phenanthrene	1.0E-07	6.8E-08	1.2E-12	1.7E-07	
Pyrene	3.5E-08	6.8E-08	1.2E-12	1.0E-07	
Pathway-Specific Subtotal	2.1E-05	1.2E-06	1.7E-09	2.2E-05	

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	1.0E-05	4.7E-07	1.1E-09	1.1E-05	
Arsenic	7.8E-08	1.1E-08	8.9E-13	9.0E-08	
Iron	2.1E-05	6.4E-07	1.5E-09	2.2E-05	
Manganese	1.2E-07	1.4E-08	3.3E-11	1.3E-07	
Pathway-Specific Subtotal	3.1E-05	1.1E-06	2.6E-09	3.2E-05	

TABLE 3-8a
Summary of ADDs for an Adolescent Trespasser
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	2.4E-05	2.3E-06	2.5E-09	2.7E-05	
Arsenic	1.7E-07	5.0E-08	1.9E-12	2.2E-07	
Cadmium	1.9E-10	1.8E-10	2.0E-13	3.7E-10	
Iron	4.6E-05	2.9E-06	3.2E-09	4.9E-05	
Manganese	2.0E-07	4.7E-08	5.3E-11	2.5E-07	
Vanadium	1.1E-08	1.0E-08	1.1E-11	2.1E-08	
VOC's					
Trichloroethylene	1.1E-08	2.1E-09	2.3E-13	1.3E-08	
PAH's					
Benzo(a)anthracene	8.3E-08	1.1E-07	9.7E-13	2.0E-07	
Benzo(a)pyrene	6.7E-08	9.1E-08	7.9E-13	1.6E-07	
Benzo(b)fluoranthene	7.7E-08	1.0E-07	9.0E-13	1.8E-07	
Benzo(g,h,i)perylene	1.8E-08	2.4E-08	2.1E-13	4.3E-08	
Benzo(k)fluoranthene	3.9E-08	5.2E-08	4.5E-13	9.1E-08	
Chrysene	7.8E-08	1.1E-07	9.1E-13	1.8E-07	
Dibenzo(a,h)anthracene	9.2E-09	1.2E-08	1.1E-13	2.2E-08	
Fluoranthene	6.8E-08	2.6E-07	2.3E-12	3.3E-07	
Indeno(1,2,3-cd)pyrene	2.5E-08	3.4E-08	2.9E-13	5.9E-08	
Naphthalene	2.6E-08	3.9E-08	3.4E-13	6.5E-08	
Phenanthrene	2.3E-07	3.1E-07	2.7E-12	5.4E-07	
Pyrene	5.2E-08	2.0E-07	1.7E-12	2.5E-07	
Pathway-Specific Subtotal	7.2E-05	6.6E-06	5.8E-09	7.8E-05	

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	2.8E-05	2.6E-06	2.9E-09	3.0E-05	
Arsenic	2.3E-07	6.6E-08	2.5E-12	2.9E-07	
Iron	7.3E-05	4.5E-06	5.0E-09	7.7E-05	
Manganese	5.3E-07	1.2E-07	1.4E-10	6.6E-07	
Pathway-Specific Subtotal	1.0E-04	7.2E-06	8.0E-09	1.1E-04	

TABLE 3-8b
Summary of ADDs for an Adolescent Trespasser
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	3.2E-05	3.0E-06	3.3E-09	3.5E-05	
Arsenic	1.7E-07	5.0E-08	1.9E-12	2.2E-07	
Cadmium					
Iron	5.4E-05	3.3E-06	3.7E-09	5.7E-05	
Manganese	3.1E-07	7.1E-08	7.9E-11	3.8E-07	
Vanadium	6.5E-09	6.0E-09	6.7E-12	1.2E-08	
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	3.4E-09	4.5E-09	3.9E-14	7.9E-09	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	8.6E-05	6.4E-06	7.1E-09	9.3E-05	

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	2.8E-05	2.6E-06	2.9E-09	3.0E-05	
Arsenic	2.3E-07	6.6E-08	2.5E-12	2.9E-07	
Iron	7.3E-05	4.5E-06	5.0E-09	7.7E-05	
Manganese	5.3E-07	1.2E-07	1.4E-10	6.6E-07	
Pathway-Specific Subtotal	1.0E-04	7.2E-06	8.0E-09	1.1E-04	

TABLE 3-8c
Summary of ADDs for an Adolescent Trespasser
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	2.2E-05	2.1E-06	2.3E-09	2.5E-05	
Arsenic	1.8E-07	5.3E-08	2.0E-12	2.3E-07	
Cadmium	7.8E-11	7.2E-11	8.1E-14	1.5E-10	
Iron	4.1E-05	2.5E-06	2.8E-09	4.3E-05	
Manganese	1.5E-07	3.4E-08	3.8E-11	1.8E-07	
Vanadium	6.3E-09	5.8E-09	6.5E-12	1.2E-08	
VOC's					
Trichloroethylene	8.5E-12	1.6E-12	1.8E-16	1.0E-11	
PAH's					
Benzo(a)anthracene	2.8E-07	3.8E-07	3.3E-12	6.7E-07	
Benzo(a)pyrene	3.0E-07	4.0E-07	3.4E-12	6.9E-07	
Benzo(b)fluoranthene	3.8E-07	5.1E-07	4.4E-12	8.9E-07	
Benzo(g,h,i)perylene	5.6E-08	7.5E-08	6.5E-13	1.3E-07	
Benzo(k)fluoranthene	7.4E-08	9.9E-08	8.6E-13	1.7E-07	
Chrysene	1.5E-07	2.1E-07	1.8E-12	3.6E-07	
Dibenzo(a,h)anthracene	3.0E-08	4.0E-08	3.5E-13	7.0E-08	
Fluoranthene	1.2E-07	4.6E-07	4.0E-12	5.8E-07	
Indeno(1,2,3-cd)pyrene	1.1E-07	1.5E-07	1.3E-12	2.6E-07	
Naphthalene	2.1E-09	3.2E-09	2.8E-14	5.4E-09	
Phenanthrene	3.1E-07	4.2E-07	3.7E-12	7.4E-07	
Pyrene	1.1E-07	4.2E-07	3.7E-12	5.3E-07	
Pathway-Specific Subtotal	6.5E-05	7.9E-06	5.2E-09	7.3E-05	

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
ADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum	3.2E-05	2.9E-06	3.3E-09	3.5E-05	
Arsenic	2.5E-07	7.2E-08	2.7E-12	3.2E-07	
Iron	6.6E-05	4.0E-06	4.5E-09	7.0E-05	
Manganese	3.8E-07	8.8E-08	9.9E-11	4.7E-07	
Pathway-Specific Subtotal	9.8E-05	7.1E-06	7.9E-09	1.1E-04	

TABLE 3-9a
Summary of LADDs for an Industrial/Commercial Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	8.1E-07	2.0E-07	9.2E-12	1.0E-06	
Cadmium			9.8E-13	9.8E-13	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	5.3E-08	8.4E-09	1.1E-12	6.1E-08	
PAH's					
Benzo(a)anthracene	3.9E-07	4.6E-07	4.8E-12	8.5E-07	
Benzo(a)pyrene	3.2E-07	3.7E-07	3.9E-12	6.9E-07	
Benzo(b)fluoranthene	3.7E-07	4.3E-07	4.4E-12	7.9E-07	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	1.8E-07	2.1E-07	2.2E-12	4.0E-07	
Chrysene	3.7E-07	4.3E-07	4.5E-12	8.0E-07	
Dibenzo(a,h)anthracene	4.4E-08	5.1E-08	5.3E-13	9.4E-08	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	1.2E-07	1.4E-07	1.4E-12	2.6E-07	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	2.7E-06	2.3E-06	3.3E-11	5.0E-06	
Exposure Unit 1 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.1E-06	2.7E-07	1.2E-11	1.3E-06	
Iron					
Manganese					
Pathway-Specific Subtotal	1.1E-06	2.7E-07	1.2E-11	1.3E-06	

TABLE 3-10b
Summary of LADDs for a Construction Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.6E-07	6.7E-09	1.8E-13	1.6E-07	
Cadmium					
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	3.1E-09	6.1E-10	3.9E-15	3.7E-09	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	1.6E-07	7.4E-09	1.9E-13	1.7E-07	
Exposure Unit 2 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.5E-07	6.5E-09	1.8E-13	1.6E-07	
Iron					
Manganese					
Pathway-Specific Subtotal	1.5E-07	6.5E-09	1.8E-13	1.6E-07	

TABLE 3-9c
Summary of LADDs for an Industrial/Commercial Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	8.6E-07	2.2E-07	9.7E-12	1.1E-06	
Cadmium			4.0E-13	4.0E-13	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	4.0E-11	6.4E-12	8.7E-16	4.7E-11	
PAH's					
Benzo(a)anthracene	1.3E-06	1.6E-06	1.6E-11	2.9E-06	
Benzo(a)pyrene	1.4E-06	1.6E-06	1.7E-11	3.0E-06	
Benzo(b)fluoranthene	1.8E-06	2.1E-06	2.2E-11	3.9E-06	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	3.5E-07	4.1E-07	4.2E-12	7.5E-07	
Chrysene	7.3E-07	8.5E-07	8.9E-12	1.6E-06	
Dibenzo(a,h)anthracene	1.4E-07	1.6E-07	1.7E-12	3.1E-07	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	5.3E-07	6.2E-07	6.4E-12	1.1E-06	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	7.1E-06	7.5E-06	8.6E-11	1.5E-05	
Exposure Unit 3 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.2E-06	2.9E-07	1.3E-11	1.5E-06	
Iron					
Manganese					
Pathway-Specific Subtotal	1.2E-06	2.9E-07	1.3E-11	1.5E-06	

TABLE 3-10a
Summary of LADDs for a Construction Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.6E-07	6.8E-09	1.8E-13	1.6E-07	
Cadmium			2.0E-14	2.0E-14	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	1.0E-08	2.8E-10	2.3E-14	1.0E-08	
PAH's					
Benzo(a)anthracene	7.5E-08	1.5E-08	9.5E-14	9.1E-08	
Benzo(a)pyrene	6.1E-08	1.2E-08	7.7E-14	7.4E-08	
Benzo(b)fluoranthene	7.0E-08	1.4E-08	8.9E-14	8.4E-08	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	3.5E-08	7.1E-09	4.5E-14	4.2E-08	
Chrysene	7.1E-08	1.4E-08	9.0E-14	8.5E-08	
Dibenzo(a,h)anthracene	8.4E-09	1.7E-09	1.1E-14	1.0E-08	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	2.3E-08	4.6E-09	2.9E-14	2.7E-08	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	5.1E-07	7.6E-08	6.6E-13	5.9E-07	
Exposure Unit 1 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	3.6E-08	1.0E-08	3.9E-13	4.6E-08	
Iron					
Manganese					
Pathway-Specific Subtotal	3.6E-08	1.0E-08	3.9E-13	4.6E-08	

TABLE 3-10b
Summary of LADDs for a Construction Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.6E-07	6.7E-09	1.8E-13	1.6E-07	
Cadmium					
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	3.1E-09	6.1E-10	3.9E-15	3.7E-09	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	1.6E-07	7.4E-09	1.9E-13	1.7E-07	
Exposure Unit 2 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.5E-07	6.5E-09	1.8E-13	1.6E-07	
Iron					
Manganese					
Pathway-Specific Subtotal	1.5E-07	6.5E-09	1.8E-13	1.6E-07	

TABLE 3-10c
Summary of LADDs for a Construction Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.6E-07	7.1E-09	1.9E-13	1.7E-07	
Cadmium			8.0E-15	8.0E-15	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	7.7E-12	2.1E-13	1.7E-17	8.0E-12	
PAH's					
Benzo(a)anthracene	2.6E-07	5.2E-08	3.3E-13	3.1E-07	
Benzo(a)pyrene	2.7E-07	5.4E-08	3.4E-13	3.2E-07	
Benzo(b)fluoranthene	3.5E-07	6.9E-08	4.4E-13	4.1E-07	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	6.7E-08	1.3E-08	8.5E-14	8.0E-08	
Chrysene	1.4E-07	2.8E-08	1.8E-13	1.7E-07	
Dibenzo(a,h)anthracene	2.7E-08	5.4E-09	3.4E-14	3.3E-08	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	1.0E-07	2.0E-08	1.3E-13	1.2E-07	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	1.4E-06	2.5E-07	1.7E-12	1.6E-06	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	2.2E-07	9.7E-09	2.6E-13	2.3E-07	
Iron					
Manganese					
Pathway-Specific Subtotal	2.2E-07	9.7E-09	2.6E-13	2.3E-07	

TABLE 3-11a
Summary of LADDs for a Reservist
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	4.7E-09	6.8E-10	5.3E-14	5.4E-09	
Cadmium			5.7E-15	5.7E-15	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	3.0E-10	2.8E-11	6.6E-15	3.3E-10	
PAH's					
Benzo(a)anthracene	2.3E-09	1.5E-09	2.7E-14	3.8E-09	
Benzo(a)pyrene	1.8E-09	1.2E-09	2.2E-14	3.1E-09	
Benzo(b)fluoranthene	2.1E-09	1.4E-09	2.6E-14	3.5E-09	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	1.1E-09	7.1E-10	1.3E-14	1.8E-09	
Chrysene	2.1E-09	1.4E-09	2.6E-14	3.6E-09	
Dibenzo(a,h)anthracene	2.5E-10	1.7E-10	3.0E-15	4.2E-10	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	6.8E-10	4.6E-10	8.2E-15	1.1E-09	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	1.5E-08	7.7E-09	1.9E-13	2.3E-08	
Exposure Unit 1 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	6.2E-09	9.0E-10	7.0E-14	7.1E-09	
Iron					
Manganese					
Pathway-Specific Subtotal	6.2E-09	9.0E-10	7.0E-14	7.1E-09	

TABLE 3-11b
Summary of LADDs for a Reservist
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	4.7E-09	6.8E-10	5.3E-14	5.3E-09	
Cadmium					
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	9.2E-11	6.2E-11	1.1E-15	1.5E-10	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	4.8E-09	7.4E-10	5.4E-14	5.5E-09	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	4.5E-09	6.6E-10	5.1E-14	5.2E-09	
Iron					
Manganese					
Pathway-Specific Subtotal	4.5E-09	6.6E-10	5.1E-14	5.2E-09	

TABLE 3-11c
Summary of LADDs for a Reservist
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	4.9E-09	7.2E-10	5.6E-14	5.6E-09	
Cadmium			2.3E-15	2.3E-15	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	2.3E-13	2.1E-14	5.0E-18	2.5E-13	
PAH's					
Benzo(a)anthracene	7.7E-09	5.2E-09	9.4E-14	1.3E-08	
Benzo(a)pyrene	8.1E-09	5.4E-09	9.8E-14	1.3E-08	
Benzo(b)fluoranthene	1.0E-08	7.0E-09	1.3E-13	1.7E-08	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	2.0E-09	1.4E-09	2.4E-14	3.4E-09	
Chrysene	4.2E-09	2.8E-09	5.1E-14	7.0E-09	
Dibenzo(a,h)anthracene	8.1E-10	5.5E-10	9.9E-15	1.4E-09	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	3.0E-09	2.1E-09	3.7E-14	5.1E-09	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	4.1E-08	2.5E-08	5.0E-13	6.6E-08	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	6.7E-09	9.8E-10	7.6E-14	7.7E-09	
Iron					
Manganese					
Pathway-Specific Subtotal	6.7E-09	9.8E-10	7.6E-14	7.7E-09	

TABLE 3-12a
Summary of LADDs for an Adolescent Trespasser
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	2.7E-08	7.9E-09	2.9E-13	3.5E-08	
Cadmium			3.1E-14	3.1E-14	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	1.8E-09	3.2E-10	3.6E-14	2.1E-09	
PAH's					
Benzo(a)anthracene	1.3E-08	1.8E-08	1.5E-13	3.1E-08	
Benzo(a)pyrene	1.1E-08	1.4E-08	1.2E-13	2.5E-08	
Benzo(b)fluoranthene	1.2E-08	1.6E-08	1.4E-13	2.9E-08	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	6.1E-09	8.2E-09	7.1E-14	1.4E-08	
Chrysene	1.2E-08	1.7E-08	1.4E-13	2.9E-08	
Dibenzo(a,h)anthracene	1.4E-09	2.0E-09	1.7E-14	3.4E-09	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	3.9E-09	5.3E-09	4.6E-14	9.2E-09	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	8.8E-08	8.8E-08	1.1E-12	1.8E-07	
Exposure Unit 1 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	3.6E-08	1.0E-08	3.9E-13	4.6E-08	
Iron					
Manganese					
Pathway-Specific Subtotal	3.6E-08	1.0E-08	3.9E-13	4.6E-08	

TABLE 3-12b
Summary of LADDs for an Adolescent Trespasser
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	2.7E-08	7.8E-09	2.9E-13	3.5E-08	
Cadmium					
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene					
PAH's					
Benzo(a)anthracene					
Benzo(a)pyrene					
Benzo(b)fluoranthene	5.3E-10	7.1E-10	6.1E-15	1.2E-09	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Chrysene					
Dibenzo(a,h)anthracene					
Fluoranthene					
Indeno(1,2,3-cd)pyrene					
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	2.7E-08	8.6E-09	3.0E-13	3.6E-08	

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	3.6E-08	1.0E-08	3.9E-13	4.6E-08	
Iron					
Manganese					
Pathway-Specific Subtotal	3.6E-08	1.0E-08	3.9E-13	4.6E-08	

TABLE 3-12c
Summary of LADDs for an Adolescent Trespasser
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	2.8E-08	8.3E-09	3.1E-13	3.7E-08	
Cadmium			1.3E-14	1.3E-14	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	1.3E-12	2.5E-13	2.8E-17	1.6E-12	
PAH's					
Benzo(a)anthracene	4.5E-08	6.0E-08	5.2E-13	1.0E-07	
Benzo(a)pyrene	4.6E-08	6.3E-08	5.4E-13	1.1E-07	
Benzo(b)fluoranthene	6.0E-08	8.1E-08	7.0E-13	1.4E-07	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	1.2E-08	1.6E-08	1.3E-13	2.7E-08	
Chrysene	2.4E-08	3.3E-08	2.8E-13	5.7E-08	
Dibenzo(a,h)anthracene	4.7E-09	6.3E-09	5.5E-14	1.1E-08	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	1.8E-08	2.4E-08	2.0E-13	4.1E-08	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	2.4E-07	2.9E-07	2.8E-12	5.3E-07	
Exposure Unit 3 - Subsurface					
Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	3.9E-08	1.1E-08	4.2E-13	5.0E-08	
Iron					
Manganese					
Pathway-Specific Subtotal	3.9E-08	1.1E-08	4.2E-13	5.0E-08	

Table 4-1
Toxicity Values for Constituents of Concern
Marion LTA Site

	Noncancer Effects					Cancer Effects						
	Chronic Oral RfD mg/kg-d	Chronic Dermal RfD(a) mg/kg-d	Chronic Inhalation RfC mg/m ³	Chronic Inhalation RfD(b) mg/kg-d		Chronic Oral SF (mg/kg-d) ⁻¹	Chronic Dermal SF(c) (mg/kg-d) ⁻¹	Chronic Inhalation UR (mg/m ³) ⁻¹	Chronic Inhalation SF(b) (mg/kg-d) ⁻¹	Oral Absorption (Unitless)		
Inorganics												
Aluminum	1.0E+00	h	1.0E-01	5.0E-03	1.4E-03	NA	NA	NA	NA	10%		
Arsenic	3.0E-03	h	3.0E-04	NA	NA	1.5E+00	h	1.5E+00	4.3E-04	h	1.5E+01	95%
Cadmium	1.0E-03	h	1.0E-05	NA	NA	NA	NA	1.8E+00	h	6.3E+00	1%	
Iron	3.0E-01		4.5E-02	NA	NA	NA	NA	NA	NA	NA	15%	
Lead	NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese	1.4E-01	h	5.6E-03	5.0E-05	h	1.4E-05	NA	NA	NA	NA	NA	4%
Vanadium	7.0E-03	g	7.0E-05	NA		NA	NA	NA	NA	NA	NA	1%
VOCs												
Trichloroethylene	3.0E-04	d	3.0E-04	6.0E-01	d	1.7E-01	1.3E-02	d	1.3E-02	2.0E-06	d	7.0E-03
PAHs/SVOCs												
Benzo(a)anthracene	NA		NA	NA		NA	7.3E-01	e	7.3E-01	NA	3.1E-01	f
Benzo(a)pyrene	NA		NA	NA		NA	7.3E+00	h	7.3E+00	NA	3.1E+00	f
Benzo(b)fluoranthene	NA		NA	NA		NA	7.3E-01	e	7.3E-01	NA	3.1E-01	
Benzo(k)fluoranthene	NA		NA	NA		NA	7.3E-02	e	7.3E-02	NA	3.1E-02	f
Benzo(g,h,i)perylene	NA		NA	NA		NA	NA		NA	NA	NA	f
Chrysene	NA		NA	NA		NA	7.3E-03	e	7.3E-03	NA	3.1E-02	f
Dibenzo(a,h)anthracene	NA		NA	NA		NA	7.3E+00	e	7.3E+00	NA	3.1E+00	f
Fluoranthene	4.0E-02	h	1.2E-02	NA		NA	NA		NA	NA	NA	31%
Indeno(1,2,3-cd)pyrene	NA		NA	NA		NA	7.3E-01	e	7.3E-01	NA	3.1E-01	f
Naphthalene	2.0E-02	h	1.6E-02	3.0E-03	h	8.6E-04	NA		NA	NA	NA	80%
Phenanthrene	NA		NA	NA		NA	NA		NA	NA	NA	89%
Pyrene	3.0E-02	h	9.3E-03	NA		NA	NA		NA	NA	NA	31%

Notes:

a Assume Dermal RfD=Oral RfD for constituents with gastrointestinal absorption factor (GAF) greater than 50%; for constituents with GAF less than 50%, Dermal RfD=Oral RfD

b Inhalation RfD was calculated from the available RfC: $RfD_{inhalation}=20(m^3/d) \times RfC(mg/m^3)/70kg$; Inhalation SF was calculated from the available UR: $SF_{inhalation}=70kg \times 1000$

c Assume Dermal SF=Oral SF for constituents with GAF >50%; for constituents with GAF <50%, Dermal SF=Oral SF/GAF

d CalEPA Office of Envr. Health Hazard Assessment. RfC value is CalEPA Reference Exposure Level (REL).

e Toxicity Equivalency Factors (TEFs) were used to convert the slope factor for Benzo(a)pyrene into slope factors for the other carcinogenic PAHs (USEPA, 1995).

f The inhalation SF was calculated from inhalation UR as described in Supplemental Guidance to RAGS, Region 4 Bulletins (USEPA, 1995).

g Health Effects Summary Tables (HEAST) (USEPA, 1997b).

h Integrated Risk Information System (IRIS) database (<http://www.epa.gov/iris/>).

NA Not Available.

TABLE 4-2
SUMMARY OF DATA SUPPORTING TOXICITY VALUES FOR CONSTITUENTS OF CONCERN
MARION OHIO LOCAL TRAINING AREA MARION, OHIO

Chemical	Cancer Weight of Evidence Characterization							Hazard Assessment for Noncarcinogenic Effects									Chemical Specific Parameters				
	Weight Of Evidence	Cancer Slope Factor (oral) (mg/kg-day)	Cancer Slope Factor (inhalation) (mg/kg-day)	Inhalation Unit Risk (per mg/m3)	Cancer Type	Test Species	Route of Exposure	Noncancer Reference Dose (oral) (mg/kg-day)	Noncancer Reference Dose ^a (inhalation) (mg/kg-day)	Inhalation RFC (mg/m3)	Critical Effect	Dose (mg/kg-day)	Test Species	Route of Exposure	Uncertainty Factor	Modifying Factor	Study Confidence Level	Oral Abs.	Dermal Abs.	Source	
Targeted VOCs																					
Trichloroethylene	NA	1.3E-02	7.0E-03					3.0E-04	1.7E-01	6.0E-01									1.0	0.01	b,c
PAHs																					
Naphthalene	C	*	NA					2.00E-02	8.57E-04	3.00E-03	Decreased Body Weight	7.10E+01	Rat	Oral	3.00E+03	1.00E+00	High	0.9	0.13	b	
Phenanthrene	D	NA	NA					0.02**	2.00E-02	NA			Rats	Oral gavage	Data inadequate to conclude	Data inadequate to conclude	0.89	0.13	b		
Fluoranthene	D	NA				No human data and inadequate animal bioassay data		4.00E-02	4.00E-02		Nephropathy, increased liver weights, hematological alterations, clinical effects	1.25E+02	Mice	Skin painting and injection							
Pyrene	D	NA	NA			No human data and inadequate animal bioassay data		3.00E-02	3.00E-02	NA	renal tubular pathology, decreased kidney weights	7.50E+01	Mouse	Oral	3.0E+03	1.0E+00	Low-Medium	0.31	0.13	b	
Benzo(a)anthracene	B2	**(0.73)						0.02**											0.89	0.13	b
Chrysene	B2	**(0.0073)	3.1E-03	Carcinoma, lymphoma	Mice	Dermal, gavage		0.02**	2.00E-02	NA									0.89	0.13	b
Benzo(b)fluoranthene	B2	7.3E-01	3.1E-01	NA	tumors	Mice	lung implantation, intraperitoneal or subcutaneous injection, skin painting	0.02**	2.00E-02	NA									0.89	0.13	b
Benzo(k)fluoranthene	B2	**(0.073)	3.1E-02		Tumors	Mice	Lung implantation, skin painting	0.02**	2.00E-02	NA									0.89	0.13	b
Benzo(a)pyrene	B2	7.3E+00		NA	Stomach, Larynx, Esophagus	Rats and Mice	Oral, Diet	0.02**											0.89	0.13	b
Benzo(g,h,i)perylene	D	NA	NA			No human data and inadequate animal bioassay data	lung implant, skin painting, subcutaneous injection bioassays	0.02**	2.00E-02	NA									0.89	0.13	b
Indeno(1,2,3-cd)pyrene	B2	B2	**(0.73)	3.1E-01	NA	Tumors	Mice		0.02**	2.00E-02	NA								0.89	0.13	b
Dibenz(a,h)anthracene	B2**	7.3E+00		NA	Stomach, Larynx, Esophagus	Rats and Mice	Oral, Diet	0.02**											0.89	0.13	b
Inorganic Compounds																					
Aluminum	D	NA	NA	NA	NA			1.00E+00	1.40E-03	0.005									0.1	0.001	b
Arsenic	A	1.5E+00			4.3E+00	skin, lung, liver, kidney bladder cancer	Human	skin - oral, drinking water lung - inhalation	3.0E-04	3.00E-04		Hyperpigmentation, keratosis, vascular complications	8.0E-04	Human	Oral	3.0E+00	1.0E+00	Medium	0.95	0.03	b
Cadmium	B1	6.30E+00		1.8E+00	lung, trachea, bronchus	Human	Lung, trachea, bronchus - inhalation	5.0E-04	5.0E-04		Significant proteinuria	0.005 (water)	Human	Oral	1.0E+01	1.0E+00	High	0.01	0.001	b	
								1.0E-03	1.0E-03		Significant proteinuria	0.01 (food)	Human	Oral	1.0E+01	1.0E+00	High				
Iron																		0.150	0.001	b	
Lead	B2	NA	NA	NA	NA	renal tumors	Rats and Mice	Dietary and subcutaneous exposure	0.00075*	7.5E-04	NA							1.000	0.001	b	
Manganese	D	NA	NA	NA	NA				1.4E-01	1.4E-05	5.0E-05	CNS Effects	0.14 (food)	Human	Oral	1.0E+00	1.0E+00	Medium	0.040	0.001	b
Vanadium	D	NA	NA	NA	NA				7.0E-03	NA	NA							0.010	0.001	b	
* NA - Not Assessed or Not Available Under IRIS. ND - Not Determined Under IRIS.																					
* - Information Reviewed Under IRIS but Value Not Estimated.																					
** - Not Assessed under IRIS. PAH RfDs are Naphthalene Surrogates. PAH Slope Factors are Benzo(a)pyrene Surrogates for B2 Compounds.																					
a - Inhalation Reference Dose was calculated from Reference Concentration, 70kg body weight and 20m ³ /day respiration																					
b - IRIS, 2006																					
c - CalEPA Office of Environmental Health Hazard Assessment																					

TABLE 5-1a
Summary of HIs for an Industrial/Commercial Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	3.2E-04	2.6E-04	2.5E-05	6.1E-04	6.51%		
Arsenic	7.6E-04	1.9E-03	8.6E-08	2.7E-03	28.63%		
Cadmium	2.6E-06	2.0E-04	2.8E-09	2.1E-04	2.21%		
Iron	2.0E-03	7.3E-04	1.5E-07	2.8E-03	29.77%		
Manganese	1.9E-05	9.6E-05	5.2E-05	1.7E-04	1.80%		
Vanadium	2.1E-05	1.7E-03	2.2E-08	1.7E-03	18.00%		
VOCs							
Trichloroethylene	4.9E-04	7.9E-05	1.9E-11	5.7E-04	6.13%		
PAH's							
Benzo(a)anthracene	3.7E-06	4.3E-06	4.5E-11	7.9E-06	0.09%		
Benzo(a)pyrene	3.0E-06	3.5E-06	3.6E-11	6.5E-06	0.07%		
Benzo(b)fluoranthene	3.4E-06	4.0E-06	4.1E-11	7.4E-06	0.08%		
Benzo(g,h,i)perylene	8.0E-07	9.3E-07	9.7E-12	1.7E-06	0.02%		
Benzo(k)fluoranthene	1.7E-06	2.0E-06	2.1E-11	3.7E-06	0.04%		
Chrysene	3.4E-06	4.0E-06	4.2E-11	7.5E-06	0.08%		
Dibenzo(a,h)anthracene	4.1E-07	4.7E-07	4.9E-12	8.8E-07	0.01%		
Fluoranthene	2.2E-05	2.5E-04	7.8E-10	2.7E-04	2.93%		
Indeno(1,2,3-cd)pyrene	1.1E-06	1.3E-06	1.3E-11	2.4E-06	0.03%		
Naphthalene	1.7E-05	2.8E-05	5.4E-09	4.5E-05	0.49%		
Phenanthrene	1.0E-05	1.2E-05	1.2E-10	2.2E-05	0.23%		
Pyrene	2.3E-05	2.5E-04	8.0E-11	2.7E-04	2.90%		
Pathway-Specific Subtotal	3.8E-03	5.5E-03	7.7E-05	9.3E-03	100.00%		
% of Total	40.29%	58.89%	0.83%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	3.7E-04	2.9E-04	2.8E-05	6.9E-04	7.63%		
Arsenic	1.0E-03	2.5E-03	1.1E-07	3.5E-03	39.21%		
Iron	3.2E-03	1.1E-03	2.3E-07	4.3E-03	48.30%		
Manganese	5.0E-05	2.5E-04	1.4E-04	4.4E-04	4.87%		
Pathway-Specific Subtotal	4.6E-03	4.2E-03	1.6E-04	9.0E-03	100.00%		
% of Total	51.4%	46.8%	1.8%	100.0%			

USEPA ALM Lead Body Burden Estimate: 4.6-6.2 µg/dL

TABLE 5-1b
Summary of HIs for an Industrial/Commercial Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	4.3E-04	3.4E-04	3.3E-05	8.0E-04	10.10%		
Arsenic	7.6E-04	1.9E-03	8.6E-08	2.7E-03	33.61%		
Cadmium							
Iron	2.4E-03	8.4E-04	1.7E-07	3.2E-03	40.61%		
Manganese	2.9E-05	1.4E-04	7.8E-05	2.5E-04	3.19%		
Vanadium	1.2E-05	9.8E-04	1.3E-08	9.9E-04	12.49%		
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	1.5E-07	1.7E-07	1.8E-12	3.2E-07	0.00%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	3.6E-03	4.2E-03	1.1E-04	7.9E-03	100.00%		
% of Total	45.43%	53.16%	1.41%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	2.6E-04	2.1E-04	2.0E-05	4.9E-04	7.77%		
Arsenic	7.3E-04	1.8E-03	8.3E-08	2.6E-03	40.97%		
Iron	2.2E-03	7.8E-04	1.6E-07	3.0E-03	47.63%		
Manganese	2.6E-05	1.3E-04	7.1E-05	2.3E-04	3.63%		
Pathway-Specific Subtotal	3.2E-03	3.0E-03	9.1E-05	6.3E-03	100.00%		
% of Total	51.4%	47.2%	1.5%	100.0%			

USEPA ALM Lead Body Burden Estimate: 4.6-6.1 µg/dL

TABLE 5-1c
Summary of HIs for an Industrial/Commercial Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	3.0E-04	2.4E-04	2.3E-05	5.6E-04	6.82%		
Arsenic	8.0E-04	2.0E-03	9.1E-08	2.8E-03	34.33%		
Cadmium	1.0E-06	8.2E-05	1.1E-09	8.3E-05	1.02%		
Iron	1.8E-03	6.4E-04	1.3E-07	2.4E-03	29.79%		
Manganese	1.4E-05	6.9E-05	3.7E-05	1.2E-04	1.46%		
Vanadium	1.2E-05	9.5E-04	1.3E-08	9.6E-04	11.74%		
VOCs							
Trichloroethylene	3.8E-07	6.0E-08	1.4E-14	4.4E-07	0.01%		
PAH's							
Benzo(a)anthracene	1.3E-05	1.5E-05	1.5E-10	2.7E-05	0.33%		
Benzo(a)pyrene	1.3E-05	1.5E-05	1.6E-10	2.8E-05	0.35%		
Benzo(b)fluoranthene	1.7E-05	2.0E-05	2.0E-10	3.6E-05	0.44%		
Benzo(g,h,i)perylene	2.5E-06	2.9E-06	3.0E-11	5.3E-06	0.07%		
Benzo(k)fluoranthene	3.3E-06	3.8E-06	3.9E-11	7.0E-06	0.09%		
Chrysene	6.8E-06	7.9E-06	8.3E-11	1.5E-05	0.18%		
Dibenzo(a,h)anthracene	1.3E-06	1.5E-06	1.6E-11	2.9E-06	0.03%		
Fluoranthene	3.9E-05	4.4E-04	1.4E-09	4.8E-04	5.82%		
Indeno(1,2,3-cd)pyrene	4.9E-06	5.7E-06	6.0E-11	1.1E-05	0.13%		
Naphthalene	1.4E-06	2.3E-06	4.5E-10	3.7E-06	0.05%		
Phenanthrene	1.4E-05	1.6E-05	1.7E-10	3.0E-05	0.37%		
Pyrene	4.8E-05	5.2E-04	1.7E-10	5.7E-04	6.99%		
Pathway-Specific Subtotal	3.1E-03	5.0E-03	6.0E-05	8.2E-03	100.00%		
% of Total	37.71%	61.55%	0.74%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	4.2E-04	3.3E-04	3.2E-05	7.9E-04	8.87%		
Arsenic	1.1E-03	2.7E-03	1.2E-07	3.8E-03	43.19%		
Iron	2.9E-03	1.0E-03	2.1E-07	3.9E-03	44.41%		
Manganese	3.6E-05	1.8E-04	9.7E-05	3.1E-04	3.53%		
Pathway-Specific Subtotal	4.4E-03	4.3E-03	1.3E-04	8.9E-03	100.00%		
% of Total	50.2%	48.3%	1.5%	100.0%			

USEPA ALM Lead Body Burden Estimate: 4.7-6.3 µg/dL

TABLE 5-2a
Summary of HIs for a Construction Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	4.5E-03	6.2E-04	3.6E-05	5.2E-03	7.87%		
Arsenic	1.1E-02	4.6E-03	1.3E-07	1.5E-02	23.09%		
Cadmium	3.6E-05	4.9E-04	4.0E-09	5.3E-04	0.80%		
Iron	2.9E-02	1.8E-03	2.2E-07	3.0E-02	46.15%		
Manganese	2.7E-04	2.3E-04	7.6E-05	5.8E-04	0.88%		
Vanadium	2.9E-04	4.0E-03	3.3E-08	4.3E-03	6.50%		
VOCs							
Trichloroethylene	6.9E-03	1.9E-04	2.7E-11	7.1E-03	10.75%		
PAH's							
Benzo(a)anthracene	5.1E-05	1.0E-05	6.5E-11	6.2E-05	0.09%		
Benzo(a)pyrene	4.2E-05	8.4E-06	5.3E-11	5.0E-05	0.08%		
Benzo(b)fluoranthene	4.8E-05	9.6E-06	6.1E-11	5.8E-05	0.09%		
Benzo(g,h,i)perylene	1.1E-05	2.3E-06	1.4E-11	1.3E-05	0.02%		
Benzo(k)fluoranthene	2.4E-05	4.8E-06	3.0E-11	2.9E-05	0.04%		
Chrysene	4.8E-05	9.7E-06	6.1E-11	5.8E-05	0.09%		
Dibenzo(a,h)anthracene	5.7E-06	1.1E-06	7.2E-12	6.9E-06	0.01%		
Fluoranthene	3.2E-04	6.1E-04	1.1E-09	9.2E-04	1.40%		
Indeno(1,2,3-cd)pyrene	1.5E-05	3.1E-06	2.0E-11	1.9E-05	0.03%		
Naphthalene	2.4E-04	6.8E-05	7.9E-09	3.1E-04	0.47%		
Phenanthrene	1.4E-04	2.8E-05	1.8E-10	1.7E-04	0.26%		
Pyrene	3.2E-04	6.0E-04	1.2E-10	9.2E-04	1.39%		
Pathway-Specific Subtotal	5.3E-02	1.3E-02	1.1E-04	6.6E-02	100.00%		
% of Total	79.74%	20.08%	0.17%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	2.8E-05	2.6E-05	2.0E-06	5.5E-05	7.57%		
Arsenic	7.6E-05	2.2E-04	8.2E-09	3.0E-04	40.67%		
Iron	2.4E-04	9.9E-05	1.7E-08	3.4E-04	46.87%		
Manganese	3.8E-06	2.2E-05	9.9E-06	3.6E-05	4.89%		
Pathway-Specific Subtotal	3.5E-04	3.7E-04	1.2E-05	7.3E-04	100.00%		
% of Total	47.9%	50.4%	1.6%	100.0%			

USEPA ALM Lead Body Burden Estimate: 4.8-8.5 µg/dL

TABLE 5-2b
Summary of HIs for a Construction Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	6.0E-03	8.2E-04	4.8E-05	6.8E-03	11.27%		
Arsenic	1.1E-02	4.6E-03	1.3E-07	1.5E-02	25.02%		
Cadmium							
Iron	3.3E-02	2.0E-03	2.5E-07	3.5E-02	58.11%		
Manganese	4.1E-04	3.5E-04	1.1E-04	8.7E-04	1.43%		
Vanadium	1.7E-04	2.4E-03	1.9E-08	2.5E-03	4.16%		
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	2.1E-06	4.2E-07	2.6E-12	2.5E-06	0.00%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	5.0E-02	1.0E-02	1.6E-04	6.1E-02	100.00%		
% of Total	83.00%	16.73%	0.27%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	3.6E-03	5.0E-04	2.9E-05	4.2E-03	7.96%		
Arsenic	1.0E-02	4.4E-03	1.2E-07	1.5E-02	27.99%		
Iron	3.1E-02	1.9E-03	2.3E-07	3.3E-02	62.55%		
Manganese	3.7E-04	3.1E-04	1.0E-04	7.8E-04	1.50%		
Pathway-Specific Subtotal	4.5E-02	7.1E-03	1.3E-04	5.2E-02	100.00%		
% of Total	86.1%	13.6%	0.3%	100.0%			

USEPA ALM Lead Body Burden Estimate: 4.7-7.5 µg/dL

TABLE 5-2c
Summary of HIs for a Construction Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	4.2E-03	5.7E-04	3.4E-05	4.8E-03	8.60%		
Arsenic	1.1E-02	4.9E-03	1.3E-07	1.6E-02	28.90%		
Cadmium	1.4E-05	2.0E-04	1.6E-09	2.1E-04	0.38%		
Iron	2.5E-02	1.5E-03	1.9E-07	2.7E-02	48.21%		
Manganese	1.9E-04	1.7E-04	5.4E-05	4.1E-04	0.75%		
Vanadium	1.7E-04	2.3E-03	1.9E-08	2.5E-03	4.43%		
VOCs							
Trichloroethylene	5.3E-06	1.5E-07	2.1E-14	5.4E-06	0.01%		
PAH's							
Benzo(a)anthracene	1.8E-04	3.5E-05	2.2E-10	2.1E-04	0.38%		
Benzo(a)pyrene	1.8E-04	3.7E-05	2.3E-10	2.2E-04	0.40%		
Benzo(b)fluoranthene	2.4E-04	4.7E-05	3.0E-10	2.8E-04	0.51%		
Benzo(g,h,i)perylene	3.4E-05	6.9E-06	4.4E-11	4.1E-05	0.07%		
Benzo(k)fluoranthene	4.6E-05	9.2E-06	5.8E-11	5.5E-05	0.10%		
Chrysene	9.5E-05	1.9E-05	1.2E-10	1.1E-04	0.21%		
Dibenzo(a,h)anthracene	1.8E-05	3.7E-06	2.3E-11	2.2E-05	0.04%		
Fluoranthene	5.5E-04	1.1E-03	2.0E-09	1.6E-03	2.89%		
Indeno(1,2,3-cd)pyrene	6.9E-05	1.4E-05	8.7E-11	8.3E-05	0.15%		
Naphthalene	2.0E-05	5.6E-06	6.5E-10	2.5E-05	0.05%		
Phenanthrene	1.9E-04	3.9E-05	2.5E-10	2.3E-04	0.42%		
Pyrene	6.8E-04	1.3E-03	2.5E-10	1.9E-03	3.50%		
Pathway-Specific Subtotal	4.3E-02	1.2E-02	8.8E-05	5.6E-02	100.00%		
% of Total	77.93%	21.92%	0.16%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	5.9E-03	8.1E-04	4.7E-05	6.7E-03	9.24%		
Arsenic	1.5E-02	6.6E-03	1.8E-07	2.2E-02	29.99%		
Iron	4.1E-02	2.5E-03	3.1E-07	4.3E-02	59.29%		
Manganese	5.0E-04	4.3E-04	1.4E-04	1.1E-03	1.48%		
Pathway-Specific Subtotal	6.2E-02	1.0E-02	1.9E-04	7.3E-02	100.00%		
% of Total	85.5%	14.2%	0.3%	100.0%			

USEPA ALM Lead Body Burden Estimate:

4.7-7.5 µg/dL

TABLE 5-3a
Summary of HIs for a Reservist
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminim	7.8E-06	3.6E-06	6.0E-07	1.2E-05	7.10%		
Arsenic	1.8E-05	2.7E-05	2.1E-09	4.5E-05	26.59%		
Cadmium	6.1E-08	2.8E-06	6.6E-11	2.9E-06	1.72%		
Iron	4.9E-05	1.0E-05	3.5E-09	5.9E-05	35.22%		
Manganese	4.6E-07	1.3E-06	1.2E-06	3.0E-06	1.81%		
Vanadium	5.0E-07	2.3E-05	5.4E-10	2.4E-05	13.98%		
VOCs							
Trichloroethylene	1.2E-05	1.1E-06	4.5E-13	1.3E-05	7.68%		
PAH's							
Benzo(a)anthracene	8.8E-08	5.9E-08	1.1E-12	1.5E-07	0.09%		
Benzo(a)pyrene	7.1E-08	4.8E-08	8.7E-13	1.2E-07	0.07%		
Benzo(b)fluoranthene	8.2E-08	5.5E-08	1.0E-12	1.4E-07	0.08%		
Benzo(g,h,i)perylene	1.9E-08	1.3E-08	2.3E-13	3.2E-08	0.02%		
Benzo(k)fluoranthene	4.1E-08	2.8E-08	5.0E-13	6.9E-08	0.04%		
Chrysene	8.3E-08	5.6E-08	1.0E-12	1.4E-07	0.08%		
Dibenzo(a,h)anthracene	9.8E-09	6.6E-09	1.2E-13	1.6E-08	0.01%		
Fluoranthene	5.4E-07	3.5E-06	1.9E-11	4.0E-06	2.39%		
Indeno(1,2,3-cd)pyrene	2.6E-08	1.8E-08	3.2E-13	4.4E-08	0.03%		
Naphthalene	4.2E-07	3.9E-07	1.3E-10	8.1E-07	0.48%		
Phenanthrene	2.4E-07	1.6E-07	2.9E-12	4.1E-07	0.24%		
Pyrene	5.5E-07	3.4E-06	1.9E-12	4.0E-06	2.37%		
Pathway-Specific Subtotal	9.0E-05	7.6E-05	1.9E-06	1.7E-04	100.00%		
% of Total	53.57%	45.33%	1.10%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminim	8.8E-06	4.1E-06	6.8E-07	1.4E-05	7.80%		
Arsenic	2.4E-05	3.5E-05	2.7E-09	5.9E-05	34.10%		
Iron	7.7E-05	1.6E-05	5.5E-09	9.3E-05	53.51%		
Manganese	1.2E-06	3.5E-06	3.3E-06	8.0E-06	4.59%		
Pathway-Specific Subtotal	1.1E-04	5.8E-05	4.0E-06	1.7E-04	100.00%		
% of Total	64.0%	33.7%	2.3%	100.0%			

TABLE 5-3b
Summary of HIs for a Reservist
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	1.0E-05	4.7E-06	7.9E-07	1.6E-05	10.68%		
Arsenic	1.8E-05	2.6E-05	2.1E-09	4.5E-05	30.25%		
Cadmium							
Iron	5.7E-05	1.2E-05	4.1E-09	6.9E-05	46.55%		
Manganese	7.0E-07	2.0E-06	1.9E-06	4.6E-06	3.11%		
Vanadium	2.9E-07	1.4E-05	3.2E-10	1.4E-05	9.40%		
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	3.6E-09	2.4E-09	4.3E-14	6.0E-09	0.00%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	8.6E-05	5.8E-05	2.7E-06	1.5E-04	100.00%		
% of Total	58.54%	39.65%	1.82%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	6.2E-06	2.9E-06	4.8E-07	9.6E-06	7.96%		
Arsenic	1.7E-05	2.6E-05	2.0E-09	4.3E-05	35.72%		
Iron	5.3E-05	1.1E-05	3.8E-09	6.4E-05	52.89%		
Manganese	6.3E-07	1.8E-06	1.7E-06	4.1E-06	3.43%		
Pathway-Specific Subtotal	7.7E-05	4.1E-05	2.2E-06	1.2E-04	100.00%		
% of Total	64.1%	34.1%	1.8%	100.0%			

TABLE 5-3c
Summary of HIs for a Reservist
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	7.1E-06	3.3E-06	5.5E-07	1.1E-05	7.55%		
Arsenic	1.9E-05	2.8E-05	2.2E-09	4.7E-05	32.37%		
Cadmium	2.5E-08	1.1E-06	2.7E-11	1.2E-06	0.80%		
Iron	4.3E-05	8.9E-06	3.1E-09	5.2E-05	35.78%		
Manganese	3.3E-07	9.6E-07	8.9E-07	2.2E-06	1.50%		
Vanadium	2.9E-07	1.3E-05	3.1E-10	1.3E-05	9.26%		
VOCs							
Trichloroethylene	9.0E-09	8.4E-10	3.4E-16	9.9E-09	0.01%		
PAH's							
Benzo(a)anthracene	3.0E-07	2.0E-07	3.7E-12	5.0E-07	0.35%		
Benzo(a)pyrene	3.1E-07	2.1E-07	3.8E-12	5.2E-07	0.36%		
Benzo(b)fluoranthene	4.0E-07	2.7E-07	4.9E-12	6.8E-07	0.46%		
Benzo(g,h,i)perylene	5.9E-08	4.0E-08	7.2E-13	9.9E-08	0.07%		
Benzo(k)fluoranthene	7.8E-08	5.3E-08	9.5E-13	1.3E-07	0.09%		
Chrysene	1.6E-07	1.1E-07	2.0E-12	2.7E-07	0.19%		
Dibenzo(a,h)anthracene	3.2E-08	2.1E-08	3.8E-13	5.3E-08	0.04%		
Fluoranthene	9.4E-07	6.1E-06	3.3E-11	7.0E-06	4.82%		
Indeno(1,2,3-cd)pyrene	1.2E-07	8.0E-08	1.4E-12	2.0E-07	0.14%		
Naphthalene	3.4E-08	3.2E-08	1.1E-11	6.6E-08	0.05%		
Phenanthrene	3.3E-07	2.3E-07	4.0E-12	5.6E-07	0.38%		
Pyrene	1.2E-06	7.3E-06	4.1E-12	8.4E-06	5.80%		
Pathway-Specific Subtotal	7.4E-05	7.0E-05	1.4E-06	1.5E-04	100.00%		
% of Total	50.90%	48.10%	1.00%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	1.0E-05	4.7E-06	7.8E-07	1.5E-05	9.15%		
Arsenic	2.6E-05	3.8E-05	3.0E-09	6.4E-05	37.88%		
Iron	7.0E-05	1.4E-05	5.0E-09	8.4E-05	49.61%		
Manganese	8.6E-07	2.5E-06	2.3E-06	5.7E-06	3.36%		
Pathway-Specific Subtotal	1.1E-04	6.0E-05	3.1E-06	1.7E-04	100.00%		
% of Total	63.0%	35.1%	1.8%	100.0%			

TABLE 5-4a
Summary of HIs for an Adolescent Trespasser
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	2.4E-05	2.3E-05	1.8E-06	4.9E-05	6.35%		
Arsenic	5.7E-05	1.7E-04	6.2E-09	2.2E-04	29.16%		
Cadmium	1.9E-07	1.8E-05	2.0E-10	1.8E-05	2.34%		
Iron	1.5E-04	6.3E-05	1.1E-08	2.2E-04	28.37%		
Manganese	1.5E-06	8.4E-06	3.8E-06	1.4E-05	1.77%		
Vanadium	1.6E-06	1.4E-04	1.6E-09	1.5E-04	19.04%		
VOCs							
Trichloroethylene	3.7E-05	6.9E-06	1.4E-12	4.4E-05	5.73%		
PAH's							
Benzo(a)anthracene	2.8E-07	3.7E-07	3.2E-12	6.5E-07	0.08%		
Benzo(a)pyrene	2.2E-07	3.0E-07	2.6E-12	5.3E-07	0.07%		
Benzo(b)fluoranthene	2.6E-07	3.5E-07	3.0E-12	6.1E-07	0.08%		
Benzo(g,h,i)perylene	6.0E-08	8.1E-08	7.0E-13	1.4E-07	0.02%		
Benzo(k)fluoranthene	1.3E-07	1.7E-07	1.5E-12	3.0E-07	0.04%		
Chrysene	2.6E-07	3.5E-07	3.0E-12	6.1E-07	0.08%		
Dibenzo(a,h)anthracene	3.1E-08	4.1E-08	3.6E-13	7.2E-08	0.01%		
Fluoranthene	1.7E-06	2.2E-05	5.7E-11	2.4E-05	3.07%		
Indeno(1,2,3-cd)pyrene	8.3E-08	1.1E-07	9.7E-13	2.0E-07	0.03%		
Naphthalene	1.3E-06	2.4E-06	3.9E-10	3.8E-06	0.49%		
Phenanthrene	7.6E-07	1.0E-06	8.9E-12	1.8E-06	0.23%		
Pyrene	1.7E-06	2.2E-05	5.8E-12	2.3E-05	3.04%		
Pathway-Specific Subtotal	2.8E-04	4.8E-04	5.6E-06	7.7E-04	100.00%		
% of Total	36.87%	62.40%	0.73%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	2.8E-05	2.6E-05	2.0E-06	5.5E-05	7.57%		
Arsenic	7.6E-05	2.2E-04	8.2E-09	3.0E-04	40.67%		
Iron	2.4E-04	9.9E-05	1.7E-08	3.4E-04	46.87%		
Manganese	3.8E-06	2.2E-05	9.9E-06	3.6E-05	4.89%		
Pathway-Specific Subtotal	3.5E-04	3.7E-04	1.2E-05	7.3E-04	100.00%		
% of Total	47.9%	50.4%	1.6%	100.0%			

TABLE 5-4b
Summary of HIs for an Adolescent Trespasser
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	3.2E-05	3.0E-05	2.4E-06	6.4E-05	9.93%		
Arsenic	5.7E-05	1.7E-04	6.2E-09	2.2E-04	34.53%		
Cadmium							
Iron	1.8E-04	7.3E-05	1.2E-08	2.5E-04	39.03%		
Manganese	2.2E-06	1.3E-05	5.7E-06	2.1E-05	3.17%		
Vanadium	9.2E-07	8.5E-05	9.6E-10	8.6E-05	13.32%		
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	1.1E-08	1.5E-08	1.3E-13	2.6E-08	0.00%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	2.7E-04	3.7E-04	8.1E-06	6.5E-04	100.00%		
% of Total	41.94%	56.81%	1.25%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	2.8E-05	2.6E-05	2.0E-06	5.5E-05	7.57%		
Arsenic	7.6E-05	2.2E-04	8.2E-09	3.0E-04	40.67%		
Iron	2.4E-04	9.9E-05	1.7E-08	3.4E-04	46.87%		
Manganese	3.8E-06	2.2E-05	9.9E-06	3.6E-05	4.89%		
Pathway-Specific Subtotal	3.5E-04	3.7E-04	1.2E-05	7.3E-04	100.00%		
% of Total	47.9%	50.4%	1.6%	100.0%			

TABLE 5-4c
Summary of HIs for an Adolescent Trespasser
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	2.2E-05	2.1E-05	1.7E-06	4.5E-05	6.62%		
Arsenic	6.0E-05	1.8E-04	6.6E-09	2.4E-04	34.83%		
Cadmium	7.8E-08	7.2E-06	8.1E-11	7.3E-06	1.08%		
Iron	1.4E-04	5.6E-05	9.4E-09	1.9E-04	28.28%		
Manganese	1.0E-06	6.0E-06	2.7E-06	9.7E-06	1.44%		
Vanadium	9.0E-07	8.3E-05	9.3E-10	8.4E-05	12.37%		
VOCs							
Trichloroethylene	2.8E-08	5.3E-09	1.0E-15	3.4E-08	0.00%		
PAH's							
Benzo(a)anthracene	9.5E-07	1.3E-06	1.1E-11	2.2E-06	0.33%		
Benzo(a)pyrene	9.8E-07	1.3E-06	1.1E-11	2.3E-06	0.34%		
Benzo(b)fluoranthene	1.3E-06	1.7E-06	1.5E-11	3.0E-06	0.44%		
Benzo(g,h,i)perylene	1.9E-07	2.5E-07	2.2E-12	4.4E-07	0.06%		
Benzo(k)fluoranthene	2.5E-07	3.3E-07	2.9E-12	5.8E-07	0.09%		
Chrysene	5.1E-07	6.9E-07	6.0E-12	1.2E-06	0.18%		
Dibenzo(a,h)anthracene	9.9E-08	1.3E-07	1.2E-12	2.3E-07	0.03%		
Fluoranthene	3.0E-06	3.8E-05	9.9E-11	4.1E-05	6.08%		
Indeno(1,2,3-cd)pyrene	3.7E-07	5.0E-07	4.3E-12	8.7E-07	0.13%		
Naphthalene	1.1E-07	2.0E-07	3.2E-11	3.1E-07	0.05%		
Phenanthrene	1.0E-06	1.4E-06	1.2E-11	2.5E-06	0.36%		
Pyrene	3.7E-06	4.6E-05	1.2E-11	4.9E-05	7.29%		
Pathway-Specific Subtotal	2.3E-04	4.4E-04	4.4E-06	6.8E-04	100.00%		
% of Total	34.38%	64.97%	0.65%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Hazard Estimates (Non-carcinogenic)							
Inorganic Compounds							
Aluminum	3.2E-05	2.9E-05	2.3E-06	6.3E-05	8.79%		
Arsenic	8.2E-05	2.4E-04	9.0E-09	3.2E-04	44.68%		
Iron	2.2E-04	9.0E-05	1.5E-08	3.1E-04	42.99%		
Manganese	2.7E-06	1.6E-05	7.0E-06	2.5E-05	3.54%		
Pathway-Specific Subtotal	3.4E-04	3.7E-04	9.4E-06	7.2E-04	100.00%		
% of Total	46.7%	52.0%	1.3%	100.0%			

TABLE 5-5a
Summary of Risk for an Industrial/Commercial Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.2E-06	3.1E-07	1.4E-10	1.5E-06	17.56%		
Cadmium			6.2E-12	6.2E-12	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	6.9E-10	1.1E-10	8.0E-15	8.0E-10	0.01%		
PAH's							
Benzo(a)anthracene	2.9E-07	3.3E-07	1.5E-12	6.2E-07	7.16%		
Benzo(a)pyrene	2.3E-06	2.7E-06	1.2E-11	5.0E-06	58.11%		
Benzo(b)fluoranthene	2.7E-07	3.1E-07	1.4E-12	5.8E-07	6.67%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	1.3E-08	1.6E-08	6.9E-14	2.9E-08	0.33%		
Chrysene	2.7E-09	3.1E-09	1.4E-13	5.8E-09	0.07%		
Dibenzo(a,h)anthracene	3.2E-07	3.7E-07	1.6E-12	6.9E-07	7.94%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	8.6E-08	1.0E-07	4.4E-13	1.9E-07	2.15%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	4.5E-06	4.2E-06	1.6E-10	8.7E-06	100.00%		
% of Total	52.10%	47.90%	0.00%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.6E-06	4.1E-07	1.8E-10	2.0E-06	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	1.6E-06	4.1E-07	1.8E-10	2.0E-06	100.00%		
% of Total	79.86%	20.13%	0.01%	100%			

TABLE 5-5b
Summary of Risk for an Industrial/Commercial Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.2E-06	3.1E-07	1.4E-10	1.5E-06	98.37%		
Cadmium							
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	1.2E-08	1.4E-08	6.0E-14	2.5E-08	1.63%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	1.2E-06	3.2E-07	1.4E-10	1.5E-06	100.00%		
% of Total	79.32%	20.67%	0.01%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.2E-06	3.0E-07	1.3E-10	1.5E-06	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	1.2E-06	3.0E-07	1.3E-10	1.5E-06	100.00%		
% of Total	79.86%	20.13%	0.01%	100%			

TABLE 5-5c
Summary of Risk for an Industrial/Commercial Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.3E-06	3.2E-07	1.5E-10	1.6E-06	5.05%		
Cadmium			2.5E-12	2.5E-12	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	5.2E-13	8.4E-14	6.1E-18	6.1E-13	0.00%		
PAH's							
Benzo(a)anthracene	9.8E-07	1.1E-06	5.1E-12	2.1E-06	6.67%		
Benzo(a)pyrene	1.0E-05	1.2E-05	5.3E-11	2.2E-05	69.50%		
Benzo(b)fluoranthene	1.3E-06	1.5E-06	6.8E-12	2.8E-06	8.94%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	2.5E-08	3.0E-08	1.3E-13	5.5E-08	0.17%		
Chrysene	5.3E-09	6.2E-09	2.7E-13	1.2E-08	0.04%		
Dibeno(a,h)anthracene	1.0E-06	1.2E-06	5.3E-12	2.2E-06	7.01%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	3.9E-07	4.5E-07	2.0E-12	8.3E-07	2.62%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	1.5E-05	1.7E-05	2.2E-10	3.2E-05	100.00%		
% of Total	47.88%	52.12%	0.00%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.7E-06	4.4E-07	2.0E-10	2.2E-06	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	1.7E-06	4.4E-07	2.0E-10	2.2E-06	100.00%		
% of Total	79.86%	20.13%	0.01%	100%			

TABLE 5-6a
Summary of Risk for a Construction Worker
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	2.3E-07	1.0E-08	2.8E-12	2.4E-07	24.25%		
Cadmium			1.2E-13	1.2E-13	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	1.3E-10	3.6E-12	1.6E-16	1.4E-10	0.01%		
PAH's							
Benzo(a)anthracene	5.5E-08	1.1E-08	3.0E-14	6.6E-08	6.58%		
Benzo(a)pyrene	4.5E-07	9.0E-08	2.4E-13	5.4E-07	53.40%		
Benzo(b)fluoranthene	5.1E-08	1.0E-08	2.8E-14	6.2E-08	6.13%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	2.6E-09	5.2E-10	1.4E-15	3.1E-09	0.31%		
Chrysene	5.2E-10	1.0E-10	2.8E-15	6.2E-10	0.06%		
Dibenzo(a,h)anthracene	6.1E-08	1.2E-08	3.3E-14	7.3E-08	7.30%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	1.7E-08	3.3E-09	8.9E-15	2.0E-08	1.97%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	8.7E-07	1.4E-07	3.2E-12	1.0E-06	100.00%		
% of Total	86.32%	13.68%	0.00%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	5.3E-08	1.6E-08	5.8E-12	6.9E-08	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	5.3E-08	1.6E-08	5.8E-12	6.9E-08	100.00%		
% of Total	77.41%	22.59%	0.01%	100%			

TABLE 5-6b
Summary of Risk for a Construction Worker
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	2.3E-07	1.0E-08	2.8E-12	2.4E-07	98.91%		
Cadmium							
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	2.2E-09	4.5E-10	1.2E-15	2.7E-09	1.09%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	2.4E-07	1.1E-08	2.8E-12	2.5E-07	100.00%		
% of Total	95.70%	4.30%	0.00%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	2.2E-07	9.8E-09	2.7E-12	2.3E-07	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	2.2E-07	9.8E-09	2.7E-12	2.3E-07	100.00%		
% of Total	95.84%	4.16%	0.00%	100%			

TABLE 5-6c
Summary of Risk for a Construction Worker
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	2.5E-07	1.1E-08	2.9E-12	2.6E-07	7.40%		
Cadmium			5.0E-14	5.0E-14	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	1.0E-13	2.8E-15	1.2E-19	1.0E-13	0.00%		
PAH's							
Benzo(a)anthracene	1.9E-07	3.8E-08	1.0E-13	2.3E-07	6.51%		
Benzo(a)pyrene	2.0E-06	3.9E-07	1.1E-12	2.4E-06	67.78%		
Benzo(b)fluoranthene	2.5E-07	5.1E-08	1.4E-13	3.0E-07	8.72%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	4.9E-09	9.8E-10	2.6E-15	5.9E-09	0.17%		
Chrysene	1.0E-09	2.1E-10	5.5E-15	1.2E-09	0.04%		
Dibenzo(a,h)anthracene	2.0E-07	4.0E-08	1.1E-13	2.4E-07	6.84%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	7.4E-08	1.5E-08	4.0E-14	8.9E-08	2.56%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	2.9E-06	5.5E-07	4.4E-12	3.5E-06	100.00%		
% of Total	84.20%	15.80%	0.00%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	3.4E-07	1.5E-08	4.0E-12	3.5E-07	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	3.4E-07	1.5E-08	4.0E-12	3.5E-07	100.00%		
% of Total	95.84%	4.16%	0.00%	100%			

TABLE 5-7a
Summary of Risk for a Reservist
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	7.0E-09	1.0E-09	8.0E-13	8.0E-09	20.13%		
Cadmium			3.6E-14	3.6E-14	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	4.0E-12	3.7E-13	4.6E-17	4.3E-12	0.01%		
PAH's							
Benzo(a)anthracene	1.7E-09	1.1E-09	8.5E-15	2.8E-09	6.93%		
Benzo(a)pyrene	1.3E-08	9.1E-09	6.9E-14	2.2E-08	56.30%		
Benzo(b)fluoranthene	1.5E-09	1.0E-09	7.9E-15	2.6E-09	6.46%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	7.7E-11	5.2E-11	4.0E-16	1.3E-10	0.32%		
Chrysene	1.6E-11	1.0E-11	8.0E-16	2.6E-11	0.07%		
Dibenzo(a,h)anthracene	1.8E-09	1.2E-09	9.5E-15	3.1E-09	7.69%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	5.0E-10	3.3E-10	2.6E-15	8.3E-10	2.08%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	2.6E-08	1.4E-08	9.3E-13	4.0E-08	100.00%		
% of Total	65.26%	34.74%	0.00%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	9.3E-09	1.4E-09	1.1E-12	1.1E-08	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	9.3E-09	1.4E-09	1.1E-12	1.1E-08	100.00%		
% of Total	87.26%	12.73%	0.01%	100%			

TABLE 5-7b
Summary of Risk for a Reservist
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	7.0E-09	1.0E-09	8.0E-13	8.0E-09	98.62%		
Cadmium							
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	6.7E-11	4.5E-11	3.4E-16	1.1E-10	1.38%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	7.1E-09	1.1E-09	8.0E-13	8.1E-09	100.00%		
% of Total	86.88%	13.11%	0.01%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	6.7E-09	9.8E-10	7.7E-13	7.7E-09	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	6.7E-09	9.8E-10	7.7E-13	7.7E-09	100.00%		
% of Total	87.26%	12.73%	0.01%	100%			

TABLE 5-7c
Summary of Risk for a Reservist
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	7.4E-09	1.1E-09	8.4E-13	8.5E-09	5.92%		
Cadmium			1.4E-14	1.4E-14	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	3.0E-15	2.8E-16	3.5E-20	3.3E-15	0.00%		
PAH's							
Benzo(a)anthracene	5.6E-09	3.8E-09	2.9E-14	9.5E-09	6.61%		
Benzo(a)pyrene	5.9E-08	4.0E-08	3.0E-13	9.9E-08	68.86%		
Benzo(b)fluoranthene	7.6E-09	5.1E-09	3.9E-14	1.3E-08	8.86%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	1.5E-10	9.9E-11	7.5E-16	2.5E-10	0.17%		
Chrysene	3.1E-11	2.1E-11	1.6E-15	5.1E-11	0.04%		
Dibenzo(a,h)anthracene	5.9E-09	4.0E-09	3.1E-14	9.9E-09	6.95%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	2.2E-09	1.5E-09	1.1E-14	3.7E-09	2.60%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	8.8E-08	5.5E-08	1.3E-12	1.4E-07	100.00%		
% of Total	61.34%	38.66%	0.00%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.0E-08	1.5E-09	1.1E-12	1.2E-08	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	1.0E-08	1.5E-09	1.1E-12	1.2E-08	100.00%		
% of Total	87.26%	12.73%	0.01%	100%			

TABLE 5-8a
Summary of Risk for an Adolescent Trespasser
Exposure Unit 1 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	4.0E-08	1.2E-08	4.4E-12	5.2E-08	16.84%		
Cadmium			2.0E-13	2.0E-13	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	2.3E-11	4.2E-12	2.5E-16	2.7E-11	0.01%		
PAH's							
Benzo(a)anthracene	9.5E-09	1.3E-08	4.7E-14	2.2E-08	7.22%		
Benzo(a)pyrene	7.7E-08	1.0E-07	3.8E-13	1.8E-07	58.62%		
Benzo(b)fluoranthene	8.9E-09	1.2E-08	4.4E-14	2.1E-08	6.73%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	4.5E-10	6.0E-10	2.2E-15	1.0E-09	0.34%		
Chrysene	8.9E-11	1.2E-10	4.4E-15	2.1E-10	0.07%		
Dibenzo(a,h)anthracene	1.1E-08	1.4E-08	5.2E-14	2.5E-08	8.01%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	2.9E-09	3.9E-09	1.4E-14	6.7E-09	2.17%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	1.5E-07	1.6E-07	5.2E-12	3.1E-07	100.00%		
% of Total	48.43%	51.57%	0.00%	100%			

Exposure Unit 1 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	5.3E-08	1.6E-08	5.8E-12	6.9E-08	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	5.3E-08	1.6E-08	5.8E-12	6.9E-08	100.00%		
% of Total	77.41%	22.59%	0.01%	100%			

TABLE 5-8b
Summary of Risk for an Adolescent Trespasser
Exposure Unit 2 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	4.0E-08	1.2E-08	4.4E-12	5.2E-08	98.29%		
Cadmium							
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene							
PAH's							
Benzo(a)anthracene							
Benzo(a)pyrene							
Benzo(b)fluoranthene	3.9E-10	5.2E-10	1.9E-15	9.1E-10	1.71%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene							
Chrysene							
Dibenzo(a,h)anthracene							
Fluoranthene							
Indeno(1,2,3-cd)pyrene							
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	4.1E-08	1.2E-08	4.4E-12	5.3E-08	100.00%		
% of Total	76.81%	23.18%	0.01%	100%			

Exposure Unit 2 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	5.3E-08	1.6E-08	5.8E-12	6.9E-08	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	5.3E-08	1.6E-08	5.8E-12	6.9E-08	100.00%		
% of Total	77.41%	22.59%	0.01%	100%			

TABLE 5-8c
Summary of Risk for an Adolescent Trespasser
Exposure Unit 3 - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	4.3E-08	1.2E-08	4.6E-12	5.5E-08	4.81%		
Cadmium			8.0E-14	8.0E-14	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	1.7E-14	3.2E-15	1.9E-19	2.1E-14	0.00%		
PAH's							
Benzo(a)anthracene	3.3E-08	4.4E-08	1.6E-13	7.6E-08	6.69%		
Benzo(a)pyrene	3.4E-07	4.6E-07	1.7E-12	8.0E-07	69.67%		
Benzo(b)fluoranthene	4.4E-08	5.9E-08	2.2E-13	1.0E-07	8.96%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	8.4E-10	1.1E-09	4.2E-15	2.0E-09	0.17%		
Chrysene	1.8E-10	2.4E-10	8.7E-15	4.2E-10	0.04%		
Dibenzo(a,h)anthracene	3.4E-08	4.6E-08	1.7E-13	8.0E-08	7.03%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	1.3E-08	1.7E-08	6.3E-14	3.0E-08	2.63%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	5.1E-07	6.4E-07	7.0E-12	1.1E-06	100.00%		
% of Total	44.24%	55.76%	0.00%	100%			

Exposure Unit 3 - Subsurface

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	5.8E-08	1.7E-08	6.3E-12	7.5E-08	100.00%		
Iron							
Manganese							
Pathway-Specific Subtotal	5.8E-08	1.7E-08	6.3E-12	7.5E-08	100.00%		
% of Total	77.41%	22.59%	0.01%	100%			

Table 6-1
Uncertainty Analysis Exposure Unit 3* - Surface Soil (0-4') Dataset
Marion, Ohio

Detected Compounds (mg/kg)	Exposure Unit 3a			Exposure Unit 3b			Region 9 PRGs			
	Mean	95%**	Max	Mean	95%**	Max	Industrial	1/10th Residential PRG (OEPA DERR, 2004)	Residential	
Inorganic Compounds										
Aluminum, Total	16212.36	18425.67	38986.40	16586.84	29476.28	38986.40	100000	7600	76000	18404.00
Arsenic, Total	11.04	15.61	38.60	11.44	22.13	38.60	1.6		0.39	18.00
Cadmium, Total	0.47	0.64	1.30	0.48	0.87	1.30	450		37	1.30
Iron, Total	20138.20	22290.03	41235.50	21138.53	23170.62	41235.50	100000	2300	23000	25912.00
Lead, Total	57.87	129.49	476.32	44.95	182.32	476.32	800	40	400	28.00
Manganese, Total	262.88	298.95	630.00	286.03	319.87	630.00	19000	180	1800	407.00
Vanadium, Total	36.13	51.56	122.00	39.57	73.75	122.00	1000	7.8	78	32.00
SVOCs										
Trichloroethene	0.0009	0.0014	0.0029	0.0010	0.0012	0.0029	0.11	0.0053	0.053	NA
SVOCs										
Benzo(a)anthracene	2.94	26.18	105.00	0.31	1.63	4.80	2.1	0.062	0.62	0.33
Benzo(a)pyrene	3.57	27.26	105.00	0.59	3.17	9.61	0.21	0.0062	0.062	0.33
Benzo(b)fluoranthene	5.38	35.07	125.00	1.33	7.23	21.70	2.1	0.062	0.62	0.33
Benzo(g,h,i)Perylene	1.47	5.13	35.20	0.29	1.38	3.84	NS	NS	NS	0.33
Benzo(k)fluoranthene	1.93	6.79	47.60	0.47	2.50	7.69	21		6.2	0.33
Chrysene	3.90	14.22	102.00	0.83	4.76	14.80	210	6.2	62	0.33
Dibenzo(a,h)anthracene	0.48	2.75	8.95	0.16	0.75	2.56	0.21		0.062	0.33
Fluoranthene	6.36	31.32	258.00	0.44	2.59	6.41	22000	230	2300	0.33
Indeno(1,2,3-cd)pyrene	1.75	10.29	34.70	0.53	2.54	6.41	2.1		0.62	0.33
Naphthalene	0.11	0.22	0.94	0.09	0.26	0.40	190	5.6	56	0.33
Phenanthrene	5.60	29.02	242.00	0.20	0.99	3.12	NS	NS	NS	0.33
Pyrene	6.04	29.05	238.00	0.48	2.76	7.69	29000	230	2300	0.33

* - A data point in LTA25 that could not be confirmed in the field and two datapoints in LTA 18 were removed in the Exposure Unit 3b dataset to evaluate the impact of these data on the risk estimate.

** - 95% UCL of the mean for each exposure unit dataset was utilized as the EPC.

NS-No Standard ; NA-Not Applicable ; ND-Not Detected

Max. concentration detected did not exceed Region 9 PRG.

TABLE 6-2
Summary of LADDs for an Industrial/Commercial Worker
Exposure Unit 3b - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotals	
	Oral	Dermal	Inhalation		
LADDs (mg/kg-day)					
Inorganic Compounds					
Aluminum					
Arsenic	1.2E-06	3.1E-07	1.4E-11	1.5E-06	
Cadmium			5.4E-13	5.4E-13	
Iron					
Manganese					
Vanadium					
VOC's					
Trichloroethylene	3.5E-11	5.5E-12	7.5E-16	4.0E-11	
PAH's					
Benzo(a)anthracene	8.4E-08	9.8E-08	1.0E-12	1.8E-07	
Benzo(a)pyrene	1.6E-07	1.9E-07	2.0E-12	3.5E-07	
Benzo(b)fluoranthene	3.7E-07	4.3E-07	4.5E-12	8.0E-07	
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene	1.3E-07	1.5E-07	1.6E-12	2.8E-07	
Chrysene	2.4E-07	2.8E-07	3.0E-12	5.3E-07	
Dibenzo(a,h)anthracene	3.8E-08	4.5E-08	4.7E-13	8.3E-08	
Fluoranthene					
Indeno(1,2,3-cd)pyrene	1.3E-07	1.5E-07	1.6E-12	2.8E-07	
Naphthalene					
Phenanthrene					
Pyrene					
Pathway-Specific Subtotal	2.4E-06	1.7E-06	2.8E-11	4.0E-06	

TABLE 6-3
Summary of Risk for an Industrial/Commercial Worker
Exposure Unit 3b - Surface
Marion Ohio Local Training Area Marion, OH

Chemical	Soil			Chemical-Specific Subtotal	%		
	Oral	Dermal	Inhalation				
Risk Estimates (Carcinogenic)							
Inorganic Compounds							
Aluminum							
Arsenic	1.8E-06	4.6E-07	2.1E-10	2.3E-06	35.54%		
Cadmium			3.4E-12	3.4E-12	0.00%		
Iron							
Manganese							
Vanadium							
VOCs							
Trichloroethylene	4.5E-13	7.2E-14	5.2E-18	5.2E-13	0.00%		
PAH's							
Benzo(a)anthracene	6.1E-08	7.1E-08	3.1E-13	1.3E-07	2.06%		
Benzo(a)pyrene	1.2E-06	1.4E-06	6.1E-12	2.6E-06	40.15%		
Benzo(b)fluoranthene	2.7E-07	3.2E-07	1.4E-12	5.9E-07	9.16%		
Benzo(g,h,i)perylene							
Benzo(k)fluoranthene	9.4E-09	1.1E-08	4.8E-14	2.0E-08	0.32%		
Chrysene	1.8E-09	2.1E-09	9.2E-14	3.9E-09	0.06%		
Dibenzo(a,h)anthracene	2.8E-07	3.3E-07	1.4E-12	6.1E-07	9.50%		
Fluoranthene							
Indeno(1,2,3-cd)pyrene	9.5E-08	1.1E-07	4.9E-13	2.1E-07	3.22%		
Naphthalene							
Phenanthrene							
Pyrene							
Pathway-Specific Subtotal	3.7E-06	2.7E-06	2.2E-10	6.4E-06	100.00%		
% of Total	58.15%	41.85%	0.00%	100%			

TABLE 7-1
Summary of Surface Soil Hazard and Risk Estimates
US Army Reserve Marion Local Training Area
Marion, Ohio

Exposure Scenario	Non-Cancer Hazard			Excess Lifetime Cancer Risk			
	Exposure Unit 1	Exposure Unit 2	Exposure Unit 3	Exposure Unit 1	Exposure Unit 2	Exposure Unit 3	Exposure Unit 3b*
Industrial/Commercial Worker							
Adult	<i>Ingestion</i>	3.8E-03	3.6E-03	3.1E-03	4.5E-06	1.2E-06	1.5E-05
	<i>Dermal Contact</i>	5.5E-03	4.2E-03	5.0E-03	4.2E-06	3.2E-07	1.7E-05
	<i>Particulate Inhalation</i>	7.7E-05	1.1E-04	6.0E-05	1.6E-10	1.4E-10	2.2E-10
		9.4E-03	7.9E-03	8.2E-03	8.7E-06	1.5E-06	3.2E-05
USEPA ALM Lead Body Burden Estimate**		4.6 - 6.2	4.6 - 6.1	4.7 - 6.3			
Construction Worker							
Adult	<i>Ingestion</i>	5.3E-02	5.0E-02	4.3E-02	8.7E-07	2.4E-07	2.9E-06
	<i>Dermal Contact</i>	1.3E-02	1.0E-02	1.2E-02	1.4E-07	1.1E-08	5.5E-07
	<i>Particulate Inhalation</i>	1.1E-04	1.6E-04	8.8E-05	3.2E-12	2.8E-12	4.4E-12
		6.6E-02	6.0E-02	5.5E-02	1.0E-06	2.5E-07	3.5E-06
USEPA ALM Lead Body Burden Estimate		4.8 - 8.5	4.7 - 7.5	4.9 - 9.6			
Reservist							
Adult	<i>Ingestion</i>	9.0E-05	8.6E-05	7.4E-05	2.6E-08	7.1E-09	8.8E-08
	<i>Dermal Contact</i>	7.6E-05	5.8E-05	7.0E-05	1.4E-08	1.1E-09	5.5E-08
	<i>Particulate Inhalation</i>	1.9E-06	2.7E-06	1.5E-06	9.3E-13	8.0E-13	1.3E-12
		1.7E-04	1.4E-04	1.4E-04	4.0E-08	8.2E-09	1.4E-07
Adolescent Trespasser							
	<i>Ingestion</i>	2.8E-04	2.7E-04	2.3E-04	1.5E-07	4.1E-08	5.1E-07
	<i>Dermal Contact</i>	4.8E-04	3.7E-04	4.4E-04	1.6E-07	1.2E-08	6.4E-07
	<i>Particulate Inhalation</i>	5.6E-06	8.1E-06	4.4E-06	5.2E-13	4.4E-13	7.0E-12
		7.7E-04	6.5E-04	6.7E-04	3.1E-07	5.3E-08	1.2E-06

* - Exposure Unit 3b represents the dataset of Exposure Unit 3 less one sample from LTA25 (sample LTSB0337) that could not be field confirmed and 2 samples (samples LTSB0139 and LTSB0140) from LTA18 that were removed during site remedial activities. Confirmatory samples in the LTA18 removal area revealed non-detect results for all COCs. See Section 6.0 of HHRA.

** - USEPA Adult Lead Model (ALM). Estimate of lead body burden in fetus of adult worker exposure in units of $\mu\text{g}/\text{dL}$. Range presented is homogeneous vs. heterogeneous population result from the ALM. Target blood lead level is not to exceed 10 $\mu\text{g}/\text{dL}$.

TABLE 7-2
Summary of Sub-Surface Soil Hazard and Risk Estimates
US Army Reserve Marion Local Training Area
Marion, Ohio

Exposure Scenario	Non-Cancer Hazard			Excess Lifetime Cancer Risk		
	Exposure Unit 1	Exposure Unit 2	Exposure Unit 3	Exposure Unit 1	Exposure Unit 2	Exposure Unit 3
Industrial/Commercial Worker						
Adult	Ingestion	4.6E-03	3.2E-03	4.5E-03	1.6E-06	1.2E-06
	Dermal Contact	4.2E-03	3.0E-03	4.3E-03	4.1E-07	3.0E-07
	Particulate Inhalation	1.7E-04	9.1E-05	1.3E-04	1.8E-10	1.3E-10
		9.0E-03	6.3E-03	8.9E-03	2.0E-06	1.5E-06
Construction Worker						
Adult	Ingestion	6.5E-02	4.5E-02	6.2E-02	3.1E-07	2.3E-07
	Dermal Contact	1.0E-02	7.1E-03	1.0E-02	1.3E-08	9.8E-09
	Particulate Inhalation	2.4E-04	1.3E-04	1.9E-04	3.7E-12	2.7E-12
		7.5E-02	5.2E-02	7.2E-02	3.2E-07	2.4E-07
Reservist						
Adult	Ingestion	1.1E-04	1.1E-04	7.7E-05	9.2E-09	1.0E-08
	Dermal Contact	5.8E-05	6.0E-05	4.1E-05	1.4E-09	1.5E-09
	Particulate Inhalation	4.0E-06	3.1E-06	2.2E-06	1.1E-12	1.1E-12
		1.7E-04	1.7E-04	1.2E-04	1.1E-08	1.2E-08
Adolescent Trespasser						
	Ingestion	3.5E-04	2.4E-04	3.4E-04	5.3E-08	3.9E-08
	Dermal Contact	3.7E-04	2.6E-04	3.7E-04	1.6E-08	1.1E-08
	Particulate Inhalation	1.2E-05	6.6E-06	9.4E-06	5.8E-12	4.2E-12
		7.3E-04	5.1E-04	7.2E-04	6.9E-08	5.0E-08

APPENDIX A

LTA-18 LABORATORY ANALYTICAL REPORT
(provided on CD)



156 Starlite Drive, Marietta, OH 45750 • TEL 740-373-4071 • FAX 740-373-4835 • <http://www.kemron.com>

Laboratory Report Number: L0708803 - REVISED

Please find enclosed the analytical results for the samples you submitted to KEMRON Environmental Services.

Review and compilation of your report was completed by KEMRON's Sales and Service Team. If you have questions, comments or require further assistance regarding this report, please contact your team member noted in the reviewed box below at 800-373-4071. Team member e-mail addresses also appear here for your convenience.

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This report was reviewed on October 03, 2007.

Stephanie Mossburg

STEPHANIE MOSSBURG - Team Chemist/Data Specialist

I certify that all test results meet all of the requirements of the NELAP standards and other applicable contract terms and conditions. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of KEMRON Environmental Services.

This report was certified on October 03, 2007.

David Vandenberg

David Vandenberg - Vice President

FL DOH NELAP ID: E8755

This report contains a total of 177 pages.

Protecting Our Environmental Future



KEMRON REPORT L0708803
PREPARED FOR Kemron Environmental Services
WORK ID: MARION OHIO

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1.0 Introduction

LABORATORY REPORT

L0708803

10/02/07 16:25

Submitted By

KEMRON Environmental Services
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Account Name: Kemron Environmental Services
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Account Number: 2820
Work ID: MARION USARC
Invoice Number: 589027
P.O. Number: USARC

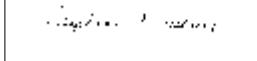
Sample Summary

Client ID	Lab ID	Date Collected	Date Received
LTA18-CS-01A	L0708803-01	08/30/2007 00:00	08/31/2007

KEMRON ENVIRONMENTAL SERVICES
REPORT NARRATIVE**KEMRON Login No.:** L0708803**CHAIN OF CUSTODY:** The chain of custody number was 76063.**SHIPMENT CONDITIONS:** The chain of custody forms were received sealed in a cooler. The cooler temperature was 2, 3, and 5 degrees C.**SAMPLE MANAGEMENT:** All samples received were intact.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Approved: 04-SEP-07

A rectangular box containing a handwritten signature.

2.0 Full Sample Data Package

2.1 Semivolatiles Data

2.1.1 Semivolatiles GC/MS Data (8270)

2.1.1.1 Summary Data

KEMRON ENVIRONMENTAL SERVICES
GC/MS SEMIVOLATILE ORGANICS

KEMRON Login No.: L0708803

METHOD

Preparation: Soils - SW-846 3545; Waters - SW-846 3510C or 3520C

Analysis: SW-846 8270C

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds which yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: The standard analyzed on 8/24/07 yielded %D for 5 compounds that were beyond the acceptance limits. All other acceptance criteria were met.

Continuing Calibration and Tune: The standard analyzed on 9/5/07 yielded %D for 3 compounds that were beyond the acceptance limits. All other acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Matrix Spikes: There were no MS/MSD results associated with this sample delivery group, due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. KEMRON recommends site specific MS/MSD samples to avoid possible data qualification.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: All acceptance criteria were met.

Samples: All acceptance criteria were met.

Manual Integration Reason Codes

KEMRON laboratory management has identified four general cases with valid reasons supporting the use of manual integration techniques.

Reason #1: Data System Fails to Select Correct Peak

In some cases the chromatography system selects and integrates the "wrong peak". In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak.

This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds.

This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline

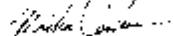
There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous

Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration is not clearly covered by these four cases, then review and approval by the Laboratory Director or the QA/QC Supervisor will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and KEMRON Environmental Services, both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Analyst: ASP, MDC

Approved: 19-SEP-07


LABORATORY REPORT

L0708803

10/02/07 16:25

Submitted By

KEMRON Environmental Services
156 Starlite Drive
Marietta , OH 45750
(740) 373 - 4071

For

Account Name: Kemron Environmental Services
156 Starlite Drive

Marietta, OH 45750
Attention: Charlie Martin

Account Number: 2820
Work ID: MARION USARC
Invoice Number: 589027
P.O. Number: USARC

Sample Analysis Summary

Client ID	Lab ID	Method	Dilution	Date Received
LTA18-CS-01A	L0708803-01	8270C	1	31-AUG-07

Report Number: L0708803

Report Date : October 2, 2007

Sample Number:L0708803-01
 Client ID:LTA18-CS-01A
 Matrix:Soil
 Workgroup Number:WG249501
 Collect Date:08/30/2007 00:00
 Sample Tag:01

Pre Prep Method:NONE
 Prep Method:3545
 Analytical Method:8270C
 Analyst:ASP
 Dilution:1
 Units:ug/kg

Instrument:HPMS5
 Prep Date:08/31/2007 15:00
 Cal Date:08/24/2007 20:50
 Run Date:09/05/2007 13:50
 File ID:5M47857
 Percent Solid:82.2

Analyte	CAS. Number	Result	Qual	RL	MDL
0,0,0-Triethylphosphorothioate	126-68-1		U	197	98.4
1,2,4,5-Tetrachlorobenzene	95-94-3		U	197	98.4
1,2,4-Trichlorobenzene	120-82-1		U	197	98.4
1,2-Dichlorobenzene	95-50-1		U	197	98.4
1,3-Dichlorobenzene	541-73-1		U	197	98.4
1,4-Dichlorobenzene	106-46-7		U	197	98.4
1,3-Dinitrobenzene	99-65-0		U	197	98.4
1,4-Naphthoquinone	130-15-4		U	197	98.4
1-Naphthylamine	134-32-7		U	197	98.4
2,3,4,6-Tetrachlorophenol	58-90-2		U	197	98.4
2,4,5-Trichlorophenol	95-95-4		U	197	98.4
2,4,6-Trichlorophenol	88-06-2		U	197	98.4
2,4-Dichlorophenol	120-83-2		U	197	98.4
2,4-Dimethylphenol	105-67-9		U	197	98.4
2,4-Dinitrophenol	51-28-5		U	984	491
2,4-Dinitrotoluene	121-14-2		U	197	98.4
2,6-Dichlorophenol	87-65-0		U	197	98.4
2,6-Dinitrotoluene	606-20-2		U	197	98.4
2-Acetylaminofluorene	53-96-3		U	197	98.4
2-Chloronaphthalene	91-58-7		U	197	98.4
2-Chlorophenol	95-57-8		U	197	98.4
2-Methylnaphthalene	91-57-6		U	197	98.4
2-Methylphenol	95-48-7		U	197	98.4
2-Naphthylamine	91-59-8		U	984	491
2-Nitroaniline	88-74-4		U	984	491
2-Nitrophenol	88-75-5		U	197	98.4
2-Picoline	109-06-8		U	984	491
3,3'-Dichlorobenzidine	91-94-1		U	393	197
3,3'-Dimethylbenzidine	119-93-7		U	984	491
3-,4-Methylphenol	106-44-5		U	197	98.4
3-Methylcholanthrene	56-49-5		U	197	98.4
3-Nitroaniline	99-09-2		U	984	491
4,6-Dinitro-2-methylphenol	534-52-1		U	984	491
4-Aminobiphenyl	92-67-1		U	1970	984
4-Bromophenyl phenyl ether	101-55-3		U	197	98.4
4-Chloro-3-methylphenol	59-50-7		U	197	98.4
4-Chloroaniline	106-47-8		U	197	98.4
4-Chlorophenyl phenyl ether	7005-72-3		U	197	98.4
4-Nitroaniline	100-01-6		U	984	491
4-Nitrophenol	100-02-7		U	984	491
4-Nitroquinoline 1-Oxide	56-57-5		U	984	491
5-Nitro-o-toluidine	99-55-8		U	197	98.4
7,12-Dimethylbenz(a)anthracene	57-97-6		U	197	98.4
Acenaphthene	83-32-9		U	197	98.4
Acenaphthylene	208-96-8		U	197	98.4
Acetophenone	98-86-2		U	197	98.4
Aniline	62-53-3		U	984	491
Anthracene	120-12-7		U	197	98.4

Report Number: L0708803

Report Date : October 2, 2007

Sample Number:L0708803-01
 Client ID:LTA18-CS-01A
 Matrix:Soil
 Workgroup Number:WG249501
 Collect Date:08/30/2007 00:00
 Sample Tag:01

PrePrep Method:NONE
 Prep Method:3545
 Analytical Method:8270C
 Analyst:ASP
 Dilution:1
 Units:ug/kg

Instrument:HPMS5
 Prep Date:08/31/2007 15:00
 Cal Date:08/24/2007 20:50
 Run Date:09/05/2007 13:50
 File ID:5M47857
 Percent Solid:82.2

Analyte	CAS. Number	Result	Qual	RL	MDL
Aramite	140-57-8		U	197	98.4
Benzo(a)anthracene	56-55-3		U	197	98.4
Benzo(a)pyrene	50-32-8		U	197	98.4
Benzo(b)fluoranthene	205-99-2		U	197	98.4
Benzo(g,h,i)Perylene	191-24-2		U	197	98.4
Benzo(k)fluoranthene	207-08-9		U	197	98.4
Benzyl alcohol	100-51-6		U	197	98.4
Bis(2-Chloroethoxy)Methane	111-91-1		U	197	98.4
Bis(2-Chloroethyl)ether	111-44-4		U	197	98.4
bis(2-Chloroisopropyl)ether	39638-32-9		U	197	98.4
bis(2-Ethylhexyl)phthalate	117-81-7		U	197	98.4
Butyl benzyl phthalate	85-68-7		U	197	98.4
Chlorobenzilate	510-15-6		U	197	98.4
Chrysene	218-01-9		U	197	98.4
Diallate	2303-16-4		U	197	98.4
Dibenz(a,h)anthracene	53-70-3		U	197	98.4
Dibenzofuran	132-64-9		U	197	98.4
Diethyl phthalate	84-66-2		U	197	98.4
Dimethoate	60-51-5		U	197	98.4
Dimethyl phthalate	131-11-3		U	197	98.4
Di-N-Butylphthalate	84-74-2		U	197	98.4
Di-n-octyl phthalate	117-84-0		U	197	98.4
Diphenylamine	122-39-4		U	197	98.4
Disulfoton	298-04-4		U	984	491
Ethyl methanesulfonate	62-50-0		U	984	491
Famphur	52-85-7		U	984	491
Fluoranthene	206-44-0		U	197	98.4
Fluorene	86-73-7		U	197	98.4
Hexachlorobenzene	118-74-1		U	197	98.4
Hexachlorobutadiene	87-68-3		U	197	98.4
Hexachlorocyclopentadiene	77-47-4		U	197	98.4
Hexachloroethane	67-72-1		U	197	98.4
Hexachlorophene	70-30-4		U	984	491
Hexachloropropene	1888-71-7		U	197	98.4
Indeno(1,2,3-cd)pyrene	193-39-5		U	197	98.4
Isodrin	465-73-6		U	984	98.4
Isophorone	78-59-1		U	197	98.4
Isosafrole	120-58-1		U	197	98.4
Kepone	143-50-0		U	1970	984
Methapyrilene	91-80-5		U	984	491
Methyl methanesulfonate	66-27-3		U	197	98.4
Naphthalene	91-20-3		U	197	98.4
Nitrobenzene	98-95-3		U	197	98.4
N-Nitrosodiethylamine	55-18-5		U	197	98.4
N-Nitrosodimethylamine	62-75-9		U	197	98.4
N-Nitrosodi-N-Butylamine	924-16-3		U	197	98.4
N-Nitrosodiphenylamine	86-30-6		U	197	98.4
N-Nitrosodipropylamine	621-64-7		U	197	98.4

Report Number: L0708803

Report Date : October 2, 2007

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 Matrix:Soil
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 Collect Date:08/30/2007 00:00
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 Prep Date:08/31/2007 15:00
 Cal Date:08/24/2007 20:50
 Run Date:09/05/2007 13:50
 File ID:5M47857
 Percent Solid:82.2

Analyte	CAS. Number	Result	Qual	RL	MDL
N-Nitrosomethylamine	10595-95-6		U	197	98.4
N-Nitrosomorpholine	59-89-2		U	197	98.4
N-Nitrosopiperidine	100-75-4		U	197	98.4
N-Nitroscoryrrolidine	930-55-2		U	197	98.4
o-Toluidine	95-53-4		U	984	491
p-Dimethylaminoazobenzene	60-11-7		U	197	98.4
p-Phenylenediamine	106-50-3		U	984	491
Parathion Ethyl	56-38-2		U	197	98.4
Parathion Methyl	298-00-0		U	197	98.4
Pentachlorobenzene	608-93-5		U	197	98.4
Pentachloroethane	76-01-7		U	197	98.4
Pentachloronitrobenzene	82-68-8		U	197	98.4
Pentachlorophenol	87-86-5		U	984	491
Phenacetin	62-44-2		U	197	98.4
Phenanthrone	85-01-8		U	197	98.4
Phenol	108-95-2		U	197	98.4
a,a-Dimethylphenethylamine	122-09-8		U	984	491
Phorate	298-02-2		U	197	98.4
Pronamide	23950-58-5		U	197	98.4
Pyrene	129-00-0		U	197	98.4
Pyridine	110-86-1		U	984	491
Safrole	94-59-7		U	197	98.4
Sulfotep	3689-24-5		U	197	98.4
sym-Trinitrobenzene	99-35-4		U	197	98.4
Thionazin	297-97-2		U	197	98.4
Surrogate		% Recovery	Lower	Upper	Qual
2,4,6-Tribromophenol		66.2	19	122	
2-Fluorobiphenyl		53.1	30	115	
2-Fluorophenol		47.7	25	121	
Nitrobenzene-d5		55.5	23	120	
p-Terphenyl-d14		84.1	18	137	
Phenol-d5		54.6	24	113	

U Not detected at or above adjusted sample detection limit

2.1.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

$$RF = [(Ax)(Cis)] / [(Ais)(Cx)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	1.65935

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

$$Cx = [(Ax)(Cis)(Vf)(D)] / [(Ais)(RF)(Vi)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	16.947

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

$$Cx = [(Ax)(Cis)(Vf)(D)] / [(Ais)(RF)(Wi)]$$

Example

where:

Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	576.7627

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	1153.525 ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, $y = mx + b$

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

$$y = 16790/784838 = 0.02139$$

Step 3: Solve for x

$$x = (y - b)/m = [(0.02139 - (-0.0435))/0.0783] = 0.829$$

Step 4: Solve for analyte concentration Cx

$$Cx = Cis(x) = (25.0)(0.829) = 20.72 \text{ ug/L}$$

Example Spreadsheet Calculation:

Slope from curve, m: 0.0783
 Intercept from curve, b: -0.0435
 Area of analyte, Ax: 16790
 Area of Internal Standard , Ais: 784484
 Concentration of IS, Cis 25.00 ug/L
 Response Ratio (y) : 0.021403
 Amount Ratio: 0.828897
 Concentration (Cx): 20.72241 ug/L

5.0 Concentration from Quadratic Regression**Step 1 - Retrieve Curve Data from Plot, $y = Ax^2 + Bx + C$**

Where:

$$Ax^2 + Bx + (C - y) = 0$$

A, B, C = constants from the ICAL quadratic regression

y = Response ratio = Area of analyte/Area of internal standard (IS)

x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

$$y = Ax/Ais$$

Step 3: Solve for x using the quadratic formula

$$Ax^2 + Bx + C - y = 0$$

$$x = \frac{b \pm \sqrt{(b^2 - 4a(c - y))}}{2a} \quad (\text{Two possible solutions})$$

Step 4: Solve for analyte concentration Cx

$$Cx = (Cis)(\text{Amount ratio})$$

Example Spreadsheet Calculation:

Value of A from plot: 0.0259
 Value of B from plot: 0.0596
 Value of C from plot: -0.0165
 Area of analyte from quantitation report: 203233
 Area of IS from quantitation report: 1425653
 Response ratio, y: 0.142554
 C - y: -0.15905
 Root 1 - Computed amount ratio , X1: -3.88278
 Root 2 - Computed amount ratio , X2: 1.581623 use this solution
 Concentration of IS, Cis: 40.00
 Concentration of analyte, Cx: 63.26 ug/L

Parameter: BNA/S1 SOP #: EXASED1 Revision #: 6
 Extraction Analyst(s): RAB/CAF Lab TV/KD Analyst(s): CSH
 Date Time Extracted: 8-31-07 / 1510D Date TV/KD: 9-4-7
 Spike/Surrogate Analyst: CFS Witness: CPD
 Surrogate #: STD 2135 Earliest Hold Date: 9-13-07
 Spike #: A - STD 2145b Spike #: B -

Extraction Work Group WG 249164
 Extract Relinquished By: CSH
 Extract Received By & Date: CAA 9/4/07

Line	Sample ID	Test Code	pH	N	Initial Vol / Wt	Amount Surrogate	Amount Spike	Final Volume	Extract Color	A	BN	N	Comments
			<2	>12									
1	Blank				20.00g	500mL	.1mL		T				WG 249164-02
2	LCS				1		500mL		C				WG 1 - 03
3	08-803-01	S27-SPE			26.42g				I				
4	08-804-01				19.24g				O				
5	-02				19.49g				C				
6	-03				20.30g				O				
7	-04				19.87g				C				
8	-05				20.43g				O				
9	-06				20.70g				C				
10	-07				19.66g				I				
11	-08				19.50g				O				
12	-09				20.70g				O				
13	-10				19.05g				C				
14	-11				20.12g				I				
15	08-805-01 Ref				18.78g				O				WG 249164-01
16	-02MS				19.69g	500mL							WG 1 - 04
17	-03MS				18.95g	1							WG 1 - 05
18	-04				20.93g								
19	-05				20.78g								
20	-06				20.24g								
21	-07				20.58g								
22	-08				20.31g								
23	-09				20.14g	CSH	9-4-2						
24													

Methylene Chloride Lot #: E25E57Hexane Lot #: Ether Lot #: Methanol Lot #: Solvent: Lot #: Reagent: SARO Lot #: E25595Reagent: DE Lot #: E11 HbYReagent: Lot #: Acid: 1% Acetic Lot #: RGT 11815Florisil Lot #: Silica Gel Lot #: IR Analyst / Date / Time: Dried Na₂SO₄ Lot #: CAA 12125

Color Code

T = Transparent

C = Colored

O = Opaque

SW-846 Method

Continuous 3520C

Soxhlet 3540C

ASE* 3545

Sep Funnel 3510C

Sonication 3550B

Waste 3580A

* Accelerated Solvent Extractor (ASE)

Clean-ups

Florisil 3620B

GPC 3640A

Silica Gel 3630C

Other

Acid 3665A

N/A

Sulfur 3660B

✓

Peer Reviewed By:

*Chas Hill*Date: 9-4-7

Extraction Notes For Volume # 286 Page # 97

General Comments: NONE

General Comments: NONE

Extraction Anomalies: *NoPE*

Extraction Anomalies: None

Concentration Anomalies: None

Concentration Anomalies: NONE

Clean-Up Anomalies: N/A

Clean-Up Anomalies: N/A

Supervisor Review: _____ Date: _____

KEMRON Environmental Services**Instrument Run Log**

Instrument: <u>HPMS5</u>	Dataset: <u>081607</u>
Analyst1: <u>ASP</u>	Analyst2: <u>MDC</u>
Method: <u>8270C</u>	SOP: <u>MSS01</u>
Method: <u>625</u>	SOP: <u>MSS02</u>
	Rev: <u>14</u>
	Rev: <u>8</u>

Maintenance Log ID: _____

Column 1 ID: RXI-5MS Column 2 ID: NA
 Workgroups: _____

Internal STD: STD19283 Surrogate STD: NA Calibration STD: _____

Comments: Compounds #63, 96 only calibrated to 100ppm. ICAL fails kepone, famphur.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5M47434	WG247985-01 50PPM DFTPP	1	1	STD18296	08/16/07 16:09
2	5M47435	WG247985-02 50PPM MEGAMIX STD	1	1	STD21155	08/16/07 16:28
3	5M47436	WG247985-03 3PPM MEGAMIX STD	1	1	STD21155	08/16/07 17:03
4	5M47437	WG247985-02 50PPM MEGAMIX STD	1	1	STD21155	08/16/07 17:38
5	5M47438	WG247985-03 3PPM MEGAMIX STD	1	1	STD21155	08/16/07 18:13
6	5M47439	WG247985-04 10PPM MEGAMIX STD	1	1	STD21155	08/16/07 18:48
7	5M47440	WG247985-05 15PPM MEGAMIX STD	1	1	STD21155	08/16/07 19:22
8	5M47441	WG247985-06 25PPM MEGAMIX STD	1	1	STD21155	08/16/07 19:56
9	5M47442	WG247985-07 80PPM MEGAMIX STD	1	1	STD21155	08/16/07 20:30
10	5M47443	WG247985-08 100PPM MEGAMIX STD	1	1	STD21155	08/16/07 21:04
11	5M47444	WG247985-09 120PPM MEGAMIX STD	1	1	STD21155	08/16/07 21:38
12	5M47445	WG247985-10 50PPM BNA ALT STD	1	1	STD17822	08/16/07 22:11
13	5M47446	WG247985-11 50PPM A9 ALT STD	1	1	STD20124	08/16/07 22:45
14	5M47447	WG247985-02 50PPM MEGAMIX STD	1	1	STD20124	08/16/07 23:18
15	5M47448	WG247987-01 50ppm TCL STD	1	1	STD20141	08/16/07 23:51
16	5M47449	WG247987-02 3ppm TCL STD	1	1	STD20141	08/17/07 00:25
17	5M47450	WG247987-03 10ppm TCL STD	1	1	STD20141	08/17/07 00:59
18	5M47451	WG247987-04 25ppm TCL STD	1	1	STD20141	08/17/07 01:32
19	5M47452	WG247987-05 80ppm TCL STD	1	1	STD20141	08/17/07 02:05
20	5M47453	WG247987-06 100ppm TCL STD	1	1	STD20141	08/17/07 02:39
21	5M47454	WG247987-07 50ppm TCL ALT STD	1	1	STD21293	08/17/07 03:12
22	5M47455	WG247002-03 BLK EP284P139 SOIL	7	1	SOIL	08/17/07 03:46
23	5M47456	WG247002-04 LCS EP284P139 SOIL	7	1	SOIL	08/17/07 04:19
24	5M47457	L0708198-01 SOIL	7	1	SOIL	08/17/07 04:52
25	5M47458	BAKE OUT	1	1		08/17/07 05:25
26	5M47459	BAKE OUT	1	1		08/17/07 05:58
27	5M47460	BAKE OUT	1	1		08/17/07 06:32
28	5M47461	GLYCOL L0708093-01	1	1		08/17/07 07:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2			Not used - EMV set too high.	
3			Not used - EMV set too high.	

KEMRON Environmental Services**Instrument Run Log**

Instrument: <u>HPMS5</u>	Dataset: <u>081607</u>
Analyst1: <u>ASP</u>	Analyst2: <u>MDC</u>
Method: <u>8270C</u>	SOP: <u>MSS01</u>
Method: <u>625</u>	SOP: <u>MSS02</u>
	Rev: <u>14</u>
	Rev: <u>8</u>

Maintenance Log ID: _____

Workgroups: _____
 Internal STD: STD19283 Surrogate STD: NA _____

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12			#10, 38, 113 >30% D.	
13			#44, 75, 109, 118, 121 >30%D.	
14			Not used.	
22			Not reported.	
23			Not reported, missed tune.	
24			Not reported, missed tune. Insufficient extract volume for reanalysis.	

KEMRON Environmental Services**Instrument Run Log**

Instrument: <u>HPMS5</u>	Dataset: <u>082407</u>
Analyst1: <u>ASP</u>	Analyst2: <u>NA</u>
Method: <u>8270C</u>	SOP: <u>MSS01</u>
Method: <u>625</u>	SOP: <u>MSS02</u>
	Rev: <u>14</u>
	Rev: <u>8</u>

Maintenance Log ID: 20592

Column 1 ID: <u>RXI-5MS</u>	Column 2 ID: <u>NA</u>	
Workgroups: <u>WG248303, WG248652</u>		
Internal STD: <u>STD19283</u>	Surrogate STD: <u>NA</u>	Calibration STD _____
Comments: <u>L0708513-01, FBLK, and batch QC need rerun due to internal standard failures compared to ICAL.</u> <u>L0708092s need rerun due to the TCL 50PPM standard mis-injection.</u>		

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5M47598	WG248589-01 50PPM DFTPP	1	1	STD18296	08/24/07 08:36
2	5M47599	WG248589-02 50PPM MEGAMIX STD	1	1	STD21155	08/24/07 08:57
3	5M47600	WG248354-01 BLK EP285P51	1	1		08/24/07 09:31
4	5M47601	WG248354-02 LCS EP285P51	1	1		08/24/07 10:05
5	5M47602	WG248354-03 DUP EP285P51	1	1		08/24/07 10:39
6	5M47603	L0708513-01 TCLP	17	1		08/24/07 11:14
7	5M47604	WG248312-01 FBLK EP285P81 TCLP	17	1		08/24/07 11:48
8	5M47605	WG247716-01 FBLK EP285P53 TCLP	17	1		08/24/07 12:23
9	5M47606	L0708286-01 TCLP	17	1		08/24/07 12:58
10	5M47607	WG247993-01 FBLK EP285P53 TCLP	17	1		08/24/07 13:34
11	5M47608	L0708396-01 TCLP	17	1		08/24/07 14:10
12	5M47609	L0708396-02 TCLP	17	1		08/24/07 14:46
13	5M47610	WG248001-01 L0708428-05 REF	17	1		08/24/07 15:22
14	5M47611	WG248001-05 L0708428-05 MS	17	1		08/24/07 15:58
15	5M47612	WG248656-01 50PPM DFTPP	1	1	STD18296	08/24/07 16:26
16	5M47613	WG248656-02 50PPM MEGAMIX STD	1	1	STD21155	08/24/07 16:48
17	5M47614	WG248656-03 3PPM MEGAMIX STD	1	1	STD21155	08/24/07 17:23
18	5M47615	WG248656-04 10PPM MEGAMIX STD	1	1	STD21155	08/24/07 17:58
19	5M47616	WG248656-05 15PPM MEGAMIX STD	1	1	STD21155	08/24/07 18:33
20	5M47617	WG248656-06 25PPM MEGAMIX STD	1	1	STD21155	08/24/07 19:08
21	5M47618	WG248656-07 80PPM MEGAMIX STD	1	1	STD21155	08/24/07 19:42
22	5M47619	WG248656-08 100PPM MEGAMIX STD	1	1	STD21155	08/24/07 20:16
23	5M47620	WG248656-09 120PPM MEGAMIX STD	1	1	STD21155	08/24/07 20:50
24	5M47621	WG248656-10 50PPM BNA ALT STD	1	1	STD21455	08/24/07 21:24
25	5M47622	WG248656-11 50PPM A9 ALT STD	1	1	STD21461	08/24/07 21:58
40	5M47623	WG248673-01 50PPM TCL STD	1	1	STD20141	08/24/07 22:31
26	5M47624	L0708092-01	1	1		08/24/07 23:05
27	5M47625	L0708092-03	1	1		08/24/07 23:38
28	5M47626	L0708092-05	1	1		08/25/07 00:12
29	5M47627	L0708092-07	1	1		08/25/07 00:46
30	5M47628	WG247243-01 L0708092-09 REF	1	1		08/25/07 01:20
31	5M47629	WG247243-04 L0708092-11 MS	1	1		08/25/07 01:54
32	5M47630	WG247243-05 L0708092-13 MSD	1	1		08/25/07 02:27
33	5M47631	L0708092-17	1	1		08/25/07 03:01
34	5M47632	3PPM MRL CHECK	1	1	STD21155	08/25/07 03:35

Page: 1

Approved: 27-AUG-07



KEMRON Environmental Services**Instrument Run Log**

Instrument: HPMS5	Dataset: 082407
Analyst1: ASP	Analyst2: NA
Method: 8270C	SOP: MSS01
Method: 625	SOP: MSS02
	Rev: 14
	Rev: 8

Maintenance Log ID: 20592

Column 1 ID: RXI-5MS

Column 2 ID: NA

Workgroups: WG248303, WG248652

Internal STD: STD19283 Surrogate STD: NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
35	5M47633	15PPM MRL CHECK	1	1	STD21155	08/25/07 04:09
36	5M47634	BAKE OUT	1	1		08/25/07 04:42
37	5M47635	BAKE OUT	1	1		08/25/07 05:16
38	5M47636	BAKE OUT	1	1		08/25/07 05:49
39	5M47637	BAKE OUT	1	1		08/25/07 06:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
4	X			
5	X			
6	X			
7	X			
9			L0708286-01 TCLP- Surr FBP low.	
10			WG247993-01 FBLK EP285P53 TCLP- Surr FBP low.	
12			L0708396-02 TCLP- Surr FBP low.	
13			WG248001-01 L0708428-05 REF- Surr FBP low.	
40			WG248673-01 50PPM TCL STD- Mis-injected for some unknown reason.	



KEMRON Environmental Services**Instrument Run Log**

Instrument: <u>HPMS5</u>	Dataset: <u>090507</u>
Analyst1: <u>ASP</u>	Analyst2: <u>NA</u>
Method: <u>8270C</u>	SOP: <u>MSS01</u>
Method: <u>625</u>	SOP: <u>MSS02</u>
	Rev: <u>14</u>
	Rev: <u>8</u>

Maintenance Log ID: 20729

Column 1 ID: <u>RXI-5MS</u>	Column 2 ID: <u>NA</u>	
Workgroups: <u>WG249501, WG249242</u>		
Internal STD: <u>STD19283</u>	Surrogate STD: <u>NA</u>	Calibration STD: _____
Comments: _____		

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	5M47850	WG249365-01 50PPM DFTPP	1	1	STD18296	09/05/07 10:16
2	5M47851	WG249365-02 50PPM MEGAMIX STD	1	1	STD21155	09/05/07 10:34
3	5M47852	WG249365-01 50PPM DFTPP	1	1	STD18296	09/05/07 11:17
4	5M47853	WG249365-02 50PPM MEGAMIX STD	1	1	STD21155	09/05/07 11:36
5	5M47854	WG249164-02 BLK EP286P97 SOIL	7	1	SOIL	09/05/07 12:09
6	5M47855	WG249164-03 LCS EP286P97 SOIL	7	1	SOIL	09/05/07 12:42
7	5M47856	L0708727-09 SOIL RR	7	1	SOIL	09/05/07 13:16
8	5M47857	L0708803-01 SOIL	7	1	SOIL	09/05/07 13:50
9	5M47858	WG249394-01 50PPM DFTPP	1	1	STD18296	09/05/07 14:23
10	5M47859	WG249394-02 50PPM MEGAMIX STD	1	1	STD21155	09/05/07 14:42
11	5M47860	L0708804-02 SOIL	7	1	SOIL	09/05/07 15:17
12	5M47861	L0708804-01 SOIL 10x	7	10	SOIL	09/05/07 15:51
13	5M47862	L0708804-10	7	1	SOIL	09/05/07 16:39
14	5M47863	L0708804-04 soil	7	1	SOIL	09/05/07 17:13
15	5M47864	L0708804-05 soil	7	1	SOIL	09/05/07 17:47
16	5M47865	L0708804-06 soil	7	1	SOIL	09/05/07 18:20
17	5M47866	L0708804-07 soil	7	1	SOIL	09/05/07 18:54
18	5M47867	L0708804-08 soil	7	1	SOIL	09/05/07 19:28
19	5M47868	L0708804-09 soil	7	1	SOIL	09/05/07 20:02
20	5M47869	L0708804-11 soil	7	1	SOIL	09/05/07 20:35
21	5M47870	L0708804-03 5x soil	7	5	SOIL	09/05/07 21:08
22	5M47871	L0708805-04 10x soil	7	10	SOIL	09/05/07 21:42
23	5M47872	L0708805-05 10x soil	7	10	SOIL	09/05/07 22:15
24	5M47873	L0708805-06 10x soil	7	10	SOIL	09/05/07 22:49
25	5M47874	L0708805-07 5x soil	7	5	SOIL	09/05/07 23:23
26	5M47875	L0708805-08 soil	7	1		09/05/07 23:56
27	5M47876	L0708805-09 soil	7	1		09/06/07 00:30
28	5M47877	WG249164-01 L0708805-01 REF 20x soil	7	20	SOIL	09/06/07 01:04
29	5M47878	WG249164-04 L0708805-02 MS 20x soil	7	20	SOIL	09/06/07 01:37
30	5M47879	WG249164-05 L0708805-03 MSD 20x soil	7	20	SOIL	09/06/07 02:11
31	5M47880	BAKE OUT	1	1		09/06/07 02:45
32	5M47881	BAKE OUT	1	1		09/06/07 03:18
33	5M47882	BAKE OUT	1	1		09/06/07 03:52
34	5M47883	BAKE OUT	1	1		09/06/07 04:26



KEMRON Environmental Services**Instrument Run Log**

Instrument: <u>HPMS5</u>	Dataset: <u>090507</u>
Analyst1: <u>ASP</u>	Analyst2: <u>NA</u>
Method: <u>8270C</u>	SOP: <u>MSS01</u>
Method: <u>625</u>	SOP: <u>MSS02</u>
	Rev: <u>14</u>
	Rev: <u>8</u>

Maintenance Log ID: 20729

Column 1 ID: RXI-5MS Column 2 ID: NA
 Workgroups: WG249501, WG249242
 Internal STD: STD19283 Surrogate STD: NA

Comments

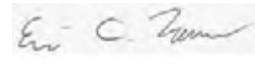
Seq.	Rerun	Dil.	Reason	Analytes
1				
			<u>WG249365-01 50PPM DFTPP- injection error</u>	
7				
			<u>L0708727-09 SOIL RR- Surr 2FP, PHL, FBP, TBP low. Sent for RE.</u>	
16				
			<u>L0708804-06 soil- Surr FBP low.</u>	



KEMRON Environmental Services
Data Checklist

Date: 16-AUG-2007Analyst: ASPAnalyst: MDCMethod: 8270Instrument: HPMS5Curve Workgroup: NARunlog ID: 17818Analytical Workgroups: 8270 & TCL ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup dataforms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MDC
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
20-AUG-2007Secondary Reviewer:
20-AUG-2007

Generated: AUG-20-2007 14:00:33

KEMRON Environmental Services
Data Checklist

Date: 24-AUG-2007

Analyst: ASP

Analyst: NA

Method: 8270

Instrument: HPMS5

Curve Workgroup: NA

Runlog ID: 17931

Analytical Workgroups: L0708513, L0708396, L0708428, L0708286

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	X
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup dataforms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ASP
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
27-AUG-2007

Secondary Reviewer:
27-AUG-2007




Generated: AUG-27-2007 15:27:13

KEMRON Environmental Services
Data Checklist

Date: 05-SEP-2007

Analyst: ASP

Analyst: NA

Method: 8270

Instrument: HPMS5

Curve Workgroup: NA

Runlog ID: 18100

Analytical Workgroups: L0708727, L0708803, L0708804, L0708805

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup dataforms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	ASP
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MDC

Primary Reviewer:
06-SEP-2007Secondary Reviewer:
06-SEP-2007



KEMRON Environmental Services
HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method:8270C
Login Number:L0708803

AAB#: WG249501

Client ID	Date Collected	Date Received	Date Extracted	Max Hold Time Ext.	Time Held Ext.	Date Analyzed	Max Hold Time Anal.	Time Held Anal.	Q
LTA1P-CS-01A	08/30/07	08/31/07	08/31/07	14	1.63	09/05/07	40	4.95	

* EXT = SEE PROJECT QAPP REQUIREMENTS

*ANAL = SEE PROJECT QAPP REQUIREMENTS

SURROGATE STANDARDS

Login Number:L0708803Method:8270Instrument Id:HPMS5CAL ID: HPMS5 - 24-AUG-07Workgroup (AAB#):WG249501Matrix:Soil

Sample Number	Dilution	Tag	1	2	3	4	5	6
L0708803-01	1.00	01	66.2	53.1	47.7	55.5	84.1	54.6
WG249164-02	1.00	01	55.7	53.3	54.5	59.5	88.1	56.6
WG249164-03	1.00	01	76.9	59.2	56.2	58.2	92.1	60.0

Surrogates

Surrogate Limits

1 - 2,4,6-Tribromophenol	19	-	122
2 - 2-Fluorobiphenyl	30	-	115
3 - 2-Fluorophenol	25	-	121
4 - Nitrobenzene-d5	23	-	120
5 - p-Terphenyl-d14	18	-	137
6 - Phenol-d5	24	-	113

Underline = Result out of surrogate limits

DL = surrogate diluted out

ND = surrogate not detected

METHOD BLANK SUMMARY

Login Number:L0708803
Blank File ID:5M47854
Prep Date:08/31/07 15:00
Analyzed Date:09/05/07 12:09
Analyst:ASP

Work Group:WG249501
Blank Sample ID:WG249164-02
Instrument ID:HPMS5
Method:8270C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG249164-03	5M47855	09/05/07 12:42	01
LTA1P-CS-01A	L0708803-01	5M47857	09/05/07 13:50	01

METHOD BLANK REPORT

Login Number:L0708803 Prep Date:08/31/07 15:00 Sample ID:WG249164-02
 Instrument ID:HPMS5 Run Date:09/05/07 12:09 Prep Method:3545
 File ID:5M47854 Analyst:ASP Method:8270C
 Workgroup (AAB#):WG249501 Matrix:Soil Units:ug/kg
 Contract #:_____ Cal ID: HPMS5 - 24-AUG-07

Analytes	MDL	RL	Concentration	Dilution	Qualifier
0,0,0-Triethylphosphorothioate	82.5	165	82.5	1	U
1,2,4,5-Tetrachlorobenzene	82.5	165	82.5	1	U
1,2,4-Trichlorobenzene	82.5	165	82.5	1	U
1,2-Dichlorobenzene	82.5	165	82.5	1	U
1,3-Dichlorobenzene	82.5	165	82.5	1	U
1,4-Dichlorobenzene	82.5	165	82.5	1	U
1,3-Dinitrobenzene	82.5	165	82.5	1	U
1,4-Naphthoquinone	82.5	165	82.5	1	U
1-Naphthylamine	82.5	165	82.5	1	U
2,3,4,6-Tetrachlorophenol	82.5	165	82.5	1	U
2,4,5-Trichlorophenol	82.5	165	82.5	1	U
2,4,6-Trichlorophenol	82.5	165	82.5	1	U
2,4-Dichlorophenol	82.5	165	82.5	1	U
2,4-Dimethylphenol	82.5	165	82.5	1	U
2,4-Dinitrophenol	412	825	412	1	U
2,4-Dinitrotoluene	82.5	165	82.5	1	U
2,6-Dichlorophenol	82.5	165	82.5	1	U
2,6-Dinitrotoluene	82.5	165	82.5	1	U
2-Acetylaminofluorene	82.5	165	82.5	1	U
2-Chloronaphthalene	82.5	165	82.5	1	U
2-Chlorophenol	82.5	165	82.5	1	U
2-Methylnaphthalene	82.5	165	82.5	1	U
2-Methylphenol	82.5	165	82.5	1	U
2-Naphthylamine	412	825	412	1	U
2-Nitroaniline	412	825	412	1	U
2-Nitrophenol	82.5	165	82.5	1	U
2-Picoline	412	825	412	1	U
3,3'-Dichlorobenzidine	165	330	165	1	U
3,3'-Dimethylbenzidine	412	825	412	1	U
3-,4-Methylphenol	82.5	165	82.5	1	U
3-Methylcholanthrene	82.5	165	82.5	1	U
3-Nitroaniline	412	825	412	1	U
4,6-Dinitro-2-methylphenol	412	825	412	1	U
4-Aminobiphenyl	825	1650	825	1	U
4-Bromophenyl phenyl ether	82.5	165	82.5	1	U
4-Chloro-3-methylphenol	82.5	165	82.5	1	U
4-Chloroaniline	82.5	165	82.5	1	U
4-Chlorophenyl phenyl ether	82.5	165	82.5	1	U
4-Nitroaniline	412	825	412	1	U
4-Nitrophenol	412	825	412	1	U
4-Nitroquinoline 1-Oxide	412	825	412	1	U
5-Nitro-o-toluidine	82.5	165	82.5	1	U

KEMRON FORMS - Modified 12/07/2006
 Version 1.5 PDF File ID: 868872
 Report generated 09/07/2007 08:34

KEMRON Environmental Services

METHOD BLANK REPORT

Login Number:L0708803 Prep Date:08/31/07 15:00 Sample ID:WG249164-02
 Instrument ID:HPMS5 Run Date:09/05/07 12:09 Prep Method:3545
 File ID:5M47854 Analyst:ASP Method:8270C
 Workgroup (AAB#):WG249501 Matrix:Soil Units:ug/kg
 Contract #:_____ Cal ID: HPMS5 - 24-AUG-07

Analytes	MDL	RL	Concentration	Dilution	Qualifier
7,12-Dimethylbenz(a)anthracene	82.5	165	82.5	1	U
Acenaphthene	82.5	165	82.5	1	U
Acenaphthylene	82.5	165	82.5	1	U
Acetophenone	82.5	165	82.5	1	U
Aniline	412	825	412	1	U
Anthracene	82.5	165	82.5	1	U
Aramite	82.5	165	82.5	1	U
Benzo(a)anthracene	82.5	165	82.5	1	U
Benzo(a)pyrene	82.5	165	82.5	1	U
Benzo(b)fluoranthene	82.5	165	82.5	1	U
Benzo(g,h,i)Perylene	82.5	165	82.5	1	U
Benzo(k)fluoranthene	82.5	165	82.5	1	U
Benzyl alcohol	82.5	165	82.5	1	U
Bis(2-Chloroethoxy)Methane	82.5	165	82.5	1	U
Bis(2-Chloroethyl)ether	82.5	165	82.5	1	U
bis(2-Chloroisopropyl)ether	82.5	165	82.5	1	U
bis(2-Ethylhexyl)phthalate	82.5	165	82.5	1	U
Butyl benzyl phthalate	82.5	165	82.5	1	U
Chlorobenzilate	82.5	165	82.5	1	U
Chrysene	82.5	165	82.5	1	U
Diallate	82.5	165	82.5	1	U
Dibenz(a,h)anthracene	82.5	165	82.5	1	U
Dibenzofuran	82.5	165	82.5	1	U
Diethyl phthalate	82.5	165	82.5	1	U
Dimethoate	82.5	165	82.5	1	U
Dimethyl phthalate	82.5	165	82.5	1	U
Di-N-Butylphthalate	82.5	165	82.5	1	U
Di-n-octyl phthalate	82.5	165	82.5	1	U
Diphenylamine	82.5	165	82.5	1	U
Disulfoton	412	825	412	1	U
Ethyl methanesulfonate	412	825	412	1	U
Famphur	412	825	412	1	U
Fluoranthene	82.5	165	82.5	1	U
Fluorene	82.5	165	82.5	1	U
Hexachlorobenzene	82.5	165	82.5	1	U
Hexachlorobutadiene	82.5	165	82.5	1	U
Hexachlorocyclopentadiene	82.5	165	82.5	1	U
Hexachloroethane	82.5	165	82.5	1	U
Hexachlorophene	412	825	412	1	U
Hexachloropropene	82.5	165	82.5	1	U
Indeno(1,2,3-cd)pyrene	82.5	165	82.5	1	U
Isodrin	82.5	825	82.5	1	U

KEMRON FORMS - Modified 12/07/2006
 Version 1.5 PDF File ID: 868872
 Report generated 09/07/2007 08:34

METHOD BLANK REPORT

Login Number:L0708803 Prep Date:08/31/07 15:00 Sample ID:WG249164-02
 Instrument ID:HPMS5 Run Date:09/05/07 12:09 Prep Method:3545
 File ID:5M47854 Analyst:ASP Method:8270C
 Workgroup (AAB#):WG249501 Matrix:Soil Units:ug/kg
 Contract #:_____ Cal ID: HPMS5 - 24-AUG-07

Analytes	MDL	RL	Concentration	Dilution	Qualifier
Isophorone	82.5	165	82.5	1	U
Isosafrole	82.5	165	82.5	1	U
Kepone	825	1650	825	1	U
Methapyrilene	412	825	412	1	U
Methyl methanesulfonate	82.5	165	82.5	1	U
Naphthalene	82.5	165	82.5	1	U
Nitrobenzene	82.5	165	82.5	1	U
N-Nitrosodiethylamine	82.5	165	82.5	1	U
N-Nitrosodimethylamine	82.5	165	82.5	1	U
N-Nitrosodi-N-Butylamine	82.5	165	82.5	1	U
N-Nitrosodiphenylamine	82.5	165	82.5	1	U
N-Nitrosodipropylamine	82.5	165	82.5	1	U
N-Nitrosomethylalkylamine	82.5	165	82.5	1	U
N-Nitrosomorpholine	82.5	165	82.5	1	U
N-Nitrosopiperidine	82.5	165	82.5	1	U
N-Nitrosopyrrolidine	82.5	165	82.5	1	U
o-Tolidine	412	825	412	1	U
p-Dimethylaminoazobenzene	82.5	165	82.5	1	U
p-Phenylenediamine	412	825	412	1	U
Parathion Ethyl	82.5	165	82.5	1	U
Parathion Methyl	82.5	165	82.5	1	U
Pentachlorobenzene	82.5	165	82.5	1	U
Pentachloroethane	82.5	165	82.5	1	U
Pentachloronitrobenzene	82.5	165	82.5	1	U
Pentachlorophenol	412	825	412	1	U
Phenacetin	82.5	165	82.5	1	U
Phenanthrene	82.5	165	82.5	1	U
Phenol	82.5	165	82.5	1	U
a,a-Dimethylphenethylamine	412	825	412	1	U
Phorate	82.5	165	82.5	1	U
Pronamide	82.5	165	82.5	1	U
Pyrene	82.5	165	82.5	1	U
Pyridine	412	825	412	1	U
Safrole	82.5	165	82.5	1	U
Sulfotepp	82.5	165	82.5	1	U
sym-Trinitrobenzene	82.5	165	82.5	1	U
Thionazin	82.5	165	82.5	1	U

METHOD BLANK REPORT

Login Number:L0708803 Prep Date:08/31/07 15:00 Sample ID:WG249164-02
 Instrument ID:HPMS5 Run Date:09/05/07 12:09 Prep Method:3545
 File ID:5M47854 Analyst:ASP Method:8270C
 Workgroup (AAB#):WG249501 Matrix:Soil Units:ug/kg
 Contract #:_____ Cal ID:_HPMS5 - 24-AUG-07

Surrogates	% Recovery	Surrogate Limits		Qualifier	
2,4,6-Tribromophenol	55.7	19	-	122	PASS
2-Fluorobiphenyl	53.3	30	-	115	PASS
2-Fluorophenol	54.5	25	-	121	PASS
Nitrobenzene-d5	59.5	23	-	120	PASS
p-Terphenyl-d14	88.1	18	-	137	PASS
Phenol-d5	56.6	24	-	113	PASS

MDL Method Detection Limit

RL Reporting/Practical Quantitation Limit

ND Analyte Not detected at or above reporting limit

* Analyte concentration > RL

LABORATORY CONTROL SAMPLE (LCS)

Login Number:L0708803 Run Date:09/05/2007 Sample ID:WG249164-03
 Instrument ID:HPMS5 Run Time:12:42 Prep Method:3545
 File ID:5M47855 Analyst:ASP Method:8270C
 Workgroup (AAB#):WG249501 Matrix:Soil Units:ug/kg
 QC Key:STD Lot#: Cal ID: HPMS5 - 24-AUG-07

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,2,4-Trichlorobenzene	2500	1330	53.2	35 - 100	
1,2-Dichlorobenzene	2500	1470	58.9	35 - 95	
1,3-Dichlorobenzene	2500	1430	57.0	35 - 100	
1,4-Dichlorobenzene	2500	1400	55.9	35 - 105	
2,3,4,6-Tetrachlorophenol	2500	1960	78.2	40 - 140	
2,4,5-Trichlorophenol	2500	1740	69.5	40 - 110	
2,4,6-Trichlorophenol	2500	1670	67.0	40 - 110	
2,4-Dichlorophenol	2500	1570	62.8	35 - 110	
2,4-Dimethylphenol	2500	1500	59.9	30 - 105	
2,4-Dinitrophenol	2500	2100	83.9	40 - 130	
2,4-Dinitrotoluene	2500	2330	93.0	50 - 130	
2,6-Dinitrotoluene	2500	1870	74.8	50 - 125	
2-Chloronaphthalene	2500	1310	52.3	40 - 105	
2-Chlorophenol	2500	1490	59.8	35 - 105	
2-Methylnaphthalene	2500	1420	56.8	35 - 115	
2-Methylphenol	2500	1600	63.8	35 - 100	
2-Nitroaniline	2500	1870	74.8	45 - 120	
2-Nitrophenol	2500	1510	60.4	35 - 100	
3,3'-Dichlorobenzidine	2500	2450	97.9	40 - 140	
3-,4-Methylphenol	2500	1850	74.0	35 - 105	
3-Nitroaniline	2500	1910	76.4	50 - 130	
4,6-Dinitro-2-methylphenol	2500	2610	105	45 - 130	
4-Bromophenyl phenyl ether	2500	1750	70.2	40 - 115	
4-Chloro-3-methylphenol	2500	1590	63.5	40 - 100	
4-Chloroaniline	2500	1240	49.6	35 - 100	
4-Chlorophenyl phenyl ether	2500	1630	65.1	40 - 110	
4-Nitroaniline	2500	2080	83.2	35 - 140	
4-Nitrophenol	2500	2150	85.9	45 - 140	
Acenaphthene	2500	1510	60.5	40 - 110	
Acenaphthylene	2500	1500	60.0	40 - 110	
Acetophenone	2500	1560	62.4	40 - 140	
Aniline	2500	1250	50.1	20 - 100	
Anthracene	2500	2170	86.8	55 - 130	
Benzo(a)anthracene	2500	2380	95.4	50 - 130	
Benzo(a)pyrene	2500	2370	94.7	50 - 130	
Benzo(b)fluoranthene	2500	2280	91.2	45 - 125	
Benzo(g,h,i)Perylene	2500	2340	93.5	40 - 140	
Benzo(k)fluoranthene	2500	2290	91.5	45 - 135	
Benzyl alcohol	2500	1600	64.0	30 - 100	
Bis(2-Chloroethoxy)Methane	2500	1140	45.6	30 - 100	
Bis(2-Chloroethyl)ether	2500	1480	59.2	30 - 100	

LABORATORY CONTROL SAMPLE (LCS)

Login Number:L0708803 Run Date:09/05/2007 Sample ID:WG249164-03
 Instrument ID:HPMS5 Run Time:12:42 Prep Method:3545
 File ID:5M47855 Analyst:ASP Method:8270C
 Workgroup (AAB#):WG249501 Matrix:Soil Units:ug/kg
 QC Key:STD Lot#: Cal ID: HPMS5 - 24-AUG-07

Analytes	Expected	Found	% Rec	LCS Limits	Q
bis(2-Chloroisopropyl)ether	2500	1530	61.4	20 - 115	
bis(2-Ethylhexyl)phthalate	2500	2330	93.2	50 - 150	
Butyl benzyl phthalate	2500	2450	97.9	50 - 150	
Chrysene	2500	2390	95.5	55 - 140	
Dibenz(a,h)anthracene	2500	2350	94.1	40 - 140	
Dibenzofuran	2500	1590	63.7	35 - 110	
Diethyl phthalate	2500	1940	77.5	50 - 130	
Dimethyl phthalate	2500	1830	73.0	45 - 115	
Di-N-Butylphthalate	2500	2370	94.8	55 - 140	
Di-n-octyl phthalate	2500	2390	95.6	40 - 145	
Fluoranthene	2500	2490	99.5	55 - 140	
Fluorene	2500	1710	68.3	45 - 115	
Hexachlorobenzene	2500	2090	83.7	45 - 120	
Hexachlorobutadiene	2500	1510	60.6	30 - 100	
Hexachlorocyclopentadiene	2500	1550	62.0	30 - 110	
Hexachloroethane	2500	1460	58.5	30 - 100	
Indeno(1,2,3-cd)pyrene	2500	2360	94.4	50 - 135	
Isophorone	2500	1630	65.1	35 - 100	
Naphthalene	2500	1370	54.7	35 - 100	
Nitrobenzene	2500	1440	57.6	35 - 100	
N-Nitrosodimethylamine	2500	1520	60.9	25 - 100	
N-Nitrosodiphenylamine	2500	1800	72.0	50 - 130	
N-Nitrosodipropylamine	2500	1670	66.6	35 - 110	
Pentachlorophenol	2500	2850	114	50 - 150	
Phenanthren	2500	2090	83.7	50 - 130	
Phenol	2500	1530	61.1	35 - 100	
Pyrene	2500	2420	96.6	45 - 135	
Pyridine	2500	1430	57.2	20 - 100	

Surrogates	% Recovery	Surrogate Limits		Qualifier
2,4,6-Tribromophenol	76.9	19	- 122	PASS
2-Fluorobiphenyl	59.2	30	- 115	PASS
2-Fluorophenol	56.2	25	- 121	PASS
Nitrobenzene-d5	58.2	23	- 120	PASS
p-Terphenyl-d14	92.1	18	- 137	PASS
Phenol-d5	60.0	24	- 113	PASS

* FAILS %REC LIMIT

KEMRON ENVIRONMENTAL SERVICES
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L0708803
Instrument: HPMS5
Analyst: ASP
Workgroup: WG247985

Tune ID: WG247985-01
Run Date: 08/16/2007
Run Time: 16:09
File ID: 5M47434
Cal ID: HPMS5 - 07-AUG-07

Target	Rel. to	Lower	Upper	Rel.	Raw	Result
51.0	198	30.0	60.0	39.8	42784	PASS
68.0	69.0	0	2.00	0	0	PASS
69.0	198	0	100	42.7	45952	PASS
70.0	69.0	0	2.00	0.555	255	PASS
127	198	40.0	60.0	50.2	54032	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	107541	PASS
199	198	5.00	9.00	6.67	7176	PASS
275	198	10.0	30.0	25.7	27650	PASS
365	198	1.00	100	3.09	3321	PASS
441	443	0.0100	100	80.7	15847	PASS
442	198	40.0	100	92.9	99914	PASS
443	442	17.0	23.0	19.7	19634	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG247987-01	STD-CCV	01	08/16/2007 23:51	
WG247987-02	STD	01	08/17/2007 00:25	
WG247987-03	STD	01	08/17/2007 00:59	
WG247987-04	STD	01	08/17/2007 01:32	
WG247987-05	STD	01	08/17/2007 02:05	
WG247987-06	STD	01	08/17/2007 02:39	
WG247987-07	SSCV	01	08/17/2007 03:12	

* Sample past 12 hour tune limit

KEMRON ENVIRONMENTAL SERVICES
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L0708803
Instrument: HPMS5
Analyst: ASP
Workgroup: WG248656

Tune ID: WG248656-01
Run Date: 08/24/2007
Run Time: 16:26
File ID: 5M47612
Cal ID: HPMS5 - 24-AUG-07

Target	Rel. to	Lower	Upper	Rel.	Raw	Result
51.0	198	30.0	60.0	43.5	20527	PASS
68.0	69.0	0	2.00	0.721	140	PASS
69.0	198	0	100	41.1	19417	PASS
70.0	69.0	0	2.00	0	0	PASS
127	198	40.0	60.0	51.6	24378	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	47224	PASS
199	198	5.00	9.00	6.84	3228	PASS
275	198	10.0	30.0	24.7	11659	PASS
365	198	1.00	100	2.91	1376	PASS
441	443	0.0100	100	80.3	7063	PASS
442	198	40.0	100	96.9	45760	PASS
443	442	17.0	23.0	19.2	8797	PASS

51.0	198	30.0	60.0	43.5	20527	PASS
68.0	69.0	0	2.00	0.721	140	PASS
69.0	198	0	100	41.1	19417	PASS
70.0	69.0	0	2.00	0	0	PASS
127	198	40.0	60.0	51.6	24378	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	47224	PASS
199	198	5.00	9.00	6.84	3228	PASS
275	198	10.0	30.0	24.7	11659	PASS
365	198	1.00	100	2.91	1376	PASS
441	443	0.0100	100	80.3	7063	PASS
442	198	40.0	100	96.9	45760	PASS
443	442	17.0	23.0	19.2	8797	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG248656-02	STD-CCV	01	08/24/2007 16:48	
WG248656-03	STD	01	08/24/2007 17:23	
WG248656-04	STD	01	08/24/2007 17:58	
WG248656-05	STD	01	08/24/2007 18:33	
WG248656-06	STD	01	08/24/2007 19:08	
WG248656-07	STD	01	08/24/2007 19:42	
WG248656-08	STD	01	08/24/2007 20:16	
WG248656-09	STD	01	08/24/2007 20:50	
WG248656-10	SSCV	01	08/24/2007 21:24	
WG248656-11	SSCV	01	08/24/2007 21:58	

* Sample past 12 hour tune limit

KEMRON ENVIRONMENTAL SERVICES
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L0708803
Instrument: HPMS5
Analyst: ASP
Workgroup: WG249365

Tune ID: WG249365-01
Run Date: 09/05/2007
Run Time: 11:17
File ID: 5M47852
Cal ID: HPMS5 - 24-AUG-07

Target	Rel. to	Lower	Upper	Rel.	Raw	Result
51.0	198	30.0	60.0	42.7	17776	PASS
68.0	69.0	0	2.00	0	0	PASS
69.0	198	0	100	42.8	17845	PASS
70.0	69.0	0	2.00	0.230	41	PASS
127	198	40.0	60.0	49.2	20510	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	41674	PASS
199	198	5.00	9.00	6.89	2870	PASS
275	198	10.0	30.0	23.8	9935	PASS
365	198	1.00	100	2.71	1129	PASS
441	443	0.0100	100	84.3	5619	PASS
442	198	40.0	100	81.4	33928	PASS
443	442	17.0	23.0	19.6	6665	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG249365-02	CCV	01	09/05/2007 11:36	
WG249164-02	BLANK	01	09/05/2007 12:09	
WG249164-03	LCS	01	09/05/2007 12:42	
L0708803-01	LTA1P-CS-01A	01	09/05/2007 13:50	

* Sample past 12 hour tune limit

INITIAL CALIBRATION SUMMARY

Login Number:L0708803
Analytical Method:8270C
ICAL Workgroup:WG247987

Instrument ID:HPMS5
Initial Calibration Date:17-AUG-07 02:39
Column ID:F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD(R ²)
Acetophenone		1.550	3.94		

R = Correlation coefficient; 0.995 minimum

R² = Coefficient of determination; 0.99 minimum

INITIAL CALIBRATION SUMMARY

Login Number: L0708803
 Analytical Method: 8270C
 ICAL Workgroup: WG248656

Instrument ID: HPMS5
 Initial Calibration Date: 24-AUG-07 20:50
 Column ID: F

Analyte		Avg RF	% RSD	Linear (R)	Quad (R ²)
1,4-Dichlorobenzene	CCC	1.763	6.30		
2,4,6-Trichlorophenol	CCC	0.3954	1.58		
2,4-Dichlorophenol	CCC	0.2931	2.07		
2-Nitrophenol	CCC	0.2029	3.73		
4-Chloro-3-Methylphenol	CCC	0.3095	3.54		
Acenaphthene	CCC	1.342	6.52		
Benzo[a]pyrene	CCC	1.340	2.94		
Di-n-Octyl Phthalate	CCC	1.706	4.61		
Fluoranthene	CCC	1.382	8.67		
Hexachlorobutadiene	CCC	0.1601	6.04		
Pentachlorophenol	CCC	0.1173	21.9	1.00	
Phenol	CCC	1.883	5.91		
n-Nitrosodiphenylamine	CCC	0.8312	6.95		
2,4-Dinitrophenol	SPCC	0.1296	36.4	0.998	
4-Nitrophenol	SPCC	0.2651	6.49		
Hexachlorocyclopentadiene	SPCC	0.2547	14.9		
n-Nitrosodipropylamine	SPCC	1.012	8.01		
0,0,0-Triethyl Phosphorothioate		0.1634	8.83		
1,2,4,5-Tetrachlorobenzene		0.5714	8.49		
1,2,4-Trichlorobenzene		0.3337	6.48		
1,2-Dichlorobenzene		1.620	5.67		
1,3-Dichlorobenzene		1.704	5.94		
1,3-Dinitrobenzene		0.2100	17.2		
1,4-Naphthoquinone		0.4828	13.7		
1-Naphthylamine		1.366	4.43		
2,3,4,6-Tetrachlorophenol		0.2801	16.0	1.00	
2,4,5-Trichlorophenol		0.4230	2.09		
2,4-Dimethylphenol		0.3587	5.54		
2,4-Dinitrotoluene		0.4119	5.65		
2,6-Dichlorophenol		0.2990	3.93		
2,6-Dinitrotoluene		0.3522	2.33		
2-Acetylaminofluorene		0.5699	10.9		
2-Chloronaphthalene		1.528	8.48		
2-Chlorophenol		1.566	3.94		
2-Methylnaphthalene		0.7468	7.03		
2-Methylphenol		1.158	4.59		
2-Naphthylamine		1.292	5.41		
2-Nitroaniline		0.3585	5.01		
2-Picoline		1.629	4.40		
3,3'-Dichlorobenzidine		0.4734	4.88		
3,3'-Dimethylbenzidine		1.078	10.9		
3-,4-Methylphenol		1.529	3.50		
3-Methylcholanthrene		0.7236	7.50		
3-Nitroaniline		0.4162	2.30		
4,6-Dinitro-2-Methylphenol		0.1451	19.0	0.999	

KEMRON FORMS - Modified 01/18/2007
 Version 1.5 PDF File ID: 869093
 Report generated 09/07/2007 08:35

INITIAL CALIBRATION SUMMARY

Login Number:L0708803
 Analytical Method:8270C
 ICAL Workgroup:WG248656

Instrument ID:HPMS5
 Initial Calibration Date:24-AUG-07 20:50
 Column ID:F

Analyte	Avg RF	% RSD	Linear (R)	Quad(R ²)
4-Aminobiphenyl	0.9118	6.70		
4-Bromophenyl Phenyl Ether	0.2519	6.09		
4-Chloroaniline	0.4905	4.78		
4-Chlorophenyl Phenyl Ether	0.6975	9.43		
4-Nitroaniline	0.4452	2.52		
4-Nitroquinoline 1-Oxide	0.06489	32.1	0.999	
5-Nitro-o-Toluidine	0.4243	6.18		
7,12-Dimethylbenz[a]anthracene	0.6437	7.24		
Acenaphthylene	2.184	7.45		
Acetophenone	1.842	8.25		
Aniline	2.331	4.67		
Anthracene	1.426	7.84		
Aramite	0.05456	8.01		
Benzo[a]anthracene	1.367	6.55		
Benzo[b]fluoranthene	1.513	7.42		
Benzo[ghi]perylene	1.302	3.10		
Benzo[k]fluoranthene	1.373	8.32		
Benzyl Alcohol	0.9742	2.86		
Butyl Benzyl Phthalate	0.6942	10.6		
Chlorobenzilate	0.3856	6.92		
Chrysene	1.321	7.35		
Di-n-Butyl Phthalate	1.570	6.33		
Diallate	0.05785	6.30		
Dibenz[ah]anthracene	1.298	3.33		
Dibenzofuran	1.807	10.2		
Diethylphthalate	1.463	7.09		
Dimethoate	0.3463	10.3		
Dimethylphthalate	1.452	7.39		
Disulfoton	0.4474	5.92		
Ethyl Methanesulfonate	1.063	4.64		
Famphur	0.2319	89.0		
Fluorene	1.533	8.30		
Hexachlorobenzene	0.2643	7.46		
Hexachloroethane	0.6331	3.74		
Hexachloropropene	0.1785	7.02		
Indeno[1,2,3-cd]pyrene	1.504	3.28		
Isodrin	0.1407	8.02		
Isophorone	0.6172	6.14		
Isosafrole	0.5585	7.45		
Kepone	0.00001250	283		
Methapyrilene	0.3925	16.9		0.995
Methyl Methanesulfonate	0.7364	7.42		
Naphthalene	1.129	8.08		
Nitrobenzene	0.3619	4.82		
Parathion Ethyl	0.1546	11.9		

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INITIAL CALIBRATION SUMMARY

Login Number: L0708803
 Analytical Method: 8270C
 ICAL Workgroup: WG248656

Instrument ID: HPMS5
 Initial Calibration Date: 24-AUG-07 20:50
 Column ID: F

Analyte	AVG RF	% RSD	LINEAR (R)	QUAD(R ²)
Parathion Methyl	0.2543	8.77		
Pentachlorobenzene	0.4933	8.90		
Pentachloroethane	0.5290	5.43		
Pentachloronitrobenzene	0.08359	7.35		
Phenacetin	0.4184	5.73		
Phenanthrene	1.424	9.08		
Phorate	0.5241	8.94		
Pronamide	0.3729	6.43		
Pyrene	1.488	8.19		
Pyridine	1.628	4.42		
Safrole	0.2838	7.43		
Sulfotep	0.1387	5.36		
Sym-Trinitrobenzene	0.1491	27.2	0.998	
Thionazin	0.2275	7.69		
a,a-Dimethylphenethylamine	1.008	6.79		
bis(2-Chloroethoxy)methane	0.5482	8.59		
bis(2-Chloroethyl)ether	1.091	7.71		
bis(2-Chloroisopropyl)ether	2.542	7.90		
bis(2-Ethylhexyl)phthalate	1.026	12.1		
n-Nitrosodi-n-Butylamine	0.2490	11.6		
n-Nitrosodiethylamine	0.7029	3.23		
n-Nitrosodimethylamine	0.9604	3.50		
n-Nitrosomethylethylamine	0.6725	6.12		
n-Nitrosomorpholine	0.9144	9.52		
n-Nitrosopiperidine	0.1842	6.72		
n-Nitrosopyrrolidine	0.7144	3.73		
o-Toluidine	2.191	4.95		
p-(Dimethylamino)azobenzene	0.2880	7.04		
p-Phenylenediamine	0.3391	8.63		

R = Correlation coefficient; 0.995 minimum

R² = Coefficient of determination; 0.99 minimum

KEMRON Environmental Services

INITIAL CALIBRATION DATA

Login Number:L0708803
Analytical Method:8270C

Instrument ID:HPMS5Initial Calibration Date:17-AUG-07 02:39Column ID:F

Analyte	WG247987-01			WG247987-02			WG247987-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Acetophenone	50.0	1604402.00	1.523	3.00	91356.0000	1.620	10.0	276334.000	1.620

KEMRON FORMS - Modified 10/13/2006
Version 1.6 PDF File ID: 869093
Report generated 09/07/2007 08:35

KEMRON Environmental Services

INITIAL CALIBRATION DATA

Login Number:L0708803
Analytical Method:8270C

Instrument ID:HPMS5
Initial Calibration Date:17-AUG-07 02:39
Column ID:F

Analyte	WG247987-04			WG247987-05			WG247987-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Acetophenone	25.0	700022.000	1.523	80.0	1752234.00	1.549	100	3184565.00	1.464

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INITIAL CALIBRATION DATA

Login Number: L0708803
 Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID:F

Analyte	WG248656-02			WG248656-03			WG248656-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	50.0	432762.000	1.779	3.00	32830.0000	1.974	10.0	91320.0000	1.832
2,4,6-Trichlorophenol	50.0	206337.000	0.4044	3.00	12884.0000	0.3944	10.0	38442.0000	0.3853
2,4-Dichlorophenol	50.0	288800.000	0.2993	3.00	19262.0000	0.2975	10.0	57592.0000	0.2953
2-Nitrophenol	50.0	207733.000	0.2153	3.00	12408.0000	0.1916	10.0	38069.0000	0.1952
4-Chloro-3-Methylphenol	50.0	312346.000	0.3237	3.00	20566.0000	0.3176	10.0	60415.0000	0.3097
Acenaphthene	50.0	676769.000	1.327	3.00	48630.0000	1.489	10.0	140044.000	1.404
Benzo[a]pyrene	50.0	1016885.00	1.364	3.00	65524.0000	1.383	10.0	206409.000	1.367
Di-n-Octyl Phthalate	50.0	1331015.00	1.785	3.00	80136.0000	1.691	10.0	241470.000	1.599
Fluoranthene	50.0	1095991.00	1.357	3.00	81113.0000	1.588	10.0	232827.000	1.470
Hexachlorobutadiene	50.0	155862.000	0.1615	3.00	11203.0000	0.1730	10.0	33012.0000	0.1692
Pentachlorophenol	50.0	99041.0000	0.1226	NA	NA	NA	NA	NA	NA
Phenol	50.0	469504.000	1.930	3.00	34675.0000	2.085	10.0	96065.0000	1.927
n-Nitrosodiphenylamine	50.0	667425.000	0.8262	3.00	47660.0000	0.9327	10.0	137033.000	0.8651
2,4-Dinitrophenol	50.0	64300.0000	0.1260	NA	NA	NA	NA	NA	NA
4-Nitrophenol	50.0	140759.000	0.2759	NA	NA	NA	NA	NA	NA
Hexachlorocyclopentadiene	50.0	146550.000	0.2873	3.00	5691.00000	0.1742	10.0	22311.0000	0.2236
n-Nitrosodipropylamine	50.0	253176.000	1.041	3.00	19147.0000	1.151	10.0	52333.0000	1.050
0,0,0-Triethyl Phosphorothioate	50.0	160165.000	0.1660	3.00	11562.0000	0.1786	10.0	33599.0000	0.1723
1,2,4,5-Tetrachlorobenzene	50.0	285533.000	0.5597	3.00	20821.0000	0.6374	10.0	60777.0000	0.6091
1,2,4-Trichlorobenzene	50.0	324769.000	0.3366	3.00	23866.0000	0.3686	10.0	68142.0000	0.3493
1,2-Dichlorobenzene	50.0	399801.000	1.644	3.00	29816.0000	1.793	10.0	83166.0000	1.668
1,3-Dichlorobenzene	50.0	422417.000	1.737	3.00	31209.0000	1.876	10.0	88414.0000	1.773
1,3-Dinitrobenzene	50.0	114410.000	0.2243	3.00	5278.00000	0.1616	10.0	17606.0000	0.1764
1,4-Naphthoquinone	50.0	237287.000	0.4651	3.00	16491.0000	0.5049	10.0	52594.0000	0.5271
1-Naphthylamine	50.0	709270.000	1.390	3.00	47456.0000	1.453	10.0	140788.000	1.411
2,3,4,6-Tetrachlorophenol	50.0	159848.000	0.3133	3.00	6150.00000	0.1883	10.0	24291.0000	0.2434
2,4,5-Trichlorophenol	50.0	220090.000	0.4314	3.00	13264.0000	0.4061	10.0	42128.0000	0.4222
2,4-Dimethylphenol	50.0	357189.000	0.3702	3.00	25206.0000	0.3893	10.0	70742.0000	0.3627
2,4-Dinitrotoluene	50.0	222236.000	0.4356	3.00	12057.0000	0.3691	10.0	38828.0000	0.3891
2,6-Dichlorophenol	50.0	295728.000	0.3065	3.00	20545.0000	0.3173	10.0	58812.0000	0.3015
2,6-Dinitrotoluene	50.0	183378.000	0.3594	3.00	11165.0000	0.3418	10.0	34095.0000	0.3417
2-Acetylaminofluorene	50.0	486791.000	0.6315	3.00	24531.0000	0.4816	10.0	84514.0000	0.5286
2-Chloronaphthalene	50.0	763578.000	1.497	3.00	57540.0000	1.762	10.0	161725.000	1.621
2-Chlorophenol	50.0	390510.000	1.605	3.00	27922.0000	1.679	10.0	78928.0000	1.583
2-Methylnaphthalene	50.0	726267.000	0.7527	3.00	53946.0000	0.8331	10.0	153291.000	0.7859
2-Methylphenol	50.0	287765.000	1.183	3.00	20851.0000	1.254	10.0	58349.0000	1.170
2-Naphthylamine	50.0	654319.000	1.283	NA	NA	NA	10.0	143782.000	1.441
2-Nitroaniline	50.0	190021.000	0.3725	NA	NA	NA	10.0	33495.0000	0.3357
2-Picoline	50.0	404867.000	1.664	3.00	29463.0000	1.771	10.0	81730.0000	1.639
3,3'-Dichlorobenzidine	50.0	382642.000	0.4964	3.00	25884.0000	0.5082	10.0	76185.0000	0.4765
3,3'-Dimethylbenzidine	50.0	853337.000	1.107	3.00	64871.0000	1.274	10.0	156347.000	0.9778
3-,4-Methylphenol	50.0	380245.000	1.563	3.00	27018.0000	1.624	10.0	76524.0000	1.535

KEMRON FORMS - Modified 10/13/2006
 Version 1.6 PDF File ID: 869093
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INITIAL CALIBRATION DATA

Login Number: L0708803
 Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID:F

Analyte	WG248656-02			WG248656-03			WG248656-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
3-Methylcholanthrene	50.0	562802.000	0.7546	3.00	33860.0000	0.7144	10.0	107595.000	0.7124
3-Nitroaniline	50.0	216927.000	0.4252	NA	NA	NA	10.0	40335.0000	0.4042
4,6-Dinitro-2-Methylphenol	50.0	118216.000	0.1463	NA	NA	NA	NA	NA	NA
4-Aminobiphenyl	50.0	742729.000	0.9194	3.00	50449.0000	0.9873	10.0	147016.000	0.9281
4-Bromophenyl Phenyl Ether	50.0	202187.000	0.2503	3.00	14329.0000	0.2804	10.0	41228.0000	0.2603
4-Chloroaniline	50.0	486171.000	0.5039	3.00	33928.0000	0.5240	10.0	97677.0000	0.5008
4-Chlorophenyl Phenyl Ether	50.0	350837.000	0.6877	3.00	26383.0000	0.8077	10.0	74401.0000	0.7456
4-Nitroaniline	50.0	232383.000	0.4555	NA	NA	NA	10.0	44072.0000	0.4417
4-Nitroquinoline 1-Oxide	50.0	55996.0000	0.06930	NA	NA	NA	10.0	5266.00000	0.03320
5-Nitro-o-Toluidine	50.0	220167.000	0.4316	3.00	13840.0000	0.4237	10.0	42579.0000	0.4267
7,12-Dimethylbenz[a]anthracene	50.0	491019.000	0.6584	3.00	30622.0000	0.6461	10.0	101803.000	0.6740
Acenaphthylene	50.0	1101606.00	2.159	3.00	79984.0000	2.449	10.0	229136.000	2.296
Acetophenone	50.0	456560.000	1.877	3.00	35286.0000	2.121	10.0	95929.0000	1.924
Aniline	50.0	581464.000	2.390	3.00	42111.0000	2.532	10.0	117421.000	2.355
Anthracene	50.0	1139975.00	1.411	3.00	82956.0000	1.624	10.0	236057.000	1.490
Aramite	50.0	46184.0000	0.05990	3.00	2529.00000	0.04970	10.0	8260.00000	0.05170
Benzo[a]anthracene	50.0	1077547.00	1.398	3.00	77750.0000	1.527	10.0	225999.000	1.413
Benzo[b]fluoranthene	50.0	1152643.00	1.546	3.00	78753.0000	1.662	10.0	240609.000	1.593
Benzo[ghi]perylene	50.0	997194.000	1.337	3.00	63342.0000	1.337	10.0	196966.000	1.304
Benzo[k]fluoranthene	50.0	1016009.00	1.362	3.00	74239.0000	1.566	10.0	212977.000	1.410
Benzyl Alcohol	50.0	245601.000	1.010	3.00	16871.0000	1.014	10.0	47887.0000	0.9605
Butyl Benzyl Phthalate	50.0	549919.000	0.7134	3.00	41625.0000	0.8173	10.0	117651.000	0.7358
Chlorobenzilate	50.0	311704.000	0.4044	3.00	20239.0000	0.3974	10.0	61089.0000	0.3821
Chrysene	50.0	1036146.00	1.344	3.00	76140.0000	1.495	10.0	220028.000	1.376
Di-n-Butyl Phthalate	50.0	1278072.00	1.582	3.00	87284.0000	1.708	10.0	257268.000	1.624
Diallate	50.0	47859.0000	0.05920	3.00	2973.00000	0.05820	10.0	8905.00000	0.05620
Dibenz[ah]anthracene	50.0	996554.000	1.336	3.00	62582.0000	1.320	10.0	197134.000	1.305
Dibenzofuran	50.0	896278.000	1.757	3.00	69220.0000	2.119	10.0	193708.000	1.941
Diethylphthalate	50.0	737507.000	1.446	3.00	54157.0000	1.658	10.0	150653.000	1.510
Dimethoate	50.0	276813.000	0.3426	3.00	19679.0000	0.3851	10.0	58137.0000	0.3670
Dimethylphthalate	50.0	728648.000	1.428	3.00	53802.0000	1.647	10.0	151624.000	1.520
Disulfoton	50.0	365549.000	0.4525	3.00	24940.0000	0.4881	10.0	72304.0000	0.4565
Ethyl Methanesulfonate	50.0	266317.000	1.095	3.00	19129.0000	1.150	10.0	53029.0000	1.064
Famphur	50.0	106116.000	0.1377	3.00	26545.0000	0.5212	10.0	72519.0000	0.4535
Fluorene	50.0	765428.000	1.500	3.00	57191.0000	1.751	10.0	161347.000	1.617
Hexachlorobenzene	50.0	209140.000	0.2589	3.00	15433.0000	0.3020	10.0	43568.0000	0.2751
Hexachloroethane	50.0	159078.000	0.6540	3.00	11106.0000	0.6677	10.0	32017.0000	0.6422
Hexachloropropene	50.0	181337.000	0.1879	3.00	11246.0000	0.1737	10.0	33823.0000	0.1734
Indeno[1,2,3-cd]pyrene	50.0	1153788.00	1.547	3.00	72830.0000	1.537	10.0	229033.000	1.516
Isodrin	50.0	112058.000	0.1387	3.00	8255.00000	0.1616	10.0	23141.0000	0.1461
Isophorone	50.0	607427.000	0.6295	3.00	44773.0000	0.6915	10.0	119672.000	0.6135
Isosafrole	50.0	283551.000	0.5558	3.00	19937.0000	0.6104	10.0	56530.0000	0.5665

KEMRON FORMS - Modified 10/13/2006
 Version 1.6 PDF File ID: 869093
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INITIAL CALIBRATION DATA

Login Number: L0708803
 Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID: F

Analyte	WG248656-02			WG248656-03			WG248656-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Kepone	50.0	0	0	3.00	0	0	10.0	0	0
Methapyrilene	50.0	329437.000	0.4078	3.00	24360.0000	0.4767	10.0	74709.0000	0.4717
Methyl Methanesulfonate	50.0	187929.000	0.7726	3.00	13823.0000	0.8310	10.0	37741.0000	0.7570
Naphthalene	50.0	1093258.00	1.133	3.00	83777.0000	1.294	10.0	231167.000	1.185
Nitrobenzene	50.0	356899.000	0.3699	3.00	25553.0000	0.3946	10.0	71058.0000	0.3643
Parathion Ethyl	50.0	137012.000	0.1696	3.00	6219.00000	0.1217	10.0	21501.0000	0.1357
Parathion Methyl	50.0	224146.000	0.2775	3.00	10972.0000	0.2147	10.0	38655.0000	0.2440
Pentachlorobenzene	50.0	246813.000	0.4838	3.00	18002.0000	0.5511	10.0	52016.0000	0.5213
Pentachloroethane	50.0	131203.000	0.5394	3.00	9605.00000	0.5774	10.0	27483.0000	0.5513
Pentachloronitrobenzene	50.0	70123.0000	0.08680	3.00	4000.00000	0.07830	10.0	13282.0000	0.08390
Phenacetin	50.0	353369.000	0.4374	3.00	21807.0000	0.4268	10.0	65874.0000	0.4159
Phenanthrene	50.0	1129555.00	1.398	3.00	85025.0000	1.664	10.0	238484.000	1.506
Phorate	50.0	427582.000	0.5293	3.00	30750.0000	0.6018	10.0	87037.0000	0.5495
Pronamide	50.0	304401.000	0.3768	3.00	20041.0000	0.3922	10.0	59557.0000	0.3760
Pyrene	50.0	1176344.00	1.526	3.00	86225.0000	1.693	10.0	248297.000	1.553
Pyridine	50.0	409475.000	1.683	3.00	29207.0000	1.756	10.0	81443.0000	1.634
Safrole	50.0	278741.000	0.2889	3.00	19603.0000	0.3027	10.0	56464.0000	0.2895
Sulfotep	50.0	112000.000	0.1386	3.00	7562.00000	0.1480	10.0	22442.0000	0.1417
Sym-Trinitrobenzene	50.0	135848.000	0.1682	3.00	4396.00000	0.08600	10.0	16366.0000	0.1033
Thionazin	50.0	116824.000	0.2290	3.00	8360.00000	0.2559	10.0	23232.0000	0.2328
a,a-Dimethylphenethylamine	50.0	1004196.00	1.041	3.00	59736.0000	0.9225	10.0	194213.000	0.9957
bis(2-Chloroethoxy)methane	50.0	536688.000	0.5562	3.00	40983.0000	0.6329	10.0	111283.000	0.5705
bis(2-Chloroethyl)ether	50.0	270821.000	1.113	3.00	21025.0000	1.264	10.0	54987.0000	1.103
bis(2-Chloroisopropyl)ether	50.0	630867.000	2.594	3.00	49106.0000	2.952	10.0	127762.000	2.563
bis(2-Ethylhexyl)phthalate	50.0	817275.000	1.060	3.00	66671.0000	1.309	10.0	158624.000	0.9921
n-Nitrosodi-n-Butylamine	50.0	283864.000	0.2942	3.00	15548.0000	0.2401	10.0	43653.0000	0.2238
n-Nitrosodiethylamine	50.0	177045.000	0.7278	3.00	12332.0000	0.7414	10.0	34886.0000	0.6997
n-Nitrosodimethylamine	50.0	242664.000	0.9976	3.00	16715.0000	1.005	10.0	47099.0000	0.9447
n-Nitrosomethylethylamine	50.0	172389.000	0.7087	3.00	10108.0000	0.6077	10.0	33453.0000	0.6710
n-Nitrosomorpholine	50.0	229267.000	0.9425	3.00	17701.0000	1.064	10.0	47269.0000	0.9481
n-Nitrosopiperidine	50.0	181723.000	0.1883	3.00	12803.0000	0.1977	10.0	35944.0000	0.1843
n-Nitrosopyrrolidine	50.0	180960.000	0.7439	3.00	12326.0000	0.7410	10.0	36159.0000	0.7253
o-Toluidine	50.0	544659.000	2.239	3.00	39912.0000	2.399	10.0	110707.000	2.221
p-(Dimethylamino)azobenzene	50.0	233878.000	0.3034	3.00	14706.0000	0.2887	10.0	44693.0000	0.2795
p-Phenylenediamine	50.0	361964.000	0.3751	NA	NA	NA	10.0	67366.0000	0.3454

INITIAL CALIBRATION DATA

Login Number: L0708803
 Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID: F

Analyte	WG248656-05			WG248656-06			WG248656-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	15.0	155578.000	1.802	25.0	232594.000	1.729	80.0	690865.000	1.711
2,4,6-Trichlorophenol	15.0	70115.0000	0.4010	25.0	106231.000	0.3945	80.0	329759.000	0.4004
2,4-Dichlorophenol	15.0	101540.000	0.3005	25.0	153516.000	0.2912	80.0	467245.000	0.2915
2-Nitrophenol	15.0	68833.0000	0.2037	25.0	108975.000	0.2067	80.0	334909.000	0.2090
4-Chloro-3-Methylphenol	15.0	106247.000	0.3144	25.0	166502.000	0.3158	80.0	493700.000	0.3080
Acenaphthene	15.0	243752.000	1.394	25.0	364124.000	1.352	80.0	1069962.00	1.299
Benzo[al]pyrene	15.0	366581.000	1.370	25.0	518677.000	1.342	80.0	1608473.00	1.331
Di-n-Octyl Phthalate	15.0	439778.000	1.643	25.0	686765.000	1.777	80.0	2195465.00	1.816
Fluoranthene	15.0	410731.000	1.456	25.0	588203.000	1.383	80.0	1716571.00	1.324
Hexachlorobutadiene	15.0	57366.0000	0.1698	25.0	82488.0000	0.1565	80.0	242310.000	0.1512
Pentachlorophenol	15.0	21172.0000	0.07500	25.0	41319.0000	0.09720	80.0	174127.000	0.1343
Phenol	15.0	163193.000	1.891	25.0	254653.000	1.893	80.0	750755.000	1.859
n-Nitrosodiphenylamine	15.0	242348.000	0.8590	25.0	358282.000	0.8427	80.0	1042316.00	0.8041
2,4-Dinitrophenol	15.0	10270.0000	0.05870	25.0	24173.0000	0.08980	80.0	130452.000	0.1584
4-Nitrophenol	15.0	41161.0000	0.2354	25.0	70952.0000	0.2635	80.0	235334.000	0.2858
Hexachlorocyclopentadiene	15.0	45141.0000	0.2582	25.0	71727.0000	0.2664	80.0	232870.000	0.2828
n-Nitrosodipropylamine	15.0	89059.0000	1.032	25.0	138554.000	1.030	80.0	397809.000	0.9851
0,0,0-Triethyl Phosphorothioate	15.0	59339.0000	0.1756	25.0	85705.0000	0.1626	80.0	246712.000	0.1539
1,2,4,5-Tetrachlorobenzene	15.0	105786.000	0.6050	25.0	153328.000	0.5694	80.0	447464.000	0.5434
1,2,4-Trichlorobenzene	15.0	118065.000	0.3494	25.0	174023.000	0.3301	80.0	513289.000	0.3203
1,2-Dichlorobenzene	15.0	142665.000	1.653	25.0	215403.000	1.601	80.0	634451.000	1.571
1,3-Dichlorobenzene	15.0	151845.000	1.759	25.0	225997.000	1.680	80.0	662334.000	1.640
1,3-Dinitrobenzene	15.0	34706.0000	0.1985	25.0	57116.0000	0.2121	80.0	195214.000	0.2370
1,4-Naphthoquinone	15.0	97145.0000	0.5556	25.0	143586.000	0.5332	80.0	344674.000	0.4185
1-Naphthylamine	15.0	242359.000	1.386	25.0	371214.000	1.379	80.0	1110988.00	1.349
2,3,4,6-Tetrachlorophenol	15.0	47669.0000	0.2726	25.0	77465.0000	0.2877	80.0	256612.000	0.3116
2,4,5-Trichlorophenol	15.0	75846.0000	0.4338	25.0	114408.000	0.4249	80.0	350414.000	0.4255
2,4-Dimethylphenol	15.0	124608.000	0.3687	25.0	192542.000	0.3652	80.0	562258.000	0.3508
2,4-Dinitrotoluene	15.0	73825.0000	0.4222	25.0	116556.000	0.4328	80.0	353684.000	0.4295
2,6-Dichlorophenol	15.0	104234.000	0.3084	25.0	156175.000	0.2963	80.0	471187.000	0.2940
2,6-Dinitrotoluene	15.0	63013.0000	0.3604	25.0	96011.0000	0.3565	80.0	297351.000	0.3611
2-Acetylaminofluorene	15.0	159004.000	0.5579	25.0	240411.000	0.5755	80.0	793923.000	0.6117
2-Chloronaphthalene	15.0	279115.000	1.596	25.0	412653.000	1.532	80.0	1200559.00	1.458
2-Chlorophenol	15.0	136221.000	1.578	25.0	208676.000	1.551	80.0	626636.000	1.552
2-Methylnaphthalene	15.0	263512.000	0.7798	25.0	391705.000	0.7430	80.0	1143371.00	0.7134
2-Methylphenol	15.0	101277.000	1.173	25.0	156843.000	1.166	80.0	461061.000	1.142
2-Naphthylamine	15.0	226432.000	1.295	25.0	337812.000	1.255	80.0	1067398.00	1.296
2-Nitroaniline	15.0	59653.0000	0.3412	25.0	99667.0000	0.3701	80.0	317077.000	0.3850
2-Picoline	15.0	139063.000	1.611	25.0	218066.000	1.621	80.0	658736.000	1.631
3,3'-Dichlorobenzidine	15.0	137568.000	0.4827	25.0	198104.000	0.4742	80.0	598664.000	0.4613
3,3'-Dimethylbenzidine	15.0	310870.000	1.091	25.0	473728.000	1.134	80.0	1352825.00	1.042
3-,4-Methylphenol	15.0	132976.000	1.541	25.0	205210.000	1.525	80.0	616203.000	1.526

KEMRON FORMS - Modified 10/13/2006
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INITIAL CALIBRATION DATA

Login Number: L0708803
Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID: F

Analyte	WG248656-05			WG248656-06			WG248656-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
3-Methylcholanthrene	15.0	195839.000	0.7317	25.0	277845.000	0.7189	80.0	890058.000	0.7362
3-Nitroaniline	15.0	72128.0000	0.4125	25.0	113018.000	0.4197	80.0	354899.000	0.4310
4,6-Dinitro-2-Methylphenol	15.0	28498.0000	0.1010	25.0	52480.0000	0.1234	80.0	216455.000	0.1670
4-Aminobiphenyl	15.0	261530.000	0.9270	25.0	394097.000	0.9269	80.0	1171070.000	0.9034
4-Bromophenyl Phenyl Ether	15.0	73881.0000	0.2619	25.0	105847.000	0.2489	80.0	315780.000	0.2436
4-Chloroaniline	15.0	171206.000	0.5066	25.0	258937.000	0.4912	80.0	770097.000	0.4805
4-Chlorophenyl Phenyl Ether	15.0	130368.000	0.7456	25.0	187147.000	0.6950	80.0	541143.000	0.6571
4-Nitroaniline	15.0	79429.0000	0.4543	25.0	121140.000	0.4498	80.0	374030.000	0.4542
4-Nitroquinoline 1-Oxide	15.0	12452.0000	0.04410	25.0	23861.0000	0.05610	80.0	108575.000	0.08380
5-Nitro-o-Toluidine	15.0	75832.0000	0.4337	25.0	115485.000	0.4288	80.0	354139.000	0.4300
7,12-Dimethylbenz[a]anthracene	15.0	179469.000	0.6705	25.0	252246.000	0.6527	80.0	769438.000	0.6365
Acenaphthylene	15.0	401370.000	2.295	25.0	595767.000	2.212	80.0	1727128.00	2.097
Acetophenone	15.0	162753.000	1.886	25.0	248578.000	1.848	80.0	714112.000	1.768
Aniline	15.0	201479.000	2.334	25.0	312659.000	2.324	80.0	940865.000	2.330
Anthracene	15.0	418510.000	1.484	25.0	614350.000	1.445	80.0	1780910.000	1.374
Aramite	15.0	15391.0000	0.05400	25.0	23483.0000	0.05620	80.0	74424.0000	0.05730
Benzo[a]anthracene	15.0	401392.000	1.408	25.0	564019.000	1.350	80.0	1715599.000	1.322
Benzo[b]fluoranthene	15.0	419999.000	1.569	25.0	609686.000	1.578	80.0	1730937.000	1.432
Benzo[ghi]perylene	15.0	359637.000	1.344	25.0	506161.000	1.310	80.0	1570762.000	1.299
Benzo[k]fluoranthene	15.0	393072.000	1.469	25.0	517380.000	1.339	80.0	1656905.000	1.371
Benzyl Alcohol	15.0	84026.0000	0.9735	25.0	131121.000	0.9745	80.0	395597.000	0.9796
Butyl Benzyl Phthalate	15.0	202827.000	0.7117	25.0	301144.000	0.7209	80.0	851825.000	0.6564
Chlorobenzilate	15.0	111308.000	0.3906	25.0	162686.000	0.3895	80.0	494953.000	0.3814
Chrysene	15.0	388898.000	1.365	25.0	551244.000	1.320	80.0	1637453.000	1.262
Di-n-Butyl Phthalate	15.0	457980.000	1.623	25.0	687889.000	1.618	80.0	2013056.000	1.553
Diallate	15.0	16189.0000	0.05740	25.0	24957.0000	0.05870	80.0	78933.0000	0.06090
Dibenz[ah]anthracene	15.0	362360.000	1.354	25.0	505091.000	1.307	80.0	1552376.000	1.284
Dibenzofuran	15.0	337352.000	1.929	25.0	491277.000	1.824	80.0	1400797.000	1.701
Diethylphthalate	15.0	264579.000	1.513	25.0	397539.000	1.476	80.0	1169058.000	1.420
Dimethoate	15.0	102541.000	0.3635	25.0	154515.000	0.3634	80.0	419364.000	0.3235
Dimethylphthalate	15.0	264448.000	1.512	25.0	391843.000	1.455	80.0	1151175.000	1.398
Disulfoton	15.0	125883.000	0.4462	25.0	198031.000	0.4658	80.0	583626.000	0.4502
Ethyl Methanesulfonate	15.0	90900.0000	1.053	25.0	143799.000	1.069	80.0	432574.000	1.071
Famphur	15.0	112191.000	0.3937	25.0	113825.000	0.2725	80.0	52674.0000	0.04060
Fluorene	15.0	283620.000	1.622	25.0	416808.000	1.548	80.0	1203318.000	1.461
Hexachlorobenzene	15.0	78225.0000	0.2773	25.0	110816.000	0.2606	80.0	326861.000	0.2522
Hexachloroethane	15.0	54803.0000	0.6349	25.0	84924.0000	0.6312	80.0	256044.000	0.6340
Hexachloropropene	15.0	61756.0000	0.1827	25.0	93960.0000	0.1782	80.0	287062.000	0.1791
Indeno[1,2,3-cd]pyrene	15.0	417588.000	1.560	25.0	585094.000	1.514	80.0	1803346.000	1.492
Isodrin	15.0	40145.0000	0.1423	25.0	59371.0000	0.1396	80.0	178177.000	0.1375
Isophorone	15.0	208242.000	0.6162	25.0	330851.000	0.6276	80.0	987944.000	0.6164
Isosafrole	15.0	101607.000	0.5811	25.0	151260.000	0.5617	80.0	449943.000	0.5464

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INITIAL CALIBRATION DATA

Login Number: L0708803
Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID: F

Analyte	WG248656-05			WG248656-06			WG248656-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Kepone	15.0	0	0	25.0	0	0	80.0	0	0
Methapyrilene	15.0	121677.000	0.4313	25.0	181502.000	0.4269	80.0	439659.000	0.3392
Methyl Methanesulfonate	15.0	63905.0000	0.7404	25.0	99741.0000	0.7413	80.0	289192.000	0.7161
Naphthalene	15.0	396800.000	1.174	25.0	593542.000	1.126	80.0	1721185.000	1.074
Nitrobenzene	15.0	121279.000	0.3589	25.0	192307.000	0.3648	80.0	581536.000	0.3628
Parathion Ethyl	15.0	41483.0000	0.1470	25.0	70010.0000	0.1647	80.0	227732.000	0.1757
Parathion Methyl	15.0	73477.0000	0.2605	25.0	118370.000	0.2784	80.0	354486.000	0.2735
Pentachlorobenzene	15.0	92302.0000	0.5279	25.0	131482.000	0.4883	80.0	385055.000	0.4676
Pentachloroethane	15.0	46602.0000	0.5399	25.0	70130.0000	0.5212	80.0	207386.000	0.5135
Pentachloronitrobenzene	15.0	23841.0000	0.08450	25.0	36051.0000	0.08480	80.0	111051.000	0.08570
Phenacetin	15.0	119382.000	0.4232	25.0	187098.000	0.4401	80.0	559612.000	0.4317
Phenanthrene	15.0	417999.000	1.482	25.0	608982.000	1.432	80.0	1755915.000	1.355
Phorate	15.0	148056.000	0.5248	25.0	232060.000	0.5458	80.0	676128.000	0.5216
Pronamide	15.0	107643.000	0.3816	25.0	161445.000	0.3797	80.0	487606.000	0.3762
Pyrene	15.0	441498.000	1.549	25.0	626764.000	1.500	80.0	1829846.000	1.410
Pyridine	15.0	137178.000	1.589	25.0	218440.000	1.624	80.0	668315.000	1.655
Safrole	15.0	100217.000	0.2966	25.0	149489.000	0.2836	80.0	441776.000	0.2756
Sulfotep	15.0	41933.0000	0.1486	25.0	58616.0000	0.1379	80.0	173599.000	0.1339
Sym-Trinitrobenzene	15.0	34277.0000	0.1215	25.0	65259.0000	0.1535	80.0	251646.000	0.1941
Thionazin	15.0	40920.0000	0.2340	25.0	63490.0000	0.2358	80.0	183430.000	0.2227
a,a-Dimethylphenethylamine	15.0	339421.000	1.004	25.0	548260.000	1.040	80.0	1699894.000	1.061
bis(2-Chloroethoxy)methane	15.0	189582.000	0.5610	25.0	294549.000	0.5587	80.0	848604.000	0.5295
bis(2-Chloroethyl)ether	15.0	93198.0000	1.080	25.0	147893.000	1.099	80.0	435125.000	1.078
bis(2-Chloroisopropyl)ether	15.0	214134.000	2.481	25.0	346634.000	2.576	80.0	1029379.000	2.549
bis(2-Ethylhexyl)phthalate	15.0	281391.000	0.9873	25.0	428415.000	1.026	80.0	1292791.000	0.9961
n-Nitrosodi-n-Butylamine	15.0	73560.0000	0.2177	25.0	115339.000	0.2188	80.0	450463.000	0.2811
n-Nitrosodiethylamine	15.0	59952.0000	0.6946	25.0	94343.0000	0.7012	80.0	284762.000	0.7051
n-Nitrosodimethylamine	15.0	80272.0000	0.9300	25.0	129990.000	0.9661	80.0	399189.000	0.9885
n-Nitrosomethylalkylamine	15.0	58173.0000	0.6740	25.0	92289.0000	0.6859	80.0	282174.000	0.6987
n-Nitrosomorpholine	15.0	79987.0000	0.9267	25.0	126908.000	0.9432	80.0	361900.000	0.8961
n-Nitrosopiperidine	15.0	62940.0000	0.1863	25.0	96985.0000	0.1840	80.0	293589.000	0.1832
n-Nitrosopyrrolidine	15.0	62011.0000	0.7184	25.0	96424.0000	0.7166	80.0	291152.000	0.7210
o-Toluidine	15.0	189899.000	2.200	25.0	294195.000	2.187	80.0	872212.000	2.160
p-(Dimethylamino)azobenzene	15.0	82971.0000	0.2911	25.0	122975.000	0.2944	80.0	376434.000	0.2901
p-Phenylenediamine	15.0	120484.000	0.3565	25.0	197162.000	0.3740	80.0	536208.000	0.3346

INITIAL CALIBRATION DATA

Login Number: L0708803
 Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID: F

Analyte	WG248656-08			WG248656-09		
	CONC	RESP	RF	CONC	RESP	RF
1,4-Dichlorobenzene	100	965057.000	1.631	120	1091009.00	1.645
2,4,6-Trichlorophenol	100	480897.000	0.3906	120	542297.000	0.3928
2,4-Dichlorophenol	100	672555.000	0.2841	120	759959.000	0.2857
2-Nitrophenol	100	474216.000	0.2003	120	535468.000	0.2013
4-Chloro-3-Methylphenol	100	694004.000	0.2931	120	781948.000	0.2940
Acenaphthene	100	1516657.00	1.232	120	1706326.00	1.236
Benzo[a]pyrene	100	2331379.00	1.272	120	2617152.00	1.293
Di-n-Octyl Phthalate	100	3010007.00	1.642	120	3426332.00	1.693
Fluoranthene	100	2410518.00	1.239	120	2723784.00	1.239
Hexachlorobutadiene	100	352747.000	0.1490	120	400211.000	0.1505
Pentachlorophenol	100	264337.000	0.1358	120	304757.000	0.1386
Phenol	100	1025740.00	1.734	120	1157864.00	1.746
n-Nitrosodiphenylamine	100	1481183.00	0.7612	120	1667341.00	0.7584
2,4-Dinitrophenol	100	208104.000	0.1690	120	242719.000	0.1758
4-Nitrophenol	100	319762.000	0.2597	120	372724.000	0.2700
Hexachlorocyclopentadiene	100	339169.000	0.2755	120	372411.000	0.2697
n-Nitrosodipropylamine	100	533394.000	0.9015	120	602511.000	0.9083
0,0,0-Triethyl Phosphorothioate	100	354779.000	0.1499	120	395103.000	0.1486
1,2,4,5-Tetrachlorobenzene	100	644180.000	0.5232	120	723690.000	0.5242
1,2,4-Trichlorobenzene	100	725027.000	0.3062	120	821728.000	0.3090
1,2-Dichlorobenzene	100	888833.000	1.502	120	1012716.00	1.527
1,3-Dichlorobenzene	100	932696.000	1.576	120	1057201.00	1.594
1,3-Dinitrobenzene	100	285413.000	0.2318	120	328989.000	0.2383
1,4-Naphthoquinone	100	462276.000	0.3755	NA	NA	NA
1-Naphthylamine	100	1580386.00	1.284	120	1763420.00	1.277
2,3,4,6-Tetrachlorophenol	100	381913.000	0.3102	120	433085.000	0.3137
2,4,5-Trichlorophenol	100	511004.000	0.4151	120	586268.000	0.4246
2,4-Dimethylphenol	100	783472.000	0.3309	120	883276.000	0.3321
2,4-Dinitrotoluene	100	500947.000	0.4069	120	566268.000	0.4102
2,6-Dichlorophenol	100	668980.000	0.2826	120	759903.000	0.2857
2,6-Dinitrotoluene	100	426668.000	0.3466	120	483602.000	0.3503
2-Acetylaminofluorene	100	1130035.00	0.5859	120	1269367.00	0.5866
2-Chloronaphthalene	100	1696714.00	1.378	120	1907146.00	1.381
2-Chlorophenol	100	874242.000	1.478	120	998330.000	1.505
2-Methylnaphthalene	100	1612443.00	0.6811	120	1823152.00	0.6855
2-Methylphenol	100	640509.000	1.083	120	728035.000	1.098
2-Naphthylamine	100	1517856.00	1.233	120	1719250.00	1.245
2-Nitroaniline	100	431351.000	0.3504	120	489904.000	0.3548
2-Picoline	100	907374.000	1.534	120	1033994.00	1.559
3,3'-Dichlorobenzidine	100	854355.000	0.4430	120	962210.000	0.4447
3,3'-Dimethylbenzidine	100	1936629.00	1.004	120	2150429.00	0.9938
3-,4-Methylphenol	100	859109.000	1.452	120	973977.000	1.468

KEMRON FORMS - Modified 10/13/2006
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INITIAL CALIBRATION DATA

Login Number: L0708803
 Analytical Method: 8270C

Instrument ID: HPMS5

Initial Calibration Date: 24-AUG-07 20:50

Column ID: F

Analyte	WG248656-08			WG248656-09		
	CONC	RESP	RF	CONC	RESP	RF
3-Methylcholanthrene	100	1292370.00	0.7051	120	1447814.00	0.7154
3-Nitroaniline	100	501810.000	0.4076	120	570402.000	0.4131
4,6-Dinitro-2-Methylphenol	100	319467.000	0.1642	120	370418.000	0.1685
4-Aminobiphenyl	100	1658900.00	0.8525	120	1868094.00	0.8497
4-Bromophenyl Phenyl Ether	100	458365.000	0.2356	120	514697.000	0.2341
4-Chloroaniline	100	1080830.00	0.4565	120	1223752.00	0.4601
4-Chlorophenyl Phenyl Ether	100	764397.000	0.6209	120	856785.000	0.6206
4-Nitroaniline	100	526710.000	0.4278	120	597759.000	0.4330
4-Nitroquinoline 1-Oxide	100	161668.000	0.08310	120	185962.000	0.08460
5-Nitro-o-Toluidine	100	502232.000	0.4079	120	568448.000	0.4117
7,12-Dimethylbenz[a]anthracene	100	1101475.00	0.6009	120	1236034.00	0.6107
Acenaphthylene	100	2434381.00	1.977	120	2744269.00	1.988
Acetophenone	100	978521.000	1.654	120	1101183.00	1.660
Aniline	100	1293208.00	2.186	120	1458667.00	2.199
Anthracene	100	2516071.00	1.293	120	2823468.00	1.284
Aramite	100	102682.000	0.05320	120	117902.000	0.05450
Benzo[a]anthracene	100	2414019.00	1.252	120	2738540.00	1.266
Benzo[b]fluoranthene	100	2517936.00	1.374	120	2738890.00	1.353
Benzo[ghi]perylene	100	2254626.00	1.230	120	2544901.00	1.258
Benzo[k]fluoranthene	100	2345271.00	1.280	120	2408698.00	1.190
Benzyl Alcohol	100	552221.000	0.9334	120	628846.000	0.9480
Butyl Benzyl Phthalate	100	1148378.00	0.5954	120	1303777.00	0.6025
Chlorobenzilate	100	705535.000	0.3658	120	807560.000	0.3732
Chrysene	100	2310048.00	1.198	120	2624922.00	1.213
Di-n-Butyl Phthalate	100	2772498.00	1.425	120	3137833.00	1.427
Diallate	100	107743.000	0.05540	120	124887.000	0.05680
Dibenz[ah]anthracene	100	2249434.00	1.227	120	2522218.00	1.246
Dibenzofuran	100	1962812.00	1.594	120	2193766.00	1.589
Diethylphthalate	100	1645061.00	1.336	120	1855922.00	1.344
Dimethoate	100	543118.000	0.2791	NA	NA	NA
Dimethylphthalate	100	1628833.00	1.323	120	1840092.00	1.333
Disulfoton	100	798831.000	0.4105	120	900147.000	0.4094
Ethyl Methanesulfonate	100	586711.000	0.9916	120	667993.000	1.007
Famphur	100	43627.0000	0.02260	120	28279.0000	0.01310
Fluorene	100	1702481.00	1.383	120	1912427.00	1.385
Hexachlorobenzene	100	476170.000	0.2447	120	534963.000	0.2433
Hexachloroethane	100	352324.000	0.5955	120	401352.000	0.6050
Hexachloropropene	100	415406.000	0.1755	120	471708.000	0.1774
Indeno[1,2,3-cd]pyrene	100	2605624.00	1.422	120	2920337.00	1.443
Isodrin	100	251715.000	0.1294	120	286014.000	0.1301
Isophorone	100	1342941.00	0.5673	120	1529778.00	0.5752
Isosafrole	100	639162.000	0.5192	120	726876.000	0.5265

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INITIAL CALIBRATION DATA

Login Number: L0708803
 Analytical Method: 8270C

Instrument ID: HPMS5
 Initial Calibration Date: 24-AUG-07 20:50
 Column ID: F

Analyte	WG248656-08			WG248656-09		
	CONC	RESP	RF	CONC	RESP	RF
Kepone	100	0	0	120	223.000000	0.0001000
Methapyrilene	100	571347.000	0.2936	120	643054.000	0.2925
Methyl Methanesulfonate	100	392981.000	0.6642	120	443655.000	0.6688
Naphthalene	100	2414047.00	1.020	120	2726016.00	1.025
Nitrobenzene	100	801016.000	0.3383	120	908545.000	0.3416
Parathion Ethyl	100	312870.000	0.1608	120	354776.000	0.1614
Parathion Methyl	100	477278.000	0.2453	120	527791.000	0.2401
Pentachlorobenzene	100	557983.000	0.4532	120	626135.000	0.4535
Pentachloroethane	100	289818.000	0.4898	120	331396.000	0.4996
Pentachloronitrobenzene	100	159462.000	0.08190	120	181985.000	0.08280
Phenacetin	100	752338.000	0.3866	120	847117.000	0.3853
Phenanthrene	100	2485485.00	1.277	120	2802719.00	1.275
Phorate	100	899347.000	0.4622	120	1007028.00	0.4580
Pronamide	100	680482.000	0.3497	120	770880.000	0.3506
Pyrene	100	2563965.00	1.329	120	2904869.00	1.342
Pyridine	100	905798.000	1.531	120	1032470.00	1.556
Safrole	100	632828.000	0.2673	120	707287.000	0.2659
Sulfoteppe	100	254713.000	0.1309	120	286236.000	0.1302
Sym-Trinitrobenzene	100	350690.000	0.1802	120	408139.000	0.1856
Thionazin	100	251957.000	0.2047	120	282752.000	0.2048
a,a-Dimethylphenethylamine	100	2347485.00	0.9916	120	2673530.00	1.005
bis(2-Chloroethoxy)methane	100	1151338.00	0.4863	120	1304764.00	0.4906
bis(2-Chloroethyl)ether	100	585580.000	0.9897	120	663314.000	0.9999
bis(2-Chloroisopropyl)ether	100	1356556.00	2.293	120	1547302.00	2.333
bis(2-Ethylhexyl)phthalate	100	1761081.00	0.9131	120	2000845.00	0.9247
n-Nitrosodi-n-Butylamine	100	612053.000	0.2585	120	686501.000	0.2581
n-Nitrosodiethylamine	100	397626.000	0.6721	120	451769.000	0.6810
n-Nitrosodimethylamine	100	542565.000	0.9170	120	619662.000	0.9341
n-Nitrosomethylalkylamine	100	390993.000	0.6608	120	446362.000	0.6729
n-Nitrosomorpholine	100	471570.000	0.7970	120	529203.000	0.7978
n-Nitrosopiperidine	100	410629.000	0.1734	120	469926.000	0.1767
n-Nitrosopyrrolidine	100	397805.000	0.6724	120	448612.000	0.6763
o-Toluidine	100	1210536.00	2.046	120	1375707.00	2.074
p-(Dimethylamino)azobenzene	100	530851.000	0.2752	120	608948.000	0.2814
p-Phenylenediamine	100	710844.000	0.3003	120	766052.000	0.2880

KEMRON Environmental Services
ALTERNATE SOURCE CALIBRATION REPORT

Login Number:L0708803 Run Date:08/17/2007 Sample ID:WG247987-07
Instrument ID:HPMS5 Run Time:03:12 Method:8270C
File ID:5M47454 Analyst:ASP QC Key:STD
ICal Workgroup:WG247987 Cal ID: HPMS5 - 17-AUG-07

Analyte	Expected	Found	Units	RF	%D	UCL	Q
Acetophenone	50000	54600	ug/L	1.69	9.10	30	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

KEMRON Environmental Services
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L0708803	Run Date: 08/24/2007	Sample ID: WG248656-10
Instrument ID: HPMS5	Run Time: 21:24	Method: 8270C
File ID: 5M47621	Analyst: ASP	QC Key: STD
ICal Workgroup: WG248656	Cal ID: HPMS5 - 24-AUG-07	

Analyte	Expected	Found	Units	RF	%D	UCL	Q
1,4-Dichlorobenzene	CCC	50000	47700	ug/L	1.68	4.60	30
2,4,6-Trichlorophenol	CCC	50000	48200	ug/L	0.381	3.70	30
2,4-Dichlorophenol	CCC	50000	47700	ug/L	0.280	4.50	30
2-Nitrophenol	CCC	50000	50300	ug/L	0.204	0.700	30
Benzo[a]pyrene	CCC	50000	52100	ug/L	1.40	4.20	30
Di-n-Octyl Phthalate	CCC	50000	49000	ug/L	1.67	1.90	30
Fluoranthene	CCC	50000	51800	ug/L	1.43	3.60	30
Hexachlorobutadiene	CCC	50000	52700	ug/L	0.169	5.30	30
Pentachlorophenol	CCC	50000	58100	ug/L	0.148	16.1	30
Phenol	CCC	50000	46800	ug/L	1.76	6.30	30
2,4-Dinitrophenol	SPCC	50000	50700	ug/L	0.145	1.50	30
4-Nitrophenol	SPCC	50000	45100	ug/L	0.239	9.80	30
Hexachlorocyclopentadiene	SPCC	50000	57100	ug/L	0.291	14.3	30
1,2,4-Trichlorobenzene		50000	48600	ug/L	0.325	2.80	30
1,2-Dichlorobenzene		50000	49300	ug/L	1.60	1.30	30
1,3-Dichlorobenzene		50000	48700	ug/L	1.66	2.50	30
2,3,4,6-Tetrachlorophenol		50000	49300	ug/L	0.302	1.30	30
2,4,5-Trichlorophenol		50000	49400	ug/L	0.418	1.20	30
2,4-Dinitrotoluene		50000	52500	ug/L	0.432	4.90	30
2,6-Dinitrotoluene		50000	48800	ug/L	0.344	2.30	30
2-Chloronaphthalene		50000	40700	ug/L	1.25	18.5	30
2-Chlorophenol		50000	46900	ug/L	1.47	6.20	30
2-Methylnaphthalene		50000	49100	ug/L	0.733	1.90	30
3,3'-Dichlorobenzidine		50000	49500	ug/L	0.469	1.00	30
4,6-Dinitro-2-Methylphenol		50000	50700	ug/L	0.155	1.40	30
4-Chloroaniline		50000	49500	ug/L	0.486	1.00	30
4-Chlorophenyl Phenyl Ether		50000	44500	ug/L	0.621	11.0	30
Aniline		50000	49900	ug/L	2.33	0.100	30
Anthracene		50000	51100	ug/L	1.46	2.20	30
Benzo[a]anthracene		50000	50500	ug/L	1.38	0.900	30
Benzo[b]fluoranthene		50000	49500	ug/L	1.50	1.00	30
Benzo[k]fluoranthene		50000	49300	ug/L	1.36	1.30	30
Benzyl Alcohol		50000	49000	ug/L	0.956	1.90	30
bis(2-Chloroethoxy)methane		50000	37200	ug/L	0.408	25.5	30
bis(2-Chloroisopropyl)ether		50000	45000	ug/L	2.29	9.90	30
bis(2-Ethylhexyl)phthalate		50000	46800	ug/L	0.959	6.50	30
Butyl Benzyl Phthalate		50000	50300	ug/L	0.699	0.600	30
Chrysene		50000	50300	ug/L	1.33	0.600	30
Dibenz[ah]anthracene		50000	50200	ug/L	1.30	0.300	30
Dibenzofuran		50000	47500	ug/L	1.72	5.00	30
Hexachlorobenzene		50000	48900	ug/L	0.258	2.30	30
Hexachloroethane		50000	47800	ug/L	0.606	4.40	30

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KEMRON Environmental Services
ALTERNATE SOURCE CALIBRATION REPORT

Login Number:L0708803 Run Date:08/24/2007 Sample ID:WG248656-10
Instrument ID:HPMS5 Run Time:21:24 Method:8270C
File ID:5M47621 Analyst:ASP QC Key:STD
ICal Workgroup:WG248656 Cal ID: HPMS5 - 24-AUG-07

Analyte	Expected	Found	Units	RF	%D	UCL	Q
Isophorone	50000	52200	ug/L	0.644	4.40	30	
Naphthalene	50000	49000	ug/L	1.11	2.10	30	
Nitrobenzene	50000	46800	ug/L	0.339	6.40	30	
n-Nitrosodimethylamine	50000	42200	ug/L	0.810	15.7	30	
Phenanthrene	50000	48800	ug/L	1.39	2.30	30	
Pyrene	50000	51500	ug/L	1.53	3.10	30	
Pyridine	50000	46900	ug/L	1.53	6.20	30	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

KEMRON FORMS - Modified 09/06/2007 - (ALT)
Version 1.5 PDF File ID: 869094
Report generated 09/07/2007 08:35

KEMRON Environmental Services
ALTERNATE SOURCE CALIBRATION REPORT

Login Number:L0708803	Run Date:08/24/2007	Sample ID:WG248656-11
Instrument ID:HPMS5	Run Time:21:58	Method:8270C
File ID:5M47622	Analyst:ASP	QC Key:STD
ICal Workgroup:WG248656	Cal ID: HPMS5 - 24-AUG-07	

Analyte	Expected	Found	Units	RF	%D	UCL	Q
0,0,0-Triethyl Phosphorothioate	50000	46400	ug/L	0.152	7.10	30	
1,2,4,5-Tetrachlorobenzene	50000	44100	ug/L	0.504	11.8	30	
1,3-Dinitrobenzene	50000	51900	ug/L	0.218	3.80	30	
1,4-Naphthoquinone	50000	45000	ug/L	0.435	10.0	30	
1-Naphthylamine	50000	42400	ug/L	1.16	15.3	30	
2,3,4,6-Tetrachlorophenol	50000	39200	ug/L	0.238	21.6	30	
2,6-Dichlorophenol	50000	44000	ug/L	0.263	12.0	30	
2-Acetylaminofluorene	50000	50800	ug/L	0.579	1.50	30	
2-Naphthylamine	50000	46300	ug/L	1.20	7.40	30	
2-Picoline	50000	45000	ug/L	1.47	10.0	30	
3,3'-Dichlorobenzidine	50000	47900	ug/L	0.454	4.10	30	
3,3'-Dimethylbenzidine	50000	27100	ug/L	0.584	45.8	30	*
3-Methylcholanthrene	50000	46700	ug/L	0.676	6.60	30	
4-Aminobiphenyl	50000	41800	ug/L	0.763	16.3	30	
5-Nitro-o-Toluidine	50000	41700	ug/L	0.354	16.6	30	
7,12-Dimethylbenz[a]anthracene	50000	50700	ug/L	0.652	1.30	30	
Acetophenone	50000	43200	ug/L	1.59	13.6	30	
Aramite	50000	54700	ug/L	0.0597	9.40	30	
Chlorobenzilate	50000	46900	ug/L	0.362	6.10	30	
Diallate	50000	148000	ug/L	0.171	196	30	*
Dimethoate	50000	43200	ug/L	0.299	13.7	30	
Disulfoton	50000	44400	ug/L	0.397	11.3	30	
Ethyl Methanesulfonate	50000	43400	ug/L	0.922	13.2	30	
Famphur	50000	19300	ug/L	0.0895	61.4	30	*
Hexachloropropene	50000	44000	ug/L	0.157	12.0	30	
Isodrin	50000	45900	ug/L	0.129	8.20	30	
Isosafrole	50000	85000	ug/L	0.949	70.0	30	*
Methapyrilene	50000	88800	ug/L	0.582	77.7	30	*
Methyl Methanesulfonate	50000	45400	ug/L	0.668	9.30	30	
n-Nitrosodiethylamine	50000	46100	ug/L	0.648	7.80	30	
n-Nitrosodi-n-Butylamine	50000	39400	ug/L	0.196	21.2	30	
n-Nitrosomethylethylamine	50000	46700	ug/L	0.628	6.70	30	
n-Nitrosomorpholine	50000	43000	ug/L	0.787	14.0	30	
n-Nitrosopiperidine	50000	46000	ug/L	0.169	8.00	30	
n-Nitrosopyrrolidine	50000	46100	ug/L	0.659	7.80	30	
o-Toluidine	50000	44500	ug/L	1.95	11.0	30	
p-Phenylenediamine	50000	46100	ug/L	0.313	7.80	30	
Parathion Ethyl	50000	49400	ug/L	0.153	1.20	30	
Parathion Methyl	50000	47900	ug/L	0.243	4.30	30	
Pentachlorobenzene	50000	43100	ug/L	0.425	13.9	30	
Pentachloroethane	50000	42600	ug/L	0.451	14.8	30	
Pentachloronitrobenzene	50000	45400	ug/L	0.0760	9.10	30	

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 Version 1.5 PDF File ID: 869094
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KEMRON Environmental Services
ALTERNATE SOURCE CALIBRATION REPORT

Login Number:L0708803 Run Date:08/24/2007 Sample ID:WG248656-11
Instrument ID:HPMS5 Run Time:21:58 Method:8270C
File ID:5M47622 Analyst:ASP QC Key:STD
ICal Workgroup:WG248656 Cal ID: HPMS5 - 24-AUG-07

Analyte	Expected	Found	Units	RF	%D	UCL	Q
Phenacetin	50000	45500	ug/L	0.381	9.10	30	
Phorate	50000	46800	ug/L	0.491	6.30	30	
Pronamide	50000	45500	ug/L	0.339	9.10	30	
Pyridine	50000	44300	ug/L	1.44	11.4	30	
Safrole	50000	44200	ug/L	0.251	11.5	30	
Sulfotepp	50000	48000	ug/L	0.133	4.10	30	
Sym-Trinitrobenzene	50000	38100	ug/L	0.131	23.8	30	
Thionazin	50000	45800	ug/L	0.208	8.40	30	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

KEMRON FORMS - Modified 09/06/2007 - (ALT)
Version 1.5 PDF File ID: 869094
Report generated 09/07/2007 08:35

Login Number: L0708803 Run Date: 09/05/2007 Sample ID: WG249365-02
 Instrument ID: HPMS5 Run Time: 11:36 Method: 8270C
 File ID: 5M47853 Analyst: ASP QC Key: STD
 Workgroup (AAB#): WG249501 Cal ID: HPMS5 - 24-AUG-07

Analyte	Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dichlorobenzene	CCC	50000	51300	ug/L	1.81	2.52	20
2,4,6-Trichlorophenol	CCC	50000	50800	ug/L	0.402	1.53	20
2,4-Dichlorophenol	CCC	50000	55400	ug/L	0.325	10.8	20
2-Nitrophenol	CCC	50000	53000	ug/L	0.215	5.99	20
4-Chloro-3-Methylphenol	CCC	50000	53500	ug/L	0.331	6.97	20
Acenaphthene	CCC	50000	46700	ug/L	1.25	6.56	20
Benzo[a]pyrene	CCC	50000	51200	ug/L	1.37	2.37	20
Di-n-Octyl Phthalate	CCC	50000	49100	ug/L	1.67	1.88	20
Fluoranthene	CCC	50000	52600	ug/L	1.45	5.13	20
Hexachlorobutadiene	CCC	50000	55400	ug/L	0.177	10.8	20
n-Nitrosodiphenylamine	CCC	50000	52100	ug/L	0.865	4.11	20
Pentachlorophenol	CCC	50000	48600	ug/L	0.120	2.87	20
Phenol	CCC	50000	48700	ug/L	1.83	2.55	20
2,4-Dinitrophenol	SPCC	50000	45800	ug/L	0.125	8.47	40
4-Nitrophenol	SPCC	50000	41700	ug/L	0.221	16.6	40
Hexachlorocyclopentadiene	SPCC	50000	54300	ug/L	0.276	8.52	40
n-Nitrosodipropylamine	SPCC	50000	52500	ug/L	1.06	5.10	40
0,0,0-Triethyl Phosphorothioate		50000	54300	ug/L	0.178	8.67	40
1,2,4,5-Tetrachlorobenzene		50000	49900	ug/L	0.570	0.208	40
1,2,4-Trichlorobenzene		50000	51100	ug/L	0.341	2.21	40
1,2-Dichlorobenzene		50000	51600	ug/L	1.67	3.15	40
1,3-Dichlorobenzene		50000	50900	ug/L	1.74	1.87	40
1,3-Dinitrobenzene		50000	56900	ug/L	0.239	13.9	40
1,4-Naphthoquinone		50000	48700	ug/L	0.470	2.66	40
1-Naphthylamine		50000	41800	ug/L	1.14	16.5	40
2,3,4,6-Tetrachlorophenol		50000	46300	ug/L	0.283	7.33	40
2,4,5-Trichlorophenol		50000	50400	ug/L	0.426	0.812	40
2,4-Dimethylphenol		50000	50700	ug/L	0.364	1.37	40
2,4-Dinitrotoluene		50000	53900	ug/L	0.444	7.84	40
2,6-Dichlorophenol		50000	54000	ug/L	0.323	7.95	40
2,6-Dinitrotoluene		50000	51700	ug/L	0.364	3.37	40
2-Acetylaminofluorene		50000	52300	ug/L	0.597	4.67	40
2-Chloronaphthalene		50000	48600	ug/L	1.49	2.82	40
2-Chlorophenol		50000	51400	ug/L	1.61	2.70	40
2-Methylnaphthalene		50000	51100	ug/L	0.764	2.25	40
2-Methylphenol		50000	52800	ug/L	1.22	5.57	40
2-Naphthylamine		50000	33300	ug/L	0.861	33.4	40
2-Nitroaniline		50000	49000	ug/L	0.351	2.07	40
2-Picoline		50000	48900	ug/L	1.59	2.12	40
3,3'-Dichlorobenzidine		50000	48700	ug/L	0.461	2.55	40
3,3'-Dimethylbenzidine		50000	43900	ug/L	0.947	12.1	40
3-,4-Methylphenol		50000	53100	ug/L	1.62	6.19	40

Login Number: L0708803 Run Date: 09/05/2007 Sample ID: WG249365-02
 Instrument ID: HPMS5 Run Time: 11:36 Method: 8270C
 File ID: 5M47853 Analyst: ASP QC Key: STD
 Workgroup (AAB#): WG249501 Cal ID: HPMS5 - 24-AUG-07

Analyte	Expected	Found	UNITS	RF	%D	UCL	Q
3-Methylcholanthrene	50000	52100	ug/L	0.754	4.14	40	
3-Nitroaniline	50000	45500	ug/L	0.379	9.01	40	
4,6-Dinitro-2-Methylphenol	50000	54500	ug/L	0.169	9.03	40	
4-Aminobiphenyl	50000	46900	ug/L	0.855	6.25	40	
4-Bromophenyl Phenyl Ether	50000	52700	ug/L	0.265	5.36	40	
4-Chloroaniline	50000	49700	ug/L	0.488	0.604	40	
4-Chlorophenyl Phenyl Ether	50000	49500	ug/L	0.690	1.05	40	
4-Nitroaniline	50000	44900	ug/L	0.400	10.3	40	
4-Nitroquinoline 1-Oxide	50000	37700	ug/L	0.0534	24.5	40	
5-Nitro-o-Toluidine	50000	47000	ug/L	0.399	5.95	40	
7,12-Dimethylbenz[a]anthracene	50000	51000	ug/L	0.657	2.06	40	
Acenaphthylene	50000	46800	ug/L	2.04	6.39	40	
Acetophenone	50000	52800	ug/L	1.94	5.53	40	
Aniline	50000	48500	ug/L	2.26	2.91	40	
Anthracene	50000	49900	ug/L	1.42	0.280	40	
Aramite	50000	51700	ug/L	0.0564	3.37	40	
Benz[a]anthracene	50000	51300	ug/L	1.40	2.62	40	
Benz[b]fluoranthene	50000	48000	ug/L	1.45	4.10	40	
Benz[ghi]perylene	50000	51500	ug/L	1.34	3.04	40	
Benz[k]fluoranthene	50000	47200	ug/L	1.30	5.62	40	
Benzyl Alcohol	50000	53000	ug/L	1.03	5.91	40	
bis(2-Chloroethoxy)methane	50000	49500	ug/L	0.542	1.06	40	
bis(2-Chloroethyl)ether	50000	49300	ug/L	1.08	1.41	40	
bis(2-Chloroisopropyl)ether	50000	48300	ug/L	2.45	3.46	40	
bis(2-Ethylhexyl)phthalate	50000	46800	ug/L	0.960	6.40	40	
Butyl Benzyl Phthalate	50000	47500	ug/L	0.659	5.07	40	
Chlorobenzilate	50000	53000	ug/L	0.409	6.05	40	
Chrysene	50000	50700	ug/L	1.34	1.32	40	
Diallate	50000	52000	ug/L	0.0602	4.06	40	
Dibenz[ah]anthracene	50000	52100	ug/L	1.35	4.18	40	
Dibenzofuran	50000	48500	ug/L	1.75	2.94	40	
Diethylphthalate	50000	47200	ug/L	1.38	5.61	40	
Dimethoate	50000	49800	ug/L	0.345	0.495	40	
Dimethylphthalate	50000	49300	ug/L	1.43	1.49	40	
Di-n-Butyl Phthalate	50000	50000	ug/L	1.57	0.0596	40	
Disulfoton	50000	50300	ug/L	0.450	0.605	40	
Ethyl Methanesulfonate	50000	51700	ug/L	1.10	3.34	40	
Famphur	50000	24400	ug/L	0.113	51.3	40	*
Fluorene	50000	49300	ug/L	1.51	1.45	40	
Hexachlorobenzene	50000	53200	ug/L	0.281	6.48	40	
Hexachloroethane	50000	52200	ug/L	0.661	4.33	40	
Hexachloropropene	50000	58600	ug/L	0.209	17.2	40	

Login Number: L0708803 Run Date: 09/05/2007 Sample ID: WG249365-02
 Instrument ID: HPMS5 Run Time: 11:36 Method: 8270C
 File ID: 5M47853 Analyst: ASP QC Key: STD
 Workgroup (AAB#): WG249501 Cal ID: HPMS5 - 24-AUG-07

Analyte	Expected	Found	UNITS	RF	%D	UCL	Q
Indeno[1,2,3-cd]pyrene	50000	51800	ug/L	1.56	3.54	40	
Isodrin	50000	51500	ug/L	0.145	3.06	40	
Isophorone	50000	52300	ug/L	0.646	4.62	40	
Isosafrole	50000	49100	ug/L	0.548	1.89	40	
Kepone	50000	NA	ug/L	0	NA	40	*
Methapyrilene	50000	44500	ug/L	0.350	10.9	40	
Methyl Methanesulfonate	50000	53200	ug/L	0.783	6.30	40	
Naphthalene	50000	49700	ug/L	1.12	0.561	40	
Nitrobenzene	50000	52300	ug/L	0.378	4.55	40	
n-Nitrosodiethylamine	50000	52900	ug/L	0.744	5.79	40	
n-Nitrosodimethylamine	50000	49900	ug/L	0.959	0.166	40	
n-Nitrosodi-n-Butylamine	50000	59700	ug/L	0.297	19.4	40	
n-Nitrosomethylalkylamine	50000	52600	ug/L	0.707	5.13	40	
n-Nitrosomorpholine	50000	50000	ug/L	0.914	0.0334	40	
n-Nitrosopiperidine	50000	50300	ug/L	0.185	0.615	40	
n-Nitrosopyrrolidine	50000	49000	ug/L	0.700	1.95	40	
o-Toluidine	50000	52800	ug/L	2.31	5.63	40	
p-(Dimethylamino)azobenzene	50000	52000	ug/L	0.300	3.99	40	
p-Phenylenediamine	50000	43000	ug/L	0.292	13.9	40	
Parathion Ethyl	50000	56200	ug/L	0.174	12.3	40	
Parathion Methyl	50000	58800	ug/L	0.299	17.7	40	
Pentachlorobenzene	50000	49800	ug/L	0.491	0.494	40	
Pentachloroethane	50000	54800	ug/L	0.580	9.63	40	
Pentachloronitrobenzene	50000	57000	ug/L	0.0954	14.1	40	
Phenacetin	50000	53100	ug/L	0.444	6.22	40	
Phenanthrene	50000	49100	ug/L	1.40	1.87	40	
a,a-Dimethylphenethylamine	50000	19900	ug/L	0.402	60.1	40	*
Phorate	50000	50500	ug/L	0.530	1.02	40	
Pronamide	50000	53500	ug/L	0.399	7.08	40	
Pyrene	50000	50800	ug/L	1.51	1.69	40	
Pyridine	50000	49900	ug/L	1.63	0.207	40	
Safrole	50000	54800	ug/L	0.311	9.64	40	
Sulfotep	50000	51000	ug/L	0.142	1.98	40	
Sym-Trinitrobenzene	50000	56100	ug/L	0.200	12.2	40	
Thionazin	50000	48600	ug/L	0.221	2.82	40	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

KEMRON ENVIRONMENTAL SERVICES
 INTERNAL STANDARD AREA SUMMARY
 (COMPARED TO MIDPOINT OF ICAL)

Login Number:L0708803
 Instrument ID:HPMS5
 Workgroup (AAB#):WG249501

ICAL CCV Number:WG248656-02
 CAL ID:HPMS5 - 24-AUG-07
 Matrix:SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG248656-02	NA	NA	194597	408134	616658	771908	596626	646291
Upper Limit	NA	NA	389194	816268	1233316	1543816	1193252	1292582
Lower Limit	NA	NA	97299	204067	308329	385954	298313	323146
L0708803-01	1.00	01	197262	431628	633429	782634	605270	631051
WG249164-02	1.00	01	182273	391690	560892	721828	531202	567425
WG249164-03	1.00	01	225500	498629	720777	982986	710348	725484

IS-1 - 1,4-Dichlorobenzene-d4
 IS-2 - Acenaphthene-d10
 IS-3 - Chrysene-d12
 IS-4 - Naphthalene-d8
 IS-5 - Perylene-d12
 IS-6 - Phenanthrene-d10

Underline = Response outside limits

KEMRON ENVIRONMENTAL SERVICES
 INTERNAL STANDARD RETENTION TIME SUMMARY
 (COMPARED TO MIDPOINT OF ICAL)

Login Number:L0708803
 Instrument ID:HPMS5
 Workgroup (AAB#):WG249501

ICAL CCV Number:WG248656-02
 CAL ID:HPMS5 - 24-AUG-07
 Matrix:SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3	IS-4	IS-5	IS-6
WG248656-02	NA	NA	9.14	12.86	17.29	10.74	19.63	14.47
Upper Limit	NA	NA	9.64	13.36	17.79	11.24	20.13	14.97
Lower Limit	NA	NA	8.64	12.36	16.79	10.24	19.13	13.97
L0708803-01	1.00	01	9.14	12.85	17.28	10.74	19.62	14.46
WG249164-02	1.00	01	9.14	12.85	17.28	10.74	19.62	14.46
WG249164-03	1.00	01	9.14	12.85	17.28	10.74	19.62	14.46

IS-1 - 1,4-Dichlorobenzene-d4
 IS-2 - Acenaphthene-d10
 IS-3 - Chrysene-d12
 IS-4 - Naphthalene-d8
 IS-5 - Perylene-d12
 IS-6 - Phenanthrene-d10

Underline = Response outside limits

2.1.1.3 Sample Data

Data File : C:\MSDCHEM\1\DATA\090507\5M47857.D
 Acq On : 5 Sep 2007 1:50 pm
 Sample : L0708803-01 SOIL
 Misc : 7,1 SOIL
 MS Integration Params: RTEINT.P
 Quant Time: Sep 06 12:33:55 2007

Vial: 6
 Operator: ASP
 Inst : HPMS5
 Multiplr: 1.00

Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Thu Sep 06 12:32:27 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	197262	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	782634	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.85	164	431628	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	631051	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	633429	40.00	ug/ml	0.00
128) Perylene-d12	19.62	264	605270	40.00	ug/ml	0.00

System Monitoring Compounds

7) 2-Fluorophenol	7.56	112	337713	47.7272	ug/ml	0.00
Spiked Amount	100.000	Range	25 - 121	Recovery	=	47.73%
11) Phenol-d5	8.68	99	470362	54.6310	ug/ml	0.00
Spiked Amount	100.000	Range	24 - 113	Recovery	=	54.63%
30) Nitrobenzene-d5	9.84	82	184061	27.7391	ug/ml	0.00
Spiked Amount	50.000	Range	23 - 120	Recovery	=	55.48%
58) 2-Fluorobiphenyl	12.04	172	408745	26.5320	ug/ml	0.00
Spiked Amount	50.000	Range	30 - 115	Recovery	=	53.06%
85) 2,4,6-Tribromophenol	13.73	330	124431	66.1648	ug/ml	0.00
Spiked Amount	100.000	Range	19 - 122	Recovery	=	66.16%
116) p-Terphenyl-d14	16.08	244	618738	42.0370	ug/ml	0.00
Spiked Amount	50.000	Range	18 - 137	Recovery	=	84.08%

Target Compounds

90) Sym-Trinitrobenzene	13.72	75	170	4.1983	ug/ml	# 1
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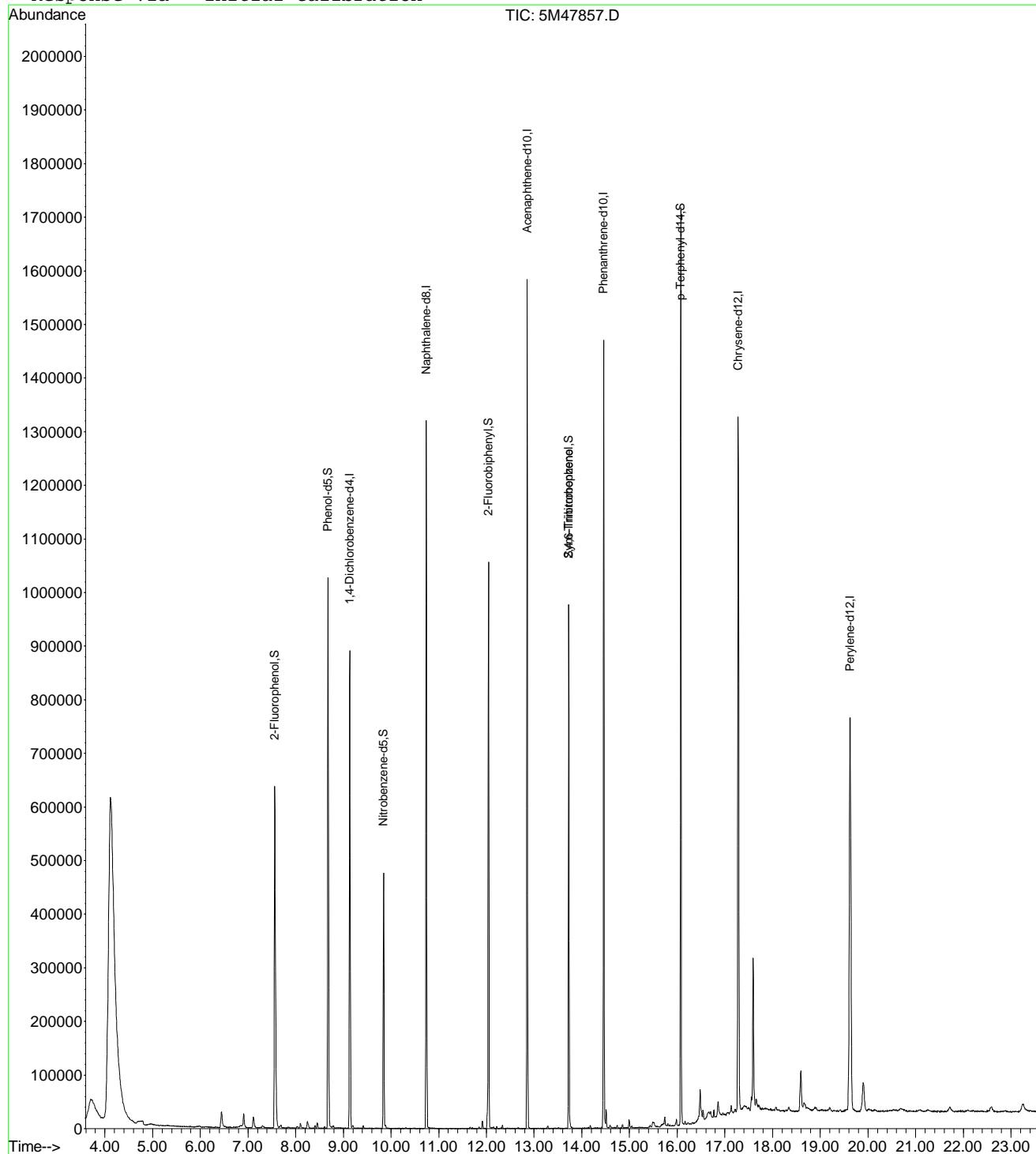
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 5M47857.D MEGAMIX.M Thu Sep 06 12:33:56 2007

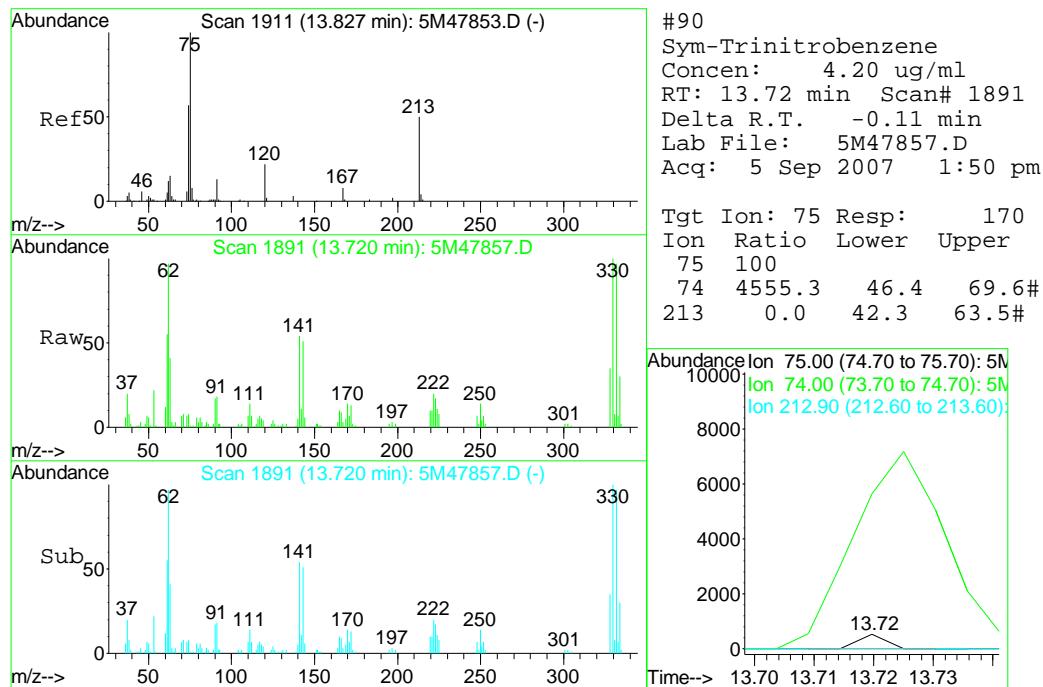
Data File : C:\MSDCHEM\1\DATA\090507\5M47857.D
 Acq On : 5 Sep 2007 1:50 pm
 Sample : L0708803-01 SOIL
 Misc : 7,1 SOIL
 MS Integration Params: RTEINT.P
 Quant Time: Sep 6 12:33 2007

Vial: 6
 Operator: ASP
 Inst : HPMS5
 Multiplr: 1.00

Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Thu Sep 06 12:32:27 2007
 Response via : Initial Calibration





2.1.1.4 Standards Data

Data File : C:\MSDCHEM\1\DATA\081607\5M47448.D Vial: 12
 Acq On : 16 Aug 2007 11:51 pm Operator: ASP
 Sample : WG247987-01 50ppm TCL STD Inst : HPMS5
 Misc : 1,1 STD20141 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 20 10:32:45 2007 Quant Results File: TCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
 Title : 827-TCL/INITIAL CALIBRATION 08/16/07
 Last Update : Wed Aug 15 08:23:50 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

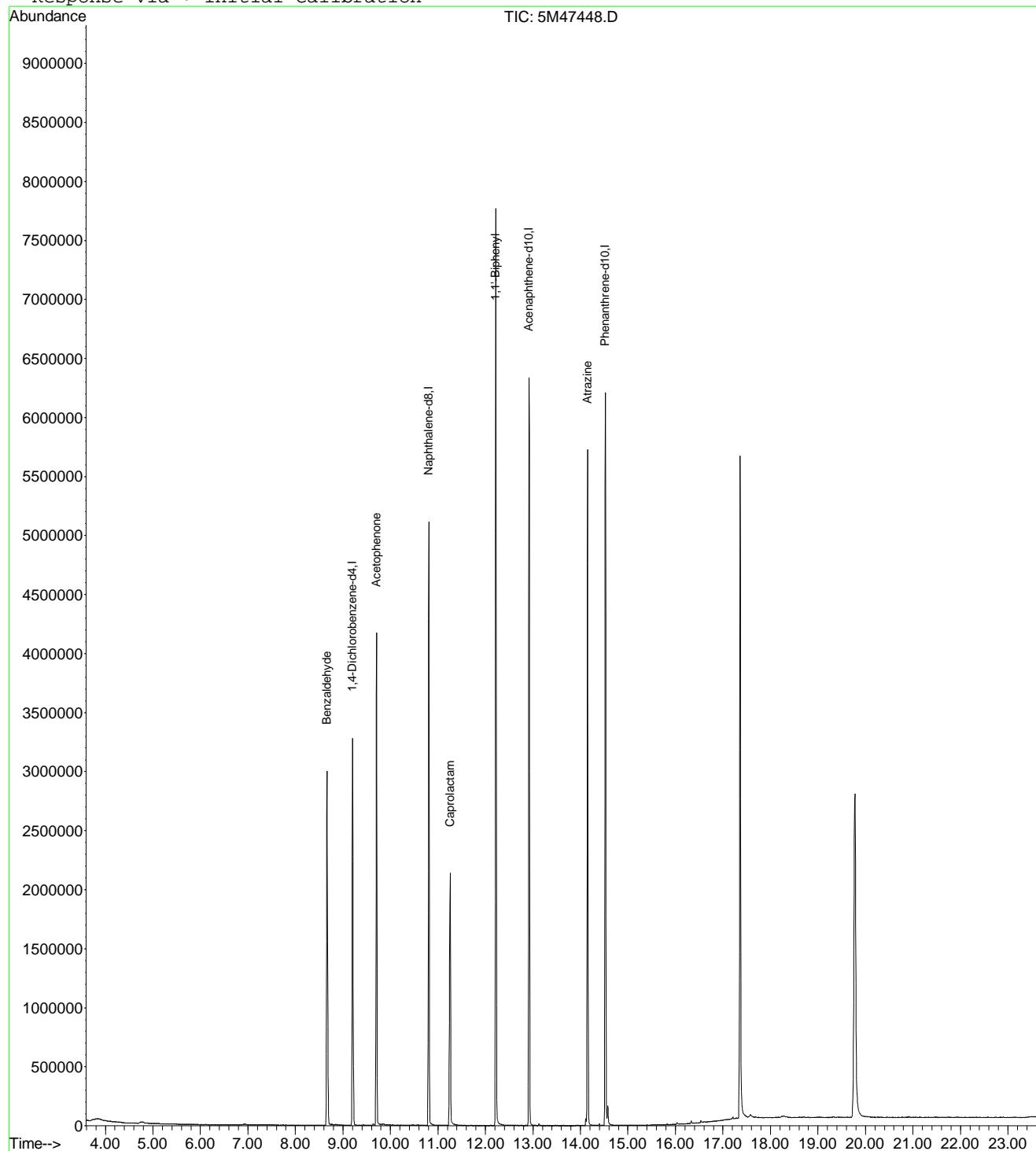
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.21	152	842683	40.00	ug/mL	0.00
4) Naphthalene-d8	10.81	136	3155161	40.00	ug/mL	0.00
6) Acenaphthene-d10	12.92	164	1742611	40.00	ug/mL	0.00
8) Phenanthrene-d10	14.53	188	2687687	40.00	ug/mL	0.00

Target Compounds				Qvalue
2) Benzaldehyde	8.67	105	949223	48.7565 ug/L 91
3) Acetophenone	9.71	105	1604402	40.9045 ug/L # 87
5) Caprolactam	11.26	55	527410	54.9592 ug/L 88
7) 1,1'-Biphenyl	12.22	154	3274939	48.8362 ug/L 99
9) Atrazine	14.15	200	869475	44.7328 ug/L 92

(#) = qualifier out of range (m) = manual integration
 5M47448.D TCL.M Mon Aug 20 10:33:18 2007

Data File : C:\MSDCHEM\1\DATA\081607\5M47448.D Vial: 12
Acq On : 16 Aug 2007 11:51 pm Operator: ASP
Sample : WG247987-01 50ppm TCL STD Inst : HPMS5
Misc : 1,1 STD20141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 10:32 2007 Quant Results File: TCL.RES

Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
Title : 827-TCL/INITIAL CALIBRATION 08/16/07
Last Update : Mon Aug 20 10:33:14 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\081607\5M47449.D Vial: 13
 Acq On : 17 Aug 2007 12:25 am Operator: ASP
 Sample : WG247987-02 3ppm TCL STD Inst : HPMS5
 Misc : 1,1 STD20141 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 20 10:33:23 2007 Quant Results File: TCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
 Title : 827-TCL/INITIAL CALIBRATION 08/16/07
 Last Update : Mon Aug 20 10:33:14 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

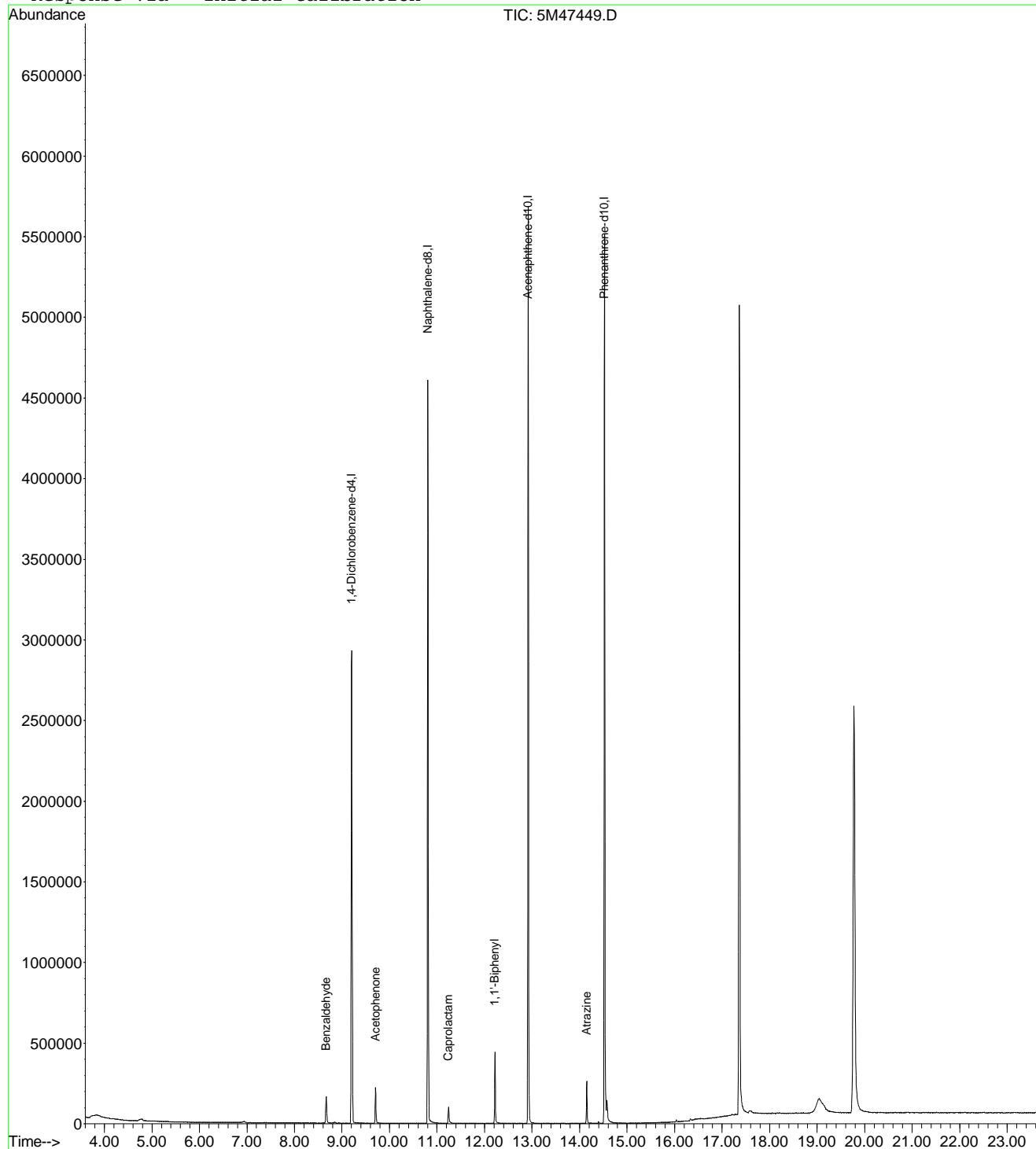
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.21	152	751945	40.00	ug/mL	0.00
4) Naphthalene-d8	10.81	136	2846945	40.00	ug/mL	0.00
6) Acenaphthene-d10	12.92	164	1578954	40.00	ug/mL	0.00
8) Phenanthrene-d10	14.53	188	2430635	40.00	ug/mL	0.00

Target Compounds				Qvalue
2) Benzaldehyde	8.67	105	52702	3.0541 ug/L 99
3) Acetophenone	9.71	105	91356	2.7002 ug/L 98
5) Caprolactam	11.24	55	25484	2.9348 ug/L 95
7) 1,1'-Biphenyl	12.22	154	204937	3.4029 ug/L 96
9) Atrazine	14.15	200	46221	2.6874 ug/L 98

(#) = qualifier out of range (m) = manual integration
 5M47449.D TCL.M Mon Aug 20 10:33:24 2007

Data File : C:\MSDCHEM\1\DATA\081607\5M47449.D Vial: 13
Acq On : 17 Aug 2007 12:25 am Operator: ASP
Sample : WG247987-02 3ppm TCL STD Inst : HPMS5
Misc : 1,1 STD20141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 10:33 2007 Quant Results File: TCL.RES

Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
Title : 827-TCL/INITIAL CALIBRATION 08/16/07
Last Update : Mon Aug 20 10:33:14 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\081607\5M47450.D Vial: 14
 Acq On : 17 Aug 2007 12:59 am Operator: ASP
 Sample : WG247987-03 10ppm TCL STD Inst : HPMS5
 Misc : 1,1 STD20141 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 20 10:33:47 2007 Quant Results File: TCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
 Title : 827-TCL/INITIAL CALIBRATION 08/16/07
 Last Update : Mon Aug 20 10:33:40 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.20	152	682416	40.00	ug/mL	0.00
4) Naphthalene-d8	10.81	136	2601226	40.00	ug/mL	0.00
6) Acenaphthene-d10	12.92	164	1415471	40.00	ug/mL	0.00
8) Phenanthrene-d10	14.53	188	2154834	40.00	ug/mL	0.00

Target Compounds				Qvalue
2) Benzaldehyde	8.67	105	162241	10.2513 ug/L 99
3) Acetophenone	9.71	105	276334	9.0467 ug/L 98
5) Caprolactam	11.24	55	86864	10.6054 ug/L 97
7) 1,1'-Biphenyl	12.22	154	597479	10.6741 ug/L 98
9) Atrazine	14.15	200	143710	9.4423 ug/L 99

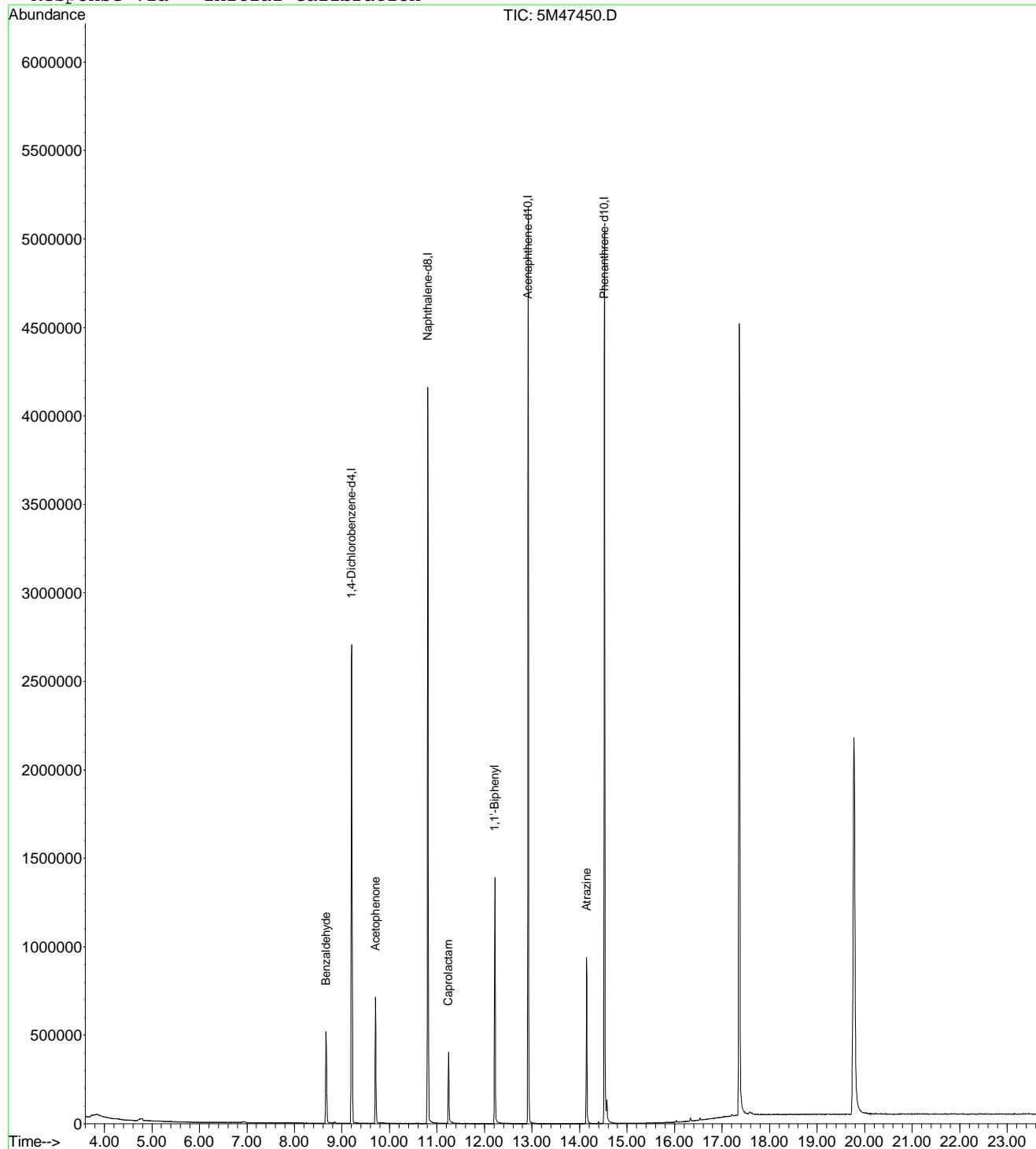
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 5M47450.D TCL.M Mon Aug 20 10:33:48 2007

Data File : C:\MSDCHEM\1\DATA\081607\5M47450.D
Acq On : 17 Aug 2007 12:59 am
Sample : WG247987-03 10ppm TCL STD
Misc : 1,1 STD20141
MS Integration Params: RTEINT.P
Quant Time: Aug 20 10:33 2007

Vial: 14
Operator: ASP
Inst : HPMS5
Multiplr: 1.00

Quant Results File: TCL.RES

Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
Title : 827-TCL/INITIAL CALIBRATION 08/16/07
Last Update : Mon Aug 20 10:33:40 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\081607\5M47451.D Vial: 15
 Acq On : 17 Aug 2007 1:32 am Operator: ASP
 Sample : WG247987-04 25ppm TCL STD Inst : HPMS5
 Misc : 1,1 STD20141 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 20 10:34:00 2007 Quant Results File: TCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
 Title : 827-TCL/INITIAL CALIBRATION 08/16/07
 Last Update : Mon Aug 20 10:33:54 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.20	152	735667	40.00	ug/mL	0.00
4) Naphthalene-d8	10.81	136	2793779	40.00	ug/mL	0.00
6) Acenaphthene-d10	12.92	164	1538958	40.00	ug/mL	0.00
8) Phenanthrene-d10	14.53	188	2363209	40.00	ug/mL	0.00

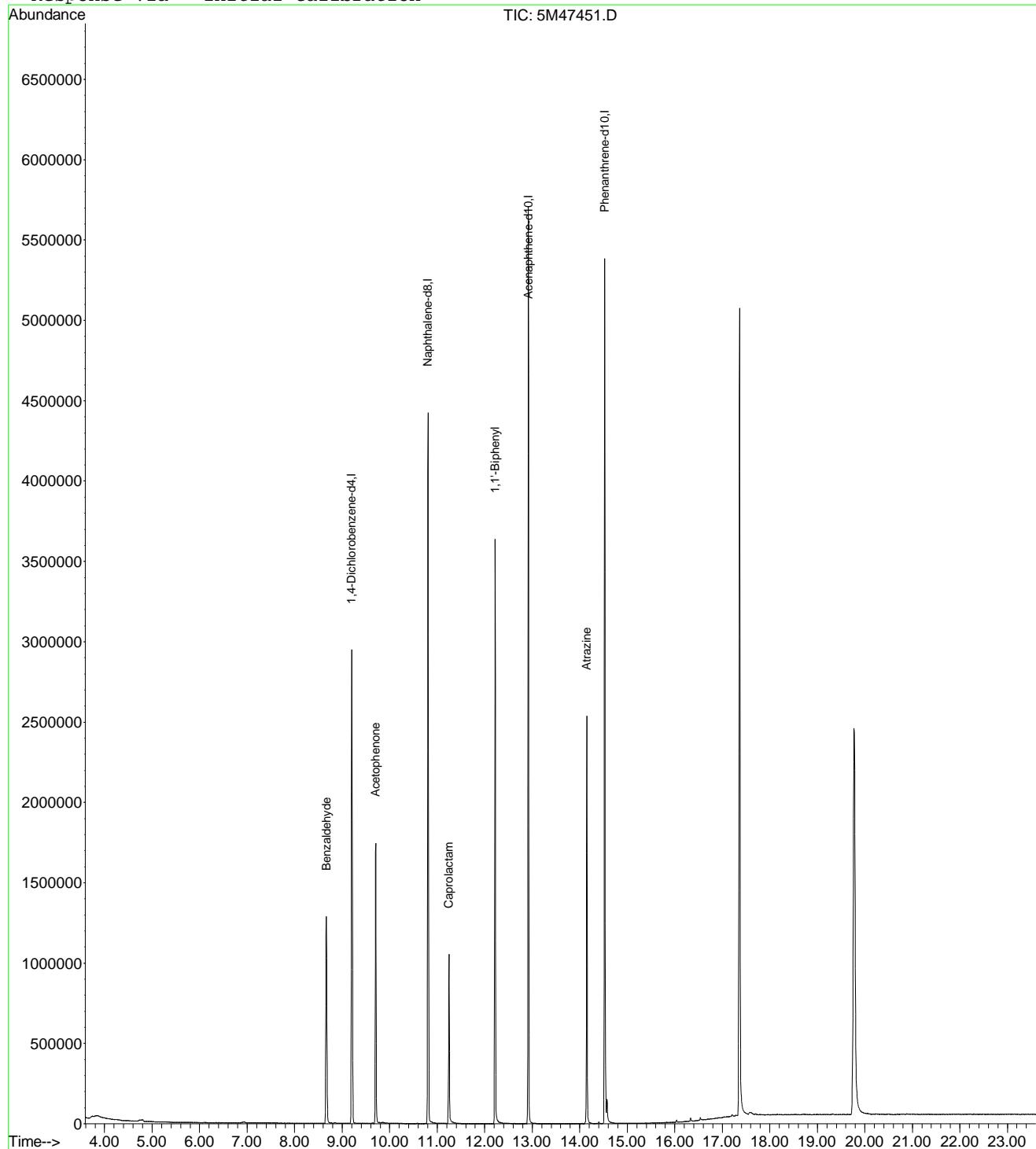
Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Benzaldehyde	8.67	105	411051	23.8053	ug/L	99
3) Acetophenone	9.71	105	700022	21.5516	ug/L	99
5) Caprolactam	11.25	55	220132	24.3222	ug/L	98
7) 1,1'-Biphenyl	12.22	154	1506144	24.0272	ug/L	99
9) Atrazine	14.15	200	378759	22.6229	ug/L	100

(#) = qualifier out of range (m) = manual integration
 5M47451.D TCL.M Mon Aug 20 10:34:00 2007

Page 1

Data File : C:\MSDCHEM\1\DATA\081607\5M47451.D Vial: 15
Acq On : 17 Aug 2007 1:32 am Operator: ASP
Sample : WG247987-04 25ppm TCL STD Inst : HPMS5
Misc : 1,1 STD20141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 10:34 2007 Quant Results File: TCL.RES

Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
Title : 827-TCL/INITIAL CALIBRATION 08/16/07
Last Update : Mon Aug 20 10:33:54 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\081607\5M47452.D Vial: 16
 Acq On : 17 Aug 2007 2:05 am Operator: ASP
 Sample : WG247987-05 80ppm TCL STD Inst : HPMS5
 Misc : 1,1 STD20141 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 20 10:34:11 2007 Quant Results File: TCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
 Title : 827-TCL/INITIAL CALIBRATION 08/16/07
 Last Update : Mon Aug 20 10:34:07 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.20	152	565481	40.00	ug/mL	0.00
4) Naphthalene-d8	10.81	136	2175961	40.00	ug/mL	0.00
6) Acenaphthene-d10	12.92	164	1188145	40.00	ug/mL	0.00
8) Phenanthrene-d10	14.53	188	1822548	40.00	ug/mL	0.00

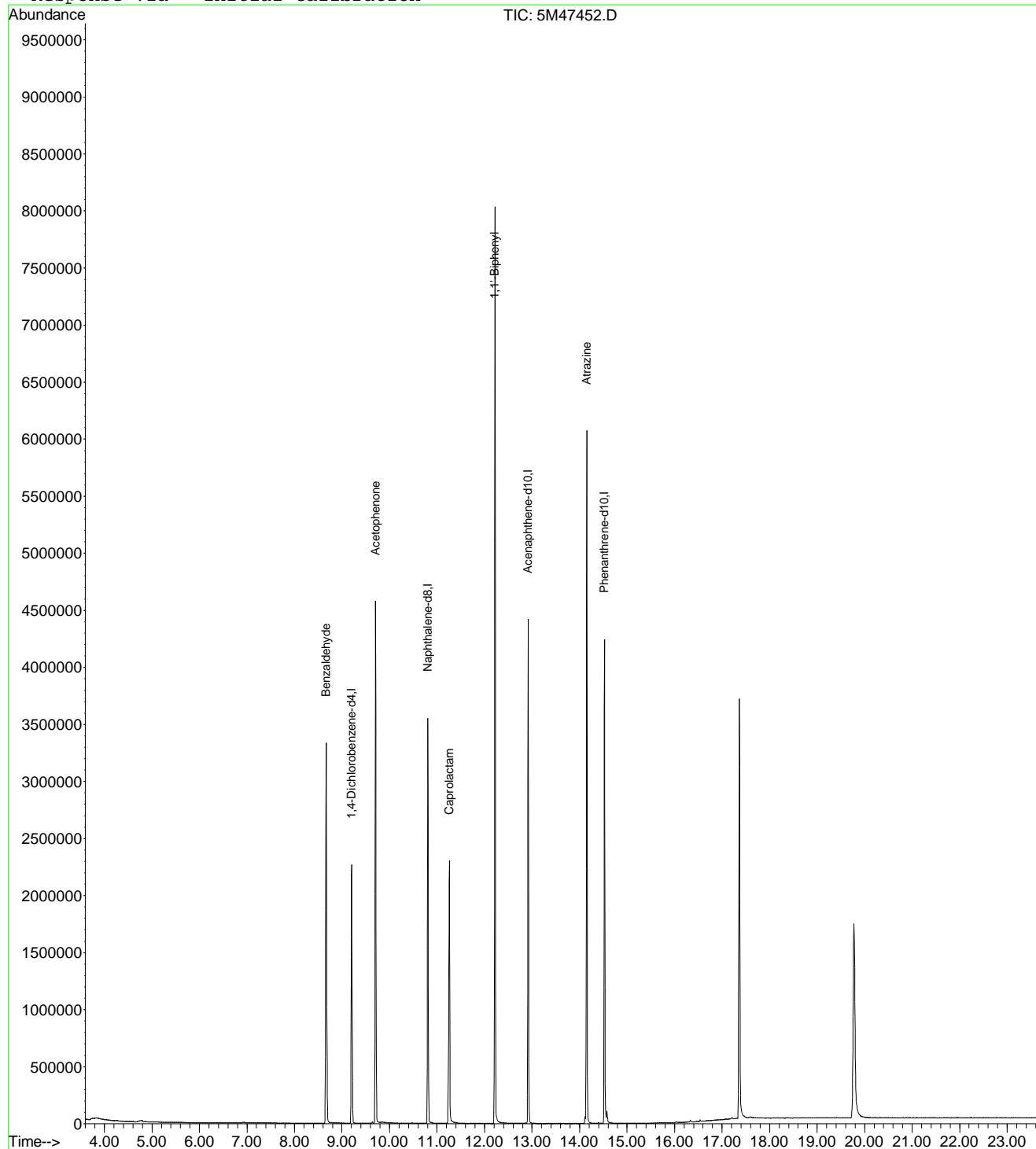
Target Compounds				Qvalue
2) Benzaldehyde	8.67	105	1033988	77.3930 ug/L 99
3) Acetophenone	9.71	105	1752234	71.7781 ug/L 99
5) Caprolactam	11.26	55	592622	83.1418 ug/L 98
7) 1,1'-Biphenyl	12.22	154	3453441	70.2841 ug/L 100
9) Atrazine	14.15	200	925117	71.8737 ug/L 99

(#) = qualifier out of range (m) = manual integration
 5M47452.D TCL.M Mon Aug 20 10:34:12 2007

Page 1

Data File : C:\MSDCHEM\1\DATA\081607\5M47452.D Vial: 16
Acq On : 17 Aug 2007 2:05 am Operator: ASP
Sample : WG247987-05 80ppm TCL STD Inst : HPMS5
Misc : 1,1 STD20141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 10:34 2007 Quant Results File: TCL.RES

Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
Title : 827-TCL/INITIAL CALIBRATION 08/16/07
Last Update : Mon Aug 20 10:34:07 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\081607\5M47453.D Vial: 17
 Acq On : 17 Aug 2007 2:39 am Operator: ASP
 Sample : WG247987-06 100ppm TCL STD Inst : HPMS5
 Misc : 1,1 STD20141 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 20 10:34:23 2007 Quant Results File: TCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
 Title : 827-TCL/INITIAL CALIBRATION 08/16/07
 Last Update : Mon Aug 20 10:34:17 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.20	152	870057	40.00	ug/mL	0.00
4) Naphthalene-d8	10.81	136	3280905	40.00	ug/mL	0.00
6) Acenaphthene-d10	12.92	164	1808151	40.00	ug/mL	0.00
8) Phenanthrene-d10	14.53	188	2818599	40.00	ug/mL	0.00

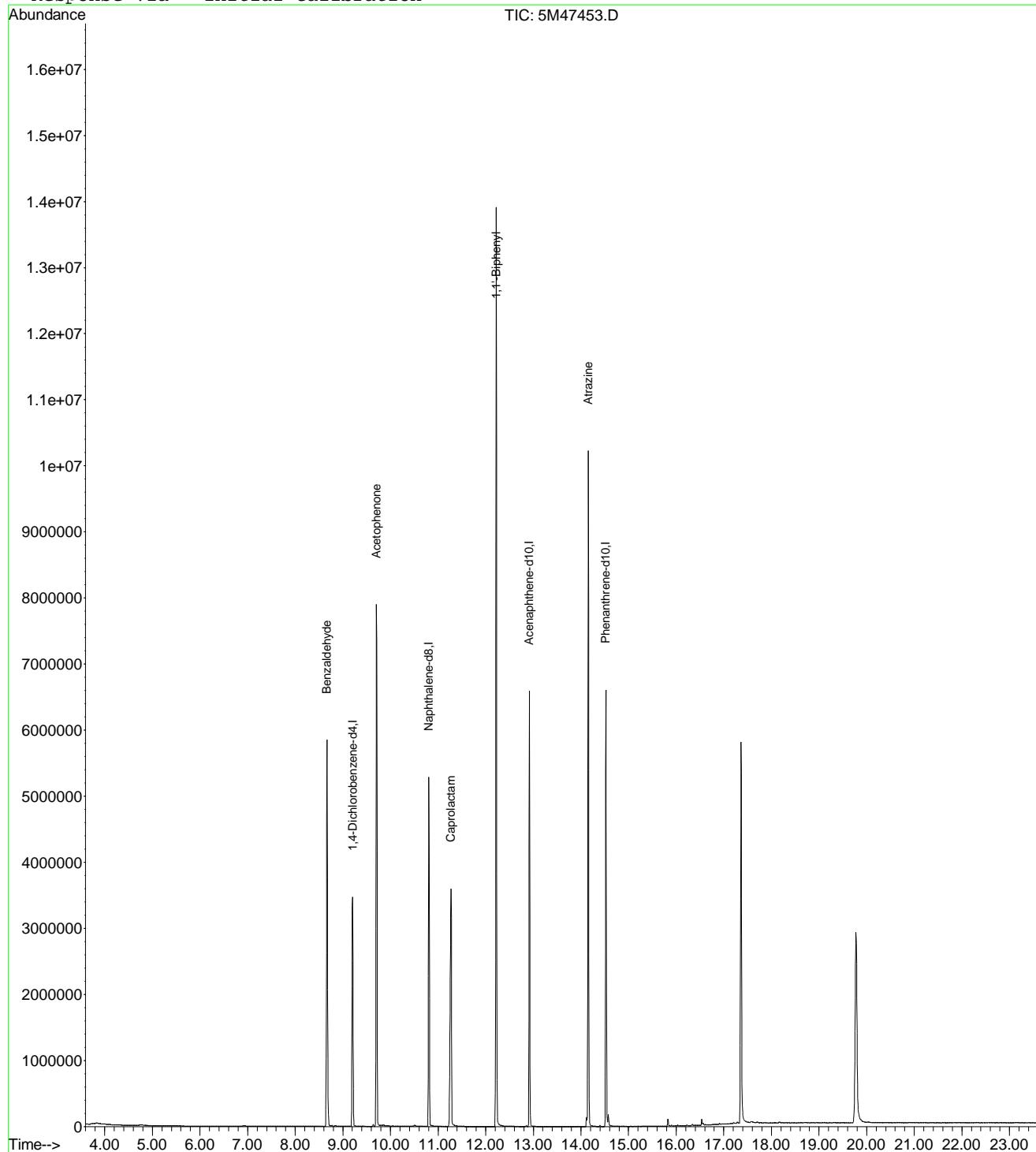
Target Compounds				Qvalue
2) Benzaldehyde	8.67	105	1917389	94.1096 ug/L 99
3) Acetophenone	9.71	105	3184565	88.5725 ug/L 99
5) Caprolactam	11.27	55	1090828	101.1660 ug/L 99
7) 1,1'-Biphenyl	12.22	154	6023431	82.8843 ug/L 98
9) Atrazine	14.16	200	1741295	91.3966 ug/L 100

(#) = qualifier out of range (m) = manual integration
 5M47453.D TCL.M Mon Aug 20 10:34:24 2007

Page 1

Data File : C:\MSDCHEM\1\DATA\081607\5M47453.D Vial: 17
Acq On : 17 Aug 2007 2:39 am Operator: ASP
Sample : WG247987-06 100ppm TCL STD Inst : HPMS5
Misc : 1,1 STD20141 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 10:34 2007 Quant Results File: TCL.RES

Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
Title : 827-TCL/INITIAL CALIBRATION 08/16/07
Last Update : Mon Aug 20 10:34:17 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\081607\5M47454.D Vial: 18
 Acq On : 17 Aug 2007 3:12 am Operator: ASP
 Sample : WG247987-07 50ppm TCL ALT STD Inst : HPMS5
 Misc : 1,1 STD21293 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 20 10:36:13 2007 Quant Results File: TCL.RES

Quant Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
 Title : 827-TCL/INITIAL CALIBRATION 08/16/07
 Last Update : Mon Aug 20 10:35:43 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.20	152	544914	40.00	ug/mL	0.00
4) Naphthalene-d8	10.81	136	2074640	40.00	ug/mL	0.00
6) Acenaphthene-d10	12.92	164	1156965	40.00	ug/mL	0.00
8) Phenanthrene-d10	14.52	188	1779825	40.00	ug/mL	0.00

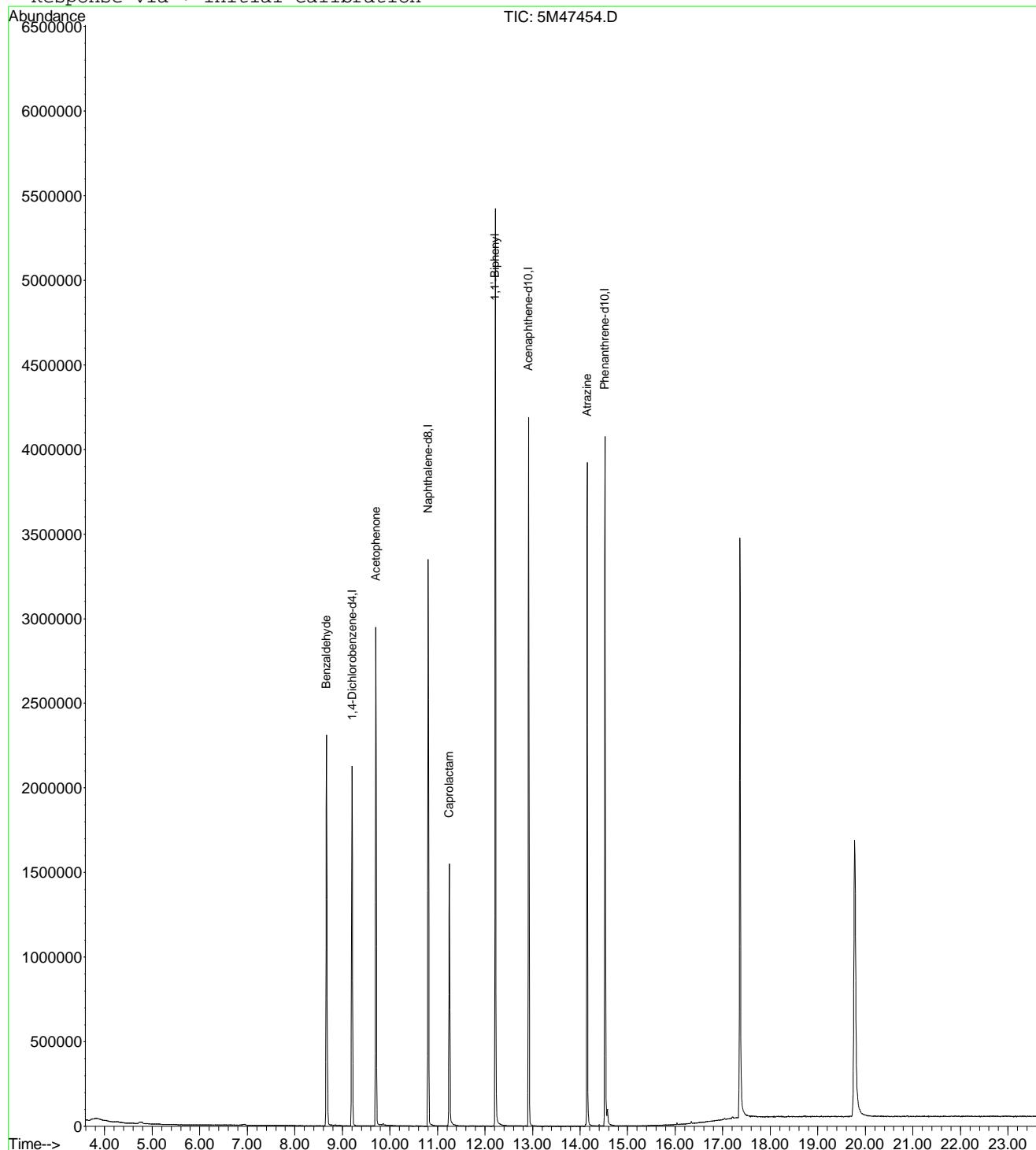
Target Compounds				Qvalue
2) Benzaldehyde	8.66	105	742196	59.6910 ug/L 91
3) Acetophenone	9.71	105	1151847	54.5579 ug/L # 86
5) Caprolactam	11.25	55	349070	51.6460 ug/L 88
7) 1,1'-Biphenyl	12.22	154	2355616	52.6892 ug/L 100
9) Atrazine	14.15	200	609370	53.4801 ug/L 93

(#) = qualifier out of range (m) = manual integration
 5M47454.D TCL.M Mon Aug 20 10:36:13 2007

Page 1

Data File : C:\MSDCHEM\1\DATA\081607\5M47454.D Vial: 18
Acq On : 17 Aug 2007 3:12 am Operator: ASP
Sample : WG247987-07 50ppm TCL ALT STD Inst : HPMS5
Misc : 1,1 STD21293 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 10:36 2007 Quant Results File: TCL.RES

Method : C:\MSDCHEM\1\METHODS\TCL.M (RTE Integrator)
Title : 827-TCL/INITIAL CALIBRATION 08/16/07
Last Update : Mon Aug 20 10:35:43 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\082407\5M47613.D Vial: 2
 Acq On : 24 Aug 2007 4:48 pm Operator: ASP
 Sample : WG248656-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:53:42 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/16/07
 Last Update : Fri Aug 24 15:15:46 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	194597	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	771908	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	408134	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.47	188	646291	40.00	ug/ml	0.00
112) Chrysene-d12	17.29	240	616658	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	596626	40.00	ug/ml	0.00
System Monitoring Compounds						
7) 2-Fluorophenol	7.56	112	360363	55.4910	ug/ml	0.00
Spiked Amount 100.000	Range 21 - 100		Recovery	=	55.49%	
11) Phenol-d5	8.68	99	439141	56.3903	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 94		Recovery	=	56.39%	
30) Nitrobenzene-d5	9.85	82	337339	59.0249	ug/ml	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery	=	118.04%#	
58) 2-Fluorobiphenyl	12.05	172	713389	48.7759	ug/ml	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery	=	97.56%	
85) 2,4,6-Tribromophenol	13.73	330	94055	50.8467	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 123		Recovery	=	50.85%	
116) p-Terphenyl-d14	16.08	244	729075	50.3396	ug/ml	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery	=	100.68%	
Target Compounds						
2) n-Nitrosodimethylamine	5.53	74	242664	58.9707	ug/ml	96
3) Pyridine	5.53	79	409475	57.8966	ug/ml	97
4) 2-Picoline	6.74	93	404867	55.4980	ug/ml	99
5) n-Nitrosomethylethylamine	6.93	88	172389	53.1142	ug/ml	97
6) Methyl Methanesulfonate	7.35	80	187929	51.7993	ug/ml	98
8) n-Nitrosodiethylamine	7.85	102	177045	53.0384	ug/ml	95
9) Ethyl Methanesulfonate	8.21	79	266317	54.2506	ug/ml	100
10) Aniline	8.76	93	581464	57.3064	ug/ml	100
12) Phenol	8.70	94	469504	57.1595	ug/ml	97
13) bis(2-Chloroethyl)ether	8.81	63	270821	58.7373	ug/ml	79
14) Pentachloroethane	8.79	167	131203	48.0715	ug/ml	96
15) 2-Chlorophenol	8.92	128	390510	52.5227	ug/ml	100
16) 1,3-Dichlorobenzene	9.10	146	422417	51.0243	ug/ml	100
17) 1,4-Dichlorobenzene	9.16	146	432762	50.8468	ug/ml	99
18) Benzyl Alcohol	9.29	108	245601	53.4939	ug/ml	99
19) 1,2-Dichlorobenzene	9.40	146	399801	50.6984	ug/ml	99
20) 2-Methylphenol	9.44	107	287765	50.8653	ug/ml	99
21) bis(2-Chloroisopropyl)ethane	9.49	45	630867	66.7586	ug/ml	96
22) 3-,4-Methylphenol	9.60	107	380245	51.9736	ug/ml	98
23) n-Nitrosopyrrolidine	9.63	100	180960	56.5536	ug/ml#	53
24) n-Nitrosodipropylamine	9.65	70	253176	52.9928	ug/ml#	52
25) Acetophenone	9.65	105	456560	52.4416	ug/ml	98
26) n-Nitrosomorpholine	9.65	56	229267	62.6557	ug/ml	95
27) o-Toluidine	9.70	106	544659	52.6479	ug/ml	98
28) Hexachloroethane	9.79	117	159078	51.3114	ug/ml	98
31) Nitrobenzene	9.87	77	356899	57.4780	ug/ml	97
32) n-Nitrosopiperidine	10.05	114	181723	52.8490	ug/ml	95
33) Isophorone	10.14	82	607427	49.4039	ug/ml	98
34) 2-Nitrophenol	10.27	139	207733	58.5797	ug/ml	93
35) 2,4-Dimethylphenol	10.27	122	357189	51.9539	ug/ml	94
36) O,O,O-Triethyl Phosphorothioate	10.40	198	160165	44.3690	ug/ml	94
37) bis(2-Chloroethoxy)methane	10.39	93	536688	53.0615	ug/ml	97
38) Benzoic Acid	10.34	105	64888m	56.2710	ug/ml	

(#) = qualifier out of range (m) = manual integration
 5M47613.D MEGAMIX.M Mon Aug 27 10:52:59 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47613.D Vial: 2
 Acq On : 24 Aug 2007 4:48 pm Operator: ASP
 Sample : WG248656-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:53:42 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/16/07
 Last Update : Fri Aug 24 15:15:46 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	288800	49.4634	ug/ml	99
40) a,a-Dimethylphenethylamine	10.57	58	1004196	61.6952	ug/ml	98
41) 1,2,4-Trichlorobenzene	10.68	180	324769	47.6314	ug/ml	100
42) Naphthalene	10.77	128	1093258	50.2264	ug/ml	100
43) 4-Chloroaniline	10.82	127	486171	54.0590	ug/ml	100
44) 2,6-Dichlorophenol	10.85	162	295728	48.8753	ug/ml	99
45) Hexachloropropene	10.92	213	181337	47.6273	ug/ml	99
46) Hexachlorobutadiene	10.98	225	155862	41.6394	ug/ml	99
47) n-Nitrosodi-n-Butylamine	11.23	84	283864	56.1002	ug/ml	90
48) p-Phenylenediamine	11.24	108	361964	70.6660	ug/ml	99
49) 4-Chloro-3-Methylphenol	11.38	107	312346	50.6218	ug/ml	99
50) Safrole	11.49	162	278741	46.9199	ug/ml	99
51) 2-Methylnaphthalene	11.62	142	726267	49.7717	ug/ml	99
52) 1-Methylnaphthalene	11.75	142	713910	49.4429	ug/ml	99
54) 1,2,4,5-Tetrachlorobenzene	11.86	216	285533	45.9427	ug/ml	99
55) Hexachlorocyclopentadiene	11.88	237	146550	51.0082	ug/ml	99
56) 2,4,6-Trichlorophenol	11.97	196	206337	52.7738	ug/ml	100
57) 2,4,5-Trichlorophenol	12.01	196	220090	52.1061	ug/ml	99
59) Isosafrole	12.09	162	283551	49.9915	ug/ml	99
60) 2-Chloronaphthalene	12.20	162	763578	50.2945	ug/ml	97
61) 1-Chloronaphthalene	12.24	162	614129	49.3193	ug/ml	98
62) 2-Nitroaniline	12.32	65	190021	67.1989	ug/ml	93
63) 1,4-Naphthoquinone	12.39	158	237287	45.4482	ug/ml	99
64) Dimethylphthalate	12.52	163	728648	48.1554	ug/ml	100
65) 1,3-Dinitrobenzene	12.44	168	114410	65.3470	ug/ml#	80
66) 2,6-Dinitrotoluene	12.62	165	183378	53.0193	ug/ml	98
67) Acenaphthylene	12.69	152	1101606	51.8120	ug/ml	99
68) 3-Nitroaniline	12.78	138	216927	64.5597	ug/ml	96
69) 2,4-Dinitrophenol	12.90	184	64300	74.8387	ug/ml#	1
70) Acenaphthene	12.90	154	676769	50.6915	ug/ml	98
71) 4-Nitrophenol	12.93	65	140759	68.5730	ug/ml	97
72) 2,4-Dinitrotoluene	13.07	165	222236	58.1742	ug/ml	96
73) Pentachlorobenzene	13.10	250	246813	43.4148	ug/ml	98
74) Dibenzofuran	13.07	168	896278	49.0727	ug/ml	100
75) 2,3,4,6-Tetrachlorophenol	13.19	232	159848	48.3528	ug/ml	98
76) 1-Naphthylamine	13.15	143	709270	57.7379	ug/ml	99
77) 2-Naphthylamine	13.23	143	654319	65.0764	ug/ml	99
78) Diethylphthalate	13.30	149	737507	48.9719	ug/ml	99
79) Thionazin	13.40	107	116824	48.6707	ug/ml	95
80) Fluorene	13.45	166	765428	48.7430	ug/ml	99
81) 4-Chlorophenyl Phenyl Ethe	13.41	204	350837	46.2169	ug/ml	99
82) 4-Nitroaniline	13.47	138	232383	65.1995	ug/ml	97
83) 5-Nitro-o-Tolidine	13.46	152	220167	57.6409	ug/ml	99
84) 1,2-Diphenylhydrazine	13.58	77	740519	52.2241	ug/ml	98
87) 4,6-Dinitro-2-Methylphenol	13.52	198	118216	64.6232	ug/ml	93
88) n-Nitrosodiphenylamine	13.54	169	667425	49.5865	ug/ml	98
89) Sulfotep	13.76	322	112000	43.6654	ug/ml	88
90) Sym-Trinitrobenzene	13.83	75	135848	71.4085	ug/ml	97
91) Diallate	13.96	86	47859	8.6726	ug/ml	88
92) Phenacetin	13.86	108	353369	54.4190	ug/ml	98
93) Phorate	13.88	75	427582	54.5904	ug/ml#	99
94) 4-Bromophenyl Phenyl Ether	13.94	248	202187	43.3306	ug/ml	96
95) Hexachlorobenzene	14.14	284	209140	42.8318	ug/ml	96
96) Dimethoate	14.08	87	276813	54.9886	ug/ml	99

(#) = qualifier out of range (m) = manual integration
 5M47613.D MEGAMIX.M Mon Aug 27 10:52:59 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47613.D Vial: 2
 Acq On : 24 Aug 2007 4:48 pm Operator: ASP
 Sample : WG248656-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:53:42 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/16/07
 Last Update : Fri Aug 24 15:15:46 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

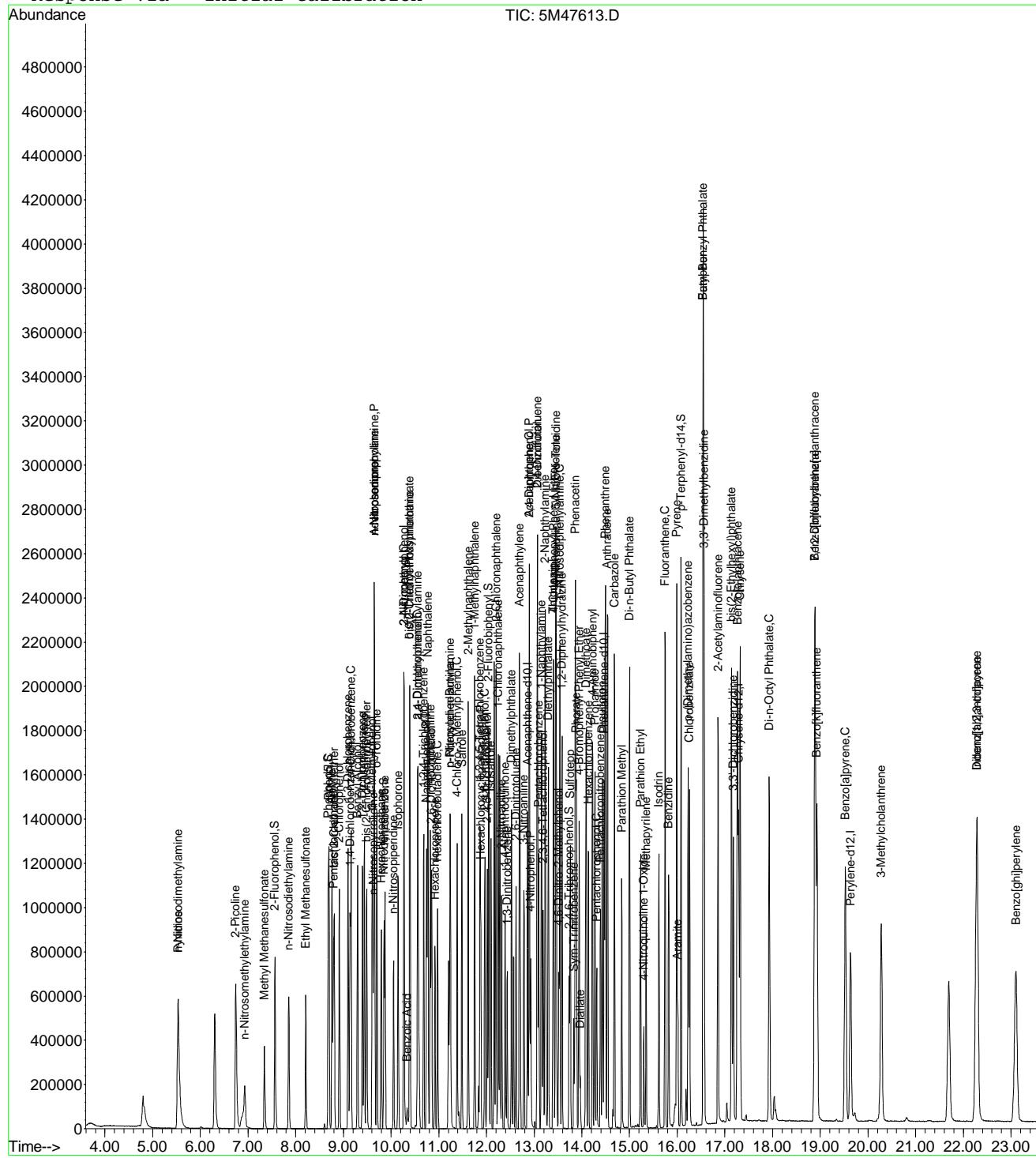
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
97) 4-Aminobiphenyl	14.22	169	742729	56.3387	ug/ml	100
98) Pentachlorophenol	14.31	266	99041	47.5787	ug/ml	99
99) Pronamide	14.27	173	304401	46.8678	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	70123	46.8649	ug/ml	99
101) Disulfoton	14.43	88	365549	51.4787	ug/ml	99
102) Phenanthrene	14.49	178	1129555	50.2914	ug/ml	99
103) Anthracene	14.54	178	1139975	49.9211	ug/ml	98
104) Carbazole	14.68	167	1037630	51.4471	ug/ml	99
105) Parathion Methyl	14.83	109	224146	67.4132	ug/ml	96
106) Di-n-Butyl Phthalate	15.00	149	1278072	50.7320	ug/ml	99
107) Parathion Ethyl	15.23	97	137012	58.5684	ug/ml	97
108) 4-Nitroquinoline 1-Oxide	15.30	190	55996	76.6812	ug/ml	95
109) Methapyrilene	15.35	58	329437	79.0045	ug/ml	96
110) Isodrin	15.61	193	112058	48.0225	ug/ml	97
111) Fluoranthene	15.74	202	1095991	47.8059	ug/ml	100
113) Benzidine	15.82	184	532679	92.5820	ug/ml	100
114) Pyrene	15.99	202	1176344	55.2122	ug/ml	99
115) Aramite	16.02	185	46184	57.2030	ug/ml	99
117) p-(Dimethylamino)azobenzene	16.23	225	233878	52.7163	ug/ml	92
118) Chlorobenzilate	16.26	251	311704	50.3124	ug/ml	96
119) Famphur	16.54	218	106116	42.8987	ug/ml	92
120) Butyl Benzyl Phthalate	16.55	149	549919	67.1023	ug/ml	99
121) 3,3'-Dimethylbenzidine	16.57	212	853337	60.1892	ug/ml	99
123) 2-Acetylaminofluorene	16.86	181	486791	66.5625	ug/ml	100
124) bis(2-Ethylhexyl)phthalate	17.14	149	817275	58.6225	ug/ml	100
125) 3,3'-Dichlorobenzidine	17.18	252	382642	57.0883	ug/ml	99
126) Benzo[a]anthracene	17.27	228	1077547	52.9904	ug/ml	99
127) Chrysene	17.32	228	1036146	52.6578	ug/ml	99
129) Di-n-Octyl Phthalate	17.93	149	1331015	54.4339	ug/ml	98
130) 7,12-Dimethylbenz[a]anthracene	18.88	256	491019	49.2605	ug/ml	100
131) Benzo[b]fluoranthene	18.89	252	1152643	52.3509	ug/ml	98
132) Benzo[k]fluoranthene	18.93	252	1016009	51.2455	ug/ml	99
133) Benzo[a]pyrene	19.53	252	1016885	51.4710	ug/ml	98
134) 3-Methylcholanthrene	20.28	268	562802	51.1918	ug/ml	99
135) Indeno[1,2,3-cd]pyrene	22.29	276	1153788	54.4412	ug/ml	98
136) Dibenz[ah]anthracene	22.28	278	996554	54.8073	ug/ml	99
137) Benzo[ghi]perylene	23.10	276	997194	56.3031	ug/ml	98

(#) = qualifier out of range (m) = manual integration
 5M47613.D MEGAMIX.M Mon Aug 27 10:52:59 2007

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082407\5M47613.D Vial: 2
Acq On : 24 Aug 2007 4:48 pm Operator: ASP
Sample : WG248656-02 50PPM MEGAMIX STD Inst : HPMS5
Misc : 1,1 STD21155 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 27 10:47 2007 Quant Results File: MEGAMIX.RES

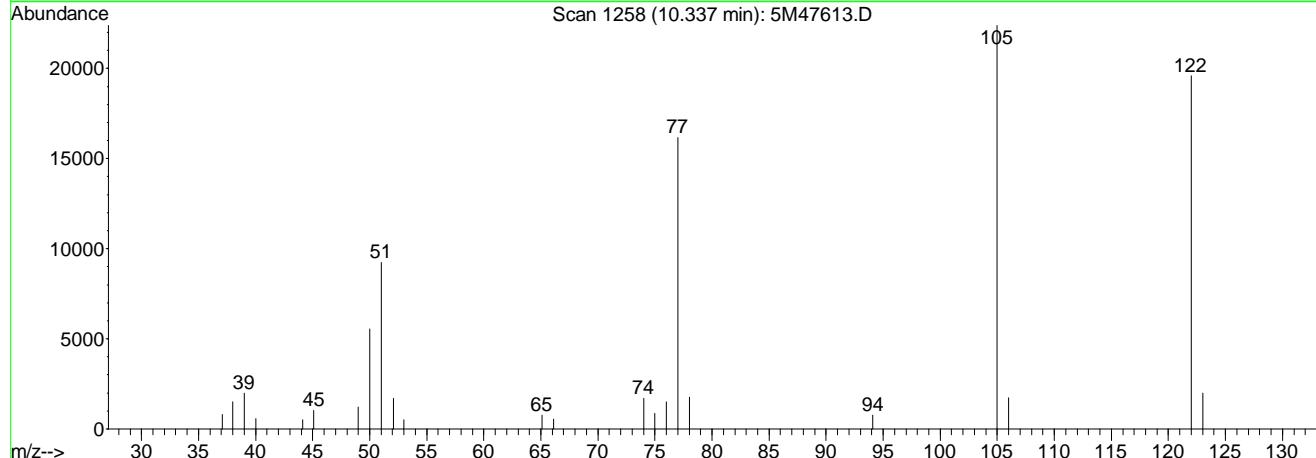
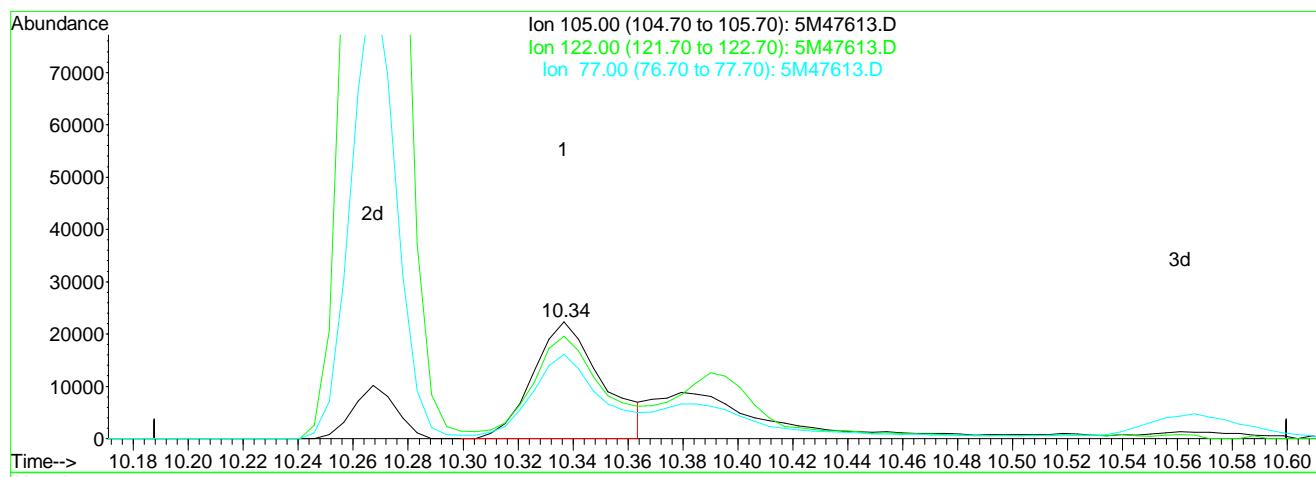
Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Mon Aug 27 10:51:11 2007
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47613.D Vial: 2
 Acq On : 24 Aug 2007 4:48 pm Operator: ASP
 Sample : WG248656-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 8:53 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:58:04 2007
 Response via : Single Level Calibration



TIC: 5M47613.D

(38) Benzoic Acid

10.34min 45.90ug/ml

response 38850

Ion Exp% Act%

105.00 100 100

122.00 71.70 87.56

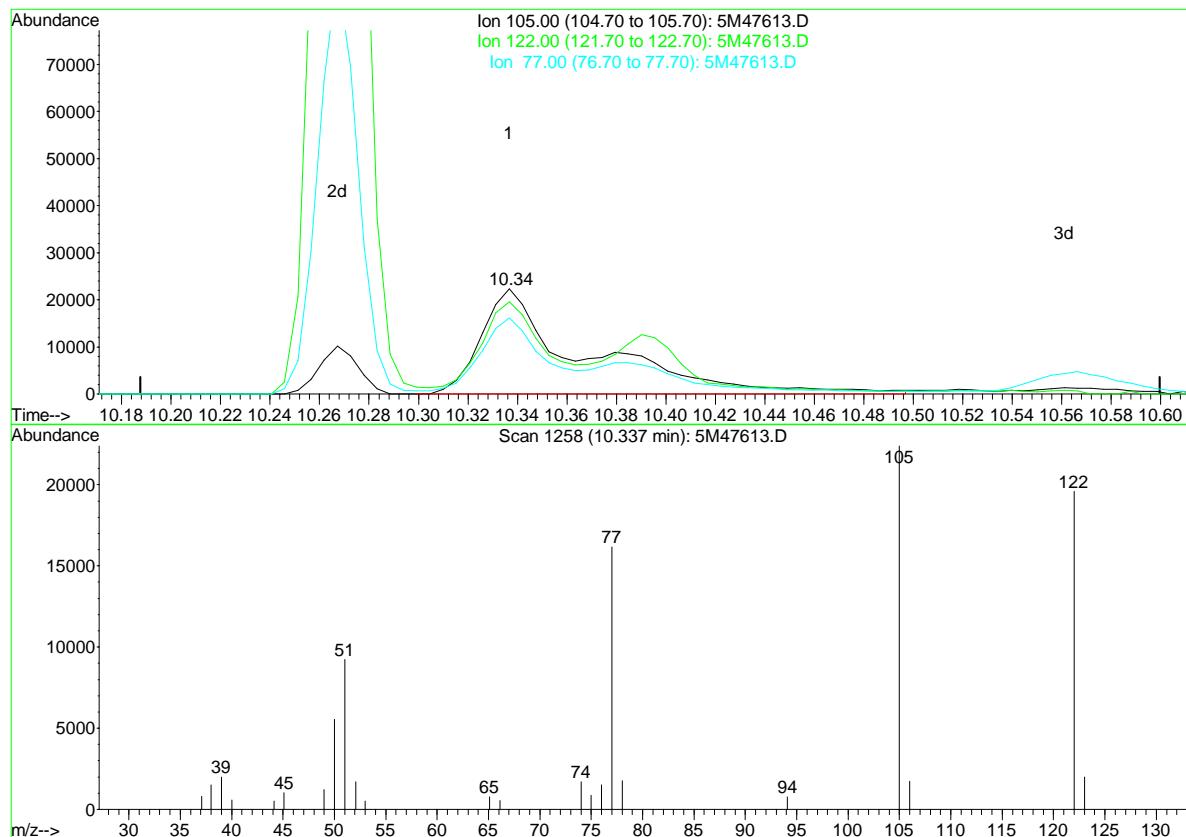
77.00 62.50 70.90

0.00 0.00 0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47613.D Vial: 2
 Acq On : 24 Aug 2007 4:48 pm Operator: ASP
 Sample : WG248656-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:47 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:58:04 2007
 Response via : Single Level Calibration



TIC: 5M47613.D		
(38) Benzoic Acid		
10.34min 56.27ug/ml m		
response 64888		
Ion Exp% Act%		
105.00	100	100
122.00	71.70	52.42
77.00	62.50	42.45
0.00	0.00	0.00

5M47613.D MEGAMIX.M Mon Aug 27 10:47:49 2007

Approved: August 27, 2007	Supervisor: August 27, 2007
Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak	
.	E. C. Baum

Data File : C:\MSDCHEM\1\DATA\082407\5M47614.D Vial: 3
 Acq On : 24 Aug 2007 5:23 pm Operator: ASP
 Sample : WG248656-03 3PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:22 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:16 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	221789	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	863353	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	435527	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.47	188	681285	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	679092	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	631932	40.00	ug/ml	0.00
System Monitoring Compounds						
7) 2-Fluorophenol	7.56	112	25347	3.3711	ug/ml	0.00
Spiked Amount 100.000	Range 21 - 100		Recovery	=	3.37%#	
11) Phenol-d5	8.68	99	30782	3.4161	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 94		Recovery	=	3.42%#	
30) Nitrobenzene-d5	9.85	82	23005	3.5110	ug/ml	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery	=	7.02%#	
58) 2-Fluorobiphenyl	12.05	172	53440	3.4203	ug/ml	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery	=	6.84%#	
85) 2,4,6-Tribromophenol	13.73	330	4945	2.5097	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 123		Recovery	=	2.51%#	
116) p-Terphenyl-d14	16.08	244	55208	3.4406	ug/ml	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery	=	6.88%#	
Target Compounds						
2) n-Nitrosodimethylamine	5.53	74	16715	3.4836	ug/ml#	94
3) Pyridine	5.55	79	29207	3.5529	ug/ml	96
4) 2-Picoline	6.75	93	29463	3.4892	ug/ml	97
5) n-Nitrosomethylethylamine	6.93	88	10108	2.7049	ug/ml	94
6) Methyl Methanesulfonate	7.35	80	13823	3.3265	ug/ml	97
8) n-Nitrosodiethylamine	7.85	102	12332	3.2115	ug/ml	92
9) Ethyl Methanesulfonate	8.21	79	19129	3.3839	ug/ml	99
10) Aniline	8.76	93	42111	3.5801	ug/ml	98
12) Phenol	8.70	94	34675	3.6409	ug/ml	99
13) bis(2-Chloroethyl)ether	8.81	63	21025	3.9174	ug/ml	98
14) Pentachloroethane	8.79	167	9605	3.0888	ug/ml	98
15) 2-Chlorophenol	8.92	128	27922	3.2700	ug/ml	99
16) 1,3-Dichlorobenzene	9.10	146	31209	3.2881	ug/ml	100
17) 1,4-Dichlorobenzene	9.16	146	32830	3.3675	ug/ml	95
18) Benzyl Alcohol	9.30	108	16871	3.2013	ug/ml	98
19) 1,2-Dichlorobenzene	9.40	146	29816	3.3017	ug/ml	100
20) 2-Methylphenol	9.43	107	20851	3.2261	ug/ml	99
21) bis(2-Chloroisopropyl)ethane	9.48	45	49106	4.3823	ug/ml	98
22) 3-,4-Methylphenol	9.60	107	27018	3.2258	ug/ml	99
23) n-Nitrosopyrrolidine	9.62	100	12326	3.3340	ug/ml#	97
24) n-Nitrosodipropylamine	9.65	70	19147	3.4914	ug/ml	69
25) Acetophenone	9.64	105	35286	3.5298	ug/ml	99
26) n-Nitrosomorpholine	9.64	56	17701	4.1234	ug/ml	99
27) o-Toluidine	9.70	106	39912	3.3624	ug/ml	99
28) Hexachloroethane	9.79	117	11106	3.1277	ug/ml	98
31) Nitrobenzene	9.87	77	25553	3.6111	ug/ml	98
32) n-Nitrosopiperidine	10.05	114	12803	3.2985	ug/ml	96
33) Isophorone	10.14	82	44773	3.2554	ug/ml	98
34) 2-Nitrophenol	10.27	139	12408	4.4162	ug/ml	97
35) 2,4-Dimethylphenol	10.27	122	25206	3.2532	ug/ml	100
36) 0,0,0-Triethyl Phosphorothioate	10.40	198	11562	2.8859	ug/ml	97
37) bis(2-Chloroethoxy)methane	10.39	93	40983	3.5888	ug/ml	99
38) Benzoic Acid	10.26	105	430	15.4092	ug/ml#	1

(#) = qualifier out of range (m) = manual integration
 5M47614.D MEGAMIX.M Mon Aug 27 10:53:01 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47614.D Vial: 3
 Acq On : 24 Aug 2007 5:23 pm Operator: ASP
 Sample : WG248656-03 3PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:22 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:16 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	19262	2.9478	ug/ml	99
40) a,a-Dimethylphenethylamine	10.50	58	59736	3.1733	ug/ml	98
41) 1,2,4-Trichlorobenzene	10.68	180	23866	3.1305	ug/ml	99
42) Naphthalene	10.77	128	83777	3.4269	ug/ml	99
43) 4-Chloroaniline	10.82	127	33928	3.3391	ug/ml	98
44) 2,6-Dichlorophenol	10.84	162	20545	3.0379	ug/ml	99
45) Hexachloropropene	10.92	213	11246	2.6544	ug/ml	96
46) Hexachlorobutadiene	10.97	225	11203	2.7158	ug/ml	98
47) n-Nitrosodi-n-Butylamine	11.23	84	15548	2.7486	ug/ml#	78
48) p-Phenylenediamine	11.24	108	17559	4.4435	ug/ml	96
49) 4-Chloro-3-Methylphenol	11.38	107	20566	2.9773	ug/ml	98
50) Safrole	11.48	162	19603	2.9634	ug/ml	99
51) 2-Methylnaphthalene	11.61	142	53946	3.2947	ug/ml	99
52) 1-Methylnaphthalene	11.75	142	52979	3.2725	ug/ml	98
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	20821	3.1524	ug/ml	97
55) Hexachlorocyclopentadiene	11.88	237	5691	3.9471	ug/ml	97
56) 2,4,6-Trichlorophenol	11.96	196	12884	3.0732	ug/ml	99
57) 2,4,5-Trichlorophenol	12.01	196	13264	2.9271	ug/ml	98
59) Isosafrole	12.09	162	19937	3.2828	ug/ml	99
60) 2-Chloronaphthalene	12.20	162	57540	3.5376	ug/ml	99
61) 1-Chloronaphthalene	12.24	162	45827	3.4366	ug/ml	99
62) 2-Nitroaniline	12.32	65	11078	3.5131	ug/ml	94
63) 1,4-Naphthoquinone	12.39	158	16491	2.9953	ug/ml	99
64) Dimethylphthalate	12.52	163	53802	3.3360	ug/ml	99
65) 1,3-Dinitrobenzene	12.43	168	5278	8.0571	ug/ml	96
66) 2,6-Dinitrotoluene	12.62	165	11165	4.1812	ug/ml	96
67) Acenaphthylene	12.69	152	79984	3.4978	ug/ml	99
68) 3-Nitroaniline	12.78	138	12786	3.4194	ug/ml	96
70) Acenaphthene	12.90	154	48630	3.3961	ug/ml	97
71) 4-Nitrophenol	12.92	65	5418	6.7592	ug/ml	97
72) 2,4-Dinitrotoluene	13.06	165	12057	4.0576	ug/ml	90
73) Pentachlorobenzene	13.09	250	18002	3.0019	ug/ml	99
74) Dibenzofuran	13.07	168	69220	3.5489	ug/ml	99
75) 2,3,4,6-Tetrachlorophenol	13.18	232	6150	4.3232	ug/ml	97
76) 1-Naphthylamine	13.15	143	47456	3.5328	ug/ml	99
77) 2-Naphthylamine	13.23	143	53984	3.6509	ug/ml	98
78) Diethylphthalate	13.29	149	54157	3.3693	ug/ml	99
79) Thionazin	13.39	107	8360	3.2758	ug/ml	96
80) Fluorene	13.45	166	57191	3.4111	ug/ml	98
81) 4-Chlorophenyl Phenyl Ethe	13.41	204	26383	3.2775	ug/ml	98
82) 4-Nitroaniline	13.46	138	14078	3.5617	ug/ml	91
83) 5-Nitro-o-Tolidine	13.46	152	13840	4.3002	ug/ml	95
84) 1,2-Diphenylhydrazine	13.58	77	53669	3.5355	ug/ml	98
87) 4,6-Dinitro-2-Methylphenol	13.52	198	2032	11.7114	ug/ml#	1
88) n-Nitrosodiphenylamine	13.54	169	47660	3.3514	ug/ml	98
89) Sulfotep	13.76	322	7562	2.8237	ug/ml	97
90) Sym-Trinitrobenzene	13.83	75	4396	8.1674	ug/ml	93
92) Phenacetin	13.85	108	21807	3.1570	ug/ml	97
93) Phorate	13.88	75	30750	3.6911	ug/ml#	99
94) 4-Bromophenyl Phenyl Ether	13.94	248	14329	2.9466	ug/ml	98
95) Hexachlorobenzene	14.14	284	15433	3.0321	ug/ml	97
96) Dimethoate	14.08	87	19679	3.6527	ug/ml	98
97) 4-Aminobiphenyl	14.22	169	50449	3.5733	ug/ml	99
98) Pentachlorophenol	14.31	266	761	9.7387	ug/ml#	50

(#) = qualifier out of range (m) = manual integration
 5M47614.D MEGAMIX.M Mon Aug 27 10:53:02 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47614.D Vial: 3
 Acq On : 24 Aug 2007 5:23 pm Operator: ASP
 Sample : WG248656-03 3PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:22 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:16 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
99) Pronamide	14.27	173	20041	2.9437	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	4000	2.5595	ug/ml	98
101) Disulfoton	14.43	88	24940	3.3230	ug/ml	100
102) Phenanthrene	14.49	178	85025	3.5743	ug/ml	99
103) Anthracene	14.54	178	82956	3.4327	ug/ml	100
104) Carbazole	14.68	167	74551	3.4908	ug/ml	100
106) Di-n-Butyl Phthalate	15.00	149	87284	3.2717	ug/ml	100
107) Parathion Ethyl	15.23	97	6219	4.8926	ug/ml#	92
108) 4-Nitroquinoline 1-Oxide	15.30	190	889	10.0198	ug/ml#	53
110) Isodrin	15.62	193	8255	3.3537	ug/ml#	46
111) Fluoranthene	15.74	202	81113	3.3595	ug/ml	98
114) Pyrene	15.99	202	86225	3.6101	ug/ml	99
115) Aramite	16.01	185	2529	2.7965	ug/ml#	83
117) p-(Dimethylamino)azobenzene	16.23	225	14706	2.9871	ug/ml	97
118) Chlorobenzilate	16.26	251	20239	2.9600	ug/ml	97
119) Famphur	16.53	218	26545	9.2626	ug/ml#	89
120) Butyl Benzyl Phthalate	16.54	149	41625	Below Cal		99
121) 3,3'-Dimethylbenzidine	16.56	212	64871	4.0433	ug/ml	100
123) 2-Acetylaminofluorene	16.85	181	24531	2.9485	ug/ml	98
124) bis(2-Ethylhexyl)phthalate	17.14	149	66671	4.2488	ug/ml	99
125) 3,3'-Dichlorobenzidine	17.18	252	25884	3.4406	ug/ml	98
126) Benzo[alanthracene	17.26	228	77750	3.4330	ug/ml	99
127) Chrysene	17.31	228	76140	3.4754	ug/ml	99
129) Di-n-Octyl Phthalate	17.93	149	80136	3.0672	ug/ml	92
130) 7,12-Dimethylbenz[a]anthra	18.88	256	30622	2.8945	ug/ml	100
131) Benzo[b]fluoranthene	18.88	252	78753	3.3322	ug/ml	99
132) Benzo[k]fluoranthene	18.92	252	74239	3.5027	ug/ml	99
133) Benzo[a]pyrene	19.52	252	65524	3.1149	ug/ml	99
134) 3-Methylcholanthrene	20.27	268	33860	2.8972	ug/ml	98
135) Indeno[1,2,3-cd]pyrene	22.27	276	72830	3.2076	ug/ml	98
136) Dibenz[ah]anthracene	22.26	278	62582	3.2108	ug/ml	100
137) Benzo[ghi]perylene	23.08	276	63342	3.3219	ug/ml	99

(#) = qualifier out of range (m) = manual integration
 5M47614.D MEGAMIX.M Mon Aug 27 10:53:02 2007

Quantitation Report

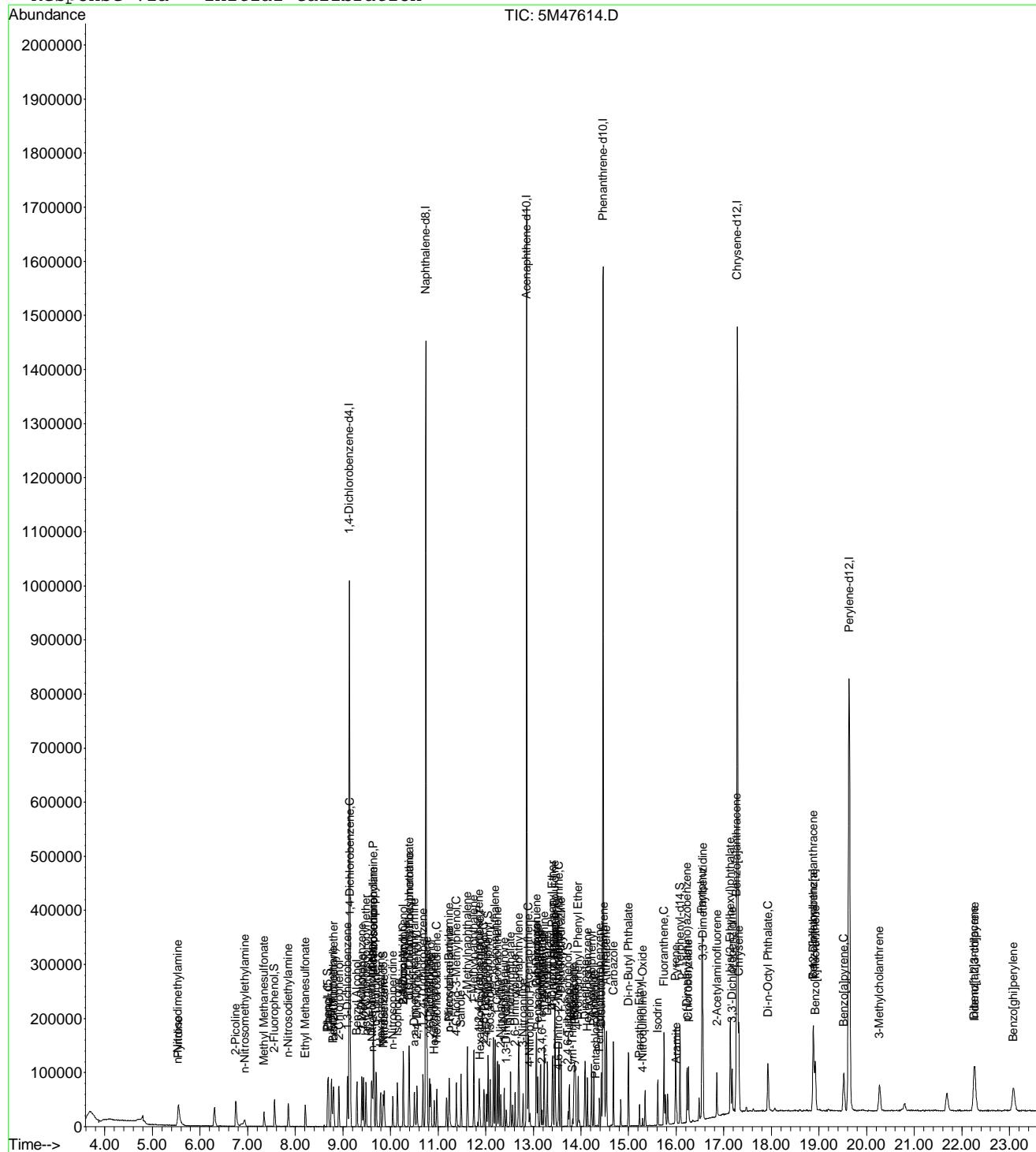
(Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082407\5M47614.D
Acq On : 24 Aug 2007 5:23 pm
Sample : WG248656-03 3PPM MEGAMIX STD
Misc : 1,1 STD21155
MS Integration Params: RTEINT.P
Quant Time: Aug 25 8:54 2007

Vial: 3
Operator: ASP
Inst : HPMS5
Multiplr: 1.00

Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Mon Aug 27 10:51:11 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\082407\5M47615.D Vial: 4
 Acq On : 24 Aug 2007 5:58 pm Operator: ASP
 Sample : WG248656-04 10PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:37 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:31 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	199422	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	780235	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	399130	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	633593	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	639580	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	604144	40.00	ug/ml	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
7) 2-Fluorophenol	7.56	112	71887	10.5560	ug/ml	0.00
Spiked Amount 100.000	Range 21 - 100		Recovery	=	10.56%#	
11) Phenol-d5	8.68	99	87541	10.6849	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 94		Recovery	=	10.68%	
30) Nitrobenzene-d5	9.85	82	65262	10.5734	ug/ml	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery	=	21.14%#	
58) 2-Fluorobiphenyl	12.05	172	149661	10.4862	ug/ml	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery	=	20.98%#	
85) 2,4,6-Tribromophenol	13.73	330	16557	9.0418	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 123		Recovery	=	9.04%#	
116) p-Terphenyl-d14	16.08	244	157662	10.4940	ug/ml	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery	=	20.98%#	

Target Compounds	R.T.	QIon	Response	Conc	Qvalue
2) n-Nitrosodimethylamine	5.53	74	47099	10.8167	ug/ml 98
3) Pyridine	5.54	79	81443	10.8565	ug/ml 98
4) 2-Picoline	6.74	93	81730	10.6986	ug/ml 98
5) n-Nitrosomethylethylamine	6.93	88	33453	10.2791	ug/ml 99
6) Methyl Methanesulfonate	7.34	80	37741	10.1609	ug/ml 99
8) n-Nitrosodiethylamine	7.85	102	34886	10.1504	ug/ml 98
9) Ethyl Methanesulfonate	8.21	79	53029	10.4364	ug/ml 98
10) Aniline	8.76	93	117421	10.9454	ug/ml 99
12) Phenol	8.69	94	96065	11.0482	ug/ml 99
13) bis(2-Chloroethyl)ether	8.81	63	54987	11.1878	ug/ml 98
14) Pentachloroethane	8.79	167	27483	9.9591	ug/ml 97
15) 2-Chlorophenol	8.92	128	78928	10.2555	ug/ml 99
16) 1,3-Dichlorobenzene	9.10	146	88414	10.3914	ug/ml 99
17) 1,4-Dichlorobenzene	9.16	146	91320	10.4241	ug/ml 99
18) Benzyl Alcohol	9.30	108	47887	10.0345	ug/ml 99
19) 1,2-Dichlorobenzene	9.40	146	83166	10.2572	ug/ml 100
20) 2-Methylphenol	9.44	107	58349	10.0528	ug/ml 100
21) bis(2-Chloroisopropyl)ethane	9.48	45	127762	12.2467	ug/ml 100
22) 3-,4-Methylphenol	9.60	107	76524	10.1316	ug/ml 99
23) n-Nitrosopyrrolidine	9.62	100	36159	10.8080	ug/ml# 91
24) n-Nitrosodipropylamine	9.65	70	52333	10.7115	ug/ml# 66
25) Acetophenone	9.64	105	95929	10.6333	ug/ml 99
26) n-Nitrosomorpholine	9.64	56	47269	11.9904	ug/ml 99
27) o-Toluidine	9.70	106	110707	10.3319	ug/ml 100
28) Hexachloroethane	9.79	117	32017	10.1268	ug/ml 98
31) Nitrobenzene	9.87	77	71058	10.7642	ug/ml 98
32) n-Nitrosopiperidine	10.05	114	35944	10.2275	ug/ml 98
33) Isophorone	10.15	82	119672	9.7382	ug/ml 99
34) 2-Nitrophenol	10.27	139	38069	11.1414	ug/ml 99
35) 2,4-Dimethylphenol	10.26	122	70742	10.1145	ug/ml 98
36) O,O,O-Triethyl Phosphorothioate	10.40	198	33599	9.5122	ug/ml 98
37) bis(2-Chloroethoxy)methane	10.39	93	111283	10.7324	ug/ml 99
38) Benzoic Acid	10.34	105	2396	18.6458	ug/ml# 45

(#) = qualifier out of range (m) = manual integration
 5M47615.D MEGAMIX.M Mon Aug 27 10:53:04 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47615.D Vial: 4
 Acq On : 24 Aug 2007 5:58 pm Operator: ASP
 Sample : WG248656-04 10PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:37 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:31 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	57592	9.7598	ug/ml	99
40) a,a-Dimethylphenethylamine	10.51	58	194213	11.3627	ug/ml	100
41) 1,2,4-Trichlorobenzene	10.68	180	68142	10.0096	ug/ml	99
42) Naphthalene	10.77	128	231167	10.4932	ug/ml	99
43) 4-Chloroaniline	10.82	127	97677	10.5388	ug/ml	99
44) 2,6-Dichlorophenol	10.85	162	58812	9.6587	ug/ml	99
45) Hexachloropropene	10.92	213	33823	8.8498	ug/ml	99
46) Hexachlorobutadiene	10.97	225	33012	9.0886	ug/ml	98
47) n-Nitrosodi-n-Butylamine	11.23	84	43653	8.6929	ug/ml#	80
48) p-Phenylenediamine	11.24	108	67366	13.8476	ug/ml	96
49) 4-Chloro-3-Methylphenol	11.38	107	60415	9.7393	ug/ml	100
50) Safrole	11.48	162	56464	9.5487	ug/ml	99
51) 2-Methylnaphthalene	11.62	142	153291	10.4103	ug/ml	99
52) 1-Methylnaphthalene	11.75	142	149778	10.3134	ug/ml	100
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	60777	10.1673	ug/ml	99
55) Hexachlorocyclopentadiene	11.88	237	22311	9.6140	ug/ml	98
56) 2,4,6-Trichlorophenol	11.96	196	38442	9.8686	ug/ml	98
57) 2,4,5-Trichlorophenol	12.02	196	42128	10.1450	ug/ml	99
59) Isosafrole	12.09	162	56530	10.1401	ug/ml	99
60) 2-Chloronaphthalene	12.20	162	161725	10.8178	ug/ml	99
61) 1-Chloronaphthalene	12.24	162	128551	10.5904	ug/ml	99
62) 2-Nitroaniline	12.31	65	33495	11.5907	ug/ml	99
63) 1,4-Naphthoquinone	12.39	158	52594	10.5660	ug/ml	99
64) Dimethylphthalate	12.52	163	151624	10.3300	ug/ml	99
65) 1,3-Dinitrobenzene	12.43	168	17606	13.4679	ug/ml	98
66) 2,6-Dinitrotoluene	12.61	165	34095	10.6430	ug/ml	99
67) Acenaphthylene	12.69	152	229136	10.9214	ug/ml	99
68) 3-Nitroaniline	12.78	138	40335	11.7707	ug/ml	99
69) 2,4-Dinitrophenol	12.90	184	2813	15.0442	ug/ml#	1
70) Acenaphthene	12.90	154	140044	10.6979	ug/ml	99
71) 4-Nitrophenol	12.92	65	21325	13.9871	ug/ml	97
72) 2,4-Dinitrotoluene	13.06	165	38828	10.7092	ug/ml	94
73) Pentachlorobenzene	13.09	250	52016	9.6133	ug/ml	99
74) Dibenzofuran	13.07	168	193708	10.8430	ug/ml	98
75) 2,3,4,6-Tetrachlorophenol	13.19	232	24291	9.6889	ug/ml	99
76) 1-Naphthylamine	13.15	143	140788	11.3320	ug/ml	99
77) 2-Naphthylamine	13.22	143	143782	12.9902	ug/ml	99
78) Diethylphthalate	13.29	149	150653	10.2781	ug/ml	100
79) Thionazin	13.39	107	23232	10.0250	ug/ml	98
80) Fluorene	13.45	166	161347	10.5372	ug/ml	100
81) 4-Chlorophenyl Phenyl Ether	13.41	204	74401	10.1522	ug/ml	99
82) 4-Nitroaniline	13.46	138	44072	12.1669	ug/ml	98
83) 5-Nitro-o-Tolidine	13.46	152	42579	11.5400	ug/ml	100
84) 1,2-Diphenylhydrazine	13.58	77	148836	10.7368	ug/ml	100
87) 4,6-Dinitro-2-Methylphenol	13.51	198	12049	15.4915	ug/ml#	1
88) n-Nitrosodiphenylamine	13.53	169	137033	10.4178	ug/ml	99
89) Sulfotep	13.76	322	22442	9.1718	ug/ml	98
90) Sym-Trinitrotoluene	13.82	75	16366	13.0333	ug/ml	98
92) Phenacetin	13.85	108	65874	10.3301	ug/ml	99
93) Phorate	13.88	75	87037	11.1980	ug/ml#	99
94) 4-Bromophenyl Phenyl Ether	13.94	248	41228	9.2740	ug/ml	99
95) Hexachlorobenzene	14.14	284	43568	9.3564	ug/ml	98
96) Dimethoate	14.08	87	58137	11.4522	ug/ml	99
97) 4-Aminobiphenyl	14.22	169	147016	11.1346	ug/ml	99

(#) = qualifier out of range (m) = manual integration
 5M47615.D MEGAMIX.M Mon Aug 27 10:53:04 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47615.D Vial: 4
 Acq On : 24 Aug 2007 5:58 pm Operator: ASP
 Sample : WG248656-04 10PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:37 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:31 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
98) Pentachlorophenol	14.31	266	7688	12.4703	ug/ml	97
99) Pronamide	14.27	173	59557	9.5799	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	13282	9.0581	ug/ml	98
101) Disulfoton	14.42	88	72304	10.4360	ug/ml	98
102) Phenanthrene	14.49	178	238484	10.7691	ug/ml	99
103) Anthracene	14.54	178	236057	10.5734	ug/ml	99
104) Carbazole	14.68	167	212190	10.6586	ug/ml	100
105) Parathion Methyl	14.84	109	38655	10.3506	ug/ml	100
106) Di-n-Butyl Phthalate	15.00	149	257268	10.5069	ug/ml	99
107) Parathion Ethyl	15.23	97	21501	10.9374	ug/ml	99
108) 4-Nitroquinoline 1-Oxide	15.30	190	5266	13.9912	ug/ml#	89
109) Methapyrilene	15.34	58	74709	10.4305	ug/ml	99
110) Isodrin	15.62	193	23141	10.1790	ug/ml	97
111) Fluoranthene	15.74	202	232827	10.4592	ug/ml	99
113) Benzidine	15.82	184	99349	13.8895	ug/ml	100
114) Pyrene	15.99	202	248297	11.0239	ug/ml	99
115) Aramite	16.01	185	8260	9.7574	ug/ml#	88
117) p-(Dimethylamino)azobenzene	16.23	225	44693	9.6595	ug/ml	99
118) Chlorobenzilate	16.26	251	61089	9.5095	ug/ml	99
119) Famphur	16.54	218	72519	23.8377	ug/ml#	87
120) Butyl Benzyl Phthalate	16.55	149	117651	7.4551	ug/ml	100
121) 3,3'-Dimethylbenzidine	16.56	212	156347	10.3107	ug/ml	100
123) 2-Acetylaminofluorene	16.85	181	84514	10.4363	ug/ml	98
124) bis(2-Ethylhexyl)phthalate	17.14	149	158624	10.3487	ug/ml	100
125) 3,3'-Dichlorobenzidine	17.18	252	76185	10.6156	ug/ml	99
126) Benzo[a]anthracene	17.26	228	225999	10.5897	ug/ml	100
127) Chrysene	17.32	228	220028	10.6797	ug/ml	99
129) Di-n-Octyl Phthalate	17.93	149	241470	9.7075	ug/ml	98
130) 7,12-Dimethylbenz[a]anthra	18.87	256	101803	10.2065	ug/ml	99
131) Benzo[b]fluoranthene	18.88	252	240609	10.5427	ug/ml	98
132) Benzo[k]fluoranthene	18.92	252	212977	10.4735	ug/ml	98
133) Benzo[a]pyrene	19.52	252	206409	10.2708	ug/ml	99
134) 3-Methylcholanthrene	20.27	268	107595	9.6697	ug/ml	99
135) Indeno[1,2,3-cd]pyrene	22.27	276	229033	10.4172	ug/ml	99
136) Dibenz[ah]anthracene	22.26	278	197134	10.4161	ug/ml	100
137) Benzo[ghi]perylene	23.08	276	196966	10.6244	ug/ml	99

(#) = qualifier out of range (m) = manual integration
 5M47615.D MEGAMIX.M Mon Aug 27 10:53:04 2007

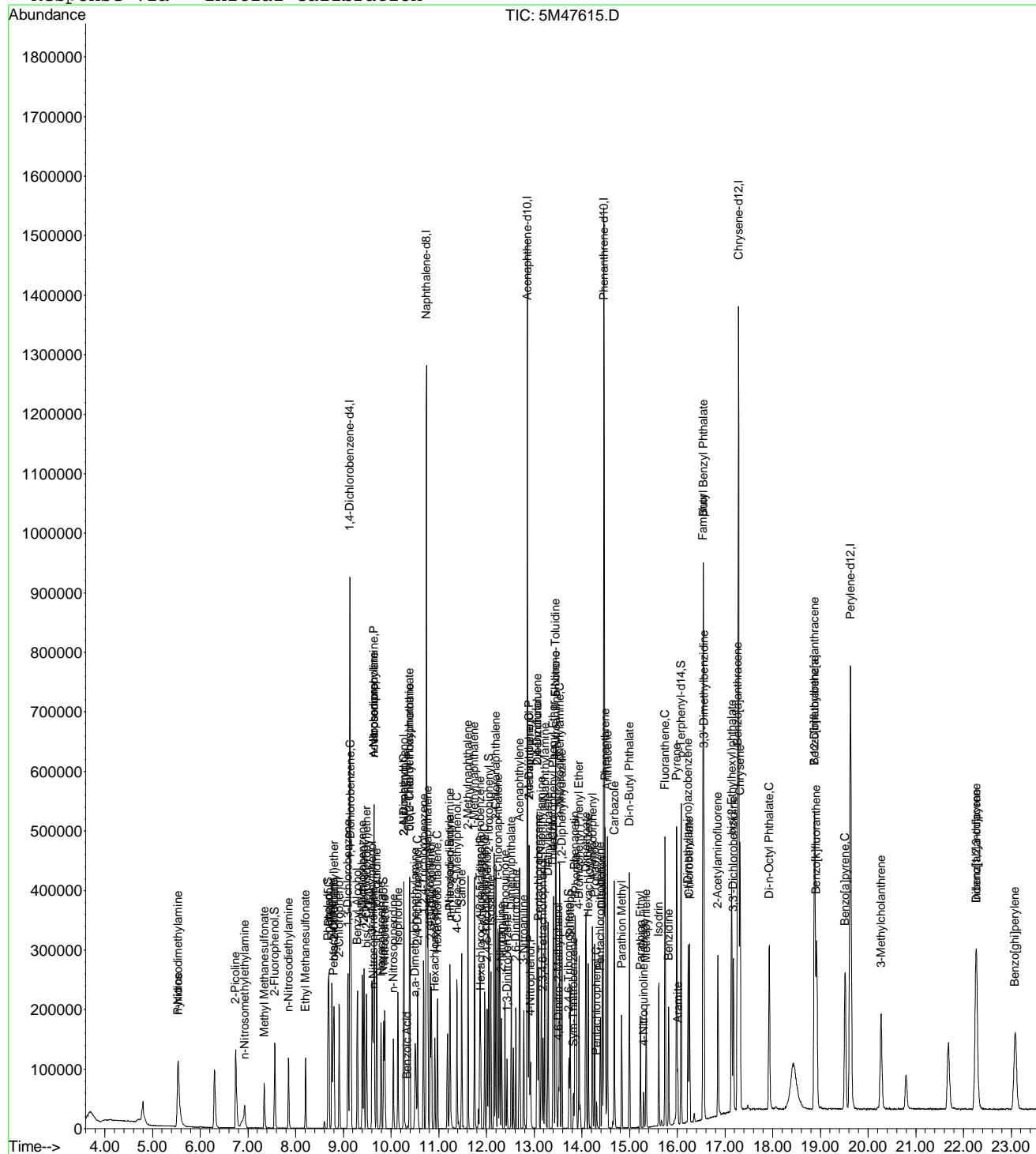
Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082407\5M47615.D
Acq On : 24 Aug 2007 5:58 pm
Sample : WG248656-04 10PPM MEGAMIX STD
Misc : 1,1 STD21155
MS Integration Params: RTEINT.P
Quant Time: Aug 25 8:54 2007

Vial: 4
Operator: ASP
Inst : HPM55
Multiplr: 1.00

Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Mon Aug 27 10:51:11 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\082407\5M47616.D Vial: 5
 Acq On : 24 Aug 2007 6:33 pm Operator: ASP
 Sample : WG248656-05 15PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:49 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:42 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	230175	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	901148	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	466284	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	752298	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	759999	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	713778	40.00	ug/ml	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
7) 2-Fluorophenol	7.56	112	122306	15.4317	ug/ml	0.00
Spiked Amount 100.000	Range 21 - 100		Recovery	=	15.43%#	
11) Phenol-d5	8.68	99	150599	15.7776	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 94		Recovery	=	15.78%	
30) Nitrobenzene-d5	9.85	82	111651	15.2411	ug/ml	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery	=	30.48%#	
58) 2-Fluorobiphenyl	12.05	172	262312	15.8049	ug/ml	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery	=	31.60%#	
85) 2,4,6-Tribromophenol	13.73	330	31316	14.6454	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 123		Recovery	=	14.65%	
116) p-Terphenyl-d14	16.08	244	275245	15.5369	ug/ml	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery	=	31.08%#	

Target Compounds	R.T.	QIon	Response	Conc	Qvalue
2) n-Nitrosodimethylamine	5.53	74	80272	15.7562	ug/ml 100
3) Pyridine	5.54	79	137178	15.6419	ug/ml 97
4) 2-Picoline	6.74	93	139063	15.6196	ug/ml 98
5) n-Nitrosomethylmethylethylamine	6.93	88	58173	15.5028	ug/ml 98
6) Methyl Methanesulfonate	7.34	80	63905	14.9348	ug/ml 99
8) n-Nitrosodiethylamine	7.85	102	59952	15.1109	ug/ml 99
9) Ethyl Methanesulfonate	8.21	79	90900	15.4329	ug/ml 99
10) Aniline	8.76	93	201479	16.0540	ug/ml 99
12) Phenol	8.69	94	163193	16.0052	ug/ml 98
13) bis(2-Chloroethyl)ether	8.81	63	93198	16.1885	ug/ml 98
14) Pentachloroethane	8.79	167	46602	14.7323	ug/ml 99
15) 2-Chlorophenol	8.91	128	136221	15.2796	ug/ml 98
16) 1,3-Dichlorobenzene	9.10	146	151845	15.4745	ug/ml 100
17) 1,4-Dichlorobenzene	9.16	146	155578	15.3746	ug/ml 100
18) Benzyl Alcohol	9.30	108	84026	15.1996	ug/ml 98
19) 1,2-Dichlorobenzene	9.40	146	142665	15.2734	ug/ml 99
20) 2-Methylphenol	9.43	107	101277	15.1649	ug/ml 99
21) bis(2-Chloroisopropyl)ethane	9.48	45	214134	17.2095	ug/ml 98
22) 3-,4-Methylphenol	9.60	107	132976	15.2357	ug/ml 99
23) n-Nitrosopyrrolidine	9.62	100	62011	15.8736	ug/ml# 88
24) n-Nitrosodipropylamine	9.65	70	89059	15.7850	ug/ml# 65
25) Acetophenone	9.64	105	162753	15.6120	ug/ml 100
26) n-Nitrosomorpholine	9.64	56	79987	17.2229	ug/ml 99
27) o-Toluidine	9.70	106	189899	15.3054	ug/ml 100
28) Hexachloroethane	9.79	117	54803	15.0440	ug/ml 97
31) Nitrobenzene	9.87	77	121279	15.6123	ug/ml 99
32) n-Nitrosopiperidine	10.05	114	62940	15.4824	ug/ml 95
33) Isophorone	10.15	82	208242	14.8151	ug/ml 99
34) 2-Nitrophenol	10.27	139	68833	16.1044	ug/ml 99
35) 2,4-Dimethylphenol	10.26	122	124608	15.4724	ug/ml 100
36) O,O,O-Triethyl Phosphorothioate	10.40	198	59339	14.8502	ug/ml 96
37) bis(2-Chloroethoxy)methane	10.39	93	189582	15.7911	ug/ml 100
38) Benzoic Acid	10.35	105	5673	21.7790	ug/ml 89

(#) = qualifier out of range (m) = manual integration
 5M47616.D MEGAMIX.M Mon Aug 27 10:53:06 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47616.D Vial: 5
 Acq On : 24 Aug 2007 6:33 pm Operator: ASP
 Sample : WG248656-05 15PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:49 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:42 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	101540	14.9099	ug/ml	99
40) a,a-Dimethylphenethylamine	10.53	58	339421	16.8410	ug/ml	99
41) 1,2,4-Trichlorobenzene	10.68	180	118065	15.1568	ug/ml	100
42) Naphthalene	10.77	128	396800	15.6489	ug/ml	99
43) 4-Chloroaniline	10.82	127	171206	15.8428	ug/ml	99
44) 2,6-Dichlorophenol	10.85	162	104234	14.9392	ug/ml	99
45) Hexachloropropene	10.92	213	61756	14.1329	ug/ml	99
46) Hexachlorobutadiene	10.97	225	57366	14.0344	ug/ml	99
47) n-Nitrosodi-n-Butylamine	11.23	84	73560	12.8017	ug/ml#	81
48) p-Phenylenediamine	11.24	108	120484	18.4982	ug/ml	98
49) 4-Chloro-3-Methylphenol	11.38	107	106247	14.8767	ug/ml	99
50) Safrole	11.48	162	100217	14.8873	ug/ml	97
51) 2-Methylnaphthalene	11.62	142	263512	15.5679	ug/ml	100
52) 1-Methylnaphthalene	11.75	142	259891	15.5931	ug/ml	100
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	105786	15.2938	ug/ml	100
55) Hexachlorocyclopentadiene	11.88	237	45141	14.9723	ug/ml	99
56) 2,4,6-Trichlorophenol	11.96	196	70115	15.3391	ug/ml	99
57) 2,4,5-Trichlorophenol	12.02	196	75846	15.5602	ug/ml	99
59) Isosafrole	12.09	162	101607	15.6667	ug/ml	98
60) 2-Chloronaphthalene	12.20	162	279115	15.9548	ug/ml	99
61) 1-Chloronaphthalene	12.24	162	226057	15.9570	ug/ml	98
62) 2-Nitroaniline	12.32	65	59653	16.6949	ug/ml	95
63) 1,4-Naphthoquinone	12.39	158	97145	16.8572	ug/ml	97
64) Dimethylphthalate	12.52	163	264448	15.5211	ug/ml	100
65) 1,3-Dinitrobenzene	12.43	168	34706	18.1091	ug/ml	98
66) 2,6-Dinitrotoluene	12.62	165	63013	15.8609	ug/ml	98
67) Acenaphthylene	12.69	152	401370	16.3465	ug/ml	100
68) 3-Nitroaniline	12.78	138	72128	17.0871	ug/ml	99
69) 2,4-Dinitrophenol	12.90	184	10270	19.7900	ug/ml#	1
70) Acenaphthene	12.89	154	243752	15.9436	ug/ml	99
71) 4-Nitrophenol	12.92	65	41161	20.1317	ug/ml	97
72) 2,4-Dinitrotoluene	13.06	165	73825	16.1762	ug/ml	100
73) Pentachlorobenzene	13.10	250	92302	14.8472	ug/ml	98
74) Dibenzofuran	13.07	168	337352	16.2010	ug/ml	99
75) 2,3,4,6-Tetrachlorophenol	13.19	232	47669	14.4931	ug/ml	99
76) 1-Naphthylamine	13.15	143	242359	16.4427	ug/ml	99
77) 2-Naphthylamine	13.22	143	226432	17.3477	ug/ml	98
78) Diethylphthalate	13.29	149	264579	15.5367	ug/ml	100
79) Thionazin	13.39	107	40920	15.2965	ug/ml	99
80) Fluorene	13.45	166	283620	15.9282	ug/ml	99
81) 4-Chlorophenyl Phenyl Ethe	13.41	204	130368	15.3973	ug/ml	99
82) 4-Nitroaniline	13.46	138	79429	17.6564	ug/ml	100
83) 5-Nitro-o-Tolidine	13.46	152	75832	16.5157	ug/ml	99
84) 1,2-Diphenylhydrazine	13.58	77	255982	15.7656	ug/ml	98
87) 4,6-Dinitro-2-Methylphenol	13.51	198	28498	19.9730	ug/ml#	10
88) n-Nitrosodiphenylamine	13.53	169	242348	15.5936	ug/ml	99
89) Sulfotep	13.76	322	41933	14.7599	ug/ml	93
90) Sym-Trinitrobenzene	13.83	75	34277	17.4144	ug/ml	98
91) Diallate	13.97	86	16189	3.8975	ug/ml	95
92) Phenacetin	13.85	108	119382	15.7099	ug/ml	99
93) Phorate	13.88	75	148056	15.9525	ug/ml#	100
94) 4-Bromophenyl Phenyl Ether	13.94	248	73881	14.2632	ug/ml	99
95) Hexachlorobenzene	14.14	284	78225	14.4332	ug/ml	97
96) Dimethoate	14.08	87	102541	16.8351	ug/ml	99

(#) = qualifier out of range (m) = manual integration
 5M47616.D MEGAMIX.M Mon Aug 27 10:53:06 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47616.D Vial: 5
 Acq On : 24 Aug 2007 6:33 pm Operator: ASP
 Sample : WG248656-05 15PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:54:49 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:42 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
97) 4-Aminobiphenyl	14.22	169	261530	16.3170	ug/ml	99
98) Pentachlorophenol	14.31	266	21172	16.4397	ug/ml	98
99) Pronamide	14.27	173	107643	14.8165	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	23841	13.8056	ug/ml	98
101) Disulfoton	14.43	88	125883	15.3140	ug/ml	99
102) Phenanthrene	14.49	178	417999	15.9435	ug/ml	100
103) Anthracene	14.54	178	418510	15.8807	ug/ml	100
104) Carbazole	14.68	167	376550	15.9113	ug/ml	100
105) Parathion Methyl	14.83	109	73477	16.2245	ug/ml	99
106) Di-n-Butyl Phthalate	15.00	149	457980	15.8804	ug/ml	100
107) Parathion Ethyl	15.23	97	41483	15.6546	ug/ml	98
108) 4-Nitroquinoline 1-Oxide	15.30	190	12452	17.7468	ug/ml	93
109) Methapyrilene	15.34	58	121677	14.9282	ug/ml	98
110) Isodrin	15.62	193	40145	14.9999	ug/ml	99
111) Fluoranthene	15.75	202	410731	15.6888	ug/ml	99
113) Benzidine	15.82	184	179043	19.2958	ug/ml	100
114) Pyrene	15.99	202	441498	16.4647	ug/ml	99
115) Aramite	16.01	185	15391	15.3509	ug/ml	92
117) p-(Dimethylamino)azobenzene	16.23	225	82971	15.2025	ug/ml	92
118) Chlorobenzilate	16.26	251	111308	14.6947	ug/ml	97
119) Famphur	16.54	218	112191	28.8366	ug/ml#	86
120) Butyl Benzyl Phthalate	16.55	149	202827	14.1127	ug/ml	99
121) 3,3'-Dimethylbenzidine	16.56	212	310870	17.0351	ug/ml	99
123) 2-Acetylaminofluorene	16.85	181	159004	16.1349	ug/ml	98
124) bis(2-Ethylhexyl)phthalate	17.13	149	281391	15.3739	ug/ml	100
125) 3,3'-Dichlorobenzidine	17.18	252	137568	16.0204	ug/ml	98
126) Benzo[a]anthracene	17.26	228	401392	15.8063	ug/ml	100
127) Chrysene	17.32	228	388898	15.8843	ug/ml	99
129) Di-n-Octyl Phthalate	17.92	149	439778	15.0349	ug/ml	100
130) 7,12-Dimethylbenz[a]anthracene	18.88	256	179469	15.3442	ug/ml	99
131) Benzo[b]fluoranthene	18.88	252	419999	15.5073	ug/ml	99
132) Benzo[k]fluoranthene	18.92	252	393072	16.3161	ug/ml	96
133) Benzo[a]pyrene	19.52	252	366581	15.4186	ug/ml	99
134) 3-Methylcholanthrene	20.27	268	195839	14.9940	ug/ml	98
135) Indeno[1,2,3-cd]pyrene	22.27	276	417588	15.9426	ug/ml	98
136) Dibenz[ah]anthracene	22.26	278	362360	16.0452	ug/ml	99
137) Benzo[ghi]perylene	23.08	276	359637	16.2208	ug/ml	99

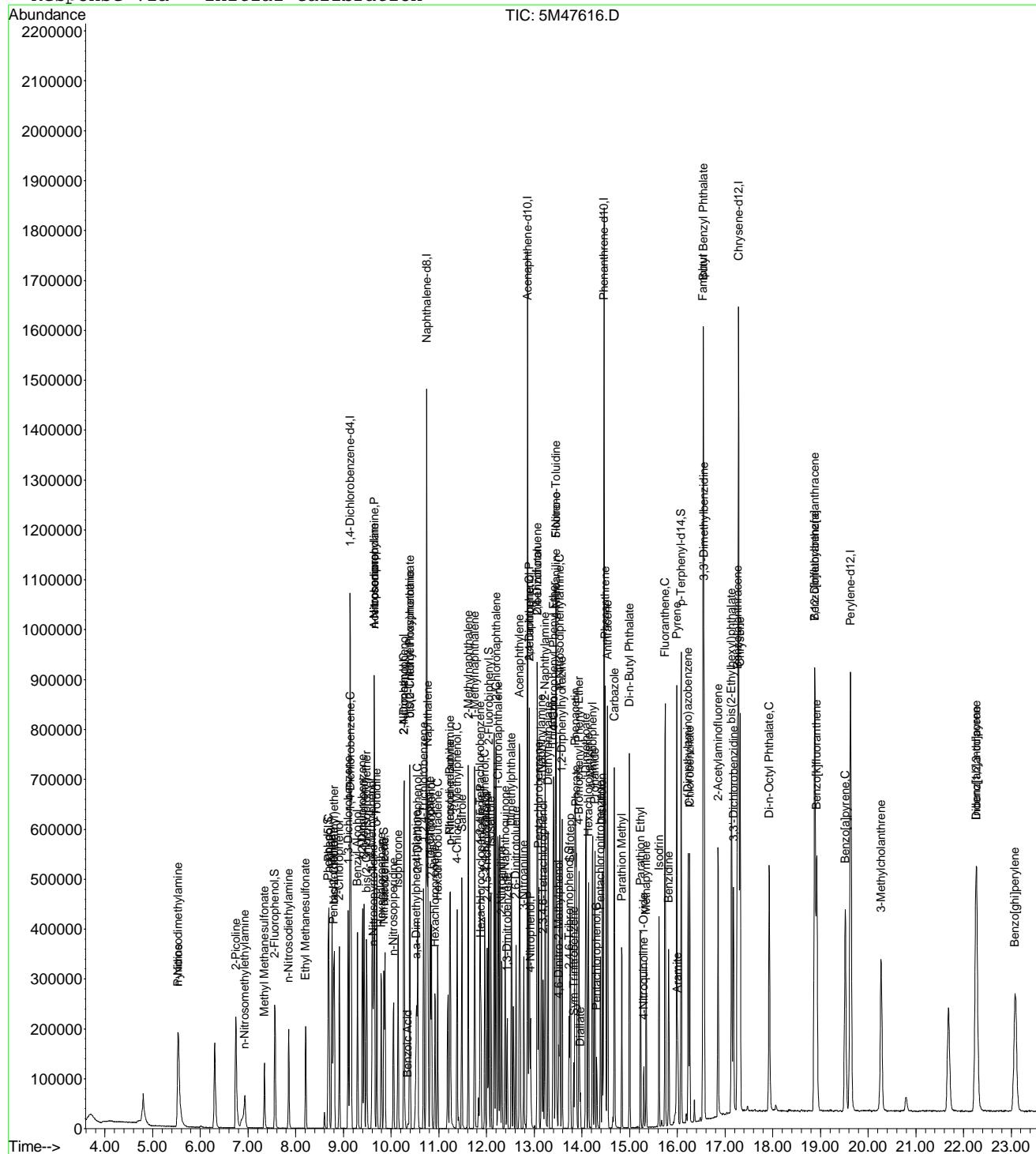
(#) = qualifier out of range (m) = manual integration
 5M47616.D MEGAMIX.M Mon Aug 27 10:53:06 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47616.D
 Acq On : 24 Aug 2007 6:33 pm
 Sample : WG248656-05 15PPM MEGAMIX STD
 Misc : 1,1 STD21155
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 8:54 2007

Vial: 5
 Operator: ASP
 Inst : HPMS5
 Multiplr: 1.00

Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:51:11 2007
 Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\082407\5M47617.D Vial: 6
 Acq On : 24 Aug 2007 7:08 pm Operator: ASP
 Sample : WG248656-06 25PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:00 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:54 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	215283	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	843459	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	430864	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	680279	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	668370	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	618381	40.00	ug/ml	0.00

System Monitoring Compounds						
7) 2-Fluorophenol	7.57	112	191800	25.7447	ug/ml	0.00
Spiked Amount	100.000	Range	21 - 100	Recovery	=	25.74%
11) Phenol-d5	8.68	99	236539	26.3032	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 94	Recovery	=	26.30%
30) Nitrobenzene-d5	9.85	82	180812	26.0355	ug/ml	0.00
Spiked Amount	50.000	Range	35 - 114	Recovery	=	52.08%
58) 2-Fluorobiphenyl	12.05	172	384606	25.1492	ug/ml	0.00
Spiked Amount	50.000	Range	43 - 116	Recovery	=	50.30%
85) 2,4,6-Tribromophenol	13.73	330	46140	23.3666	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 123	Recovery	=	23.37%
116) p-Terphenyl-d14	16.08	244	387676	25.0880	ug/ml	0.00
Spiked Amount	50.000	Range	33 - 141	Recovery	=	50.18%

Target Compounds					Qvalue
2) n-Nitrosodimethylamine	5.53	74	129990	27.0565	ug/ml
3) Pyridine	5.54	79	218440	26.4383	ug/ml
4) 2-Picoline	6.74	93	218066	26.0317	ug/ml
5) n-Nitrosomethylmethylethylamine	6.93	88	92289	26.3105	ug/ml
6) Methyl Methanesulfonate	7.34	80	99741	25.0614	ug/ml
8) n-Nitrosodiethylamine	7.85	102	94343	25.4642	ug/ml
9) Ethyl Methanesulfonate	8.21	79	143799	26.0678	ug/ml
10) Aniline	8.76	93	312659	26.3658	ug/ml
12) Phenol	8.69	94	254653	26.4275	ug/ml
13) bis(2-Chloroethyl)ether	8.80	63	147893	27.2034	ug/ml
14) Pentachloroethane	8.79	167	70130	23.9254	ug/ml
15) 2-Chlorophenol	8.92	128	208676	25.0234	ug/ml
16) 1,3-Dichlorobenzene	9.10	146	225997	24.6386	ug/ml
17) 1,4-Dichlorobenzene	9.16	146	232594	24.6097	ug/ml
18) Benzyl Alcohol	9.30	108	131121	25.3101	ug/ml
19) 1,2-Dichlorobenzene	9.40	146	215403	24.6972	ug/ml
20) 2-Methylphenol	9.43	107	156843	25.2010	ug/ml
21) bis(2-Chloroisopropyl)ethane	9.48	45	346634	29.0738	ug/ml
22) 3-,4-Methylphenol	9.60	107	205210	25.1372	ug/ml
23) n-Nitrosopyrrolidine	9.62	100	96424	26.1758	ug/ml#
24) n-Nitrosodipropylamine	9.65	70	138554	26.3368	ug/ml
25) Acetophenone	9.64	105	248578	25.5143	ug/ml
26) n-Nitrosomorpholine	9.64	56	126908	28.7505	ug/ml
27) o-Toluidine	9.70	106	294195	25.3679	ug/ml
28) Hexachloroethane	9.79	117	84924	25.0088	ug/ml
31) Nitrobenzene	9.87	77	192307	26.1699	ug/ml
32) n-Nitrosopiperidine	10.05	114	96985	25.4608	ug/ml
33) Isophorone	10.15	82	330851	25.4396	ug/ml
34) 2-Nitrophenol	10.27	139	108975	26.4083	ug/ml
35) 2,4-Dimethylphenol	10.26	122	192542	25.5811	ug/ml
36) O,O,O-Triethyl Phosphorothioate	10.40	198	85705	23.2671	ug/ml
37) bis(2-Chloroethoxy)methane	10.39	93	294549	26.2599	ug/ml
38) Benzoic Acid	10.36	105	16486m	30.4011	ug/ml

(#) = qualifier out of range (m) = manual integration
 5M47617.D MEGAMIX.M Mon Aug 27 10:53:10 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47617.D Vial: 6
 Acq On : 24 Aug 2007 7:08 pm Operator: ASP
 Sample : WG248656-06 25PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:00 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:54 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	153516	24.1812	ug/ml	100
40) a,a-Dimethylphenethylamine	10.55	58	548260	28.5980	ug/ml	99
41) 1,2,4-Trichlorobenzene	10.68	180	174023	24.0341	ug/ml	100
42) Naphthalene	10.77	128	593542	25.1017	ug/ml	100
43) 4-Chloroaniline	10.82	127	258937	25.4160	ug/ml	100
44) 2,6-Dichlorophenol	10.85	162	156175	24.0648	ug/ml	100
45) Hexachloropropene	10.92	213	93960	23.2051	ug/ml	99
46) Hexachlorobutadiene	10.97	225	82488	22.0534	ug/ml	99
47) n-Nitrosodi-n-Butylamine	11.23	84	115339	21.7467	ug/ml#	76
48) p-Phenylenediamine	11.24	108	197162	30.5056	ug/ml	99
49) 4-Chloro-3-Methylphenol	11.38	107	166502	25.0471	ug/ml	99
50) Safrole	11.48	162	149489	23.9655	ug/ml	100
51) 2-Methylnaphthalene	11.61	142	391705	24.8224	ug/ml	99
52) 1-Methylnaphthalene	11.75	142	386062	24.8483	ug/ml	100
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	153328	24.1787	ug/ml	100
55) Hexachlorocyclopentadiene	11.88	237	71727	24.2508	ug/ml	100
56) 2,4,6-Trichlorophenol	11.96	196	106231	25.0583	ug/ml	99
57) 2,4,5-Trichlorophenol	12.02	196	114408	25.2550	ug/ml	99
59) Isosafrole	12.09	162	151260	25.2532	ug/ml	100
60) 2-Chloronaphthalene	12.20	162	412653	25.5353	ug/ml	100
61) 1-Chloronaphthalene	12.24	162	333870	25.5244	ug/ml	99
62) 2-Nitroaniline	12.32	65	99667	29.0921	ug/ml	99
63) 1,4-Naphthoquinone	12.39	158	143586	27.1025	ug/ml	100
64) Dimethylphthalate	12.52	163	391843	25.0455	ug/ml	100
65) 1,3-Dinitrobenzene	12.43	168	57116	28.1730	ug/ml	97
66) 2,6-Dinitrotoluene	12.62	165	96011	25.5524	ug/ml	98
67) Acenaphthylene	12.69	152	595767	26.2045	ug/ml	100
68) 3-Nitroaniline	12.78	138	113018	27.7974	ug/ml	100
69) 2,4-Dinitrophenol	12.90	184	24173	28.7630	ug/ml#	10
70) Acenaphthene	12.90	154	364124	25.7855	ug/ml	100
71) 4-Nitrophenol	12.92	65	70952	30.4819	ug/ml	97
72) 2,4-Dinitrotoluene	13.06	165	116556	27.0840	ug/ml	98
73) Pentachlorobenzene	13.09	250	131482	23.1845	ug/ml	100
74) Dibenzofuran	13.07	168	491277	25.5758	ug/ml	100
75) 2,3,4,6-Tetrachlorophenol	13.18	232	77465	23.5699	ug/ml	99
76) 1-Naphthylamine	13.15	143	371214	26.8911	ug/ml	99
77) 2-Naphthylamine	13.23	143	337812	28.3304	ug/ml	100
78) Diethylphthalate	13.29	149	397539	25.4117	ug/ml	99
79) Thionazin	13.39	107	63490	26.0028	ug/ml	99
80) Fluorene	13.45	166	416808	25.4180	ug/ml	99
81) 4-Chlorophenyl Phenyl Ethe	13.41	204	187147	24.1664	ug/ml	99
82) 4-Nitroaniline	13.46	138	121140	27.9803	ug/ml	97
83) 5-Nitro-o-Tolidine	13.46	152	115485	26.7860	ug/ml	97
84) 1,2-Diphenylhydrazine	13.58	77	406281	27.1368	ug/ml	99
87) 4,6-Dinitro-2-Methylphenol	13.52	198	52480	27.6564	ug/ml#	18
88) n-Nitrosodiphenylamine	13.54	169	358282	25.6325	ug/ml	99
89) Sulfotep	13.76	322	58616	23.1310	ug/ml	99
90) Sym-Trinitrobenzene	13.83	75	65259	30.2407	ug/ml	99
91) Diallate	13.96	86	24957	8.1081	ug/ml	98
92) Phenacetin	13.85	108	187098	27.2859	ug/ml	100
93) Phorate	13.88	75	232060	27.7317	ug/ml#	99
94) 4-Bromophenyl Phenyl Ether	13.94	248	105847	23.0056	ug/ml	100
95) Hexachlorobenzene	14.14	284	110816	23.0044	ug/ml	100
96) Dimethoate	14.08	87	154515	27.8899	ug/ml	98

(#) = qualifier out of range (m) = manual integration
 5M47617.D MEGAMIX.M Mon Aug 27 10:53:12 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47617.D Vial: 6
 Acq On : 24 Aug 2007 7:08 pm Operator: ASP
 Sample : WG248656-06 25PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:00 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:54:54 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

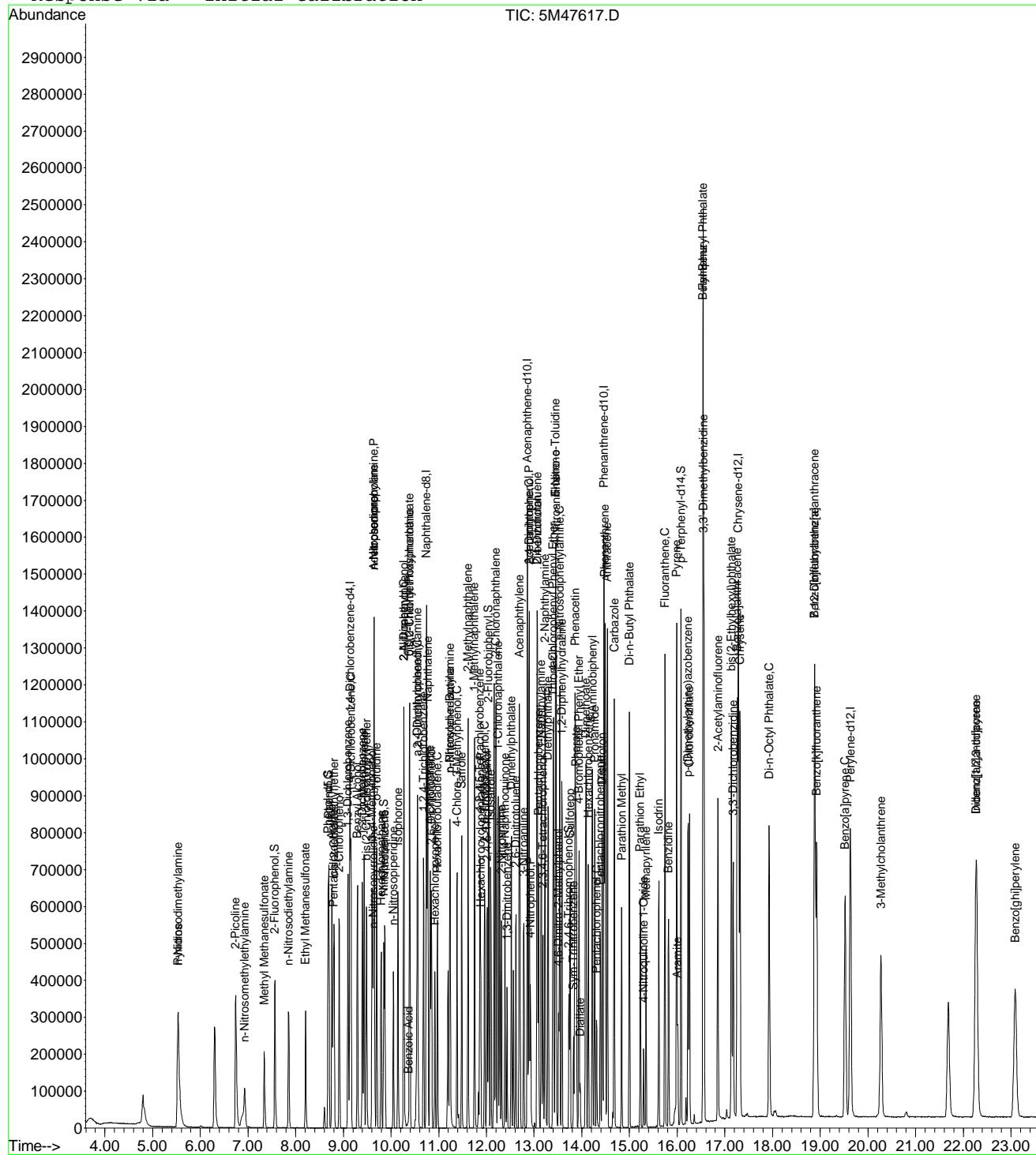
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
97) 4-Aminobiphenyl	14.22	169	394097	26.6760	ug/ml	99
98) Pentachlorophenol	14.31	266	41319	24.4148	ug/ml	99
99) Pronamide	14.27	173	161445	24.9156	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	36051	23.5255	ug/ml	99
101) Disulfoton	14.42	88	198031	26.8069	ug/ml	100
102) Phenanthrene	14.49	178	608982	25.7525	ug/ml	99
103) Anthracene	14.54	178	614350	25.9017	ug/ml	99
104) Carbazole	14.68	167	556278	25.9591	ug/ml	100
105) Parathion Methyl	14.84	109	118370	30.0737	ug/ml	99
106) Di-n-Butyl Phthalate	15.00	149	687889	26.6066	ug/ml	100
107) Parathion Ethyl	15.23	97	70010	27.4887	ug/ml	98
108) 4-Nitroquinoline 1-Oxide	15.30	190	23861	27.9833	ug/ml	97
109) Methapyrilene	15.35	58	181502	27.5613	ug/ml	99
110) Isodrin	15.62	193	59371	24.7011	ug/ml	100
111) Fluoranthene	15.74	202	588203	25.0508	ug/ml	100
113) Benzidine	15.82	184	256305	31.5867	ug/ml	100
114) Pyrene	15.99	202	626764	26.4945	ug/ml	100
115) Aramite	16.01	185	23483	26.7205	ug/ml	94
117) p-(Dimethylamino)azobenzene	16.23	225	122975	25.6873	ug/ml	99
118) Chlorobenzilate	16.26	251	162686	24.6326	ug/ml	99
119) Famphur	16.53	218	113825	31.5806	ug/ml	92
120) Butyl Benzyl Phthalate	16.55	149	301144	29.2081	ug/ml	99
121) 3,3'-Dimethylbenzidine	16.56	212	473728	28.5635	ug/ml	100
123) 2-Acetylaminofluorene	16.86	181	240411	27.1755	ug/ml	99
124) bis(2-Ethylhexyl)phthalate	17.14	149	428415	26.5483	ug/ml	99
125) 3,3'-Dichlorobenzidine	17.18	252	198104	25.9297	ug/ml	99
126) Benzo[a]anthracene	17.26	228	564019	25.2196	ug/ml	100
127) Chrysene	17.31	228	551244	25.5935	ug/ml	99
129) Di-n-Octyl Phthalate	17.93	149	686765	27.2626	ug/ml	98
130) 7,12-Dimethylbenz[a]anthracene	18.88	256	252246	25.0610	ug/ml	100
131) Benzo[b]fluoranthene	18.89	252	609686	26.0951	ug/ml	100
132) Benzo[k]fluoranthene	18.92	252	517380	24.7230	ug/ml	100
133) Benzo[a]pyrene	19.52	252	518677	25.1761	ug/ml	99
134) 3-Methylcholanthrene	20.27	268	277845	24.6218	ug/ml	100
135) Indeno[1,2,3-cd]pyrene	22.27	276	585094	25.5482	ug/ml	100
136) Dibenz[ah]anthracene	22.27	278	505091	25.5539	ug/ml	100
137) Benzo[ghi]perylene	23.09	276	506161	26.0120	ug/ml	100

(#) = qualifier out of range (m) = manual integration
 5M47617.D MEGAMIX.M Mon Aug 27 10:53:13 2007

Quantitation Report (OT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082407\5M47617.D Vial: 6
Acq On : 24 Aug 2007 7:08 pm Operator: ASP
Sample : WG248656-06 25PPM MEGAMIX STD Inst : HPMS5
Misc : 1,1 STD21155 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 27 10:48 2007 Quant Results File: MEGAMIX.RES

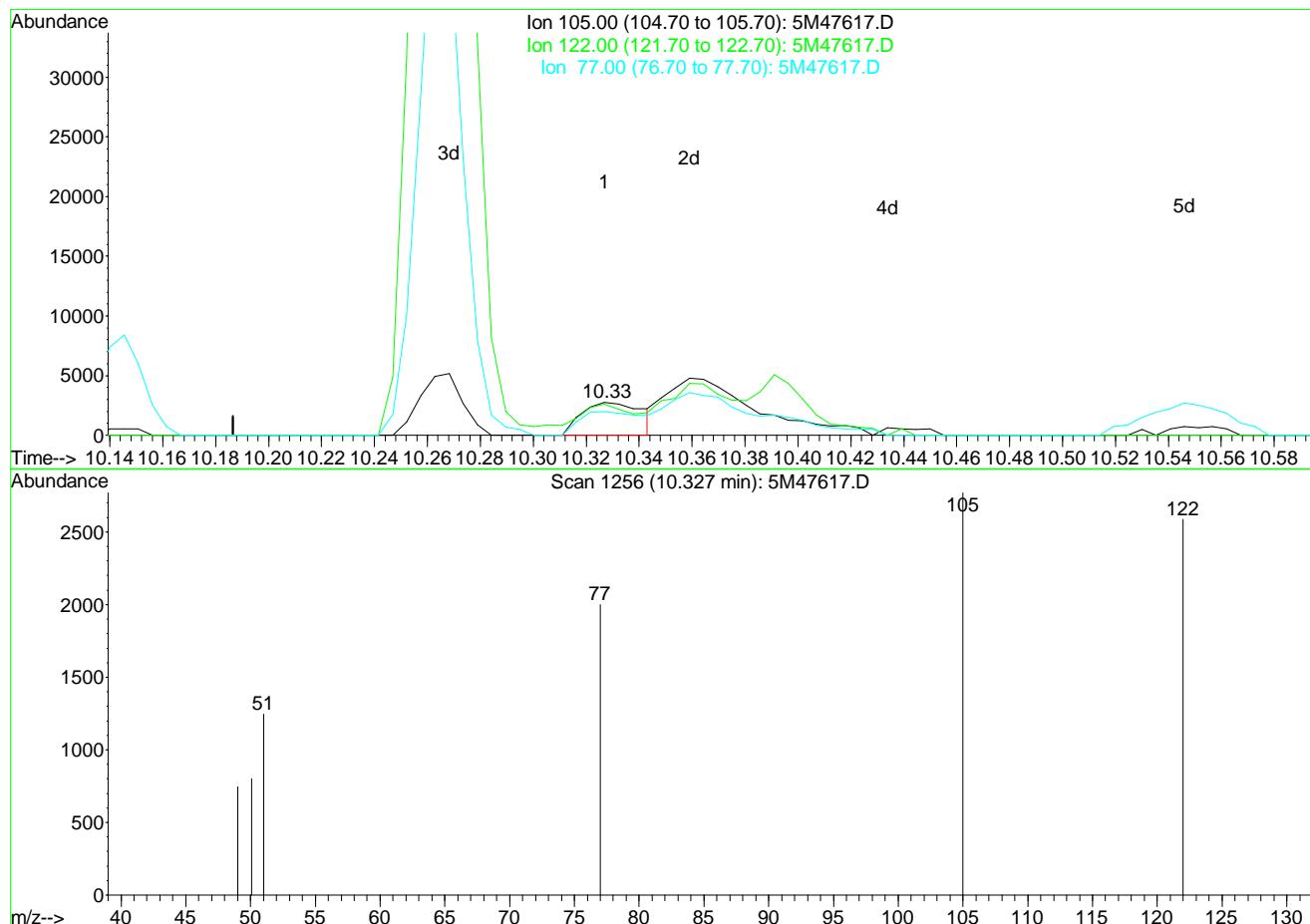
Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Mon Aug 27 10:51:11 2007
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47617.D Vial: 6
 Acq On : 24 Aug 2007 7:08 pm Operator: ASP
 Sample : WG248656-06 25PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 8:55 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:48:05 2007
 Response via : Single Level Calibration



TIC: 5M47617.D

(38) Benzoic Acid

10.33min 19.76ug/ml

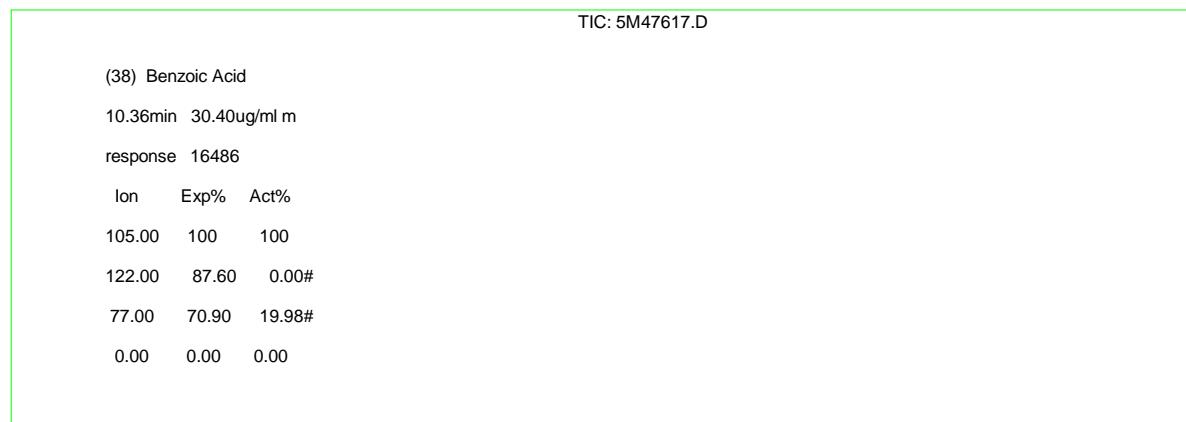
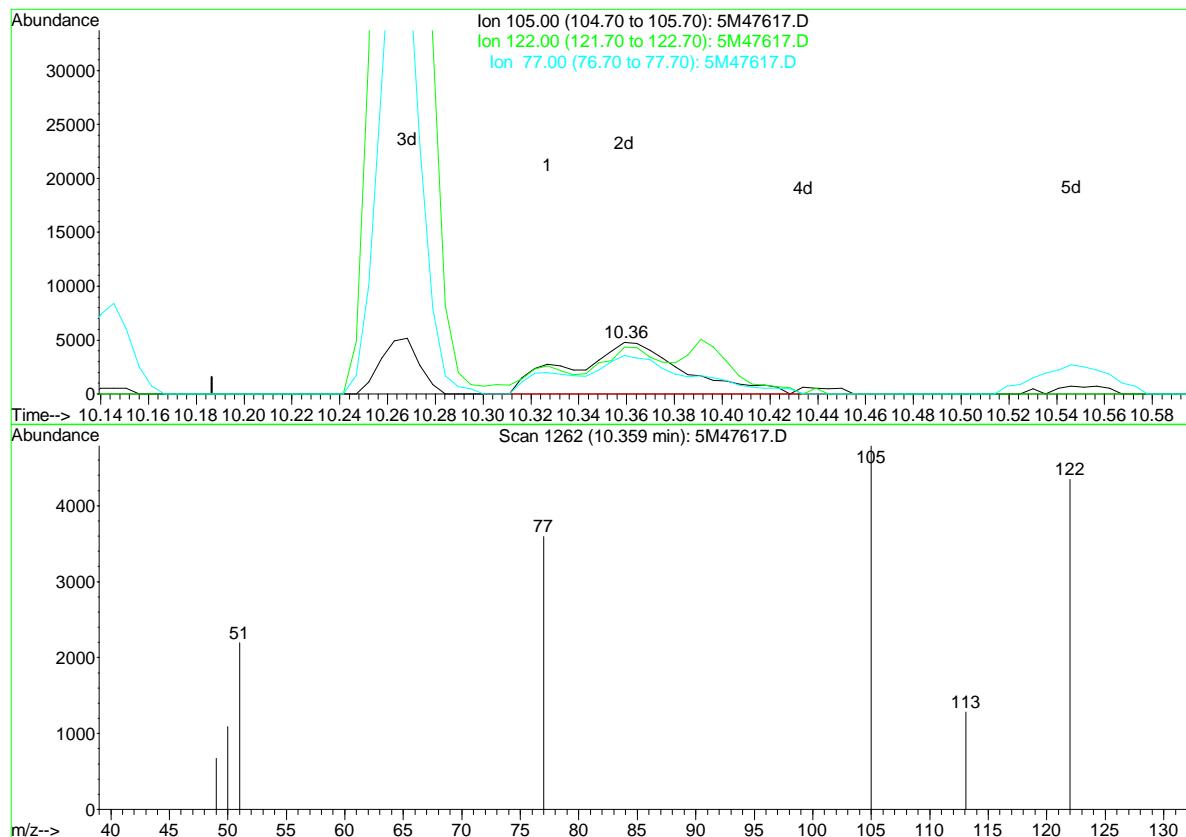
response 4392

Ion	Exp%	Act%
105.00	100	100
122.00	87.60	0.00#
77.00	70.90	75.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47617.D Vial: 6
 Acq On : 24 Aug 2007 7:08 pm Operator: ASP
 Sample : WG248656-06 25PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:48 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:48:05 2007
 Response via : Single Level Calibration



5M47617.D MEGAMIX.M Mon Aug 27 10:48:58 2007

Approved: August 27, 2007	Supervisor: August 27, 2007
Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak	
.	

Data File : C:\MSDCHEM\1\DATA\082407\5M47618.D Vial: 7
 Acq On : 24 Aug 2007 7:42 pm Operator: ASP
 Sample : WG248656-07 80PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:11 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:05 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	201922	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	801378	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	411758	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.47	188	648121	40.00	ug/ml	0.00
112) Chrysene-d12	17.29	240	648903	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	604470	40.00	ug/ml	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
7) 2-Fluorophenol	7.57	112	580324	82.2265	ug/ml	0.00
Spiked Amount 100.000	Range 21 - 100		Recovery	=	82.23%	
11) Phenol-d5	8.68	99	706966	82.7601	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 94		Recovery	=	82.76%	
30) Nitrobenzene-d5	9.85	82	557246	83.2115	ug/ml	0.00
Spiked Amount 50.000	Range 35 - 114		Recovery	=	166.42%#	
58) 2-Fluorobiphenyl	12.05	172	1120611	76.9312	ug/ml	0.00
Spiked Amount 50.000	Range 43 - 116		Recovery	=	153.86%#	
85) 2,4,6-Tribromophenol	13.73	330	149300	80.2608	ug/ml	0.00
Spiked Amount 100.000	Range 10 - 123		Recovery	=	80.26%	
116) p-Terphenyl-d14	16.08	244	1125744	75.4829	ug/ml	0.00
Spiked Amount 50.000	Range 33 - 141		Recovery	=	150.96%#	

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) n-Nitrosodimethylamine	5.53	74	399189	86.7331	ug/ml	98
3) Pyridine	5.54	79	668315	84.8008	ug/ml	100
4) 2-Picoline	6.74	93	658736	82.7191	ug/ml	100
5) n-Nitrosomethylethylamine	6.93	88	282174	84.9741	ug/ml	97
6) Methyl Methanesulfonate	7.34	80	289192	77.2301	ug/ml	99
8) n-Nitrosodiethylamine	7.85	102	284762	81.4682	ug/ml	96
9) Ethyl Methanesulfonate	8.21	79	432574	82.6848	ug/ml	100
10) Aniline	8.76	93	940865	83.3381	ug/ml	100
12) Phenol	8.70	94	750755	81.7432	ug/ml	99
13) bis(2-Chloroethyl)ether	8.81	63	435125	83.4911	ug/ml	100
14) Pentachloroethane	8.79	167	207386	76.1428	ug/ml	99
15) 2-Chlorophenol	8.92	128	626636	79.8821	ug/ml	99
16) 1,3-Dichlorobenzene	9.10	146	662334	77.0254	ug/ml	99
17) 1,4-Dichlorobenzene	9.16	146	690865	77.9455	ug/ml	100
18) Benzyl Alcohol	9.30	108	395597	80.9272	ug/ml	99
19) 1,2-Dichlorobenzene	9.40	146	634451	77.6560	ug/ml	100
20) 2-Methylphenol	9.44	107	461061	78.7788	ug/ml	100
21) bis(2-Chloroisopropyl)ethane	9.48	45	1029379	88.4960	ug/ml	99
22) 3-,4-Methylphenol	9.61	107	616203	80.1788	ug/ml	99
23) n-Nitrosopyrrolidine	9.63	100	291152	83.3163	ug/ml#	97
24) n-Nitrosodipropylamine	9.65	70	397809	80.0748	ug/ml	99
25) Acetophenone	9.64	105	714112	77.8481	ug/ml	99
26) n-Nitrosomorpholine	9.65	56	361900	84.9208	ug/ml	99
27) o-Toluidine	9.70	106	872212	79.8369	ug/ml	100
28) Hexachloroethane	9.79	117	256044	80.2375	ug/ml	98
31) Nitrobenzene	9.87	77	581536	82.0590	ug/ml	100
32) n-Nitrosopiperidine	10.05	114	293589	80.7371	ug/ml	98
33) Isophorone	10.15	82	987944	79.9968	ug/ml	99
34) 2-Nitrophenol	10.27	139	334909	86.8619	ug/ml	99
35) 2,4-Dimethylphenol	10.27	122	562258	78.5746	ug/ml	100
36) O,O,O-Triethyl Phosphorothioate	10.40	198	246712	72.0066	ug/ml	98
37) bis(2-Chloroethoxy)methane	10.39	93	848604	79.0624	ug/ml	100
38) Benzoic Acid	10.35	105	225561m	94.1654	ug/ml	

(#) = qualifier out of range (m) = manual integration
 5M47618.D MEGAMIX.M Mon Aug 27 10:53:21 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47618.D Vial: 7
 Acq On : 24 Aug 2007 7:42 pm Operator: ASP
 Sample : WG248656-07 80PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:11 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:05 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	467245	78.0345	ug/ml	99
40) a,a-Dimethylphenethylamine	10.58	58	1699894	90.7912	ug/ml	99
41) 1,2,4-Trichlorobenzene	10.68	180	513289	75.3408	ug/ml	100
42) Naphthalene	10.77	128	1721185	76.7847	ug/ml	100
43) 4-Chloroaniline	10.82	127	770097	79.0487	ug/ml	100
44) 2,6-Dichlorophenol	10.85	162	471187	76.9897	ug/ml	100
45) Hexachloropropene	10.92	213	287062	75.8707	ug/ml	100
46) Hexachlorobutadiene	10.97	225	242310	70.2370	ug/ml	100
47) n-Nitrosodi-n-Butylamine	11.24	84	450463	89.9094	ug/ml#	79
48) p-Phenylenediamine	11.25	108	536208	96.5702	ug/ml	100
49) 4-Chloro-3-Methylphenol	11.39	107	493700	78.3073	ug/ml	99
50) Safrole	11.49	162	441776	75.4760	ug/ml	99
51) 2-Methylnaphthalene	11.61	142	1143371	76.5998	ug/ml	100
52) 1-Methylnaphthalene	11.75	142	1127896	76.7836	ug/ml	100
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	447464	74.7504	ug/ml	100
55) Hexachlorocyclopentadiene	11.88	237	232870	78.7544	ug/ml	99
56) 2,4,6-Trichlorophenol	11.97	196	329759	81.3848	ug/ml	100
57) 2,4,5-Trichlorophenol	12.02	196	350414	80.6194	ug/ml	99
59) Isosafrole	12.10	162	449943	78.6149	ug/ml	99
60) 2-Chloronaphthalene	12.20	162	1200559	77.6385	ug/ml	100
61) 1-Chloronaphthalene	12.25	162	968738	77.4578	ug/ml	99
62) 2-Nitroaniline	12.32	65	317077	92.8411	ug/ml	98
63) 1,4-Naphthoquinone	12.39	158	344674	68.3931	ug/ml	100
64) Dimethylphthalate	12.52	163	1151175	77.3549	ug/ml	100
65) 1,3-Dinitrobenzene	12.44	168	195214	90.7707	ug/ml	98
66) 2,6-Dinitrotoluene	12.62	165	297351	82.9457	ug/ml	99
67) Acenaphthylene	12.69	152	1727128	79.1504	ug/ml	99
68) 3-Nitroaniline	12.78	138	354899	88.2065	ug/ml	100
69) 2,4-Dinitrophenol	12.90	184	130452	111.5541	ug/ml	54
70) Acenaphthene	12.90	154	1069962	79.1749	ug/ml	99
71) 4-Nitrophenol	12.93	65	235334	106.2390	ug/ml	100
72) 2,4-Dinitrotoluene	13.07	165	353684	88.4444	ug/ml	98
73) Pentachlorobenzene	13.09	250	385055	72.4781	ug/ml	98
74) Dibenzofuran	13.07	168	1400797	76.4922	ug/ml	99
75) 2,3,4,6-Tetrachlorophenol	13.19	232	256612	75.3070	ug/ml	99
76) 1-Naphthylamine	13.15	143	1110988	82.3510	ug/ml	99
77) 2-Naphthylamine	13.23	143	1067398	101.1287	ug/ml	99
78) Diethylphthalate	13.30	149	1169058	78.3133	ug/ml	100
79) Thionazin	13.40	107	183430	78.6725	ug/ml	100
80) Fluorene	13.45	166	1203318	76.9823	ug/ml	100
81) 4-Chlorophenyl Phenyl Ethe	13.41	204	541143	74.1443	ug/ml	100
82) 4-Nitroaniline	13.47	138	374030	87.3392	ug/ml	99
83) 5-Nitro-o-Tolidine	13.46	152	354139	88.9310	ug/ml	99
84) 1,2-Diphenylhydrazine	13.59	77	1192306	82.3808	ug/ml	99
87) 4,6-Dinitro-2-Methylphenol	13.52	198	216455	96.5362	ug/ml#	46
88) n-Nitrosodiphenylamine	13.54	169	1042316	78.3530	ug/ml	99
89) Sulfotep	13.76	322	173599	73.4838	ug/ml	98
90) Sym-Trinitrobenzene	13.83	75	251646	103.7582	ug/ml	99
91) Diallate	13.97	86	78933	33.4688	ug/ml	99
92) Phenacetin	13.86	108	559612	85.0000	ug/ml	100
93) Phorate	13.89	75	676128	83.5517	ug/ml#	100
94) 4-Bromophenyl Phenyl Ether	13.94	248	315780	73.5623	ug/ml	99
95) Hexachlorobenzene	14.14	284	326861	72.7940	ug/ml	99
96) Dimethoate	14.08	87	419364	77.9306	ug/ml	97

(#) = qualifier out of range (m) = manual integration
 5M47618.D MEGAMIX.M Mon Aug 27 10:53:21 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47618.D Vial: 7
 Acq On : 24 Aug 2007 7:42 pm Operator: ASP
 Sample : WG248656-07 80PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:11 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:05 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

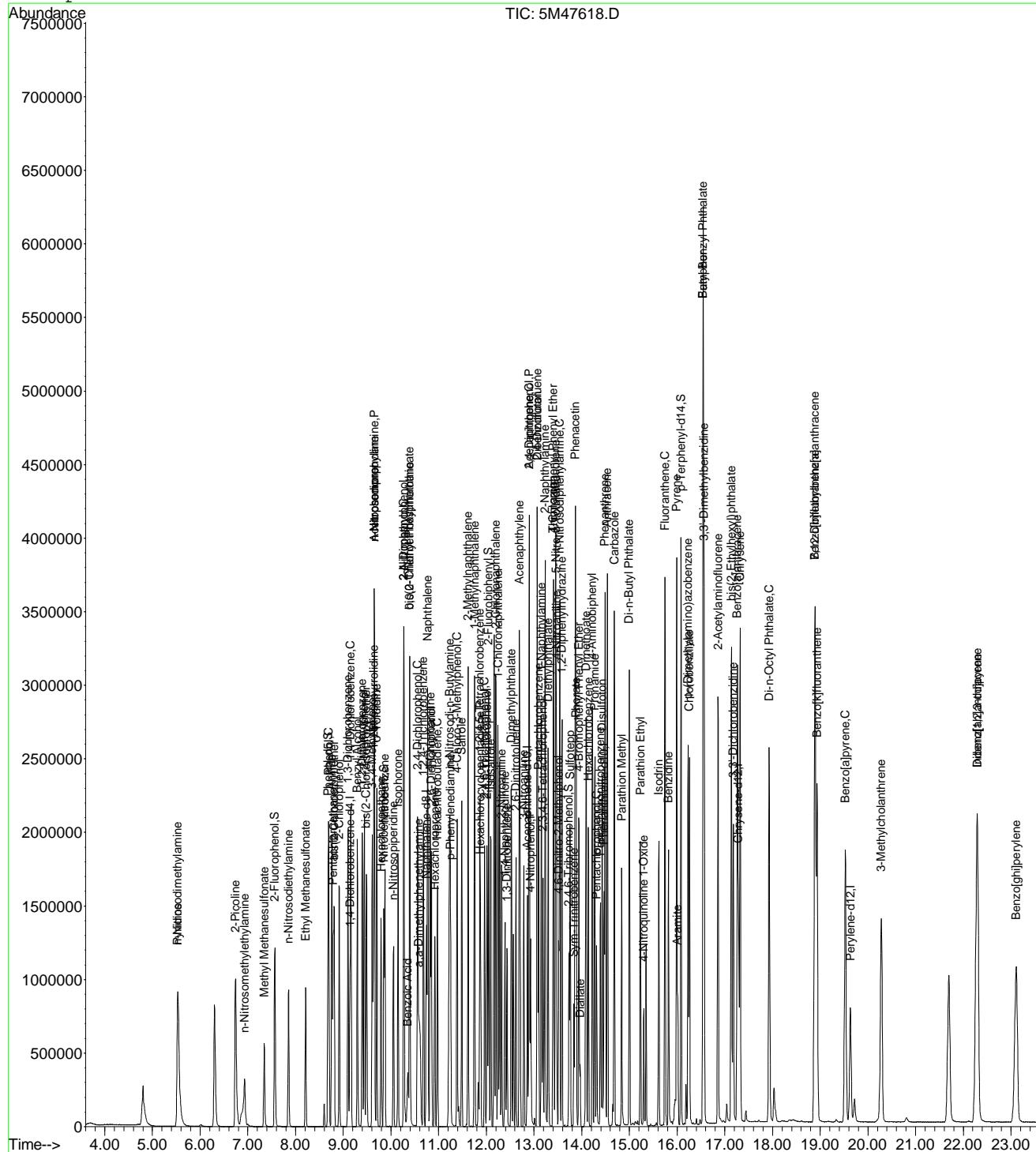
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
97) 4-Aminobiphenyl	14.22	169	1171070	81.6786	ug/ml	100
98) Pentachlorophenol	14.31	266	174127	76.1231	ug/ml	99
99) Pronamide	14.28	173	487606	79.6002	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	111051	77.6409	ug/ml	99
101) Disulfoton	14.43	88	583626	82.2172	ug/ml	100
102) Phenanthrene	14.49	178	1755915	77.9274	ug/ml	99
103) Anthracene	14.54	178	1780910	78.8952	ug/ml	100
104) Carbazole	14.68	167	1627703	79.4295	ug/ml	100
105) Parathion Methyl	14.84	109	354486	103.3831	ug/ml	98
106) Di-n-Butyl Phthalate	15.00	149	2013056	81.6195	ug/ml	100
107) Parathion Ethyl	15.23	97	227732	92.5082	ug/ml	99
108) 4-Nitroquinoline 1-Oxide	15.30	190	108575	129.1394	ug/ml	99
109) Methapyrilene	15.35	58	439659	Below Cal		99
110) Isodrin	15.62	193	178177	78.1456	ug/ml	100
111) Fluoranthene	15.74	202	1716571	77.3711	ug/ml	100
113) Benzidine	15.82	184	877709	144.2917	ug/ml	100
114) Pyrene	15.99	202	1829846	79.0577	ug/ml	99
115) Aramite	16.01	185	74424	86.4757	ug/ml	99
117) p-(Dimethylamino)azobenzene	16.23	225	376434	80.8509	ug/ml	99
118) Chlorobenzilate	16.26	251	494953	77.6480	ug/ml	99
119) Famphur	16.54	218	52674	14.3741	ug/ml#	63
120) Butyl Benzyl Phthalate	16.55	149	851825	100.2776	ug/ml	99
121) 3,3'-Dimethylbenzidine	16.57	212	1352825	81.2268	ug/ml	100
123) 2-Acetylaminofluorene	16.86	181	793923	90.5692	ug/ml	99
124) bis(2-Ethylhexyl)phthalate	17.14	149	1292791	81.1429	ug/ml	100
125) 3,3'-Dichlorobenzidine	17.18	252	598664	79.6743	ug/ml	100
126) Benzo[a]anthracene	17.26	228	1715599	78.9122	ug/ml	99
127) Chrysene	17.32	228	1637453	78.0664	ug/ml	99
129) Di-n-Octyl Phthalate	17.93	149	2195465	88.0636	ug/ml	99
130) 7,12-Dimethylbenz[a]anthracene	18.89	256	769438	78.5843	ug/ml	99
131) Benzo[b]fluoranthene	18.90	252	1730937	75.2956	ug/ml	99
132) Benzo[k]fluoranthene	18.93	252	1656905	81.6478	ug/ml	99
133) Benzo[a]pyrene	19.53	252	1608473	79.7141	ug/ml	99
134) 3-Methylcholanthrene	20.28	268	890058	80.9067	ug/ml	100
135) Indeno[1,2,3-cd]pyrene	22.30	276	1803346	79.9475	ug/ml	99
136) Dibenz[ah]anthracene	22.29	278	1552376	79.8064	ug/ml	100
137) Benzo[ghi]perylene	23.11	276	1570762	81.7205	ug/ml	99

(#) = qualifier out of range (m) = manual integration
 5M47618.D MEGAMIX.M Mon Aug 27 10:53:21 2007

Quantitation Report (OT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082407\5M47618.D Vial: 7
Acq On : 24 Aug 2007 7:42 pm Operator: ASP
Sample : WG248656-07 80PPM MEGAMIX STD Inst : HPMS5
Misc : 1,1 STD21155 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 27 10:49 2007 Quant Results File: MEGAMIX.RES

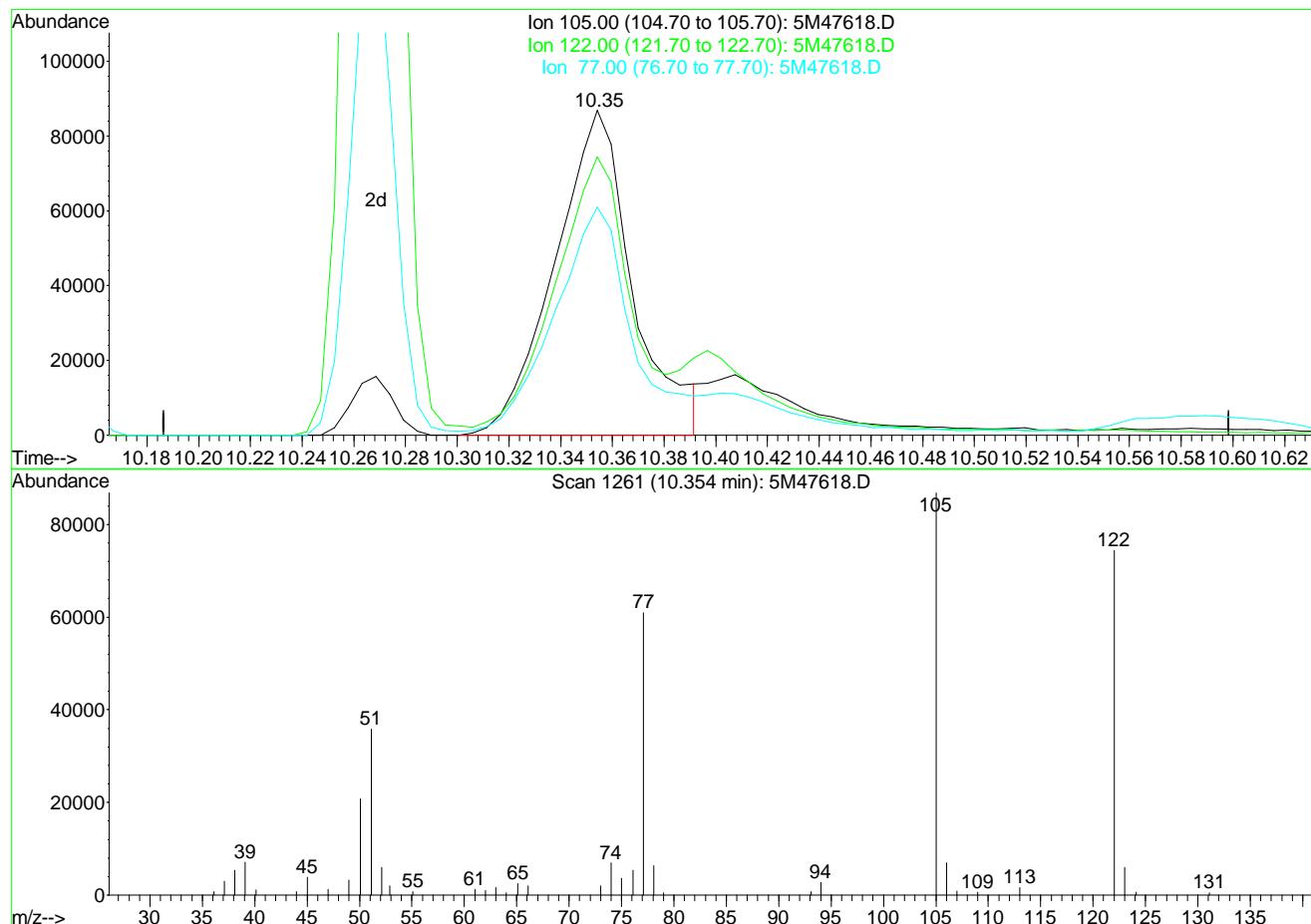
Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Mon Aug 27 10:51:11 2007
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47618.D Vial: 7
 Acq On : 24 Aug 2007 7:42 pm Operator: ASP
 Sample : WG248656-07 80PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 8:55 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:49:12 2007
 Response via : Single Level Calibration

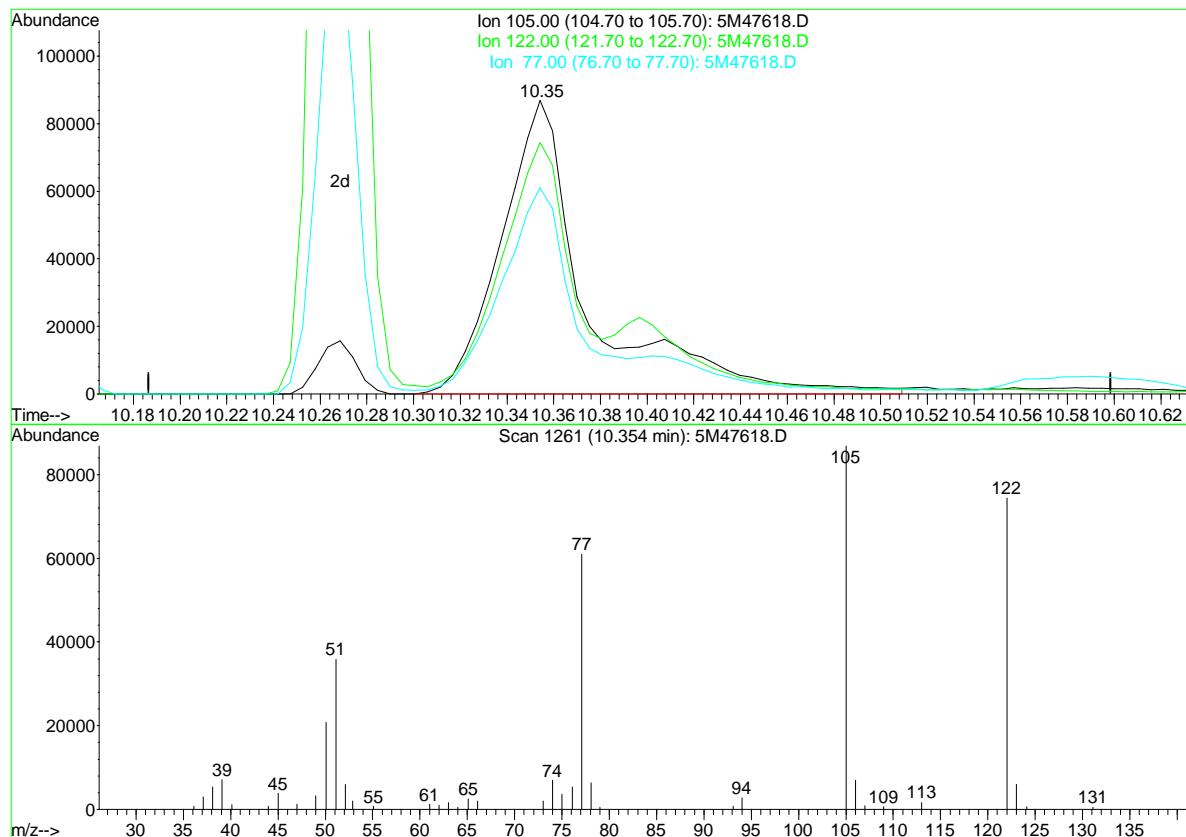


TIC: 5M47618.D		
(38) Benzoic Acid		
10.35min 85.22ug/ml		
response 181341		
Ion Exp% Act%		
105.00	100	100
122.00	87.60	81.95
77.00	70.90	67.90
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47618.D Vial: 7
 Acq On : 24 Aug 2007 7:42 pm Operator: ASP
 Sample : WG248656-07 80PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:49 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:49:12 2007
 Response via : Single Level Calibration



TIC: 5M47618.D		
(38) Benzoic Acid		
10.35min 94.17ug/ml m		
response 225561		
Ion Exp% Act%		
105.00	100	100
122.00	87.60	65.88
77.00	70.90	54.59
0.00	0.00	0.00

5M47618.D MEGAMIX.M Mon Aug 27 10:49:36 2007

Approved: August 27, 2007	Supervisor: August 27, 2007
Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak	
.	

Data File : C:\MSDCHEM\1\DATA\082407\5M47619.D Vial: 8
 Acq On : 24 Aug 2007 8:16 pm Operator: ASP
 Sample : WG248656-08 100PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:23 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:18 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	236661	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	946977	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	492453	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.47	188	778368	40.00	ug/ml	0.00
112) Chrysene-d12	17.29	240	771475	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	733177	40.00	ug/ml	0.00

System Monitoring Compounds						
7) 2-Fluorophenol	7.56	112	809116	96.7860	ug/ml	0.00
Spiked Amount	100.000	Range	21 - 100	Recovery	=	96.79%
11) Phenol-d5	8.68	99	971602	95.7813	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 94	Recovery	=	95.78%#
30) Nitrobenzene-d5	9.85	82	765881	95.8474	ug/ml	0.00
Spiked Amount	50.000	Range	35 - 114	Recovery	=	191.70%#
58) 2-Fluorobiphenyl	12.05	172	1595181	91.3741	ug/ml	0.00
Spiked Amount	50.000	Range	43 - 116	Recovery	=	182.74%#
85) 2,4,6-Tribromophenol	13.74	330	219649	100.2678	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 123	Recovery	=	100.27%
116) p-Terphenyl-d14	16.08	244	1591020	89.6790	ug/ml	0.00
Spiked Amount	50.000	Range	33 - 141	Recovery	=	179.36%#

Target Compounds					Qvalue
2) n-Nitrosodimethylamine	5.52	74	542565	98.3544	ug/ml
3) Pyridine	5.53	79	905798	96.2588	ug/ml
4) 2-Picoline	6.74	93	907374	95.9468	ug/ml
5) n-Nitrosomethylethylamine	6.93	88	390993	99.4682	ug/ml
6) Methyl Methanesulfonate	7.34	80	392981	89.5000	ug/ml
8) n-Nitrosodiethylamine	7.85	102	397626	96.4089	ug/ml
9) Ethyl Methanesulfonate	8.21	79	586711	94.5356	ug/ml
10) Aniline	8.76	93	1293208	96.0980	ug/ml
12) Phenol	8.70	94	1025740	93.9249	ug/ml
13) bis(2-Chloroethyl)ether	8.81	63	585580	93.7208	ug/ml
14) Pentachloroethane	8.79	167	289818	91.4696	ug/ml
15) 2-Chlorophenol	8.92	128	874242	94.8031	ug/ml
16) 1,3-Dichlorobenzene	9.10	146	932696	92.5835	ug/ml
17) 1,4-Dichlorobenzene	9.16	146	965057	92.8122	ug/ml
18) Benzyl Alcohol	9.30	108	552221	96.0464	ug/ml
19) 1,2-Dichlorobenzene	9.40	146	888833	92.8636	ug/ml
20) 2-Methylphenol	9.44	107	640509	93.3617	ug/ml
21) bis(2-Chloroisopropyl)ethane	9.48	45	1356556	95.6214	ug/ml
22) 3-,4-Methylphenol	9.61	107	859109	95.1286	ug/ml
23) n-Nitrosopyrrolidine	9.64	100	397805	95.9177	ug/ml#
24) n-Nitrosodipropylamine	9.66	70	533394	90.5565	ug/ml
25) Acetophenone	9.65	105	978521	90.5004	ug/ml
26) n-Nitrosomorpholine	9.65	56	471570	91.4329	ug/ml
27) o-Toluidine	9.71	106	1210536	94.0531	ug/ml
28) Hexachloroethane	9.79	117	352324	93.9532	ug/ml
31) Nitrobenzene	9.87	77	801016	94.5764	ug/ml
32) n-Nitrosopiperidine	10.05	114	410629	94.9541	ug/ml
33) Isophorone	10.15	82	1342941	91.7590	ug/ml
34) 2-Nitrophenol	10.27	139	474216	102.7690	ug/ml
35) 2,4-Dimethylphenol	10.27	122	783472	92.4820	ug/ml
36) O,O,O-Triethyl Phosphorothioate	10.40	198	354779	89.2865	ug/ml
37) bis(2-Chloroethoxy)methane	10.39	93	1151338	89.9399	ug/ml
38) Benzoic Acid	10.36	105	406758m	114.3648	ug/ml

(#) = qualifier out of range (m) = manual integration
 5M47619.D MEGAMIX.M Mon Aug 27 10:53:23 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47619.D Vial: 8
 Acq On : 24 Aug 2007 8:16 pm Operator: ASP
 Sample : WG248656-08 100PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:23 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:18 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	672555	95.7510	ug/ml	99
40) a,a-Dimethylphenethylamine	10.61	58	2347485	102.8549	ug/ml	99
41) 1,2,4-Trichlorobenzene	10.68	180	725027	90.7548	ug/ml	99
42) Naphthalene	10.77	128	2414047	91.0019	ug/ml	99
43) 4-Chloroaniline	10.82	127	1080830	93.5489	ug/ml	99
44) 2,6-Dichlorophenol	10.85	162	668980	93.2832	ug/ml	100
45) Hexachloropropene	10.92	213	415406	94.8806	ug/ml	99
46) Hexachlorobutadiene	10.97	225	352747	89.0426	ug/ml	100
47) n-Nitrosodi-n-Butylamine	11.23	84	612053	103.0852	ug/ml#	81
48) p-Phenylenediamine	11.25	108	710844	105.9515	ug/ml	100
49) 4-Chloro-3-Methylphenol	11.39	107	694004	93.6207	ug/ml	98
50) Safrole	11.49	162	632828	92.5707	ug/ml	99
51) 2-Methylnaphthalene	11.61	142	1612443	91.5480	ug/ml	99
52) 1-Methylnaphthalene	11.75	142	1594324	91.9467	ug/ml	100
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	644180	90.6832	ug/ml	100
55) Hexachlorocyclopentadiene	11.88	237	339169	96.6345	ug/ml	99
56) 2,4,6-Trichlorophenol	11.97	196	480897	99.1531	ug/ml	100
57) 2,4,5-Trichlorophenol	12.01	196	511004	98.3807	ug/ml	99
59) Isosafrole	12.10	162	639162	93.2135	ug/ml	100
60) 2-Chloronaphthalene	12.20	162	1696714	91.2527	ug/ml	100
61) 1-Chloronaphthalene	12.24	162	1375553	91.6323	ug/ml	99
62) 2-Nitroaniline	12.32	65	431351	101.8882	ug/ml	97
63) 1,4-Naphthoquinone	12.39	158	462276	77.2378	ug/ml	98
64) Dimethylphthalate	12.53	163	1628833	91.4297	ug/ml	100
65) 1,3-Dinitrobenzene	12.44	168	285413	107.3380	ug/ml	98
66) 2,6-Dinitrotoluene	12.62	165	426668	99.1017	ug/ml	98
67) Acenaphthylene	12.69	152	2434381	92.4451	ug/ml	99
68) 3-Nitroaniline	12.79	138	501810	101.5509	ug/ml	99
69) 2,4-Dinitrophenol	12.91	184	208104	Below Cal		35
70) Acenaphthene	12.90	154	1516657	93.2612	ug/ml	99
71) 4-Nitrophenol	12.93	65	319762	113.8071	ug/ml	99
72) 2,4-Dinitrotoluene	13.07	165	500947	103.4859	ug/ml	97
73) Pentachlorobenzene	13.09	250	557983	89.4183	ug/ml	99
74) Dibenzofuran	13.07	168	1962812	89.2461	ug/ml	99
75) 2,3,4,6-Tetrachlorophenol	13.19	232	381913	94.4993	ug/ml	99
76) 1-Naphthylamine	13.15	143	1580386	96.3181	ug/ml	100
77) 2-Naphthylamine	13.23	143	1517856	114.9072	ug/ml	100
78) Diethylphthalate	13.30	149	1645061	91.8856	ug/ml	100
79) Thionazin	13.40	107	251957	90.1650	ug/ml	98
80) Fluorene	13.45	166	1702481	90.9095	ug/ml	100
81) 4-Chlorophenyl Phenyl Ethe	13.41	204	764397	88.3049	ug/ml	99
82) 4-Nitroaniline	13.47	138	526710	100.0737	ug/ml	98
83) 5-Nitro-o-Tolidine	13.46	152	502232	103.8270	ug/ml	98
84) 1,2-Diphenylhydrazine	13.59	77	1604066	91.2970	ug/ml	98
87) 4,6-Dinitro-2-Methylphenol	13.52	198	319467	116.7973	ug/ml#	54
88) n-Nitrosodiphenylamine	13.54	169	1481183	92.4387	ug/ml	99
89) Sulfotep	13.76	322	254713	91.5155	ug/ml	97
90) Sym-Trinitrobenzene	13.84	75	350690	116.7532	ug/ml	98
91) Diallate	13.96	86	107743	48.0856	ug/ml	98
92) Phenacetin	13.87	108	752338	93.7913	ug/ml	99
93) Phorate	13.88	75	899347	90.6579	ug/ml#	98
94) 4-Bromophenyl Phenyl Ether	13.94	248	458365	90.5519	ug/ml	99
95) Hexachlorobenzene	14.14	284	476170	89.9624	ug/ml	98
96) Dimethoate	14.09	87	543118	81.8000	ug/ml	98

(#) = qualifier out of range (m) = manual integration
 5M47619.D MEGAMIX.M Mon Aug 27 10:53:23 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47619.D Vial: 8
 Acq On : 24 Aug 2007 8:16 pm Operator: ASP
 Sample : WG248656-08 100PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:23 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:18 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
97) 4-Aminobiphenyl	14.23	169	1658900	95.1978	ug/ml	99
98) Pentachlorophenol	14.31	266	264337	94.8754	ug/ml	99
99) Pronamide	14.27	173	680482	92.8305	ug/ml	100
100) Pentachloronitrobenzene	14.39	237	159462	94.6583	ug/ml	99
101) Disulfoton	14.43	88	798831	92.6433	ug/ml	99
102) Phenanthrene	14.49	178	2485485	91.2681	ug/ml	99
103) Anthracene	14.54	178	2516071	92.2286	ug/ml	99
104) Carbazole	14.69	167	2284921	92.2227	ug/ml	100
105) Parathion Methyl	14.84	109	477278	111.1318	ug/ml	99
106) Di-n-Butyl Phthalate	15.00	149	2772498	92.5887	ug/ml	99
107) Parathion Ethyl	15.23	97	312870	102.9689	ug/ml	99
108) 4-Nitroquinoline 1-Oxide	15.30	190	161668	Below Cal		97
109) Methapyrilene	15.35	58	571347	Below Cal		99
110) Isodrin	15.62	193	251715	91.9138	ug/ml	99
111) Fluoranthene	15.74	202	2410518	90.3380	ug/ml	100
113) Benzidine	15.82	184	1195891	145.8870	ug/ml	100
114) Pyrene	15.99	202	2563965	91.9231	ug/ml	99
115) Aramite	16.01	185	102682	99.0766	ug/ml	99
117) p-(Dimethylamino)azobenzene	16.23	225	530851	95.7811	ug/ml	97
118) Chlorobenzilate	16.26	251	705535	93.7928	ug/ml	98
119) Famphur	16.54	218	43627	9.8845	ug/ml#	33
120) Butyl Benzyl Phthalate	16.55	149	1148378	110.3639	ug/ml	99
121) 3,3'-Dimethylbenzidine	16.57	212	1936629	96.3712	ug/ml	99
123) 2-Acetylaminofluorene	16.86	181	1130035	106.1642	ug/ml	100
124) bis(2-Ethylhexyl)phthalate	17.14	149	1761081	91.2518	ug/ml	100
125) 3,3'-Dichlorobenzidine	17.18	252	854355	94.9303	ug/ml	99
126) Benzo[a]anthracene	17.27	228	2414019	92.7787	ug/ml	99
127) Chrysene	17.32	228	2310048	92.1322	ug/ml	99
129) Di-n-Octyl Phthalate	17.93	149	3010007	97.9784	ug/ml	99
130) 7,12-Dimethylbenz[a]anthracene	18.90	256	1101475	92.9797	ug/ml	100
131) Benzo[b]fluoranthene	18.90	252	2517936	90.7820	ug/ml	100
132) Benzo[k]fluoranthene	18.94	252	2345271	94.7407	ug/ml	99
133) Benzo[a]pyrene	19.53	252	2331379	95.2083	ug/ml	100
134) 3-Methylcholanthrene	20.28	268	1292370	97.0807	ug/ml	100
135) Indeno[1,2,3-cd]pyrene	22.31	276	2605624	94.9985	ug/ml	100
136) Dibenz[ah]anthracene	22.30	278	2249434	95.1242	ug/ml	99
137) Benzo[ghi]perylene	23.11	276	2254626	95.9477	ug/ml	100

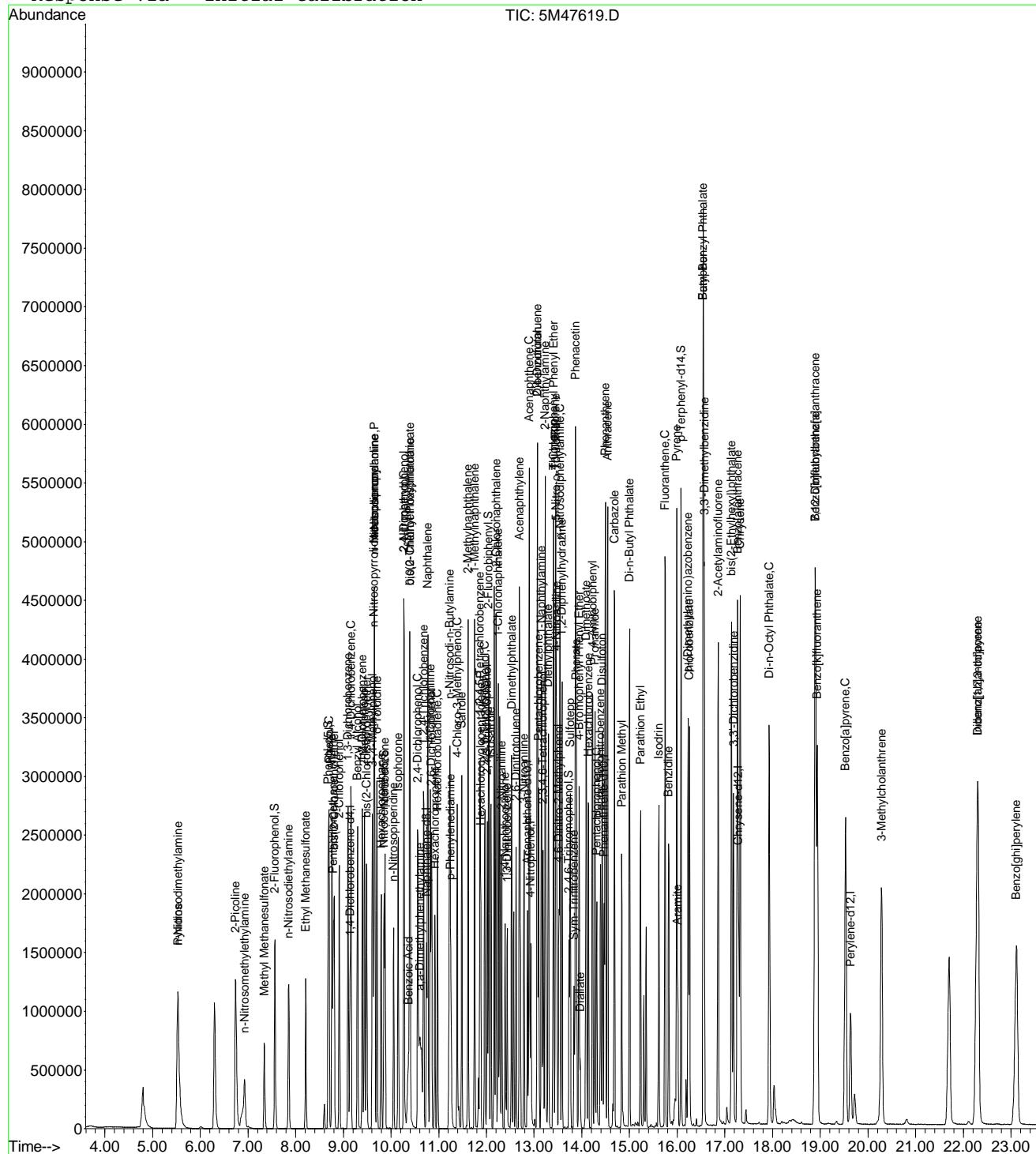
(#) = qualifier out of range (m) = manual integration
 5M47619.D MEGAMIX.M Mon Aug 27 10:53:24 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47619.D
 Acq On : 24 Aug 2007 8:16 pm
 Sample : WG248656-08 100PPM MEGAMIX STD
 Misc : 1,1 STD21155
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:50 2007

Vial: 8
 Operator: ASP
 Inst : HPMS5
 Multiplr: 1.00

Quant Results File: MEGAMIX.RES

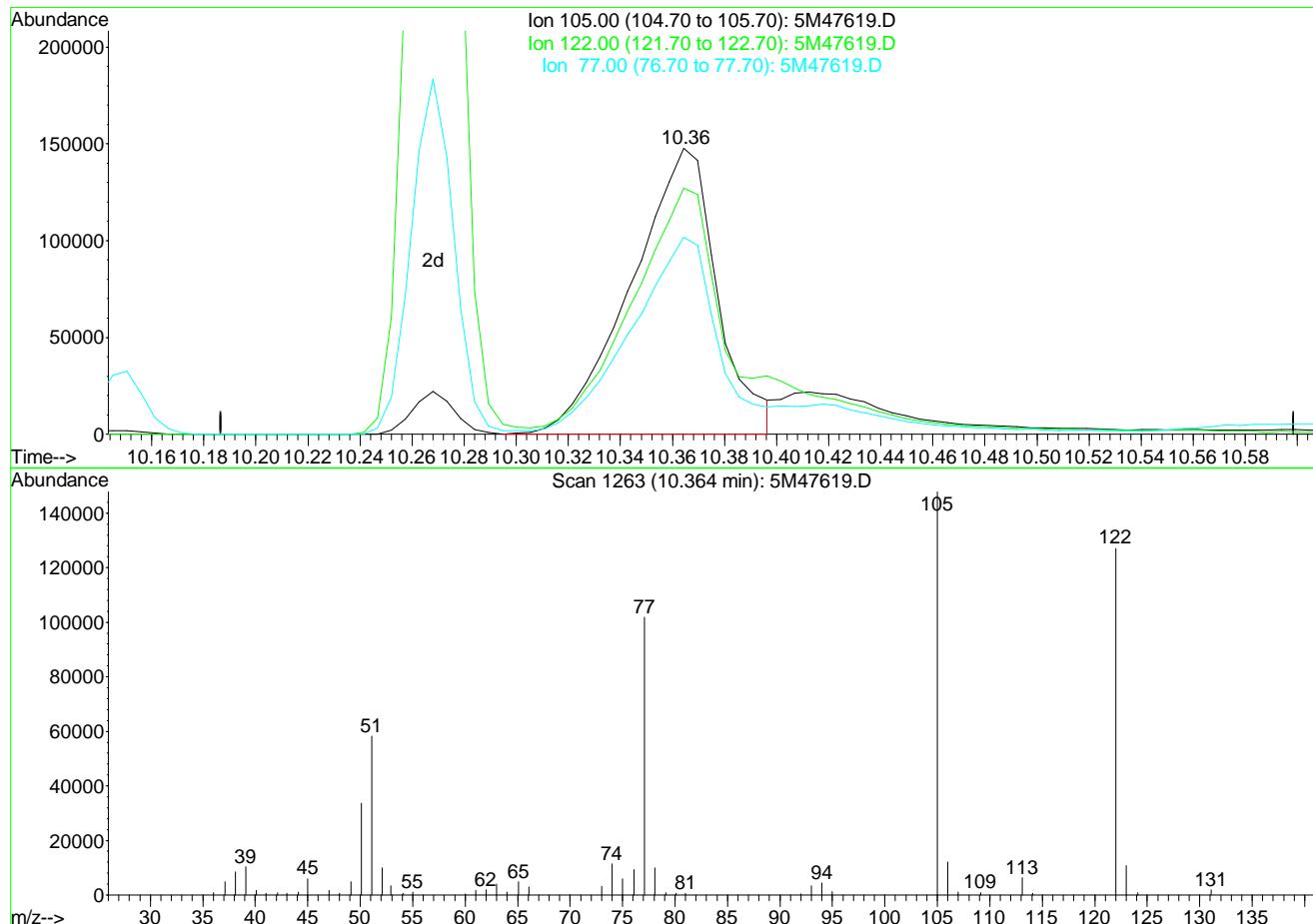
Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:51:11 2007
 Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47619.D Vial: 8
 Acq On : 24 Aug 2007 8:16 pm Operator: ASP
 Sample : WG248656-08 100PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 8:55 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:49:50 2007
 Response via : Single Level Calibration



(38) Benzoic Acid

10.36min 104.26ug/ml

response 337005

Ion	Exp%	Act%
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105.00	100	100
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122.00	87.60	106.43
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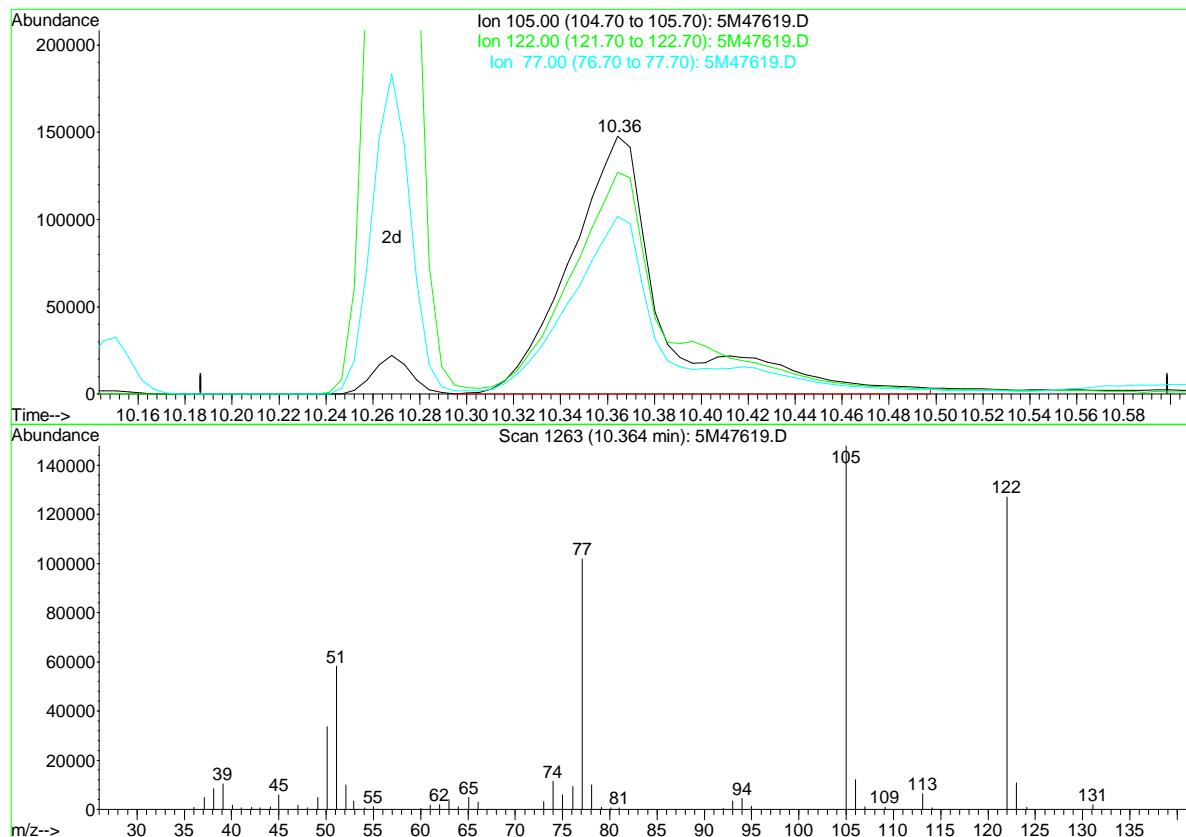
77.00	70.90	68.82
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0.00	0.00	0.00
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Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47619.D Vial: 8
 Acq On : 24 Aug 2007 8:16 pm Operator: ASP
 Sample : WG248656-08 100PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:50 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:49:50 2007
 Response via : Single Level Calibration



TIC: 5M47619.D		
(38) Benzoic Acid		
10.36min 114.36ug/ml m		
response 406758		
Ion Exp% Act%		
105.00	100	100
122.00	87.60	88.18
77.00	70.90	57.02
0.00	0.00	0.00

5M47619.D MEGAMIX.M Mon Aug 27 10:50:12 2007

Approved: August 27, 2007	Supervisor: August 27, 2007
Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak	
.	

Data File : C:\MSDCHEM\1\DATA\082407\5M47620.D Vial: 9
 Acq On : 24 Aug 2007 8:50 pm Operator: ASP
 Sample : WG248656-09 120PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:36 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:30 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	221117	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	886573	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	460212	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.47	188	732855	40.00	ug/ml	0.00
112) Chrysene-d12	17.29	240	721295	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	674608	40.00	ug/ml	0.00

System Monitoring Compounds						
7) 2-Fluorophenol	7.56	112	918353	116.7441	ug/ml	0.00
Spiked Amount	100.000	Range	21 - 100	Recovery	= 116.74%#	
11) Phenol-d5	8.68	99	1100925	115.2386	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 94	Recovery	= 115.24%#	
30) Nitrobenzene-d5	9.85	82	875112	116.8152	ug/ml	0.00
Spiked Amount	50.000	Range	35 - 114	Recovery	= 233.64%#	
58) 2-Fluorobiphenyl	12.05	172	1798167	109.9446	ug/ml	0.00
Spiked Amount	50.000	Range	43 - 116	Recovery	= 219.88%#	
85) 2,4,6-Tribromophenol	13.73	330	251871	124.3364	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 123	Recovery	= 124.34%#	
116) p-Terphenyl-d14	16.08	244	1804219	108.3607	ug/ml	0.00
Spiked Amount	50.000	Range	33 - 141	Recovery	= 216.72%#	

Target Compounds					Qvalue
2) n-Nitrosodimethylamine	5.53	74	619662	118.6383	ug/ml
3) Pyridine	5.53	79	1032470	116.2463	ug/ml
4) 2-Picoline	6.74	93	1033994	116.0730	ug/ml
5) n-Nitrosomethylmethylethylamine	6.93	88	446362	120.9688	ug/ml
6) Methyl Methanesulfonate	7.35	80	443655	108.7222	ug/ml
8) n-Nitrosodiethylamine	7.85	102	451769	116.8800	ug/ml
9) Ethyl Methanesulfonate	8.21	79	667993	114.6552	ug/ml
10) Aniline	8.76	93	1458667	114.7384	ug/ml
12) Phenol	8.70	94	1157864	112.4616	ug/ml
13) bis(2-Chloroethyl)ether	8.81	63	663314	111.9897	ug/ml
14) Pentachloroethane	8.79	167	331396	112.7432	ug/ml
15) 2-Chlorophenol	8.92	128	998330	115.7030	ug/ml
16) 1,3-Dichlorobenzene	9.10	146	1057201	112.3310	ug/ml
17) 1,4-Dichlorobenzene	9.16	146	1091009	112.1829	ug/ml
18) Benzyl Alcohol	9.30	108	628846	117.0196	ug/ml
19) 1,2-Dichlorobenzene	9.40	146	1012716	113.2826	ug/ml
20) 2-Methylphenol	9.45	107	728035	113.7387	ug/ml
21) bis(2-Chloroisopropyl)ethane	9.49	45	1547302	113.6150	ug/ml
22) 3-,4-Methylphenol	9.61	107	973977	115.4412	ug/ml
23) n-Nitrosopyrrolidine	9.64	100	448612	114.8923	ug/ml#
24) n-Nitrosodipropylamine	9.66	70	602511	108.8517	ug/ml
25) Acetophenone	9.65	105	1101183	108.6928	ug/ml
26) n-Nitrosomorpholine	9.65	56	529203	107.4600	ug/ml
27) o-Toluidine	9.71	106	1375707	114.1534	ug/ml
28) Hexachloroethane	9.79	117	401352	114.7645	ug/ml
31) Nitrobenzene	9.87	77	908545	114.0777	ug/ml
32) n-Nitrosopiperidine	10.05	114	469926	115.6681	ug/ml
33) Isophorone	10.15	82	1529778	111.9556	ug/ml
34) 2-Nitrophenol	10.27	139	535468	122.0621	ug/ml
35) 2,4-Dimethylphenol	10.27	122	883276	111.3221	ug/ml
36) O,O,O-Triethyl Phosphorothioate	10.40	198	395103	107.5557	ug/ml
37) bis(2-Chloroethoxy)methane	10.39	93	1304764	108.3294	ug/ml
38) Benzoic Acid	10.37	105	508563m	131.1769	ug/ml

(#) = qualifier out of range (m) = manual integration
 5M47620.D MEGAMIX.M Mon Aug 27 10:53:25 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47620.D Vial: 9
 Acq On : 24 Aug 2007 8:50 pm Operator: ASP
 Sample : WG248656-09 120PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:36 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:30 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.56	162	759959	116.1949	ug/ml	100
40) a,a-Dimethylphenethylamine	10.61	58	2673530	122.6007	ug/ml#	93
41) 1,2,4-Trichlorobenzene	10.68	180	821728	110.5485	ug/ml	99
42) Naphthalene	10.77	128	2726016	109.4826	ug/ml	100
43) 4-Chloroaniline	10.82	127	1223752	112.9225	ug/ml	99
44) 2,6-Dichlorophenol	10.85	162	759903	114.0069	ug/ml	99
45) Hexachloropropene	10.92	213	471708	117.0272	ug/ml	100
46) Hexachlorobutadiene	10.97	225	400211	110.2570	ug/ml	100
47) n-Nitrosodi-n-Butylamine	11.23	84	686501	123.9854	ug/ml#	81
48) p-Phenylenediamine	11.26	108	766052	119.6268	ug/ml	100
49) 4-Chloro-3-Methylphenol	11.39	107	781948	113.3926	ug/ml	97
50) Safrole	11.49	162	707287	111.3665	ug/ml	100
51) 2-Methylnaphthalene	11.61	142	1823152	110.4423	ug/ml	99
52) 1-Methylnaphthalene	11.75	142	1794374	110.4063	ug/ml	99
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	723690	109.5419	ug/ml	100
55) Hexachlorocyclopentadiene	11.88	237	372411	114.4844	ug/ml	99
56) 2,4,6-Trichlorophenol	11.97	196	542297	119.4047	ug/ml	99
57) 2,4,5-Trichlorophenol	12.02	196	586268	120.7289	ug/ml	99
59) Isosafrole	12.09	162	726876	113.3458	ug/ml	99
60) 2-Chloronaphthalene	12.20	162	1907146	109.2000	ug/ml	100
61) 1-Chloronaphthalene	12.24	162	1544651	109.6880	ug/ml	99
62) 2-Nitroaniline	12.32	65	489904	121.5177	ug/ml	97
63) 1,4-Naphthoquinone	12.39	158	464503	83.6161	ug/ml	99
64) Dimethylphthalate	12.53	163	1840092	110.4382	ug/ml	100
65) 1,3-Dinitrobenzene	12.44	168	328989	132.3722	ug/ml	97
66) 2,6-Dinitrotoluene	12.62	165	483602	120.1215	ug/ml	98
67) Acenaphthylene	12.69	152	2744269	110.5199	ug/ml	99
68) 3-Nitroaniline	12.79	138	570402	121.2774	ug/ml	99
69) 2,4-Dinitrophenol	12.91	184	242719	Below Cal		30
70) Acenaphthene	12.90	154	1706326	111.5096	ug/ml	99
71) 4-Nitrophenol	12.93	65	372724	134.8207	ug/ml	99
72) 2,4-Dinitrotoluene	13.07	165	566268	123.1013	ug/ml	97
73) Pentachlorobenzene	13.10	250	626135	108.7901	ug/ml	99
74) Dibenzofuran	13.07	168	2193766	106.2393	ug/ml	99
75) 2,3,4,6-Tetrachlorophenol	13.19	232	433085	116.1704	ug/ml	99
76) 1-Naphthylamine	13.15	143	1763420	113.5530	ug/ml	99
77) 2-Naphthylamine	13.23	143	1719250	131.3706	ug/ml	100
78) Diethylphthalate	13.30	149	1855922	110.7368	ug/ml	100
79) Thionazin	13.40	107	282752	108.4406	ug/ml	98
80) Fluorene	13.45	166	1912427	108.9639	ug/ml	100
81) 4-Chlorophenyl Phenyl Ethe	13.41	204	856785	106.5210	ug/ml	99
82) 4-Nitroaniline	13.48	138	597759	119.1256	ug/ml	99
83) 5-Nitro-o-Tolidine	13.47	152	568448	123.5578	ug/ml	98
84) 1,2-Diphenylhydrazine	13.59	77	1806253	109.3469	ug/ml	98
87) 4,6-Dinitro-2-Methylphenol	13.52	198	370418	170.3628	ug/ml#	55
88) n-Nitrosodiphenylamine	13.54	169	1667341	110.1213	ug/ml	98
89) Sulfotep	13.76	322	286236	110.7419	ug/ml	97
90) Sym-Trinitrobenzene	13.84	75	408139	153.9682	ug/ml	98
91) Diallate	13.96	86	124887	79.5891	ug/ml	98
92) Phenacetin	13.87	108	847117	111.5824	ug/ml	99
93) Phorate	13.88	75	1007028	106.6335	ug/ml#	98
94) 4-Bromophenyl Phenyl Ether	13.94	248	514697	109.6739	ug/ml	99
95) Hexachlorobenzene	14.14	284	534963	108.8120	ug/ml	98
96) Dimethoate	14.09	87	596830	94.0585	ug/ml	98

(#) = qualifier out of range (m) = manual integration
 5M47620.D MEGAMIX.M Mon Aug 27 10:53:25 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47620.D Vial: 9
 Acq On : 24 Aug 2007 8:50 pm Operator: ASP
 Sample : WG248656-09 120PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 08:55:36 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Sat Aug 25 08:55:30 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

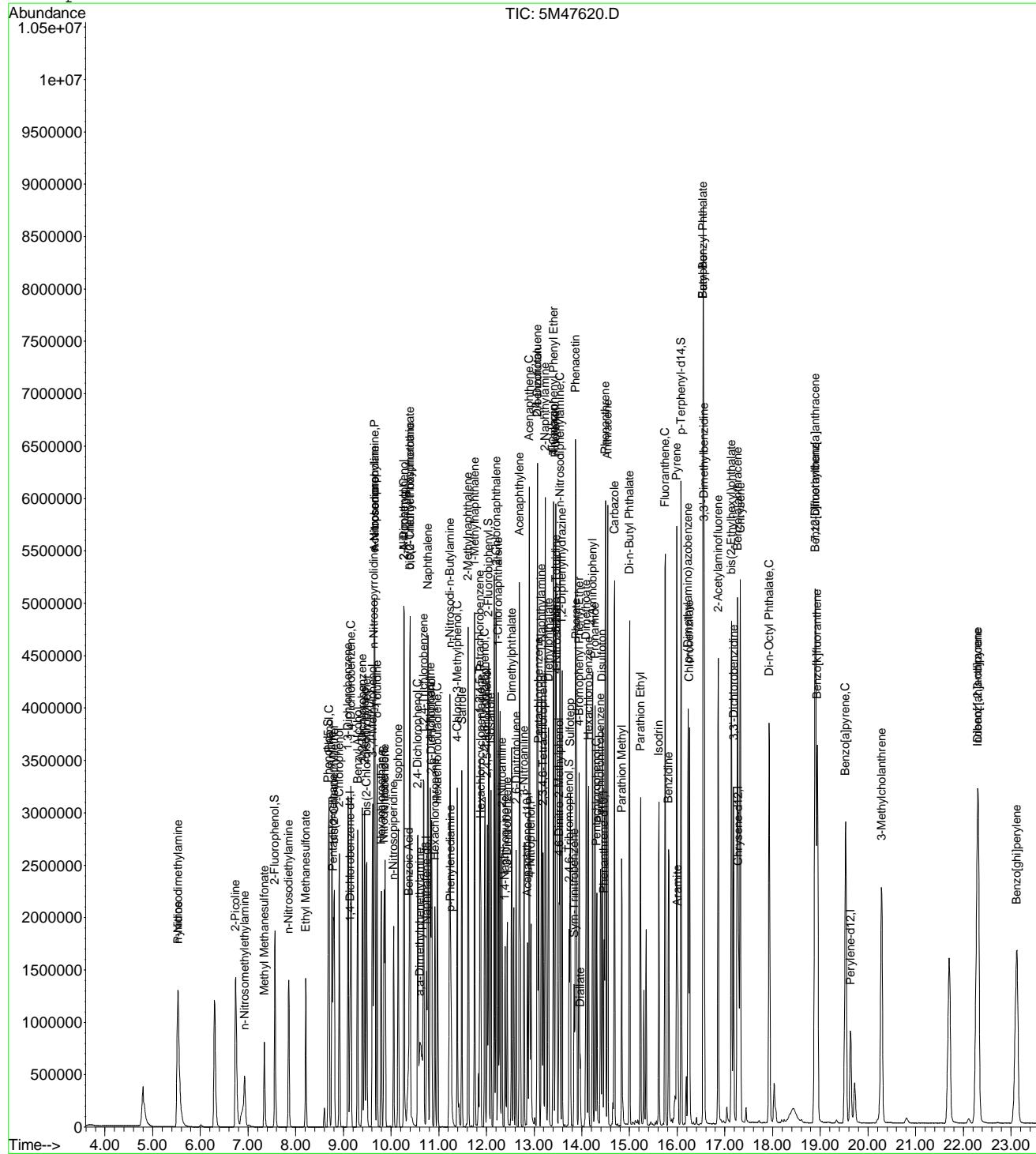
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
97) 4-Aminobiphenyl	14.23	169	1868094	112.8545	ug/ml	99
98) Pentachlorophenol	14.31	266	304757	115.8546	ug/ml	100
99) Pronamide	14.27	173	770880	112.3751	ug/ml	100
100) Pentachloronitrobenzene	14.39	237	181985	116.8143	ug/ml	100
101) Disulfoton	14.43	88	900147	110.5459	ug/ml	100
102) Phenanthrene	14.49	178	2802719	108.5533	ug/ml	99
103) Anthracene	14.54	178	2823468	109.1572	ug/ml	99
104) Carbazole	14.69	167	2589900	110.4394	ug/ml	100
105) Parathion Methyl	14.84	109	527791	124.9653	ug/ml	99
106) Di-n-Butyl Phthalate	15.00	149	3137833	110.4364	ug/ml	99
107) Parathion Ethyl	15.23	97	354776	121.9587	ug/ml	98
108) 4-Nitroquinoline 1-Oxide	15.30	190	185962	Below Cal		96
109) Methapyrilene	15.35	58	643054	Below Cal		100
110) Isodrin	15.62	193	286014	110.9988	ug/ml	99
111) Fluoranthene	15.75	202	2723784	108.1615	ug/ml	100
113) Benzidine	15.82	184	1321961	144.7330	ug/ml	100
114) Pyrene	15.99	202	2904869	109.9638	ug/ml	99
115) Aramite	16.01	185	117902	120.9680	ug/ml	99
117) p-(Dimethylamino)azobenzene	16.23	225	608948	117.4479	ug/ml	96
118) Chlorobenzilate	16.26	251	807560	115.5436	ug/ml	98
119) Famphur	16.54	218	28279	6.7961	ug/ml#	1
120) Butyl Benzyl Phthalate	16.55	149	1303777	129.1133	ug/ml	98
121) 3,3'-Dimethylbenzidine	16.57	212	2150429	112.4657	ug/ml	99
123) 2-Acetylaminofluorene	16.86	181	1269367	125.3489	ug/ml	99
124) bis(2-Ethylhexyl)phthalate	17.14	149	2000845	109.6354	ug/ml	100
125) 3,3'-Dichlorobenzidine	17.18	252	962210	113.4298	ug/ml	99
126) Benzo[a]anthracene	17.27	228	2738540	111.9007	ug/ml	99
127) Chrysene	17.32	228	2624922	111.1366	ug/ml	99
129) Di-n-Octyl Phthalate	17.93	149	3426332	120.5706	ug/ml	99
130) 7,12-Dimethylbenz[a]anthracene	18.90	256	1236034	113.6892	ug/ml	100
131) Benzo[b]fluoranthene	18.91	252	2738890	107.0644	ug/ml	99
132) Benzo[k]fluoranthene	18.94	252	2408698	104.6203	ug/ml	99
133) Benzo[a]pyrene	19.53	252	2617152	116.0075	ug/ml	100
134) 3-Methylcholanthrene	20.28	268	1447814	118.4146	ug/ml	99
135) Indeno[1,2,3-cd]pyrene	22.31	276	2920337	115.4433	ug/ml	99
136) Dibenz[ah]anthracene	22.30	278	2522218	115.5941	ug/ml	99
137) Benzo[ghi]perylene	23.12	276	2544901	116.8700	ug/ml	100

(#) = qualifier out of range (m) = manual integration
 5M47620.D MEGAMIX.M Mon Aug 27 10:53:26 2007

Quantitation Report (OT Reviewed)

Data File : C:\MSDCHEM\1\DATA\082407\5M47620.D Vial: 9
Acq On : 24 Aug 2007 8:50 pm Operator: ASP
Sample : WG248656-09 120PPM MEGAMIX STD Inst : HPMS5
Misc : 1,1 STD21155 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 27 10:50 2007 Quant Results File: MEGAMIX.RES

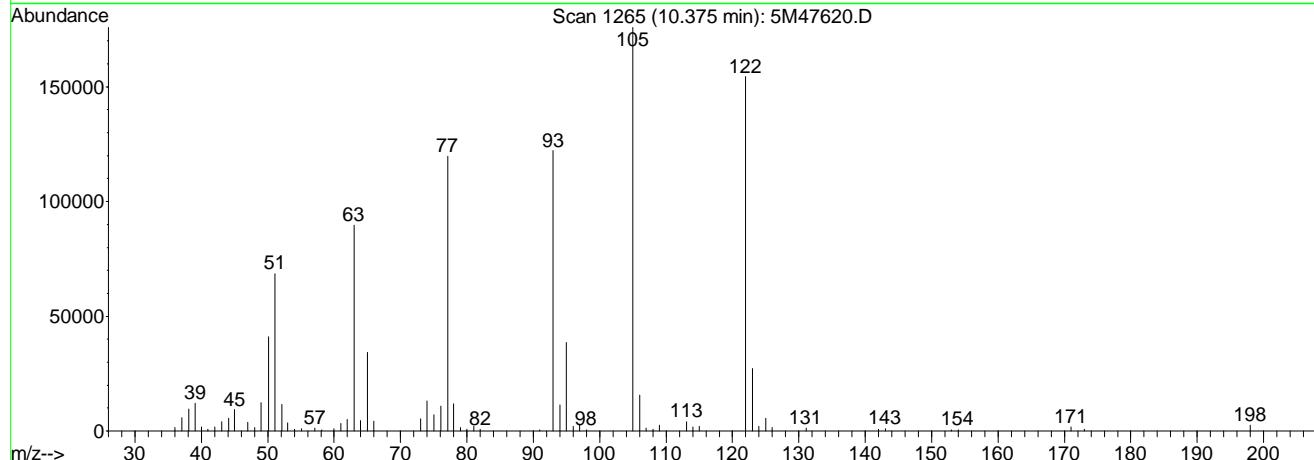
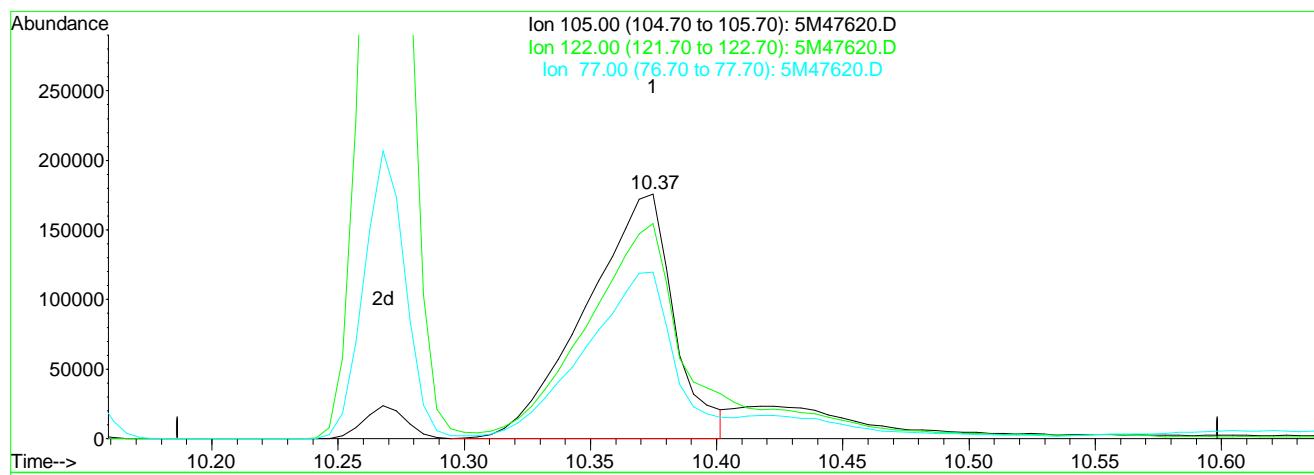
Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Mon Aug 27 10:51:11 2007
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47620.D Vial: 9
 Acq On : 24 Aug 2007 8:50 pm Operator: ASP
 Sample : WG248656-09 120PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 25 8:55 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:50:20 2007
 Response via : Single Level Calibration



TIC: 5M47620.D

(38) Benzoic Acid

10.37min 119.86ug/ml

response 425190

Ion Exp% Act%

105.00 100 100

122.00 87.60 105.26

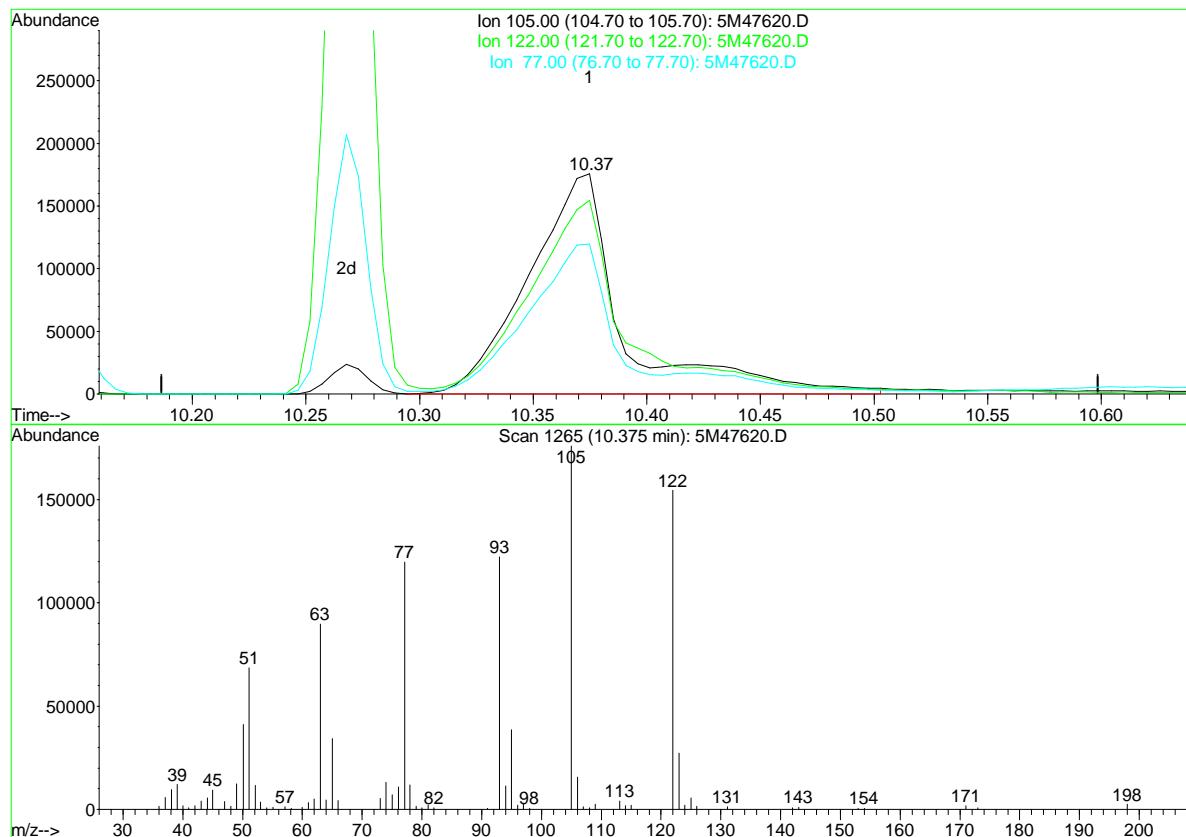
77.00 70.90 67.23

0.00 0.00 0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47620.D Vial: 9
 Acq On : 24 Aug 2007 8:50 pm Operator: ASP
 Sample : WG248656-09 120PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:50 2007 Quant Results File: temp.res

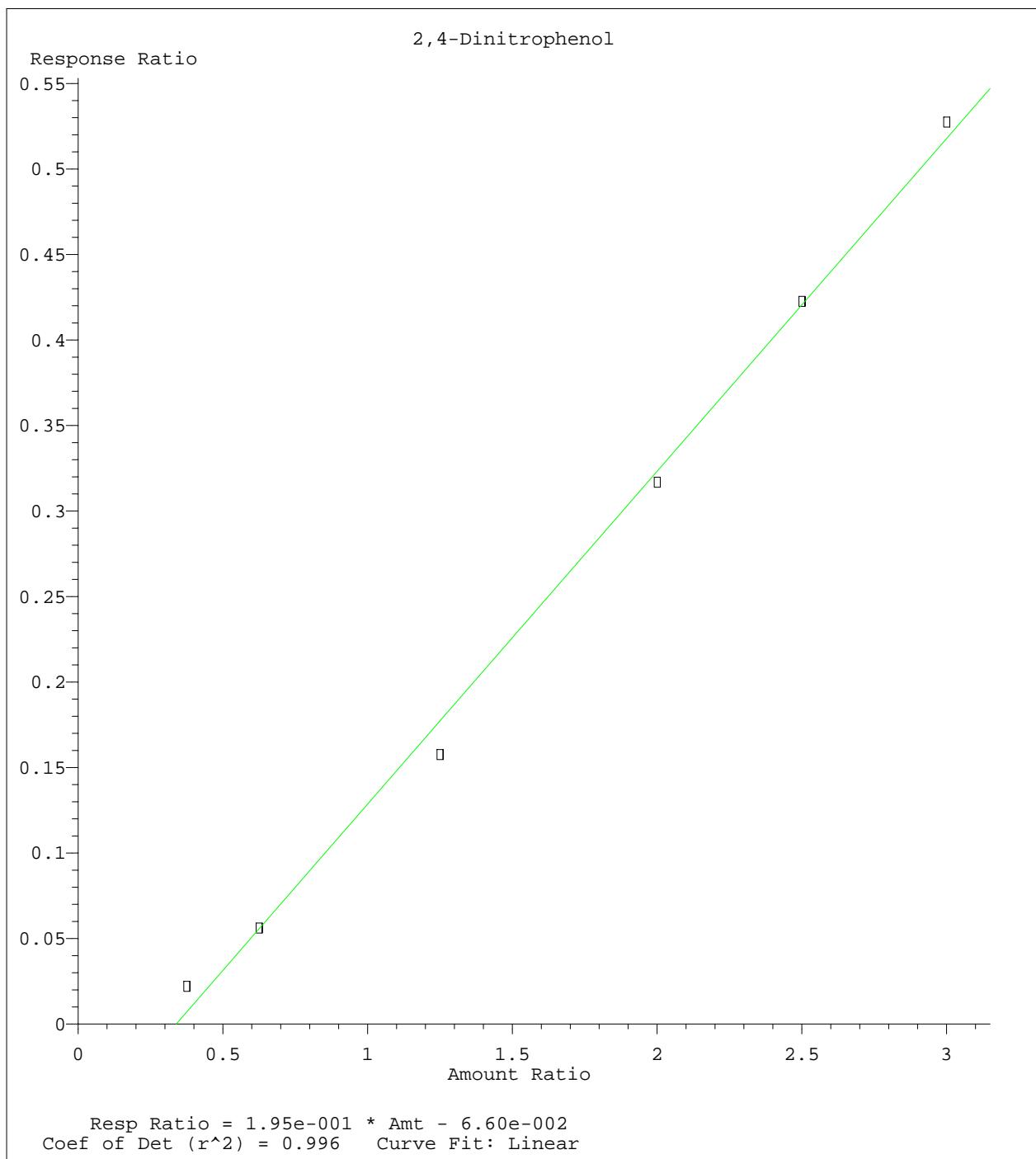
Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:50:20 2007
 Response via : Single Level Calibration



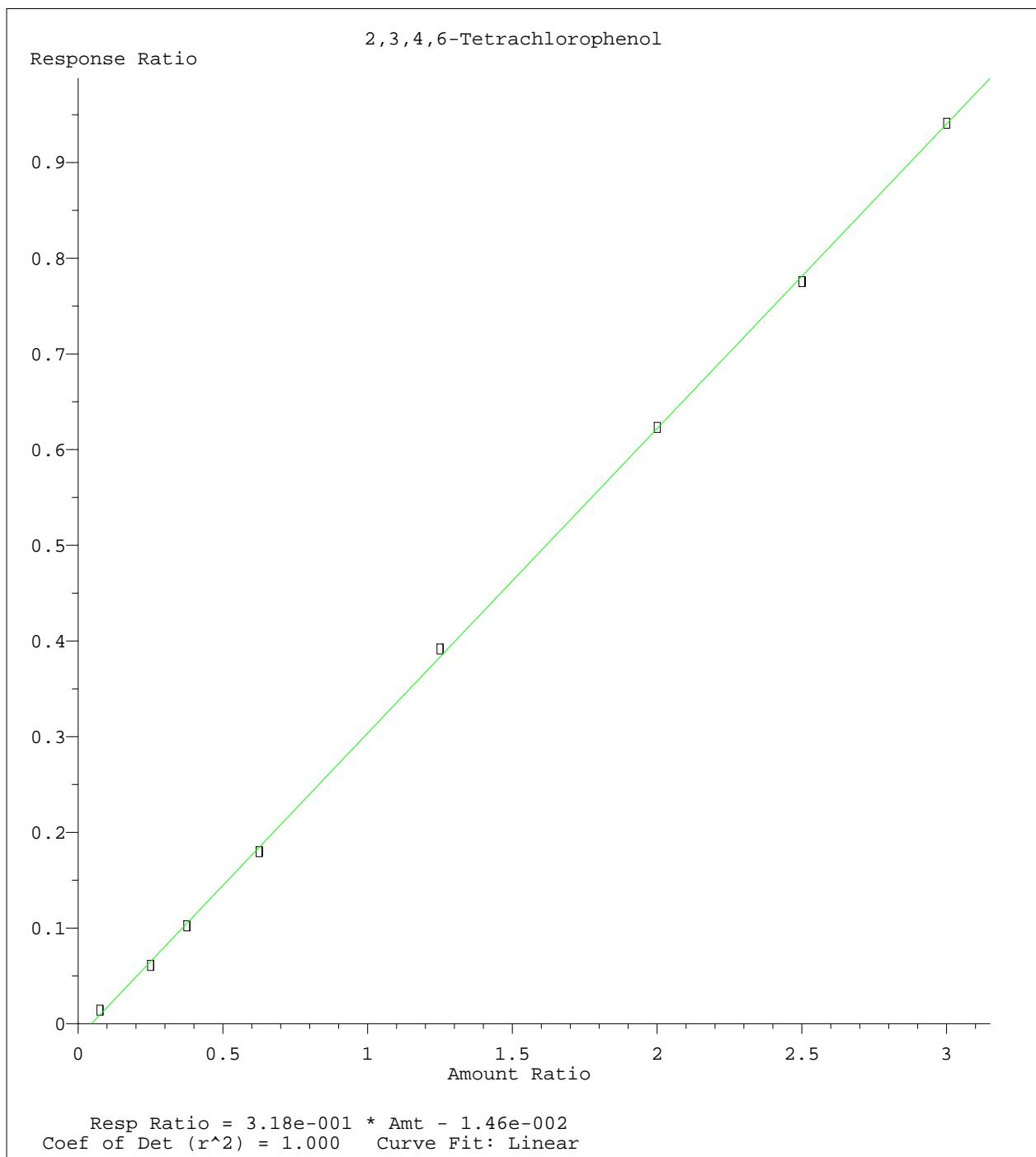
TIC: 5M47620.D		
(38) Benzoic Acid		
10.37min 131.18ug/ml m		
response 508563		
Ion Exp% Act%		
105.00	100	100
122.00	87.60	88.01
77.00	70.90	56.21
0.00	0.00	0.00

5M47620.D MEGAMIX.M Mon Aug 27 10:50:43 2007

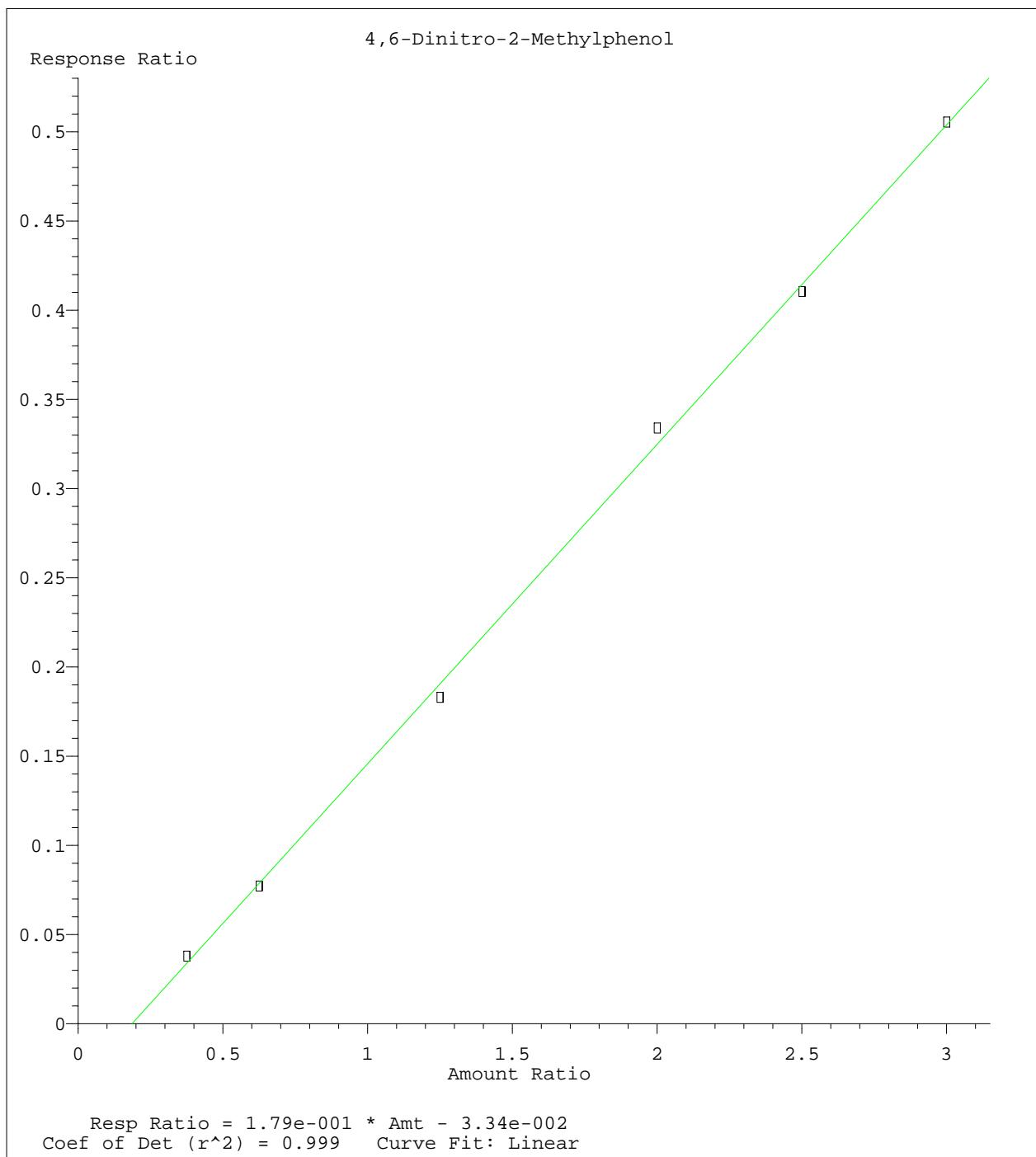
Approved: August 27, 2007	Supervisor: August 27, 2007
Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak	
.	



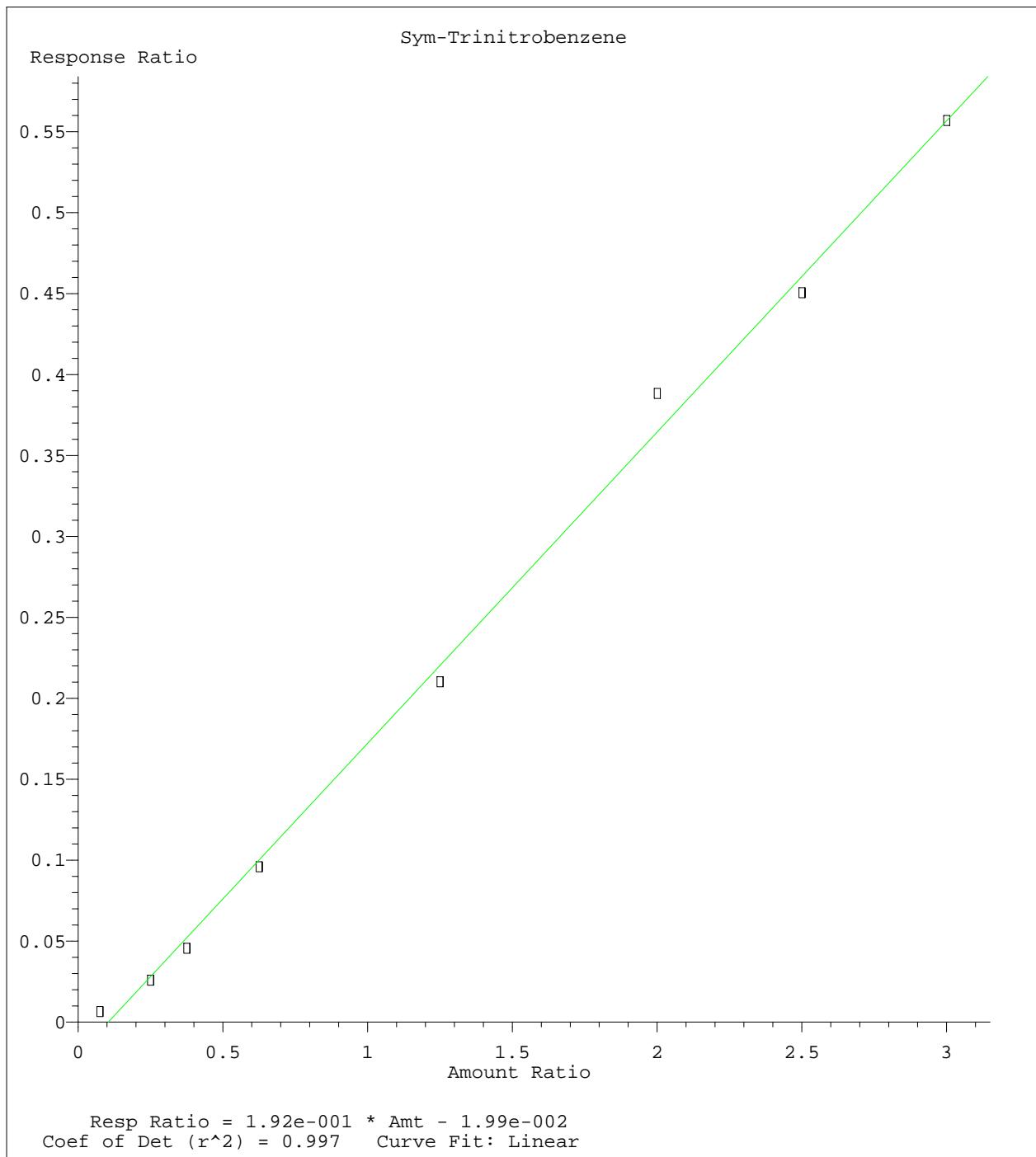
Method Name: C:\MSDCHEM\1\METHODS\MEGAMIX.M
Calibration Table Last Updated: Mon Aug 27 10:56:18 2007



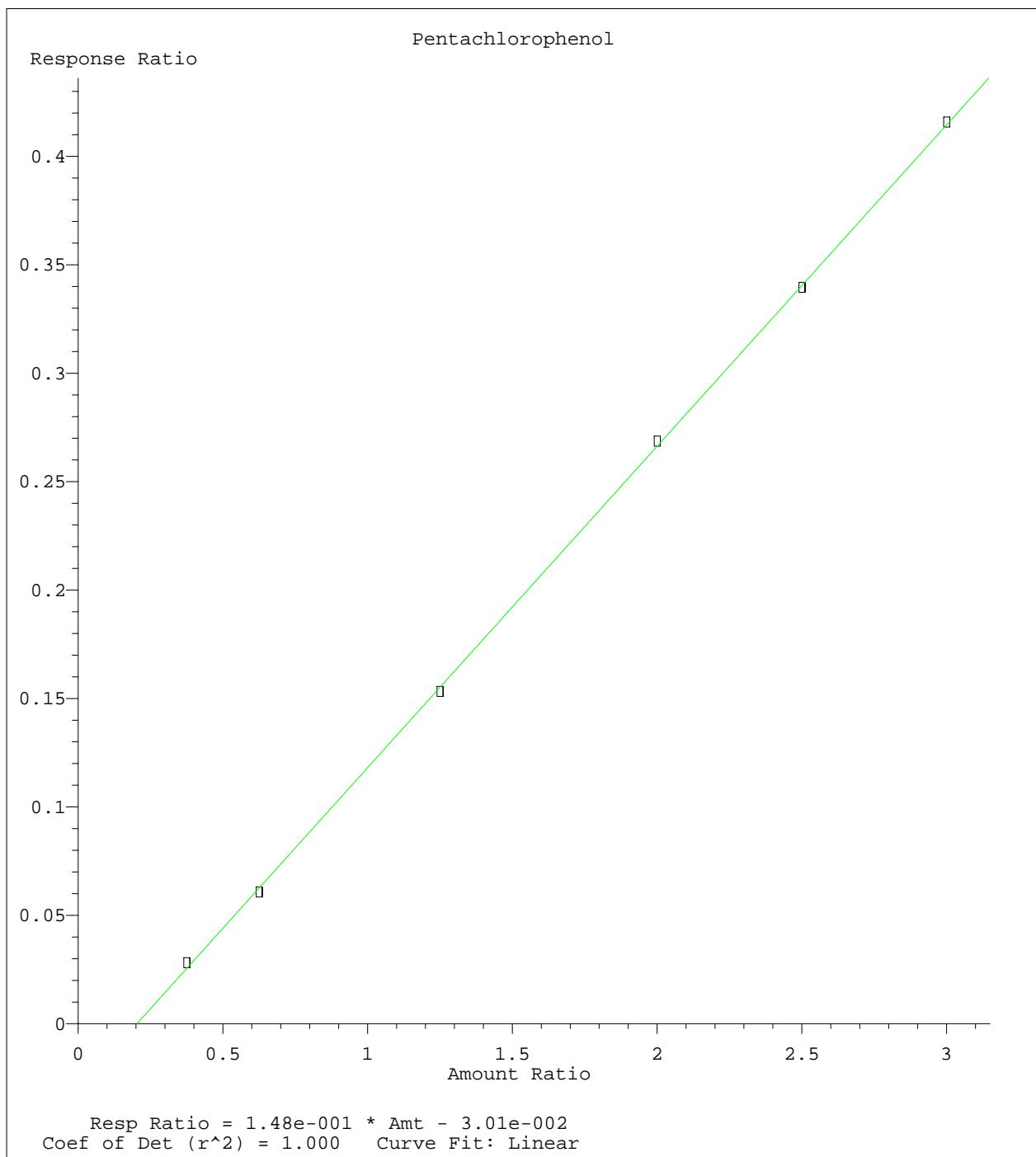
Method Name: C:\MSDCHEM\1\METHODS\MEGAMIX.M
Calibration Table Last Updated: Mon Aug 27 10:56:18 2007



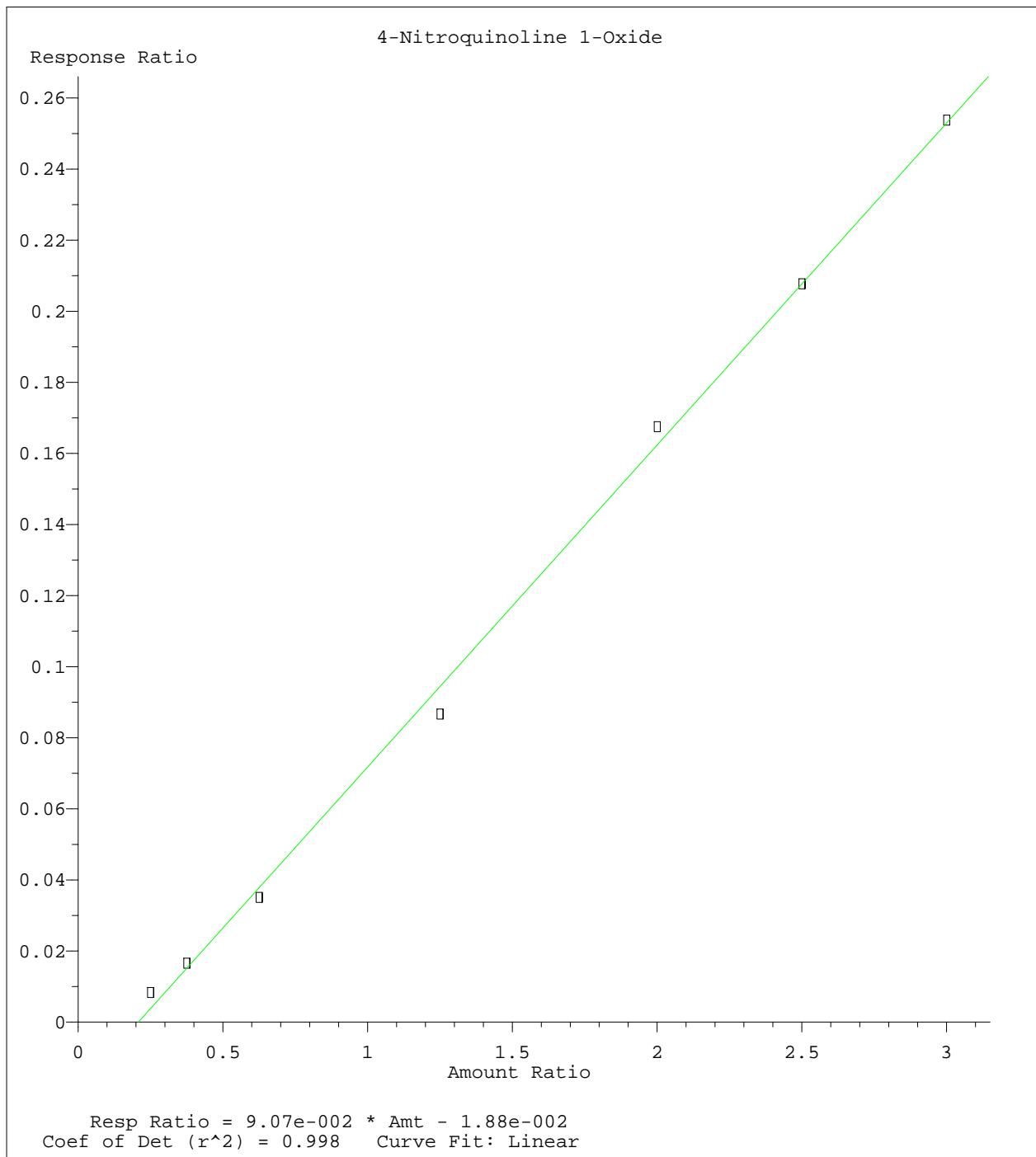
Method Name: C:\MSDCHEM\1\METHODS\MEGAMIX.M
Calibration Table Last Updated: Mon Aug 27 10:56:18 2007



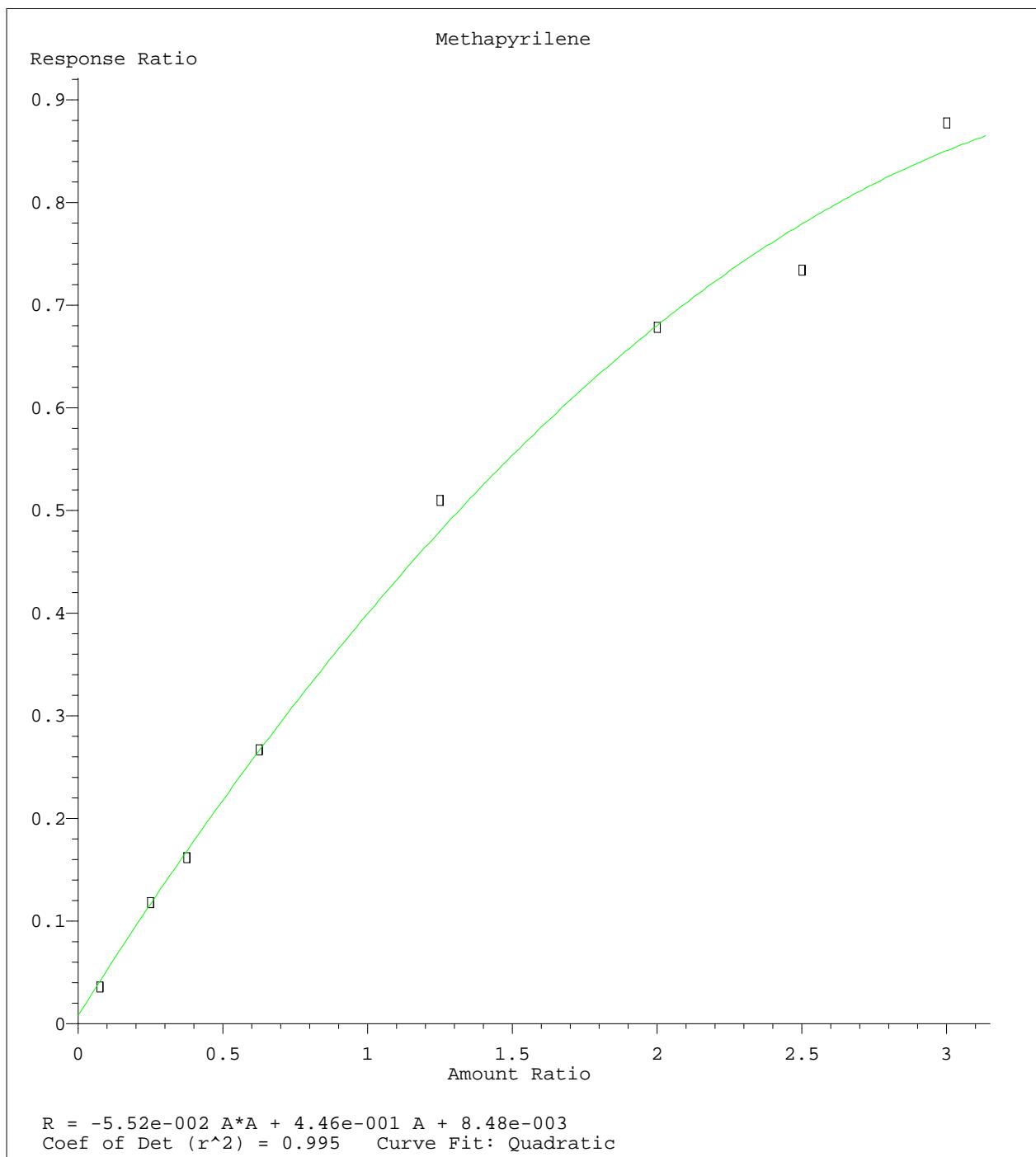
Method Name: C:\MSDCHEM\1\METHODS\MEGAMIX.M
Calibration Table Last Updated: Mon Aug 27 10:56:18 2007



Method Name: C:\MSDCHEM\1\METHODS\MEGAMIX.M
Calibration Table Last Updated: Mon Aug 27 10:56:18 2007



Method Name: C:\MSDCHEM\1\METHODS\MEGAMIX.M
Calibration Table Last Updated: Mon Aug 27 10:56:18 2007



Method Name: C:\MSDCHEM\1\METHODS\MEGAMIX.M
Calibration Table Last Updated: Mon Aug 27 10:56:18 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47621.D Vial: 10
 Acq On : 24 Aug 2007 9:24 pm Operator: ASP
 Sample : WG248656-10 50PPM BNA ALT STD Inst : HPMS5
 Misc : 1,1 STD21455 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:57:00 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:56:18 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	235472	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	936314	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	494642	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	765367	40.00	ug/ml	0.00
112) Chrysene-d12	17.29	240	742148	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	720675	40.00	ug/ml	0.00

System Monitoring Compounds

7) 2-Fluorophenol	0.00	112	0	0.0000	ug/ml
Spiked Amount	100.000	Range 21 - 100	Recovery	=	0.00%#
11) Phenol-d5	0.00	99	0	0.0000	ug/ml
Spiked Amount	100.000	Range 10 - 94	Recovery	=	0.00%#
30) Nitrobenzene-d5	9.79	82	31728	3.9968	ug/ml-0.06
Spiked Amount	50.000	Range 35 - 114	Recovery	=	8.00%#
58) 2-Fluorobiphenyl	0.00	172	0	0.0000	ug/ml
Spiked Amount	50.000	Range 43 - 116	Recovery	=	0.00%#
85) 2,4,6-Tribromophenol	0.00	330	0	0.0000	ug/ml
Spiked Amount	100.000	Range 10 - 123	Recovery	=	0.00%#
116) p-Terphenyl-d14	0.00	244	0	0.0000	ug/ml
Spiked Amount	50.000	Range 33 - 141	Recovery	=	0.00%#

Target Compounds

				Qvalue
2) n-Nitrosodimethylamine	5.52	74	238308	42.1526 ug/ml 99
3) Pyridine	5.53	79	449571	46.8962 ug/ml 98
10) Aniline	8.76	93	685441	49.9471 ug/ml 98
12) Phenol	8.70	94	519181	46.8400 ug/ml 95
13) bis(2-Chloroethyl)ether	8.81	63	284039	44.2343 ug/ml 95
15) 2-Chlorophenol	8.91	128	432447	46.9003 ug/ml 99
16) 1,3-Dichlorobenzene	9.10	146	488916	48.7285 ug/ml 99
17) 1,4-Dichlorobenzene	9.16	146	495115	47.7127 ug/ml 99
18) Benzyl Alcohol	9.30	108	281240	49.0416 ug/ml 100
19) 1,2-Dichlorobenzene	9.40	146	470479	49.3419 ug/ml 100
20) 2-Methylphenol	9.43	107	333005	48.8305 ug/ml 98
21) bis(2-Chloroisopropyl)ethane	9.48	45	674248	45.0492 ug/ml 100
22) 3-,4-Methylphenol	9.60	107	420874	46.7504 ug/ml 99
24) n-Nitrosodipropylamine	9.65	70	276515	46.4037 ug/ml# 60
26) n-Nitrosomorpholine	9.65	56	20200	3.7524 ug/ml# 41
28) Hexachloroethane	9.79	117	178220	47.8227 ug/ml 98
31) Nitrobenzene	9.87	77	396400	46.7922 ug/ml 99
33) Isophorone	10.14	82	754042	52.1971 ug/ml 99
34) 2-Nitrophenol	10.27	139	239096	50.3454 ug/ml 98
35) 2,4-Dimethylphenol	10.27	122	395969	47.1537 ug/ml 99
37) bis(2-Chloroethoxy)methane	10.39	93	477868	37.2384 ug/ml 89
38) Benzoic Acid	10.35	105	175070	66.1806 ug/ml# 62
39) 2,4-Dichlorophenol	10.56	162	327508	47.7304 ug/ml 99
41) 1,2,4-Trichlorobenzene	10.68	180	379774	48.6218 ug/ml 100
42) Naphthalene	10.77	128	1293610	48.9570 ug/ml 100
43) 4-Chloroaniline	10.82	127	568172	49.4914 ug/ml 98
46) Hexachlorobutadiene	10.97	225	197292	52.6500 ug/ml 100
48) p-Phenylenediamine	11.38	108	26130	3.2917 ug/ml# 1
49) 4-Chloro-3-Methylphenol	11.38	107	333955	46.0874 ug/ml 95
51) 2-Methylnaphthalene	11.61	142	857823	49.0713 ug/ml 99
52) 1-Methylnaphthalene	11.75	142	756952	44.0029 ug/ml 99
55) Hexachlorocyclopentadiene	11.88	237	179945	57.1319 ug/ml 99
56) 2,4,6-Trichlorophenol	11.96	196	235471	48.1545 ug/ml 99

(#) = qualifier out of range (m) = manual integration
 5M47621.D MEGAMIX.M Mon Aug 27 10:57:01 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47621.D Vial: 10
 Acq On : 24 Aug 2007 9:24 pm Operator: ASP
 Sample : WG248656-10 50PPM BNA ALT STD Inst : HPMS5
 Misc : 1,1 STD21455 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:57:00 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:56:18 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

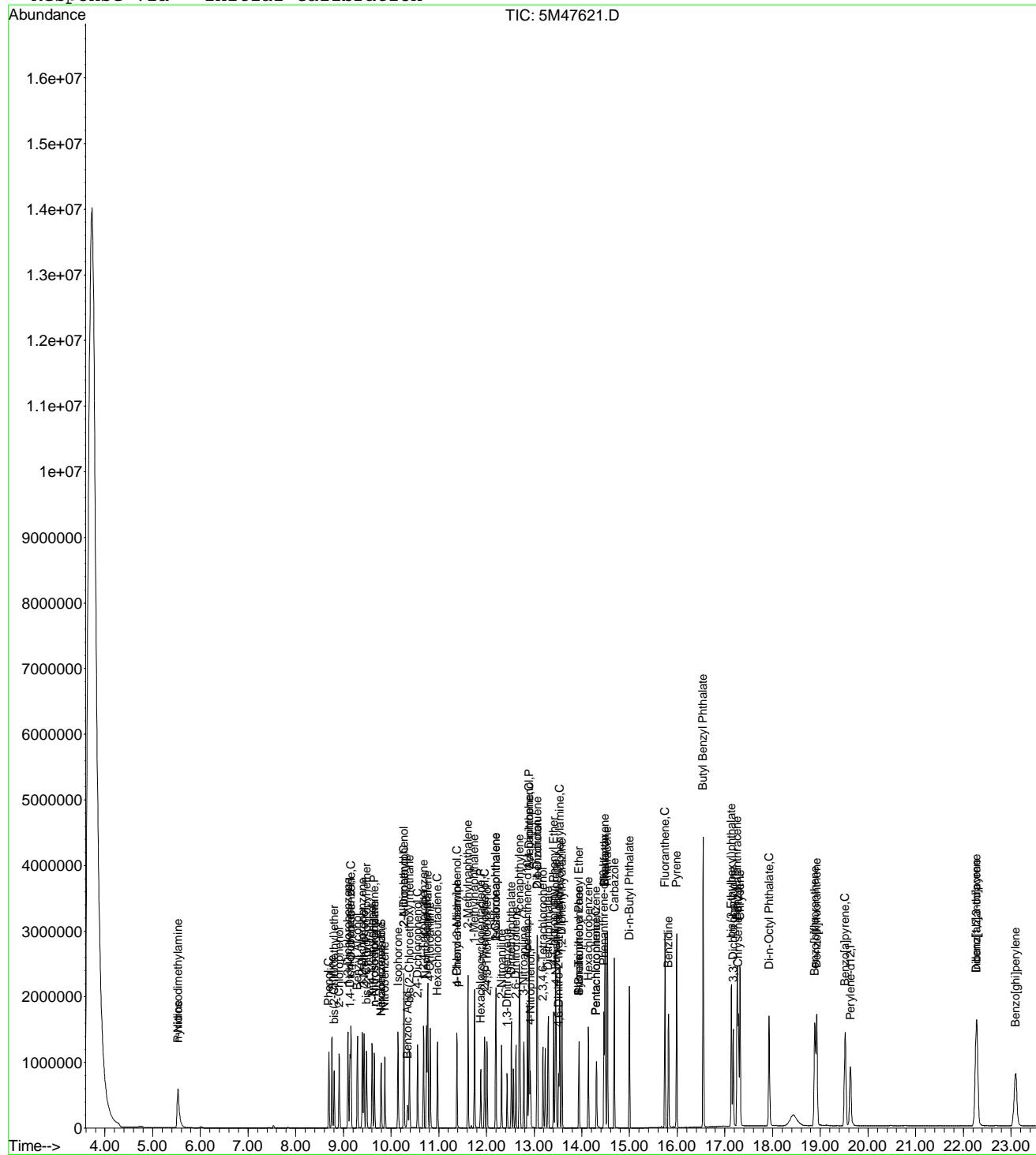
Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
57) 2,4,5-Trichlorophenol	12.01	196	258300	49.3875	ug/ml	100
59) Isosafrole	12.20	162	770016	111.5052	ug/ml#	36
60) 2-Chloronaphthalene	12.20	162	770016	40.7482	ug/ml	100
61) 1-Chloronaphthalene	12.20	162	770016	50.6242	ug/ml	99
62) 2-Nitroaniline	12.32	65	224916	50.7311	ug/ml	97
64) Dimethylphthalate	12.52	163	797212	44.3990	ug/ml	100
65) 1,3-Dinitrobenzene	12.43	168	134305	51.7170	ug/ml	94
66) 2,6-Dinitrotoluene	12.62	165	212699	48.8337	ug/ml	98
67) Acenaphthylene	12.69	152	1322154	48.9485	ug/ml	100
68) 3-Nitroaniline	12.78	138	268288	52.1290	ug/ml	98
69) 2,4-Dinitrophenol	12.90	184	89526	50.7400	ug/ml	68
70) Acenaphthene	12.90	154	799899	48.2181	ug/ml	100
71) 4-Nitrophenol	12.92	65	147786	45.0909	ug/ml	96
72) 2,4-Dinitrotoluene	13.06	165	267206	52.4560	ug/ml	97
74) Dibenzofuran	13.07	168	1060818	47.4763	ug/ml	99
75) 2,3,4,6-Tetrachlorophenol	13.18	232	186869	49.3352	ug/ml	99
78) Diethylphthalate	13.30	149	790068	43.6749	ug/ml	100
80) Fluorene	13.45	166	915666	48.2891	ug/ml	100
81) 4-Chlorophenyl Phenyl Ether	13.41	204	383925	44.5104	ug/ml	98
82) 4-Nitroaniline	13.47	138	275956	50.1272	ug/ml	96
84) 1,2-Diphenylhydrazine	13.58	77	852051	47.4459	ug/ml	100
87) 4,6-Dinitro-2-Methylphenol	13.52	198	148382	50.7028	ug/ml	94
88) n-Nitrosodiphenylamine	13.54	169	751547	47.2557	ug/ml	99
90) Sym-Trinitrobenzene	13.94	75	28191	11.7971	ug/ml#	63
93) Phorate	13.94	75	28191	2.8110	ug/ml#	40
94) 4-Bromophenyl Phenyl Ether	13.94	248	193531	40.1547	ug/ml	99
95) Hexachlorobenzene	14.14	284	247074	48.8637	ug/ml	98
98) Pentachlorophenol	14.31	266	141807	58.0573	ug/ml	99
100) Pentachloronitrobenzene	14.31	237	4105	2.5669	ug/ml#	14
101) Disulfoton	14.49	88	104605	12.2192	ug/ml#	2
102) Phenanthrene	14.49	178	1330299	48.8386	ug/ml	100
103) Anthracene	14.54	178	1394187	51.1125	ug/ml	100
104) Carbazole	14.68	167	1232858	49.8795	ug/ml	100
106) Di-n-Butyl Phthalate	15.00	149	1355178	45.1088	ug/ml	100
111) Fluoranthene	15.74	202	1369800	51.8046	ug/ml	99
113) Benzidine	15.82	184	785612	66.4353	ug/ml	100
114) Pyrene	15.99	202	1422787	51.5390	ug/ml	100
120) Butyl Benzyl Phthalate	16.54	149	648092	50.3200	ug/ml	97
124) bis(2-Ethylhexyl)phthalate	17.14	149	889956	46.7502	ug/ml	100
125) 3,3'-Dichlorobenzidine	17.18	252	434702	49.4951	ug/ml	99
126) Benzo[a]anthracene	17.26	228	1280074	50.4721	ug/ml	100
127) Chrysene	17.32	228	1232847	50.2824	ug/ml	100
129) Di-n-Octyl Phthalate	17.93	149	1506903	49.0353	ug/ml	100
131) Benzo[b]fluoranthene	18.88	252	1349278	49.4906	ug/ml	95
132) Benzo[k]fluoranthene	18.93	252	1220853	49.3429	ug/ml	99
133) Benzo[a]pyrene	19.52	252	1258012	52.1085	ug/ml	100
135) Indeno[1,2,3-cd]pyrene	22.28	276	1367142	50.4599	ug/ml	100
136) Dibenz[ah]anthracene	22.27	278	1172909	50.1733	ug/ml	100
137) Benzo[ghi]perylene	23.09	276	1179598	50.2772	ug/ml	100

(#) = qualifier out of range (m) = manual integration
 5M47621.D MEGAMIX.M Mon Aug 27 10:57:01 2007

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\082407\5M47621.D Vial: 10
Acq On : 24 Aug 2007 9:24 pm Operator: ASP
Sample : WG248656-10 50PPM BNA ALT STD Inst : HPMS5
Misc : 1,1 STD21455 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 27 10:57 2007 Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Mon Aug 27 10:56:18 2007
Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\082407\5M47622.D Vial: 11
 Acq On : 24 Aug 2007 9:58 pm Operator: ASP
 Sample : WG248656-11 50PPM A9 ALT STD Inst : HPMS5
 Misc : 1,1 STD21461 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:57:58 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:56:18 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	239090	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	951816	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.86	164	500187	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	768296	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	748902	40.00	ug/ml	0.00
128) Perylene-d12	19.63	264	719191	40.00	ug/ml	0.00

System Monitoring Compounds

7) 2-Fluorophenol	0.00	112	0	0.0000	ug/ml
Spiked Amount	100.000	Range 21 - 100	Recovery	=	0.00%#
11) Phenol-d5	8.79	99	2007	0.1923	ug/ml 0.11
Spiked Amount	100.000	Range 10 - 94	Recovery	=	0.19%#
30) Nitrobenzene-d5	0.00	82	0	0.0000	ug/ml
Spiked Amount	50.000	Range 35 - 114	Recovery	=	0.00%#
58) 2-Fluorobiphenyl	12.15	172	177	0.0099	ug/ml 0.10
Spiked Amount	50.000	Range 43 - 116	Recovery	=	0.02%#
85) 2,4,6-Tribromophenol	0.00	330	0	0.0000	ug/ml
Spiked Amount	100.000	Range 10 - 123	Recovery	=	0.00%#
116) p-Terphenyl-d14	0.00	244	0	0.0000	ug/ml
Spiked Amount	50.000	Range 33 - 141	Recovery	=	0.00%#

Target Compounds

				Qvalue
3) Pyridine	5.53	79	431275	44.3069 ug/ml 98
4) 2-Picoline	6.74	93	438314	45.0214 ug/ml 99
5) n-Nitrosomethylmethylethylamine	6.93	88	187541	46.6582 ug/ml 99
6) Methyl Methanesulfonate	7.34	80	199700	45.3682 ug/ml 99
8) n-Nitrosodiethylamine	7.85	102	193610	46.0845 ug/ml 99
9) Ethyl Methanesulfonate	8.21	79	275614	43.3976 ug/ml 99
14) Pentachloroethane	8.79	167	134632	42.5773 ug/ml 99
22) 3-,4-Methylphenol	9.70	107	451305	49.3721 ug/ml# 37
23) n-Nitrosopyrrolidine	9.62	100	196896	46.1126 ug/ml# 95
25) Acetophenone	9.64	105	475608	43.1928 ug/ml 99
26) n-Nitrosomorpholine	9.64	56	235151	43.0215 ug/ml 95
27) o-Toluidine	9.70	106	582641	44.4964 ug/ml 99
32) n-Nitrosopiperidine	10.05	114	201562	45.9776 ug/ml 98
35) 2,4-Dimethylphenol	10.35	122	94157	11.0300 ug/ml# 10
36) O,O,O-Triethyl Phosphorothioate	10.40	198	180577	46.4386 ug/ml 98
37) bis(2-Chloroethoxy)methane	10.39	93	125833	9.6460 ug/ml# 57
38) Benzoic Acid	10.35	105	122675	54.8008 ug/ml# 62
44) 2,6-Dichlorophenol	10.84	162	313204	44.0165 ug/ml 99
45) Hexachloropropene	10.92	213	186813	43.9844 ug/ml 99
47) n-Nitrosodi-n-Butylamine	11.23	84	233541	39.4105 ug/ml# 79
48) p-Phenylenediamine	11.24	108	371999	46.0988 ug/ml 99
50) Safrole	11.48	162	298707	44.2382 ug/ml 99
52) 1-Methylnaphthalene	11.75	142	727341	41.5930 ug/ml 99
54) 1,2,4,5-Tetrachlorobenzene	11.87	216	315045	44.0907 ug/ml 100
59) Isosafrole	12.09	162	593392	84.9759 ug/ml 99
60) 2-Chloronaphthalene	12.20	162	119989	6.2793 ug/ml 99
61) 1-Chloronaphthalene	12.24	162	666351	43.3231 ug/ml 99
63) 1,4-Naphthoquinone	12.39	158	271818	45.0199 ug/ml 98
65) 1,3-Dinitrobenzene	12.56	168	136349	51.9220 ug/ml 87
73) Pentachlorobenzene	13.09	250	265626	43.0587 ug/ml 99
75) 2,3,4,6-Tetrachlorophenol	13.23	232	148631	39.1971 ug/ml 97
76) 1-Naphthylamine	13.15	143	723485	42.3528 ug/ml 99
77) 2-Naphthylamine	13.22	143	748420	46.3080 ug/ml 99

(#) = qualifier out of range (m) = manual integration
 5M47622.D MEGAMIX.M Mon Aug 27 10:58:01 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47622.D Vial: 11
 Acq On : 24 Aug 2007 9:58 pm Operator: ASP
 Sample : WG248656-11 50PPM A9 ALT STD Inst : HPMS5
 Misc : 1,1 STD21461 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:57:58 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:56:18 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
79) Thionazin	13.39	107	130247	45.7907	ug/ml	98
83) 5-Nitro-o-Toluidine	13.46	152	221158	41.6851	ug/ml	97
84) 1,2-Diphenylhydrazine	13.53	77	68922	3.7953	ug/ml#	50
88) n-Nitrosodiphenylamine	13.54	169	697857	43.7125	ug/ml	98
89) Sulfotepp	13.76	322	127818	47.9686	ug/ml	97
90) Sym-Trinitrobenzene	13.83	75	125554	38.1043	ug/ml	98
91) Diallate	13.96	86	164447	147.9992	ug/ml	98
92) Phenacetin	13.86	108	365402	45.4721	ug/ml	95
93) Phorate	13.88	75	471621	46.8480	ug/ml#	100
96) Dimethoate	14.08	87	287096	43.1583	ug/ml	98
97) 4-Aminobiphenyl	14.22	169	732698	41.8365	ug/ml	99
98) Pentachlorophenol	14.31	266	5197	9.9465	ug/ml	97
99) Pronamide	14.27	173	325626	45.4694	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	72943	45.4381	ug/ml	99
101) Disulfoton	14.42	88	381206	44.3601	ug/ml	99
105) Parathion Methyl	14.84	109	233781	47.8745	ug/ml	99
107) Parathion Ethyl	15.23	97	146606	49.3795	ug/ml	98
108) 4-Nitroquinoline 1-Oxide	15.29	190	54730	39.7051	ug/ml	98
109) Methapyrilene	15.34	58	558747	88.8315	ug/ml	99
110) Isodrin	15.62	193	123966	45.8873	ug/ml	96
113) Benzidine	15.82	184	605441	50.7374	ug/ml	100
115) Aramite	16.01	185	55882	54.7008	ug/ml	98
117) p-(Dimethylamino)azobenzene	16.23	225	275773	51.1464	ug/ml	96
118) Chlorobenzilate	16.26	251	338741	46.9299	ug/ml	99
119) Famphur	16.53	218	83818	19.3092	ug/ml#	85
121) 3,3'-Dimethylbenzidine	16.56	212	546874	27.0970	ug/ml	98
123) 2-Acetylaminofluorene	16.85	181	541551	50.7522	ug/ml	99
125) 3,3'-Dichlorobenzidine	17.18	252	424762	47.9271	ug/ml	99
130) 7,12-Dimethylbenz[a]anthra	18.87	256	586253	50.6523	ug/ml	99
134) 3-Methylcholanthrene	20.27	268	607510	46.6959	ug/ml	99

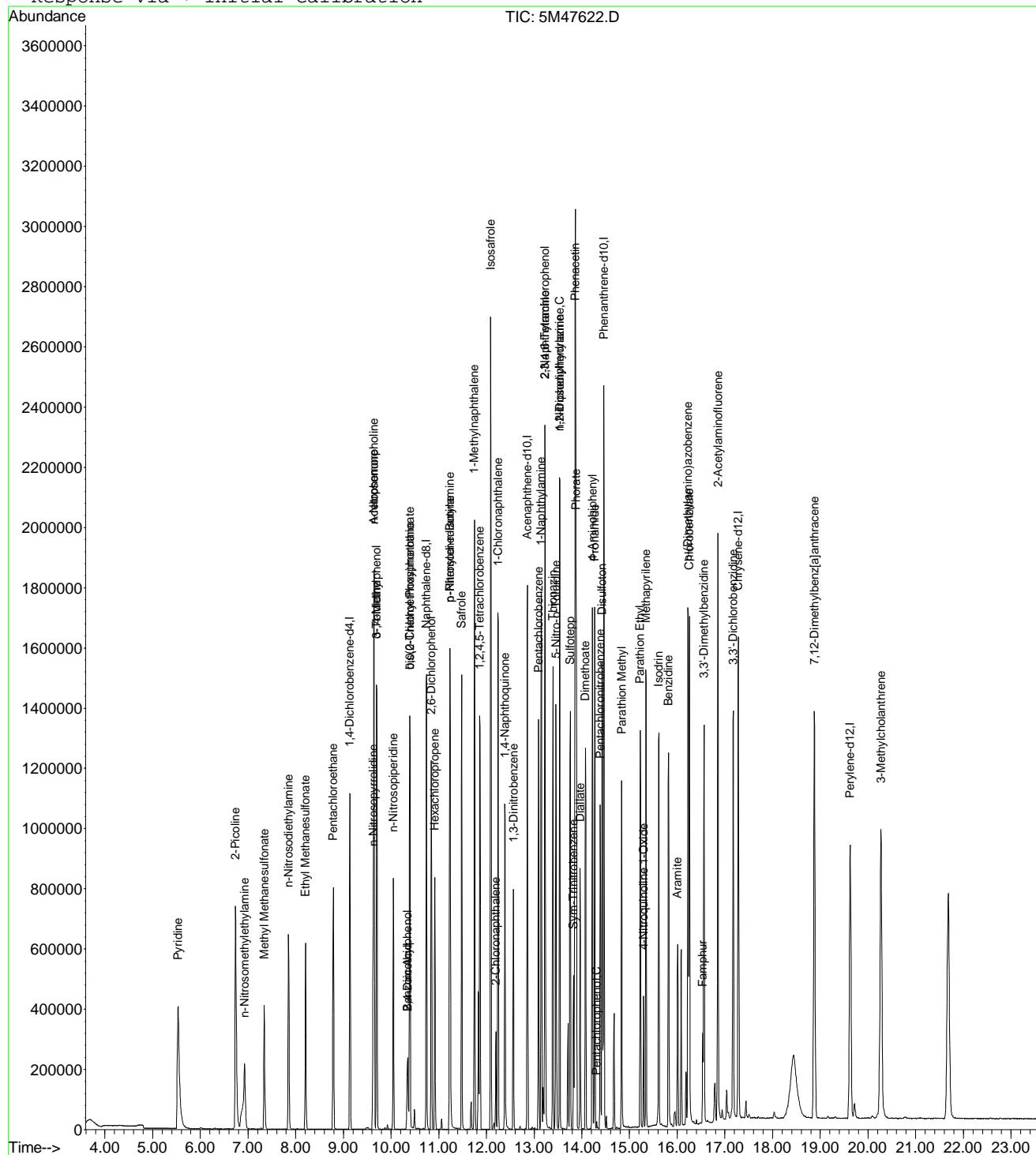
(#) = qualifier out of range (m) = manual integration
 5M47622.D MEGAMIX.M Mon Aug 27 10:58:01 2007

Data File : C:\MSDCHEM\1\DATA\082407\5M47622.D
 Acq On : 24 Aug 2007 9:58 pm
 Sample : WG248656-11 50PPM A9 ALT STD
 Misc : 1,1 STD21461
 MS Integration Params: RTEINT.P
 Quant Time: Aug 27 10:58 2007

Vial: 11
 Operator: ASP
 Inst : HPMS5
 Multiplr: 1.00

Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Mon Aug 27 10:56:18 2007
 Response via : Initial Calibration



Data File : C:\MSDCHEM\1\DATA\090507\5M47853.D Vial: 2
 Acq On : 5 Sep 2007 11:36 am Operator: ASP
 Sample : WG249365-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 05 12:00:23 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Wed Sep 05 08:33:27 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	228677	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	918220	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.85	164	523985	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	787272	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	799949	40.00	ug/ml	0.00
128) Perylene-d12	19.62	264	778299	40.00	ug/ml	0.00

System Monitoring Compounds						
7) 2-Fluorophenol	7.56	112	414336	50.5117	ug/ml	0.00
Spiked Amount	100.000	Range	21 - 100	Recovery	=	50.51%
11) Phenol-d5	8.68	99	496564	49.7511	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 94	Recovery	=	49.75%
30) Nitrobenzene-d5	9.85	82	412098	52.9350	ug/ml	0.00
Spiked Amount	50.000	Range	35 - 114	Recovery	=	105.86%
58) 2-Fluorobiphenyl	12.04	172	918530	49.1135	ug/ml	0.00
Spiked Amount	50.000	Range	43 - 116	Recovery	=	98.22%
85) 2,4,6-Tribromophenol	13.73	330	110842	48.5505	ug/ml	0.00
Spiked Amount	100.000	Range	10 - 123	Recovery	=	48.55%
116) p-Terphenyl-d14	16.08	244	948370	51.0198	ug/ml	0.00
Spiked Amount	50.000	Range	33 - 141	Recovery	=	102.04%

Target Compounds					Qvalue
2) n-Nitrosodimethylamine	5.54	74	274059	49.9168	ug/ml 100
3) Pyridine	5.54	79	464529	49.8963	ug/ml 94
4) 2-Picoline	6.74	93	455708	48.9394	ug/ml 99
5) n-Nitrosomethylmethylethylamine	6.93	88	202076	52.5637	ug/ml 97
6) Methyl Methanesulfonate	7.34	80	223769	53.1511	ug/ml 97
8) n-Nitrosodiethylamine	7.85	102	212550	52.8966	ug/ml 95
9) Ethyl Methanesulfonate	8.21	79	313862	51.6704	ug/ml 98
10) Aniline	8.76	93	646996	48.5466	ug/ml 99
12) Phenol	8.69	94	524494	48.7254	ug/ml 97
13) bis(2-Chloroethyl)ether	8.81	63	307414	49.2972	ug/ml 99
14) Pentachloroethane	8.79	167	165785	54.8168	ug/ml 96
15) 2-Chlorophenol	8.91	128	459823	51.3511	ug/ml 98
16) 1,3-Dichlorobenzene	9.09	146	496314	50.9356	ug/ml 100
17) 1,4-Dichlorobenzene	9.16	146	516579	51.2603	ug/ml 99
18) Benzyl Alcohol	9.29	108	294908	52.9531	ug/ml 99
19) 1,2-Dichlorobenzene	9.39	146	477562	51.5730	ug/ml 100
20) 2-Methylphenol	9.44	107	349585	52.7850	ug/ml 99
21) bis(2-Chloroisopropyl)ethane	9.48	45	701607	48.2700	ug/ml 97
22) 3-,4-Methylphenol	9.60	107	464196	53.0947	ug/ml 99
23) n-Nitrosopyrrolidine	9.62	100	200215	49.0251	ug/ml# 88
24) n-Nitrosodipropylamine	9.65	70	304094	52.5483	ug/ml 96
25) Acetophenone	9.64	105	555712	52.7656	ug/ml 98
26) n-Nitrosomorpholine	9.64	56	261305	49.9833	ug/ml 98
27) o-Toluidine	9.70	106	661415	52.8125	ug/ml 100
28) Hexachloroethane	9.79	117	188797	52.1662	ug/ml 92
31) Nitrobenzene	9.87	77	434288	52.2748	ug/ml 97
32) n-Nitrosopiperidine	10.05	114	212760	50.3077	ug/ml 99
33) Isophorone	10.14	82	741038	52.3077	ug/ml 99
34) 2-Nitrophenol	10.27	139	246823	52.9965	ug/ml 96
35) 2,4-Dimethylphenol	10.26	122	417400	50.6852	ug/ml 96
36) O,O,O-Triethyl Phosphorothioate	10.39	198	203821	54.3340	ug/ml 94
37) bis(2-Chloroethoxy)methane	10.39	93	622557	49.4695	ug/ml 100
38) Benzoic Acid	10.35	105	63478m	40.5691	ug/ml

(#) = qualifier out of range (m) = manual integration
 5M47853.D MEGAMIX.M Thu Sep 06 12:31:28 2007

Data File : C:\MSDCHEM\1\DATA\090507\5M47853.D Vial: 2
 Acq On : 5 Sep 2007 11:36 am Operator: ASP
 Sample : WG249365-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 05 12:00:23 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Wed Sep 05 08:33:27 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
39) 2,4-Dichlorophenol	10.55	162	372876	55.4130	ug/ml	98
40) a,a-Dimethylphenethylamine	10.58	58	461364	19.9467	ug/ml#	96
41) 1,2,4-Trichlorobenzene	10.67	180	391438	51.1027	ug/ml	100
42) Naphthalene	10.77	128	1288364	49.7193	ug/ml	100
43) 4-Chloroaniline	10.82	127	559518	49.6980	ug/ml	99
44) 2,6-Dichlorophenol	10.84	162	370500	53.9738	ug/ml	99
45) Hexachloropropene	10.92	213	240030	58.5819	ug/ml	99
46) Hexachlorobutadiene	10.97	225	203614	55.4078	ug/ml	99
47) n-Nitrosodi-n-Butylamine	11.23	84	341384	59.7170	ug/ml#	80
48) p-Phenylenediamine	11.25	108	335030	43.0366	ug/ml	99
49) 4-Chloro-3-Methylphenol	11.38	107	380078	53.4861	ug/ml	98
50) Safrole	11.48	162	357098	54.8209	ug/ml	98
51) 2-Methylnaphthalene	11.61	142	876457	51.1253	ug/ml	100
52) 1-Methylnaphthalene	11.75	142	864872	51.2672	ug/ml	100
54) 1,2,4,5-Tetrachlorobenzene	11.86	216	373488	49.8959	ug/ml	99
55) Hexachlorocyclopentadiene	11.88	237	181030	54.2578	ug/ml	100
56) 2,4,6-Trichlorophenol	11.96	196	262950	50.7627	ug/ml	99
57) 2,4,5-Trichlorophenol	12.02	196	279265	50.4059	ug/ml	99
59) Isosafrole	12.09	162	358843	49.0537	ug/ml	98
60) 2-Chloronaphthalene	12.20	162	972704	48.5916	ug/ml	98
61) 1-Chloronaphthalene	12.24	162	782505	48.5643	ug/ml	98
62) 2-Nitroaniline	12.31	65	229963	48.9648	ug/ml	98
63) 1,4-Naphthoquinone	12.38	158	307824	48.6679	ug/ml	97
64) Dimethylphthalate	12.52	163	936910	49.2572	ug/ml	100
65) 1,3-Dinitrobenzene	12.43	168	156632	56.9369	ug/ml	96
66) 2,6-Dinitrotoluene	12.61	165	238481	51.6868	ug/ml	98
67) Acenaphthylene	12.69	152	1339312	46.8070	ug/ml	100
68) 3-Nitroaniline	12.78	138	248046	45.4970	ug/ml	98
69) 2,4-Dinitrophenol	12.90	184	82142	45.7635	ug/ml	88
70) Acenaphthene	12.89	154	821044	46.7212	ug/ml	100
71) 4-Nitrophenol	12.93	65	144773	41.6980	ug/ml	95
72) 2,4-Dinitrotoluene	13.06	165	290952	53.9190	ug/ml	97
73) Pentachlorobenzene	13.09	250	321526	49.7530	ug/ml	99
74) Dibenzofuran	13.06	168	1148637	48.5278	ug/ml	98
75) 2,3,4,6-Tetrachlorophenol	13.18	232	185454	46.3358	ug/ml	99
76) 1-Naphthylamine	13.15	143	747195	41.7542	ug/ml	98
77) 2-Naphthylamine	13.22	143	563957	33.3096	ug/ml	98
78) Diethylphthalate	13.29	149	904345	47.1926	ug/ml	100
79) Thionazin	13.39	107	144782	48.5890	ug/ml	94
80) Fluorene	13.45	166	989747	49.2729	ug/ml	100
81) 4-Chlorophenyl Phenyl Ethe	13.40	204	452058	49.4745	ug/ml	98
82) 4-Nitroaniline	13.46	138	261663	44.8692	ug/ml	96
83) 5-Nitro-o-Tolidine	13.46	152	261371	47.0272	ug/ml	97
84) 1,2-Diphenylhydrazine	13.58	77	910048	47.8376	ug/ml	99
87) 4,6-Dinitro-2-Methylphenol	13.51	198	166084	54.5152	ug/ml#	54
88) n-Nitrosodiphenylamine	13.53	169	851593	52.0565	ug/ml	99
89) Sulfotep	13.75	322	139228	50.9913	ug/ml	96
90) Sym-Trinitrobenzene	13.83	75	196797	56.0922	ug/ml	98
91) Diallate	13.96	86	59243	52.0324	ug/ml	92
92) Phenacetin	13.86	108	437319	53.1099	ug/ml	99
93) Phorate	13.88	75	521035	50.5089	ug/ml#	99
94) 4-Bromophenyl Phenyl Ether	13.94	248	261171	52.6812	ug/ml	99
95) Hexachlorobenzene	14.13	284	276900	53.2387	ug/ml	96
96) Dimethoate	14.08	87	339136	49.7525	ug/ml	98

(#) = qualifier out of range (m) = manual integration
 5M47853.D MEGAMIX.M Thu Sep 06 12:31:28 2007

Data File : C:\MSDCHEM\1\DATA\090507\5M47853.D Vial: 2
 Acq On : 5 Sep 2007 11:36 am Operator: ASP
 Sample : WG249365-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 05 12:00:23 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Wed Sep 05 08:33:27 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
97) 4-Aminobiphenyl	14.22	169	841201	46.8742	ug/ml	99
98) Pentachlorophenol	14.31	266	118134	48.5640	ug/ml	99
99) Pronamide	14.27	173	392911	53.5424	ug/ml	99
100) Pentachloronitrobenzene	14.39	237	93836	57.0439	ug/ml	100
101) Disulfoton	14.43	88	442949	50.3026	ug/ml	100
102) Phenanthrene	14.48	178	1374695	49.0643	ug/ml	100
103) Anthracene	14.53	178	1398952	49.8601	ug/ml	100
104) Carbazole	14.68	167	1321259	51.9687	ug/ml	98
105) Parathion Methyl	14.83	109	294377	58.8305	ug/ml	96
106) Di-n-Butyl Phthalate	15.00	149	1544190	49.9702	ug/ml	100
107) Parathion Ethyl	15.23	97	170893	56.1724	ug/ml	94
108) 4-Nitroquinoline 1-Oxide	15.30	190	52588	37.7488	ug/ml	97
109) Methapyrilene	15.34	58	343902	44.5307	ug/ml	96
110) Isodrin	15.61	193	142644	51.5285	ug/ml	99
111) Fluoranthene	15.74	202	1429622	52.5627	ug/ml	99
113) Benzidine	15.81	184	346669	27.1978	ug/ml	100
114) Pyrene	15.98	202	1512920	50.8440	ug/ml	99
115) Aramite	16.01	185	56401	51.6858	ug/ml	94
117) p-(Dimethylamino)azobenzene	16.23	225	299444	51.9926	ug/ml	93
118) Chlorobenzilate	16.25	251	408813	53.0236	ug/ml	96
119) Famphur	16.54	218	112947	24.3592	ug/ml	97
120) Butyl Benzyl Phthalate	16.54	149	658946	47.4659	ug/ml	99
121) 3,3'-Dimethylbenzidine	16.56	212	947074	43.9319	ug/ml	99
123) 2-Acetylaminofluorene	16.86	181	596491	52.3338	ug/ml	97
124) bis(2-Ethylhexyl)phthalate	17.13	149	960285	46.7997	ug/ml	97
125) 3,3'-Dichlorobenzidine	17.17	252	461290	48.7273	ug/ml	98
126) Benzo[a]anthracene	17.26	228	1402653	51.3092	ug/ml	100
127) Chrysene	17.32	228	1338898	50.6620	ug/ml	99
129) Di-n-Octyl Phthalate	17.92	149	1628237	49.0607	ug/ml	98
130) 7,12-Dimethylbenz[a]anthracene	18.88	256	639168	51.0301	ug/ml	99
131) Benzo[b]fluoranthene	18.89	252	1411844	47.9514	ug/ml	98
132) Benzo[k]fluoranthene	18.92	252	1260896	47.1882	ug/ml	100
133) Benzo[a]pyrene	19.52	252	1334517	51.1848	ug/ml	98
134) 3-Methylcholanthrene	20.27	268	733104	52.0701	ug/ml	100
135) Indeno[1,2,3-cd]pyrene	22.28	276	1514792	51.7700	ug/ml	96
136) Dibenz[ah]anthracene	22.27	278	1315026	52.0877	ug/ml	97
137) Benzo[ghi]perylene	23.10	276	1305385	51.5191	ug/ml	96

(#) = qualifier out of range (m) = manual integration
 5M47853.D MEGAMIX.M Thu Sep 06 12:31:28 2007

Quantitation Report

(OT Reviewed)

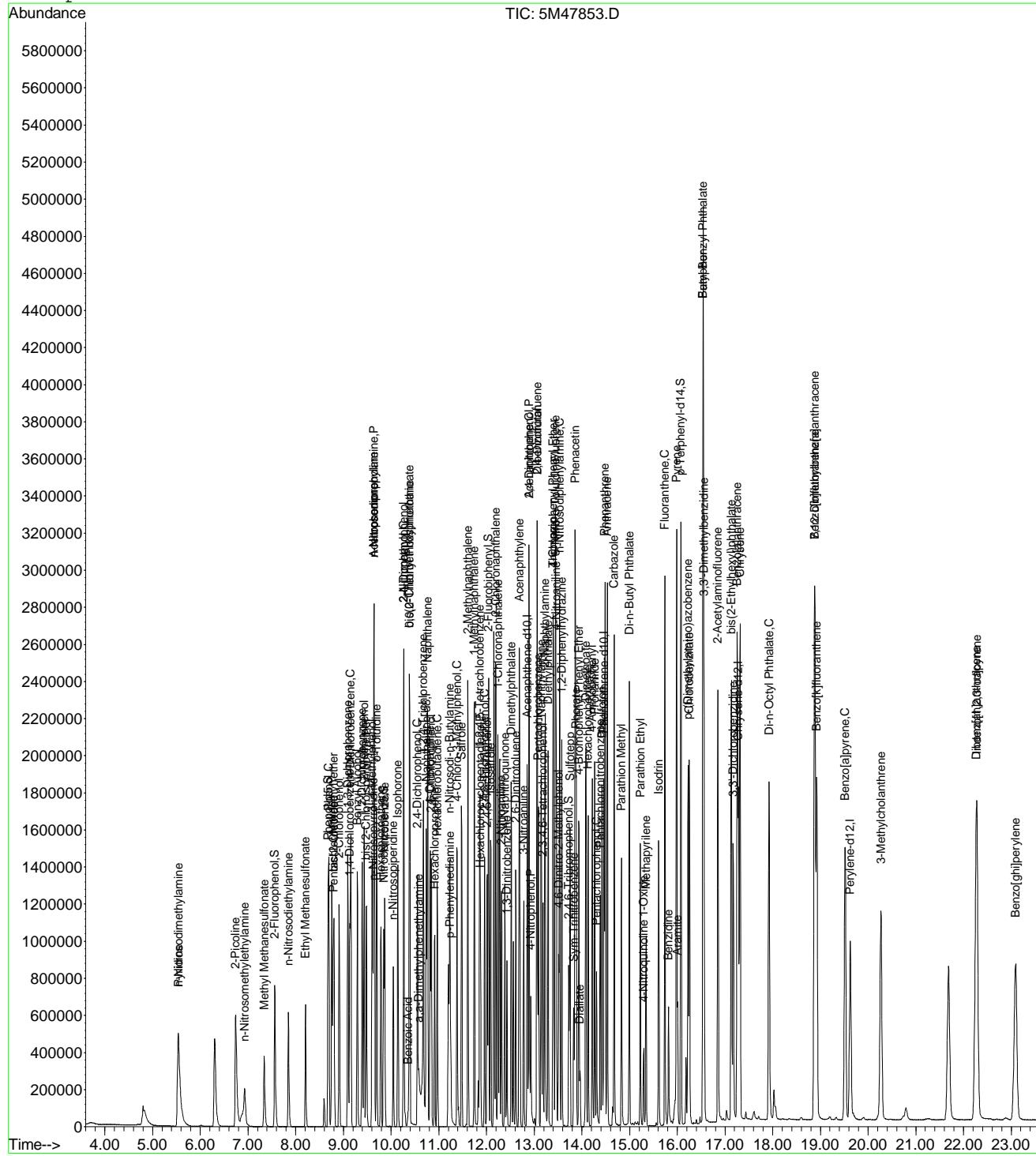
Data File : C:\MSDCHEM\1\DATA\090507\5M47853.D
Acq On : 5 Sep 2007 11:36 am
Sample : WG249365-02 50PPM MEGAMIX STD
Misc : 1,1 STD21155
MS Integration Params: RTEINT.P
Quant Time: Sep 6 12:31 2007

Vial: 2
Operator: ASP
Inst : HPMS5
Multiplr: 1.00

Quanta TIME: Sep 6 12:51 2007

Quant Results File: MEGAMIX.RES

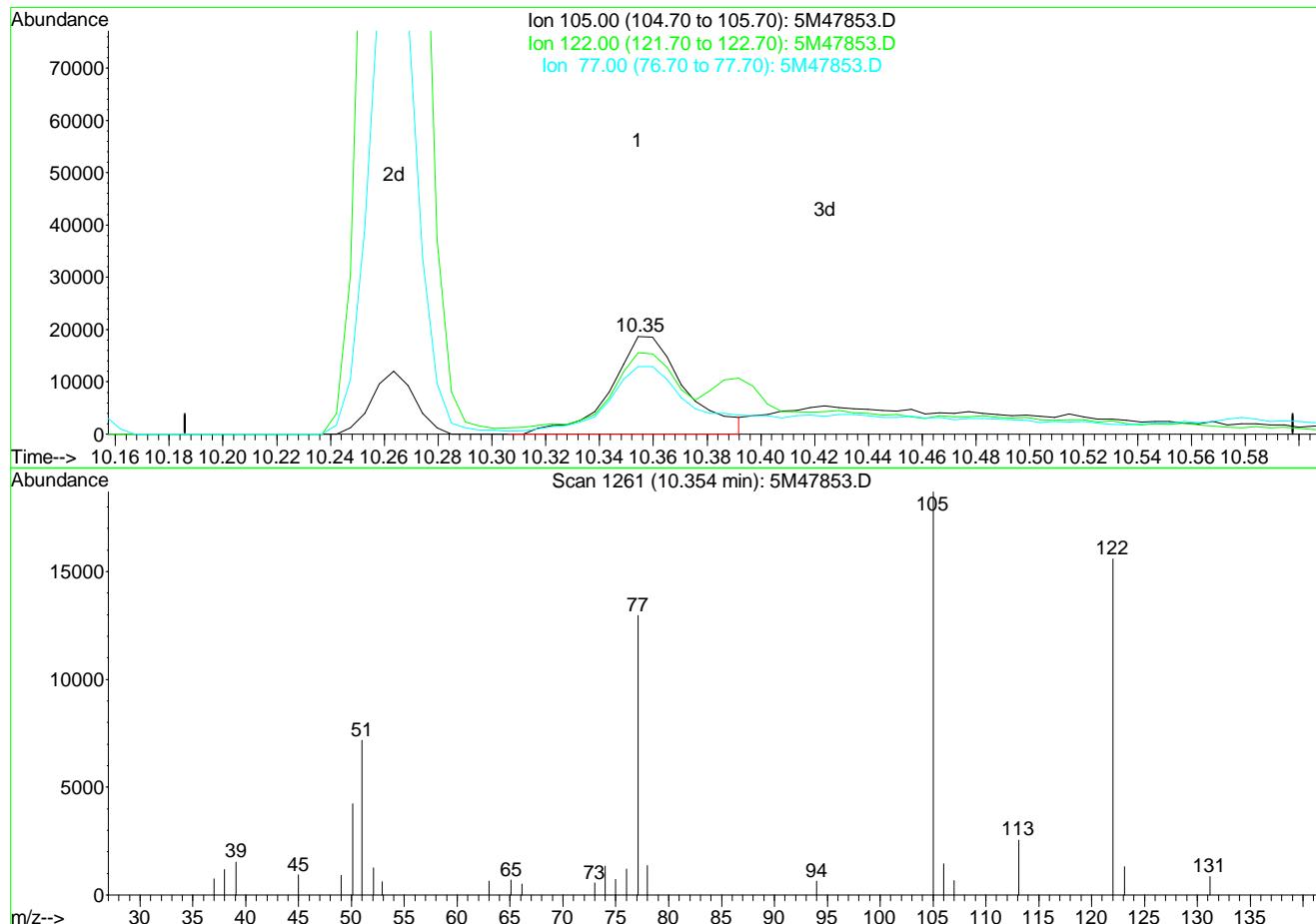
Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Wed Sep 05 13:52:49 2007
Response via : Initial Calibration



Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\090507\5M47853.D Vial: 2
 Acq On : 5 Sep 2007 11:36 am Operator: ASP
 Sample : WG249365-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 5 12:00 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Wed Sep 05 13:52:49 2007
 Response via : Single Level Calibration



(38) Benzoic Acid

10.35min 31.66ug/ml

response 35828

Ion Exp% Act%

105.00 100 100

122.00 52.40 67.02

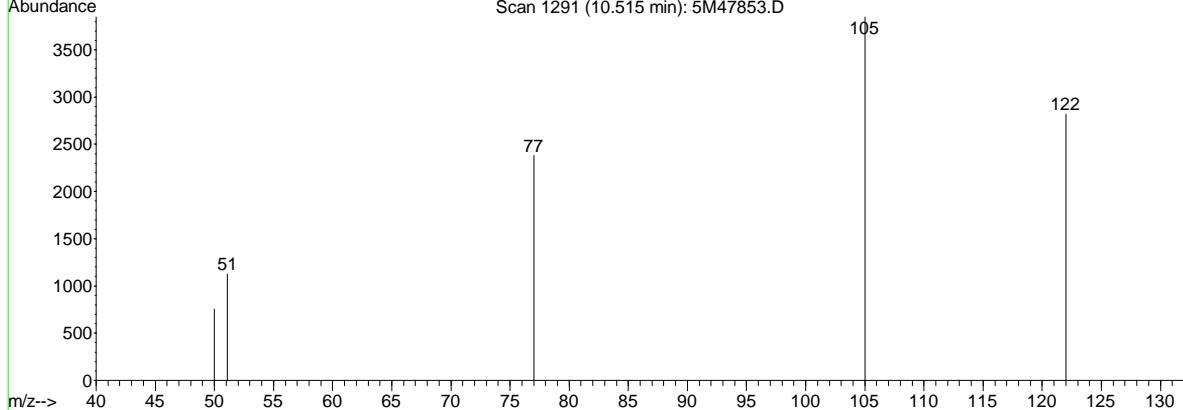
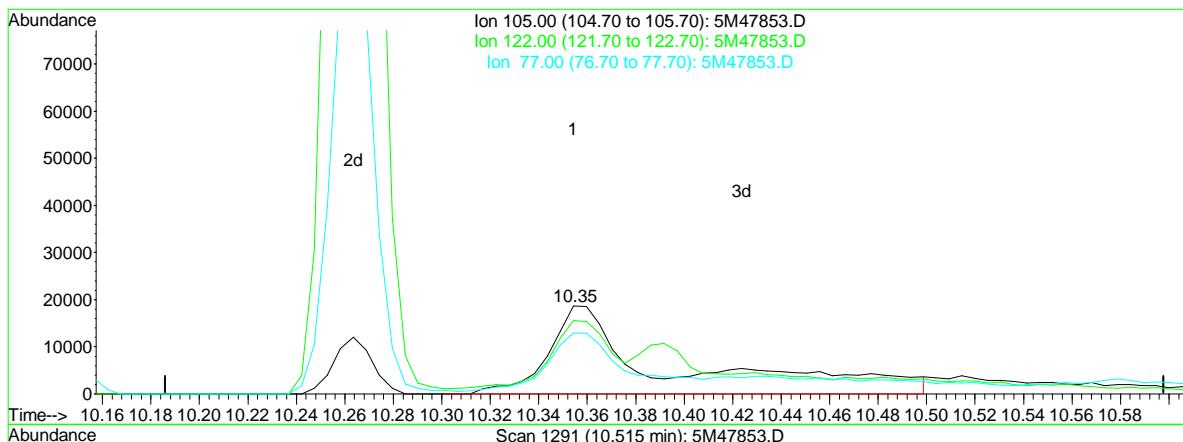
77.00 42.50 76.91#

0.00 0.00 0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\090507\5M47853.D Vial: 2
 Acq On : 5 Sep 2007 11:36 am Operator: ASP
 Sample : WG249365-02 50PPM MEGAMIX STD Inst : HPMS5
 Misc : 1,1 STD21155 Multiplr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 6 12:31 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Wed Sep 05 13:52:49 2007
 Response via : Single Level Calibration



TIC: 5M47853.D

(38) Benzoic Acid

10.35min 40.57ug/ml m

response 63478

Ion	Exp%	Act%
105.00	100	100
122.00	52.40	37.83
77.00	42.50	43.41
0.00	0.00	0.00

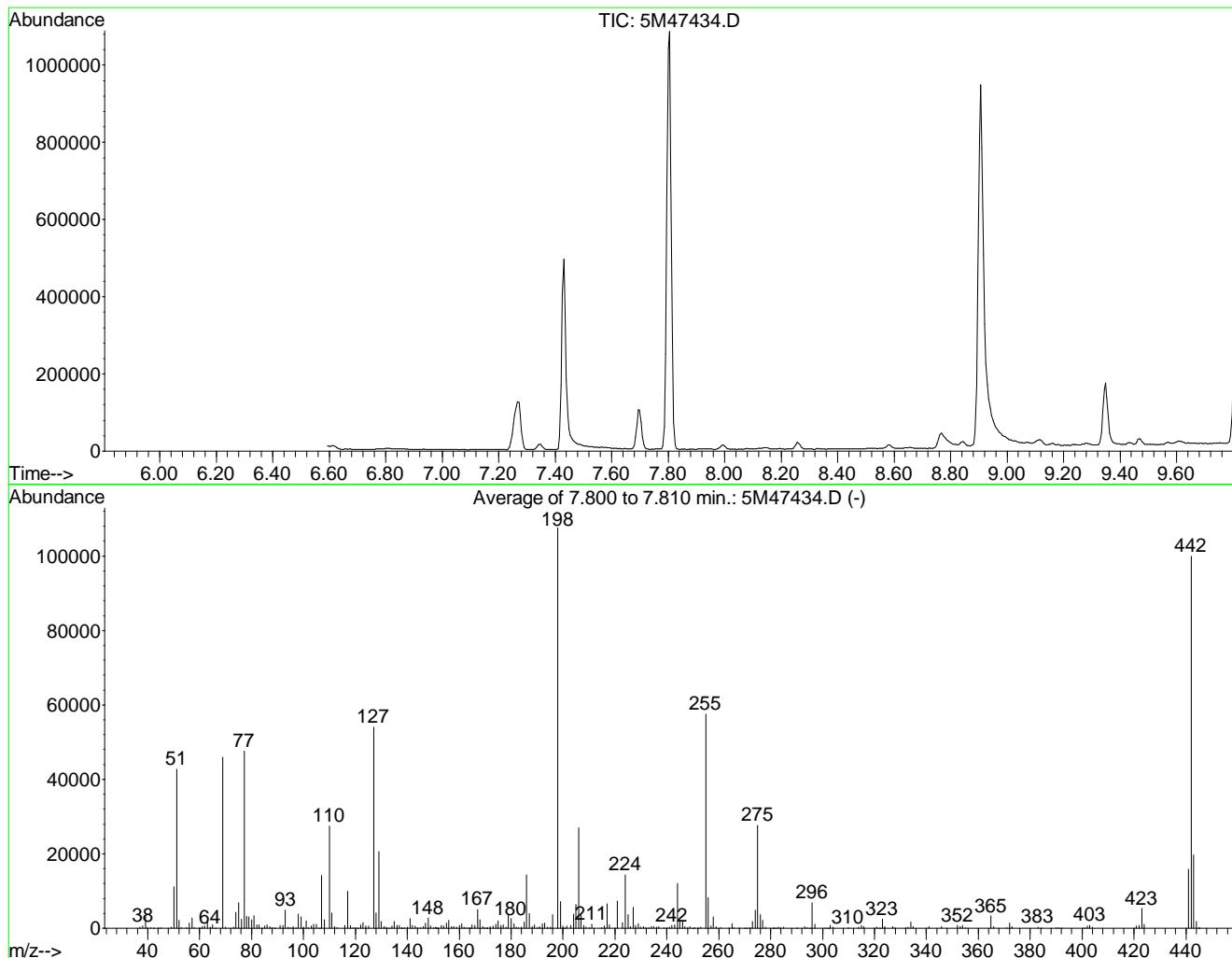
5M47853.D MEGAMIX.M Thu Sep 06 12:31:21 2007

Approved: September 06, 2007	Supervisor: September 06, 2007
Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak	
.	✓

2.1.1.5 Raw QC Data

DFTPP

Data File : C:\MSDCHEM\1\DATA\081607\5M47434.D Vial: 1
 Acq On : 16 Aug 2007 4:09 pm Operator: ASP
 Sample : WG247985-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP



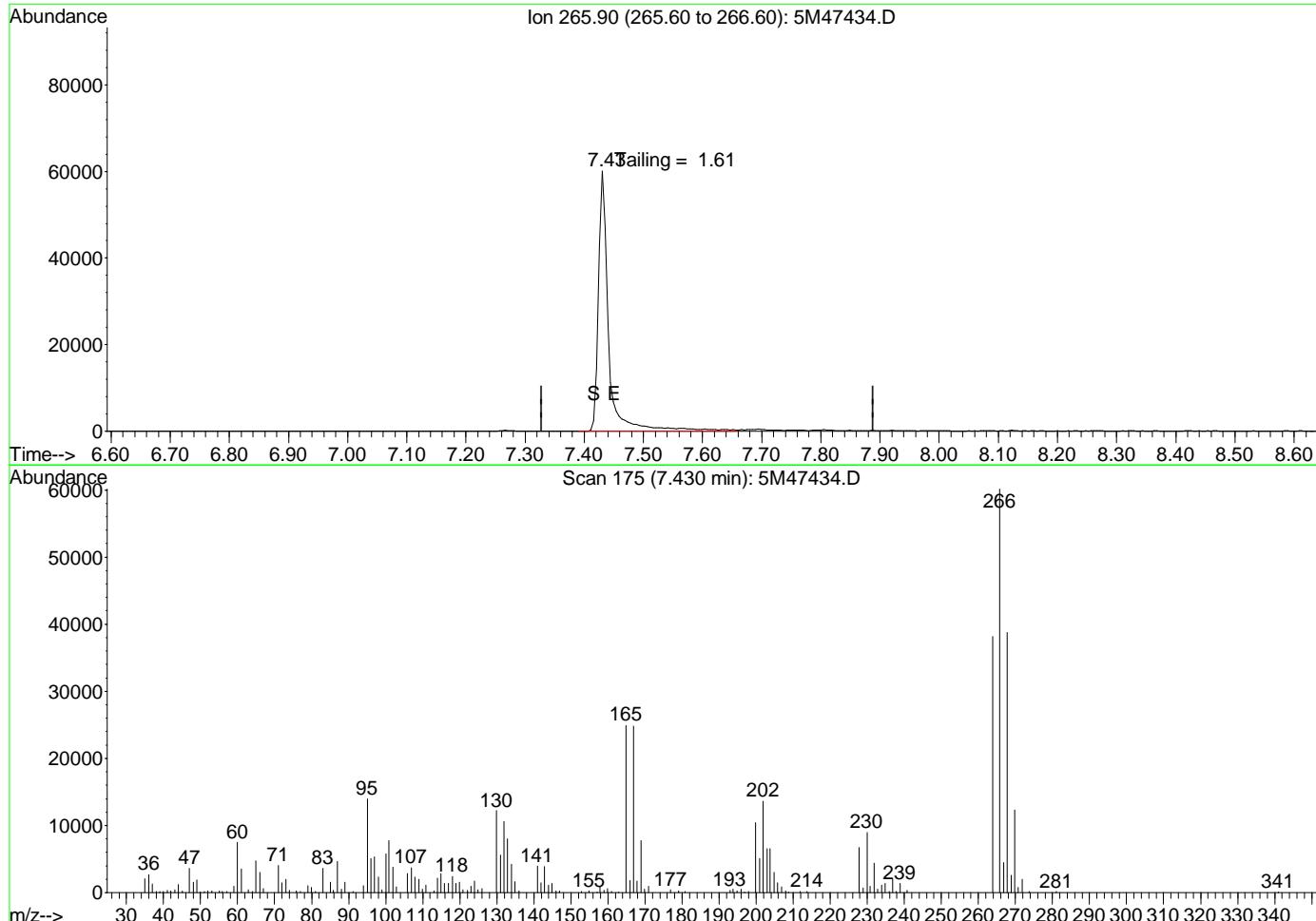
AutoFind: Scans 252, 253, 254; Background Corrected with Scan 244

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.8	42784	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	42.7	45952	PASS
70	69	0.00	2	0.6	255	PASS
127	198	40	60	50.2	54032	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	107541	PASS
199	198	5	9	6.7	7176	PASS
275	198	10	30	25.7	27650	PASS
365	198	1	100	3.1	3321	PASS
441	443	0.01	100	80.7	15847	PASS
442	198	40	100	92.9	99914	PASS
443	442	17	23	19.7	19634	PASS

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\081607\5M47434.D Vial: 1
 Acq On : 16 Aug 2007 4:09 pm Operator: ASP
 Sample : WG247985-01 50PPM DFTPP Inst : HPMSS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p Quant Results File: temp.res
 Quant Time: Aug 16 16:20 2007

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47434.D

(1) Pentachlorophenol

7.43min 0.00

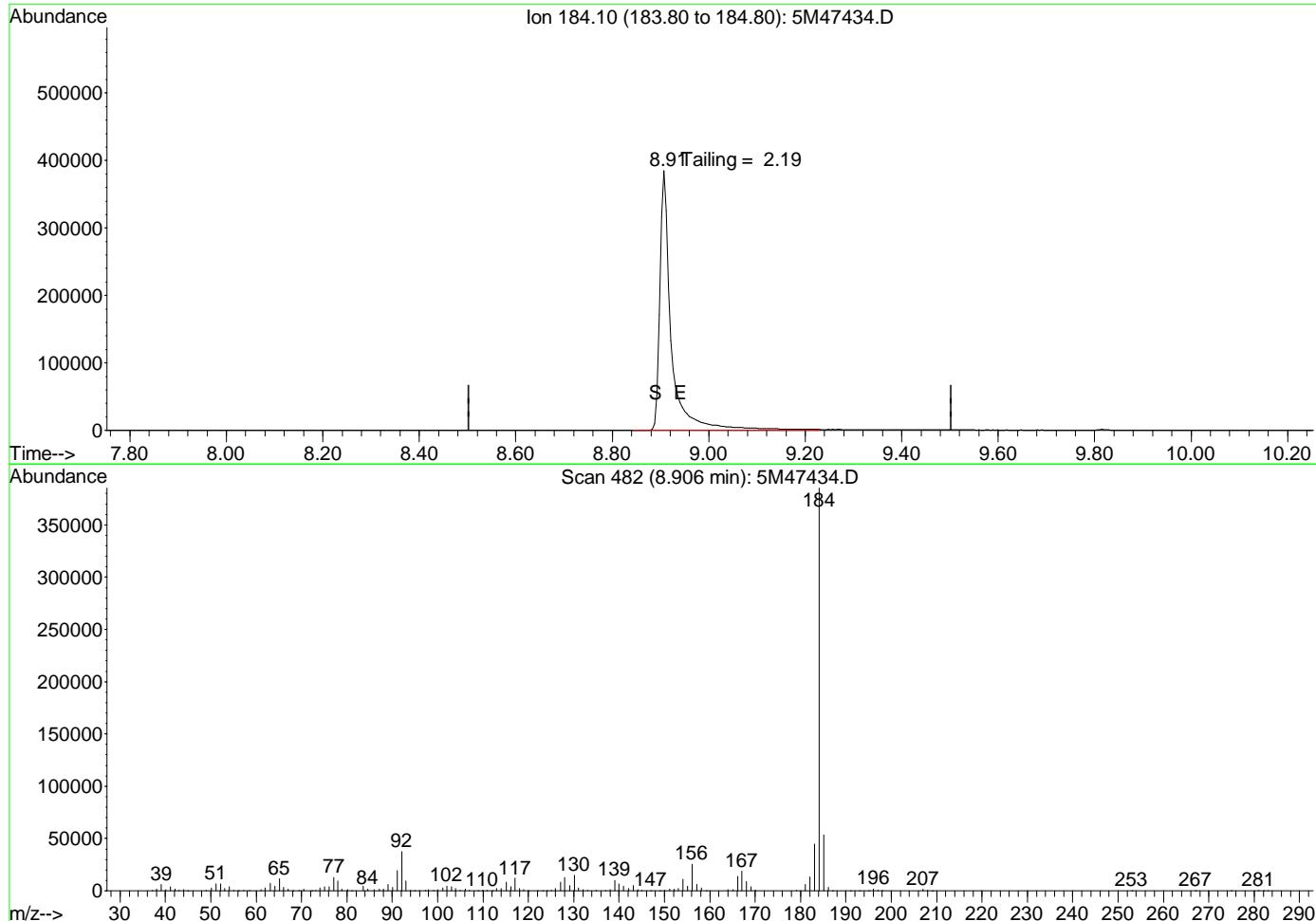
response 69971

Ion	Exp%	Act%
265.90	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\081607\5M47434.D Vial: 1
 Acq On : 16 Aug 2007 4:09 pm Operator: ASP
 Sample : WG247985-01 50PPM DFTPP Inst : HPMSS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p Quant Results File: temp.res
 Quant Time: Aug 16 16:20 2007

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DF TPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47434.D

(2) Benzidine

8.91min 0.00

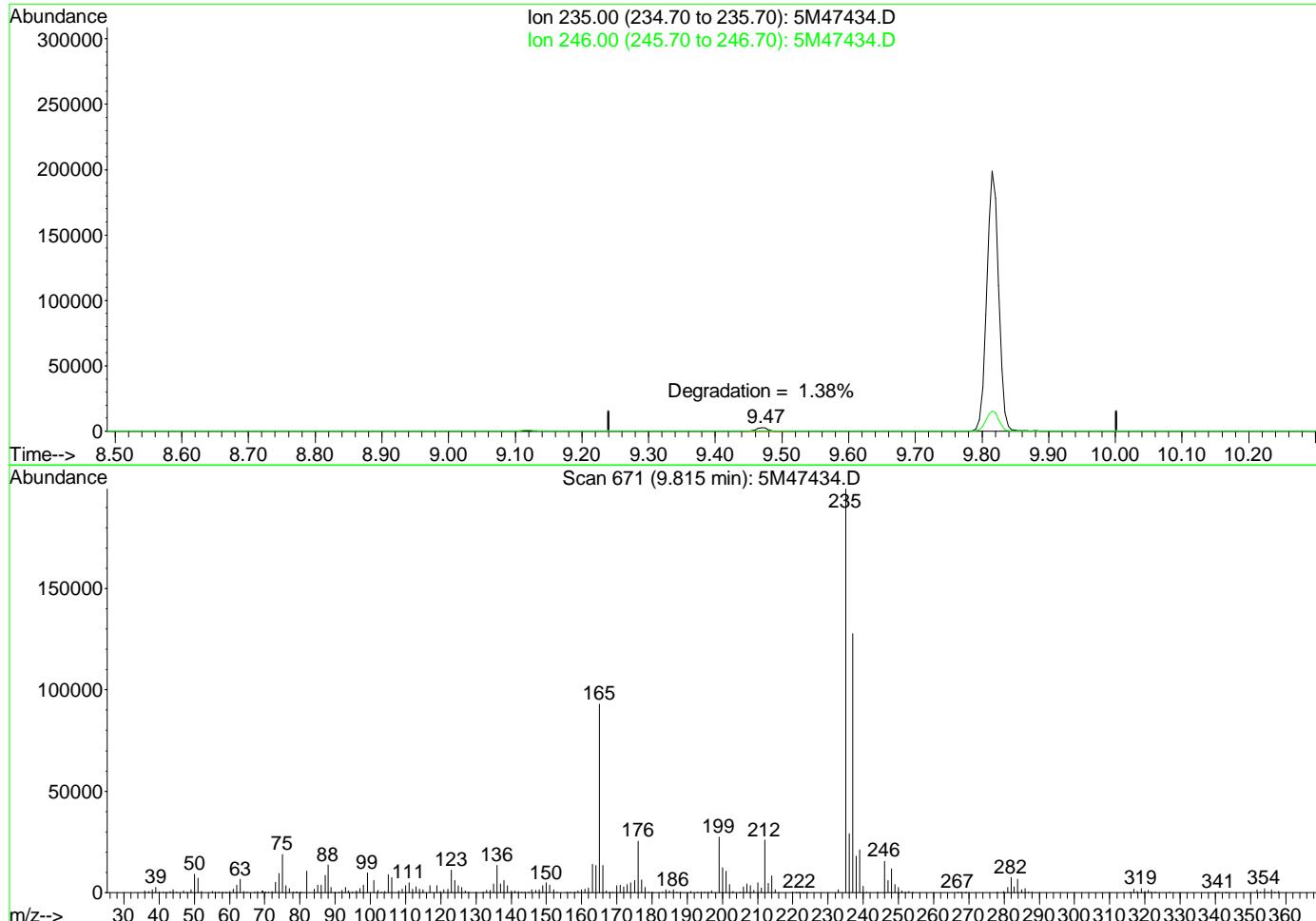
response 632986

Ion	Exp%	Act%
184.10	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\081607\5M47434.D Vial: 1
 Acq On : 16 Aug 2007 4:09 pm Operator: ASP
 Sample : WG247985-01 50PPM DFTPP Inst : HPMSS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p Quant Results File: temp.res
 Quant Time: Aug 16 16:20 2007

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47434.D

(3) DDT

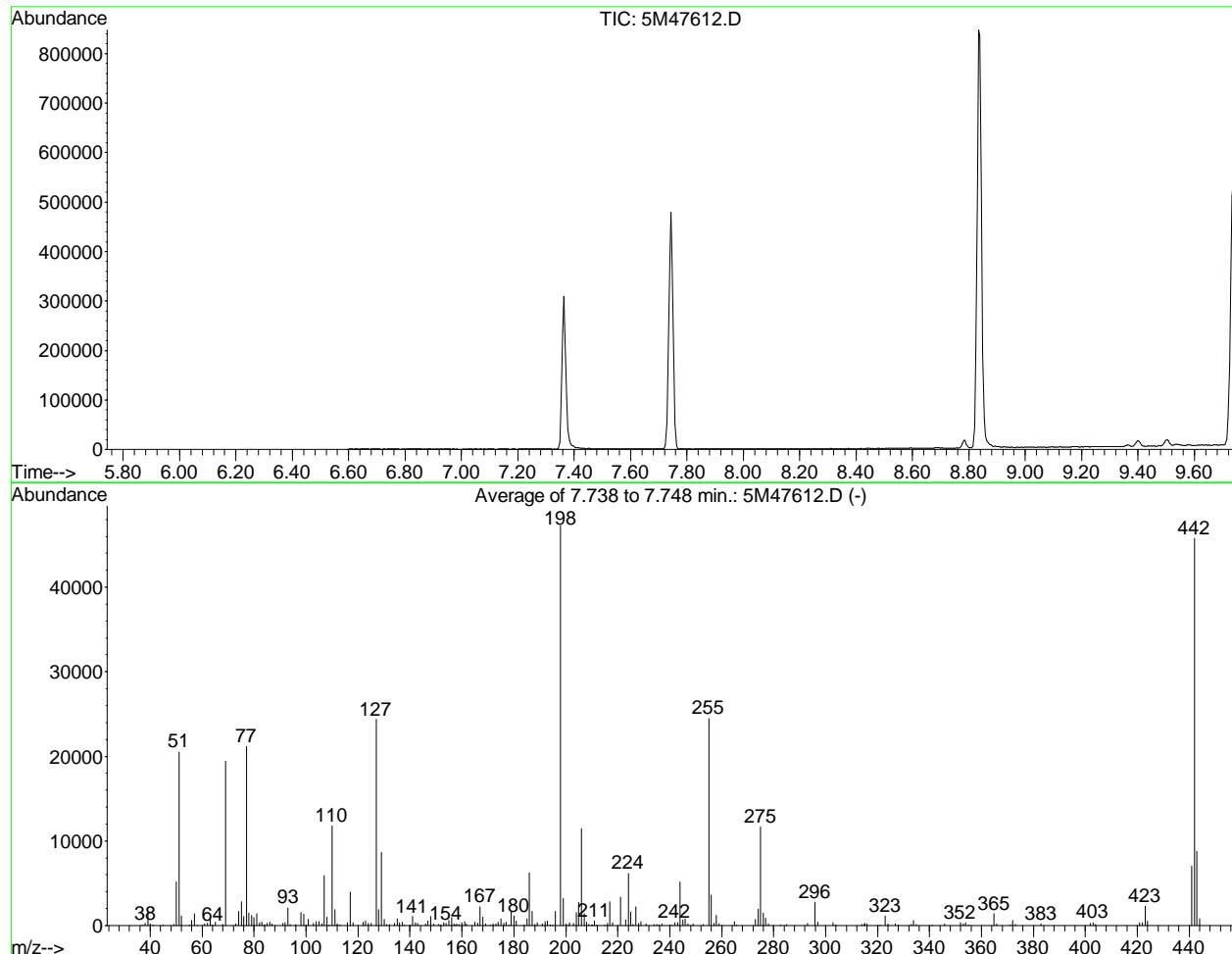
9.82min 0.00

response 246421

Ion	Exp%	Act%
235.00	100	100
246.00	6.70	8.61#
0.00	0.00	0.00
0.00	0.00	0.00

DFTPP

Data File : C:\MSDCHEM\1\DATA\082407\5M47612.D Vial: 1
 Acq On : 24 Aug 2007 4:26 pm Operator: ASP
 Sample : WG248656-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP



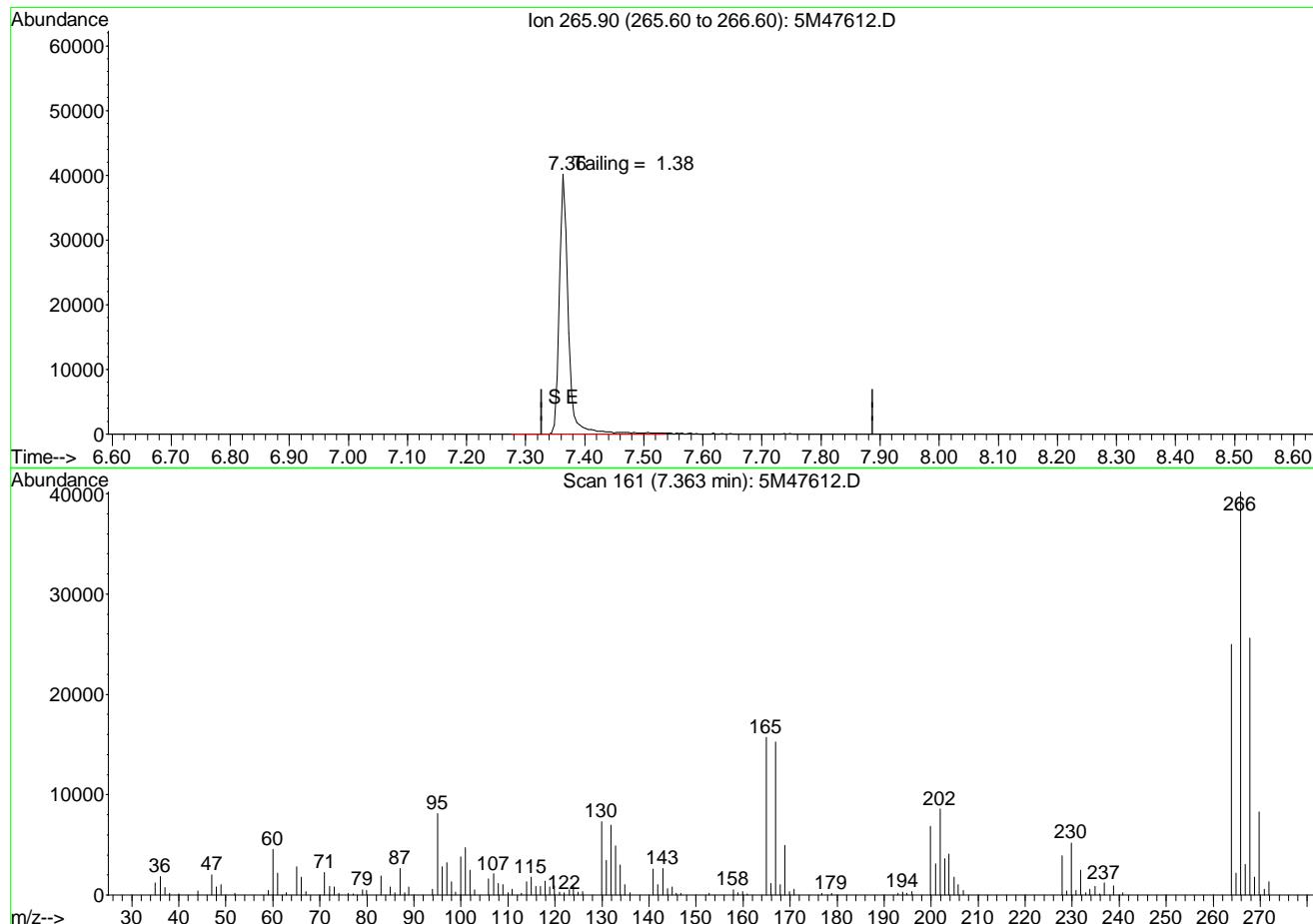
AutoFind: Scans 239, 240, 241; Background Corrected with Scan 232

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	43.5	20527	PASS
68	69	0.00	2	0.7	140	PASS
69	198	0.00	100	41.1	19417	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	51.6	24378	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	47224	PASS
199	198	5	9	6.8	3228	PASS
275	198	10	30	24.7	11659	PASS
365	198	1	100	2.9	1376	PASS
441	443	0.01	100	80.3	7063	PASS
442	198	40	100	96.9	45760	PASS
443	442	17	23	19.2	8797	PASS

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47612.D Vial: 1
 Acq On : 24 Aug 2007 4:26 pm Operator: ASP
 Sample : WG248656-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Quant Time: Aug 27 10:51 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47612.D

(1) Pentachlorophenol

7.36min 0.00

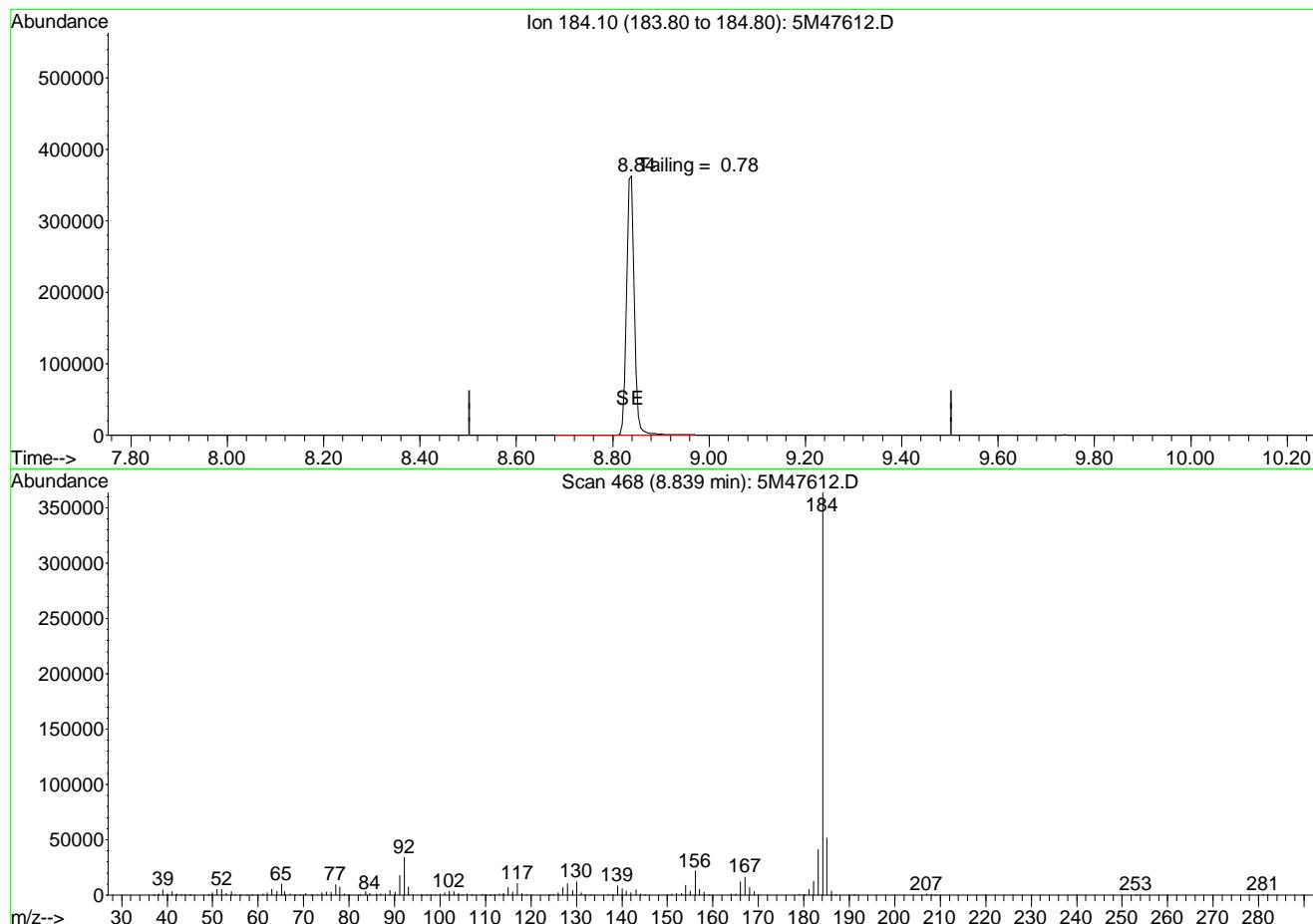
response 41513

Ion	Exp%	Act%
265.90	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47612.D Vial: 1
 Acq On : 24 Aug 2007 4:26 pm Operator: ASP
 Sample : WG248656-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Quant Time: Aug 27 10:51 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47612.D

(2) Benzidine

8.84min 0.00

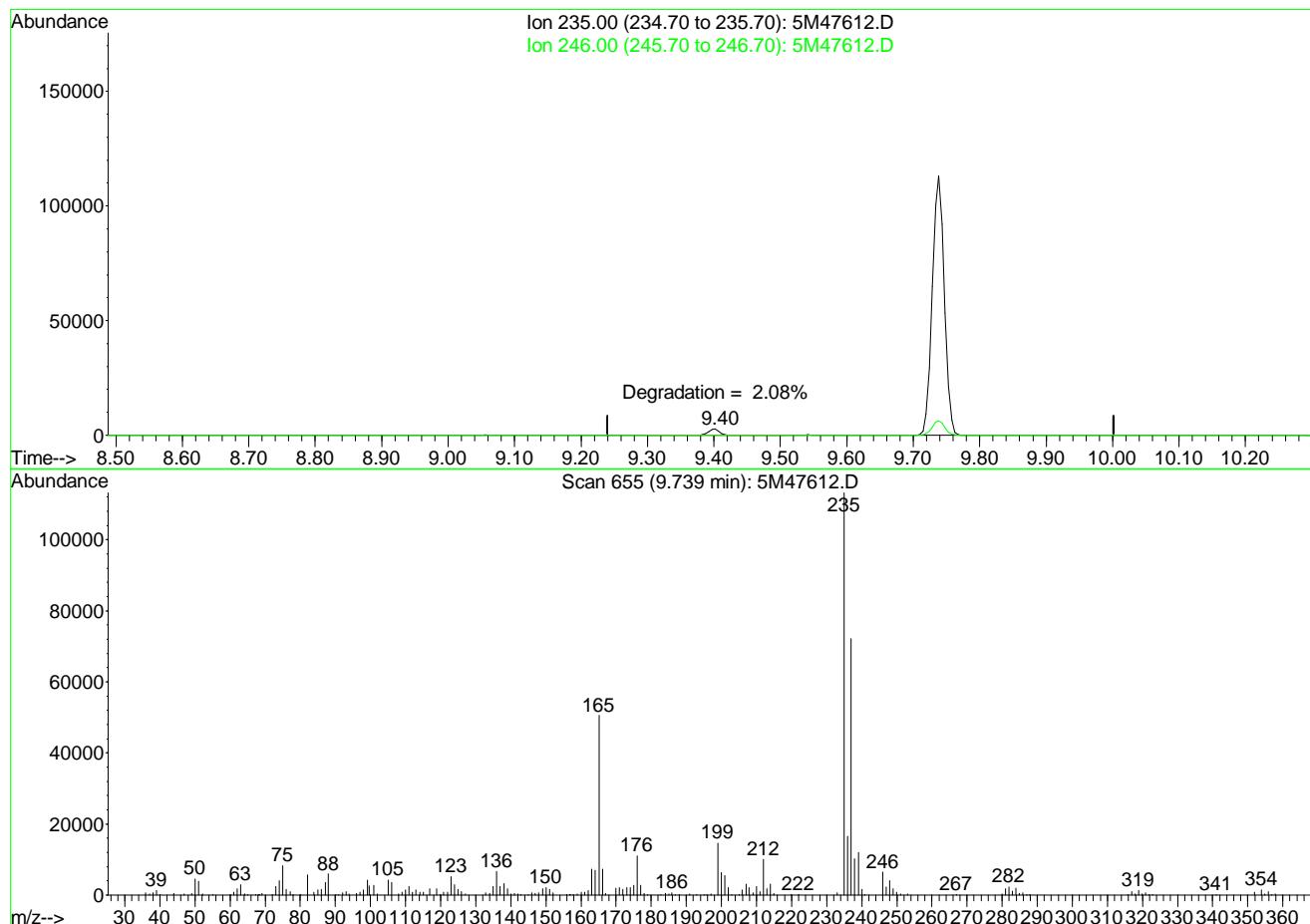
response 408979

Ion	Exp%	Act%
184.10	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\082407\5M47612.D Vial: 1
 Acq On : 24 Aug 2007 4:26 pm Operator: ASP
 Sample : WG248656-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Quant Time: Aug 27 10:51 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47612.D

(3) DDT

9.74min 0.00

response 142562

Ion Exp% Act%

235.00 100 100

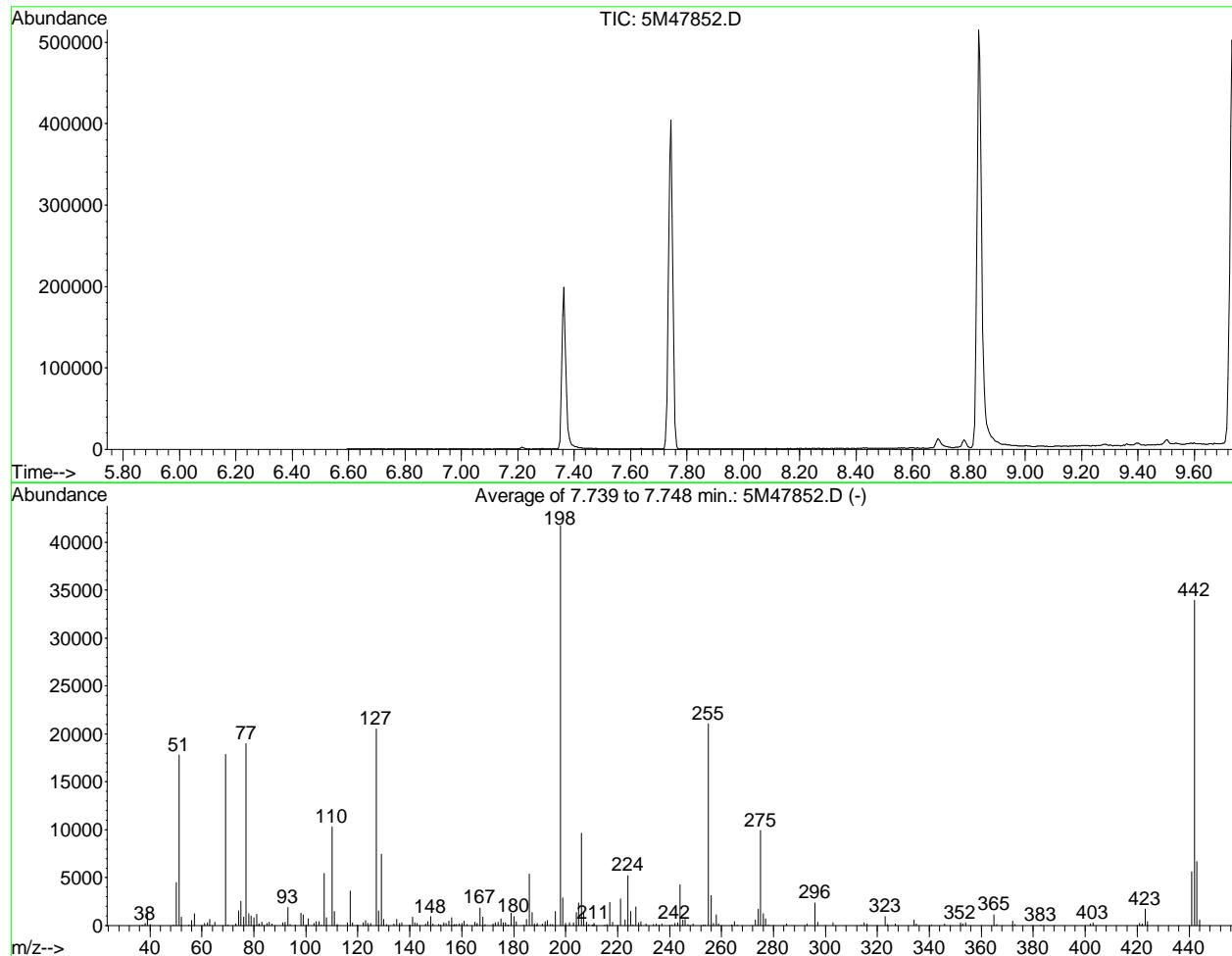
246.00 6.70 5.77

0.00 0.00 0.00

0.00 0.00 0.00

DFTPP

Data File : C:\MSDCHEM\1\DATA\090507\5M47852.D Vial: 1
 Acq On : 5 Sep 2007 11:17 am Operator: ASP
 Sample : WG249365-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP



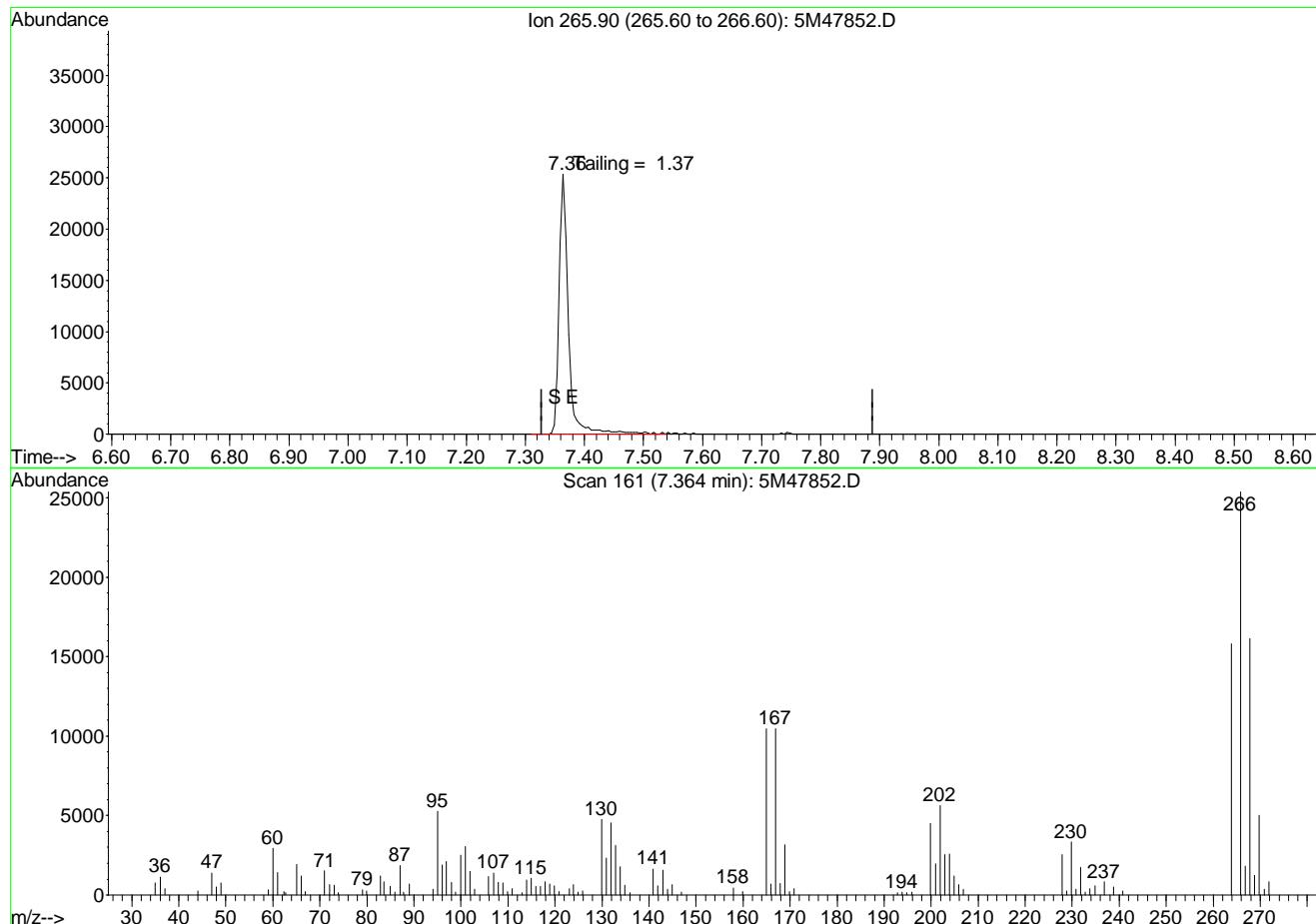
AutoFind: Scans 239, 240, 241; Background Corrected with Scan 232

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	42.7	17776	PASS
68	69	0.00	2	0.0	0	PASS
69	198	0.00	100	42.8	17845	PASS
70	69	0.00	2	0.2	41	PASS
127	198	40	60	49.2	20510	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	41674	PASS
199	198	5	9	6.9	2870	PASS
275	198	10	30	23.8	9935	PASS
365	198	1	100	2.7	1129	PASS
441	443	0.01	100	84.3	5619	PASS
442	198	40	100	81.4	33928	PASS
443	442	17	23	19.6	6665	PASS

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\090507\5M47852.D Vial: 1
 Acq On : 5 Sep 2007 11:17 am Operator: ASP
 Sample : WG249365-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Quant Time: Sep 6 12:28 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47852.D

(1) Pentachlorophenol

7.36min 0.00

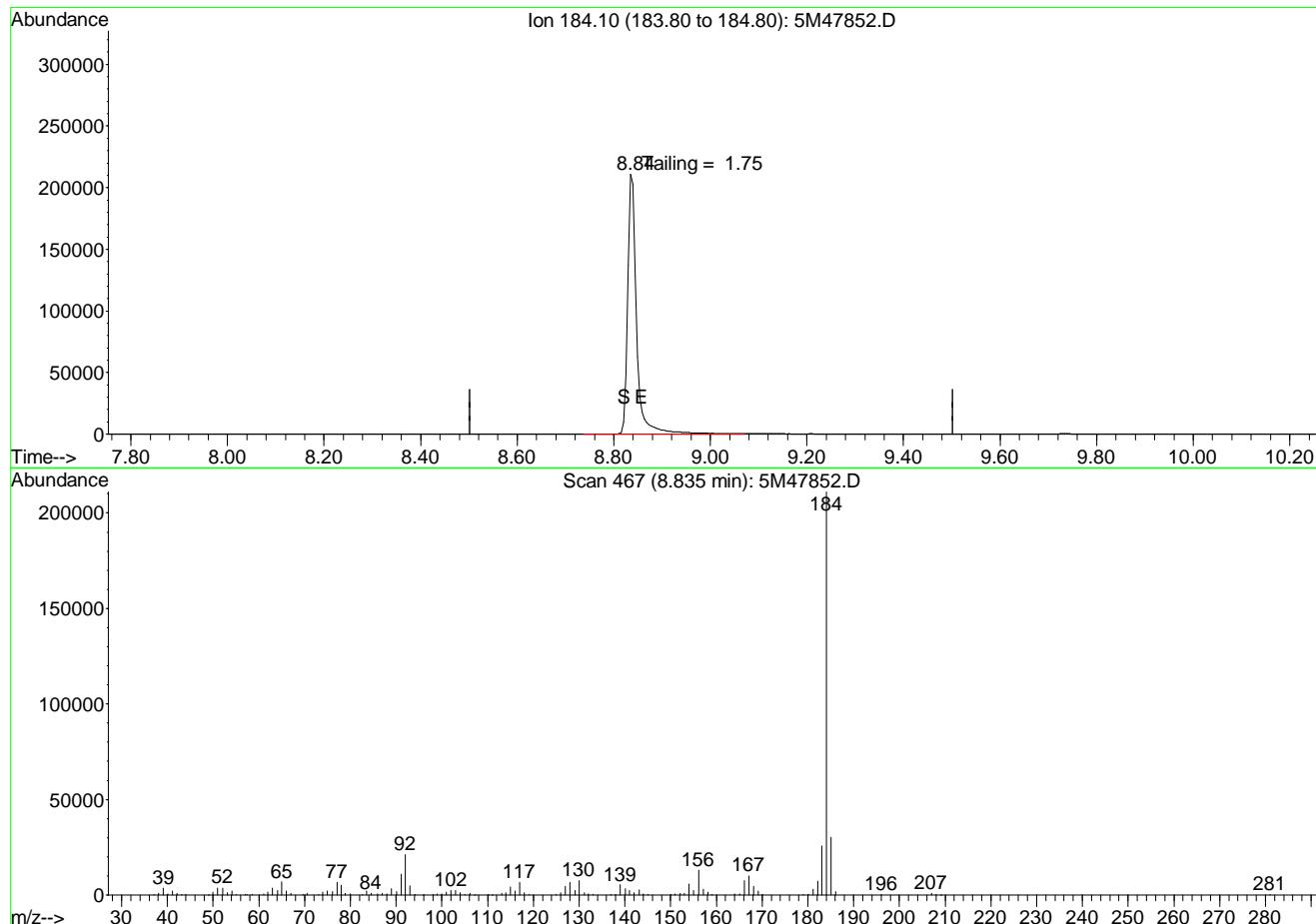
response 26687

Ion	Exp%	Act%
265.90	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\090507\5M47852.D Vial: 1
 Acq On : 5 Sep 2007 11:17 am Operator: ASP
 Sample : WG249365-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Quant Time: Sep 6 12:28 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47852.D

(2) Benzidine

8.84min 0.00

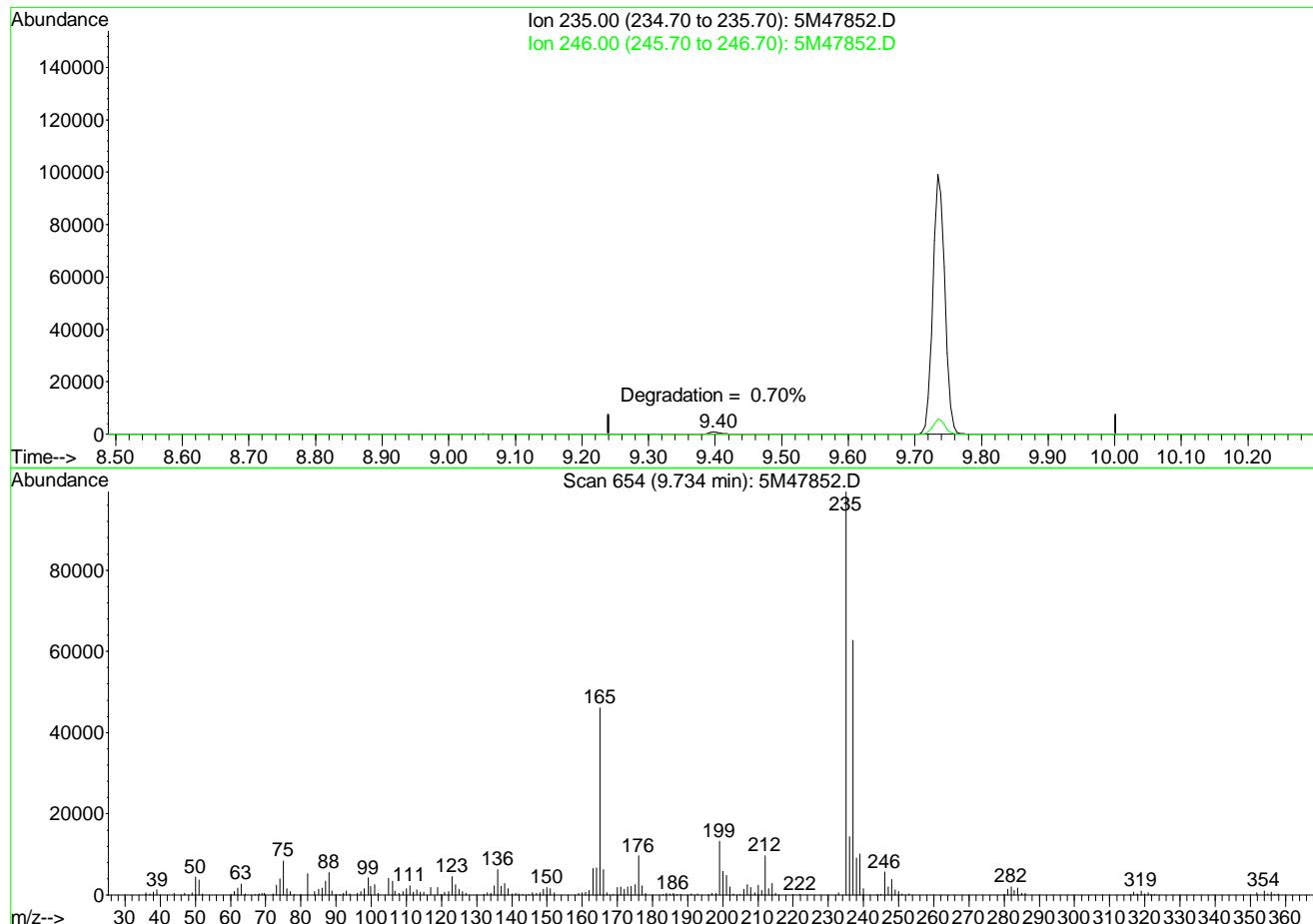
response 271169

Ion	Exp%	Act%
184.10	100	100
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\090507\5M47852.D Vial: 1
 Acq On : 5 Sep 2007 11:17 am Operator: ASP
 Sample : WG249365-01 50PPM DFTPP Inst : HPMS5
 Misc : 1,1 STD18296 Multiplr: 1.00
 MS Integration Params: rteint.p
 Quant Time: Sep 6 12:28 2007 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\DFTPP.M (RTE Integrator)
 Title : DFTPP
 Last Update : Sun Mar 18 11:57:57 2007
 Response via : Single Level Calibration



TIC: 5M47852.D

(3) DDT

9.73min 0.00

response 123968

Ion	Exp%	Act%
235.00	100	100
246.00	6.70	5.78
0.00	0.00	0.00
0.00	0.00	0.00

Data File : C:\MSDCHEM\1\DATA\090507\5M47854.D Vial: 3
 Acq On : 5 Sep 2007 12:09 pm Operator: ASP
 Sample : WG249164-02 BLK EP286P97 SOIL Inst : HPMS5
 Misc : 7,1 SOIL Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 06 12:33:00 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Thu Sep 06 12:32:27 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	182273	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	721828	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.85	164	391690	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	567425	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	560892	40.00	ug/ml	0.00
128) Perylene-d12	19.62	264	531202	40.00	ug/ml	0.00

System Monitoring Compounds						
7) 2-Fluorophenol	7.56	112	356336	54.5004	ug/ml	0.00
Spiked Amount	100.000	Range	25 - 121	Recovery	=	54.50%
11) Phenol-d5	8.68	99	450252	56.5957	ug/ml	0.00
Spiked Amount	100.000	Range	24 - 113	Recovery	=	56.60%
30) Nitrobenzene-d5	9.84	82	182103	29.7558	ug/ml	0.00
Spiked Amount	50.000	Range	23 - 120	Recovery	=	59.52%
58) 2-Fluorobiphenyl	12.04	172	372297	26.6302	ug/ml	0.00
Spiked Amount	50.000	Range	30 - 115	Recovery	=	53.26%
85) 2,4,6-Tribromophenol	13.73	330	95085	55.7157	ug/ml	0.00
Spiked Amount	100.000	Range	19 - 122	Recovery	=	55.72%
116) p-Terphenyl-d14	16.08	244	574213	44.0572	ug/ml	0.00
Spiked Amount	50.000	Range	18 - 137	Recovery	=	88.12%

Target Compounds					Qvalue
38) Benzoic Acid	10.33	105	165	16.2655	ug/ml# 29
90) Sym-Trinitrobenzene	13.73	75	190	4.2119	ug/ml# 1

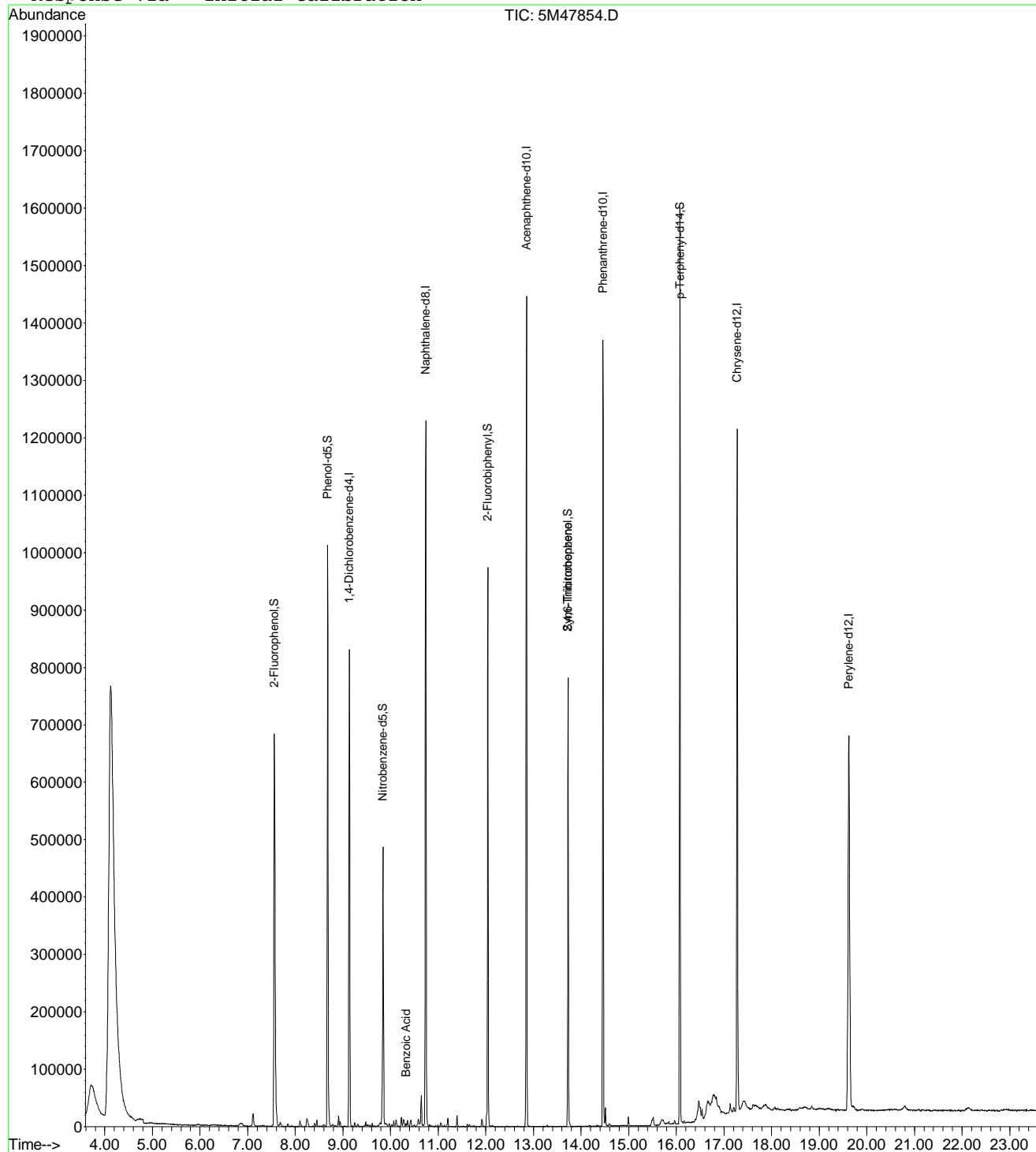
(#) = qualifier out of range (m) = manual integration
 5M47854.D MEGAMIX.M Thu Sep 06 12:33:09 2007

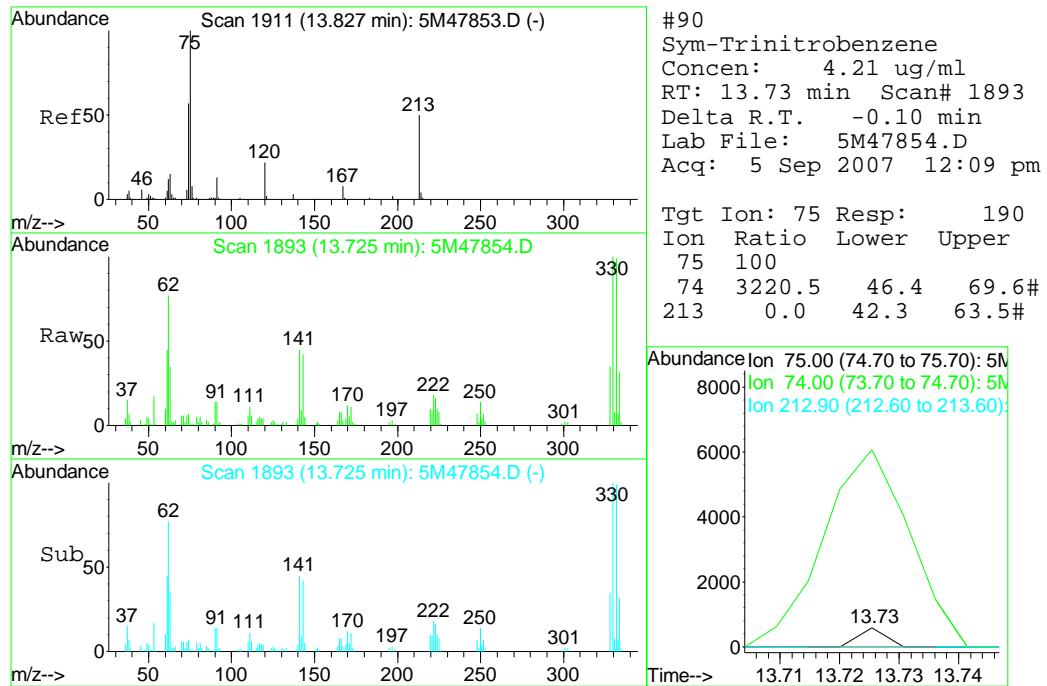
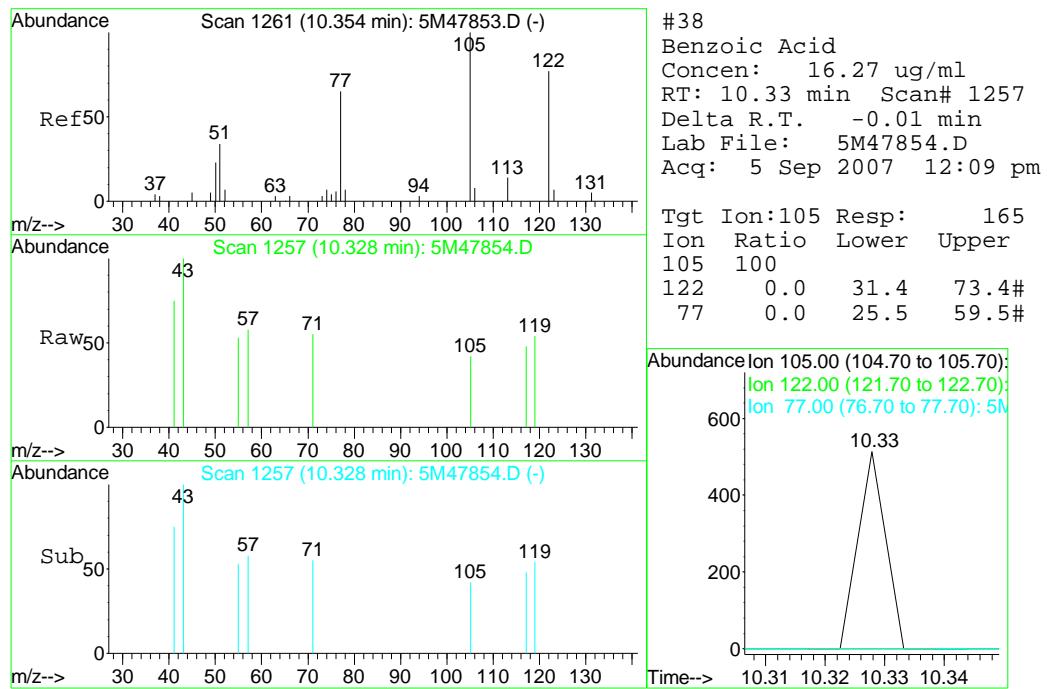
Data File : C:\MSDCHEM\1\DATA\090507\5M47854.D
Acq On : 5 Sep 2007 12:09 pm
Sample : WG249164-02 BLK EP286P97 SOIL
Misc : 7,1 SOIL
MS Integration Params: RTEINT.P
Quant Time: Sep 6 12:33 2007

Vial: 3
Operator: ASP
Inst : HPMS5
Multiplr: 1.00

Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Thu Sep 06 12:32:27 2007
Response via : Initial Calibration





Data File : C:\MSDCHEM\1\DATA\090507\5M47855.D Vial: 4
 Acq On : 5 Sep 2007 12:42 pm Operator: ASP
 Sample : WG249164-03 LCS EP286P97 SOIL Inst : HPMS5
 Misc : 7,1 SOIL Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 06 12:33:29 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Thu Sep 06 12:32:27 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) 1,4-Dichlorobenzene-d4	9.14	152	225500	40.00	ug/ml	0.00
29) Naphthalene-d8	10.74	136	982986	40.00	ug/ml	0.00
53) Acenaphthene-d10	12.85	164	498629	40.00	ug/ml	0.00
86) Phenanthrene-d10	14.46	188	725484	40.00	ug/ml	0.00
112) Chrysene-d12	17.28	240	720777	40.00	ug/ml	0.00
128) Perylene-d12	19.62	264	710348	40.00	ug/ml	0.00

System Monitoring Compounds						
7) 2-Fluorophenol	7.56	112	454959	56.2455	ug/ml	0.00
Spiked Amount	100.000	Range	25 - 121	Recovery	=	56.25%
11) Phenol-d5	8.68	99	590850	60.0317	ug/ml	0.00
Spiked Amount	100.000	Range	24 - 113	Recovery	=	60.03%
30) Nitrobenzene-d5	9.84	82	242676	29.1185	ug/ml	0.00
Spiked Amount	50.000	Range	23 - 120	Recovery	=	58.24%
58) 2-Fluorobiphenyl	12.04	172	526504	29.5836	ug/ml	0.00
Spiked Amount	50.000	Range	30 - 115	Recovery	=	59.16%
85) 2,4,6-Tribromophenol	13.73	330	167012	76.8738	ug/ml	0.00
Spiked Amount	100.000	Range	19 - 122	Recovery	=	76.87%
116) p-Terphenyl-d14	16.08	244	771307	46.0521	ug/ml	0.00
Spiked Amount	50.000	Range	18 - 137	Recovery	=	92.10%

Target Compounds					Qvalue
2) n-Nitrosodimethylamine	5.54	74	164804	30.4401	ug/ml
3) Pyridine	5.56	79	262393	28.5814	ug/ml
10) Aniline	8.76	93	329082	25.0402	ug/ml
12) Phenol	8.69	94	324368	30.5583	ug/ml
13) bis(2-Chloroethyl)ether	8.81	63	181991	29.5954	ug/ml
15) 2-Chlorophenol	8.91	128	263895	29.8859	ug/ml
16) 1,3-Dichlorobenzene	9.09	146	274015	28.5178	ug/ml
17) 1,4-Dichlorobenzene	9.16	146	277995	27.9742	ug/ml
18) Benzyl Alcohol	9.29	108	175638	31.9815	ug/ml
19) 1,2-Dichlorobenzene	9.39	146	269135	29.4740	ug/ml
20) 2-Methylphenol	9.43	107	208453	31.9184	ug/ml
21) bis(2-Chloroisopropyl)ethane	9.48	45	439980	30.6968	ug/ml
22) 3-,4-Methylphenol	9.60	107	319084	37.0110	ug/ml
24) n-Nitrosodipropylamine	9.65	70	190154	33.3221	ug/ml#
25) Acetophenone	9.64	105	323988	31.1965	ug/ml
26) n-Nitrosomorpholine	9.65	56	13761	2.6693	ug/ml#
27) o-Toluidine	9.64	106	25297	2.0484	ug/ml#
28) Hexachloroethane	9.79	117	104307	29.2270	ug/ml
31) Nitrobenzene	9.87	77	256340	28.8224	ug/ml
33) Isophorone	10.14	82	493854	32.5629	ug/ml
34) 2-Nitrophenol	10.27	139	150583	30.2021	ug/ml
35) 2,4-Dimethylphenol	10.26	122	264055	29.9518	ug/ml
37) bis(2-Chloroethoxy)methane	10.38	93	307074	22.7930	ug/ml
38) Benzoic Acid	10.34	105	101611	49.1327	ug/ml#
39) 2,4-Dichlorophenol	10.55	162	226329	31.4186	ug/ml
41) 1,2,4-Trichlorobenzene	10.68	180	218266	26.6174	ug/ml
42) Naphthalene	10.77	128	759110	27.3647	ug/ml
43) 4-Chloroaniline	10.82	127	298698	24.7832	ug/ml
46) Hexachlorobutadiene	10.97	225	119128	30.2815	ug/ml
48) p-Phenylenediamine	11.38	108	18944	2.2731	ug/ml#
49) 4-Chloro-3-Methylphenol	11.38	107	241668	31.7678	ug/ml
51) 2-Methylnaphthalene	11.61	142	521164	28.3974	ug/ml
52) 1-Methylnaphthalene	11.75	142	467747	25.8999	ug/ml

(#) = qualifier out of range (m) = manual integration
 5M47855.D MEGAMIX.M Thu Sep 06 12:33:33 2007

Data File : C:\MSDCHEM\1\DATA\090507\5M47855.D Vial: 4
 Acq On : 5 Sep 2007 12:42 pm Operator: ASP
 Sample : WG249164-03 LCS EP286P97 SOIL Inst : HPMS5
 Misc : 7,1 SOIL Multipllr: 1.00
 MS Integration Params: RTEINT.P
 Quant Time: Sep 06 12:33:29 2007 Quant Results File: MEGAMIX.RES

Quant Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
 Title : 8270 megamix/Initial cal. 08/24/07
 Last Update : Thu Sep 06 12:32:27 2007
 Response via : Initial Calibration
 DataAcq Meth : BNA

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55) Hexachlorocyclopentadiene	11.88	237	98464	31.0120	ug/ml	99
56) 2,4,6-Trichlorophenol	11.96	196	165031	33.4794	ug/ml	100
57) 2,4,5-Trichlorophenol	12.01	196	183198	34.7478	ug/ml	98
59) Isosafrole	12.19	162	498242	71.5730	ug/ml#	36
60) 2-Chloronaphthalene	12.19	162	498242	26.1555	ug/ml	99
61) 1-Chloronaphthalene	12.19	162	498242	32.4947	ug/ml	99
62) 2-Nitroaniline	12.32	65	167195	37.4103	ug/ml	94
64) Dimethylphthalate	12.52	163	661046	36.5212	ug/ml	100
65) 1,3-Dinitrobenzene	12.43	168	108421	41.4160	ug/ml	99
66) 2,6-Dinitrotoluene	12.61	165	164279	37.4153	ug/ml	99
67) Acenaphthylene	12.69	152	816581	29.9895	ug/ml	100
68) 3-Nitroaniline	12.78	138	198189	38.2007	ug/ml	100
69) 2,4-Dinitrophenol	12.90	184	68918	41.9534	ug/ml	36
70) Acenaphthene	12.89	154	506135	30.2660	ug/ml	98
71) 4-Nitrophenol	12.92	65	141948	42.9634	ug/ml	94
72) 2,4-Dinitrotoluene	13.06	165	238797	46.5041	ug/ml	97
74) Dibenzofuran	13.06	168	717387	31.8495	ug/ml	99
75) 2,3,4,6-Tetrachlorophenol	13.18	232	147802	39.1048	ug/ml	99
78) Diethylphthalate	13.29	149	706174	38.7251	ug/ml	100
80) Fluorene	13.45	166	653188	34.1715	ug/ml	100
81) 4-Chlorophenyl Phenyl Ethe	13.40	204	282884	32.5339	ug/ml	98
82) 4-Nitroaniline	13.46	138	230789	41.5874	ug/ml	97
84) 1,2-Diphenylhydrazine	13.58	77	665517	36.7626	ug/ml	97
87) 4,6-Dinitro-2-Methylphenol	13.51	198	145688	52.2519	ug/ml	100
88) n-Nitrosodiphenylamine	13.53	169	542845	36.0094	ug/ml	99
90) Sym-Trinitrobenzene	13.93	75	25006	11.3055	ug/ml#	62
93) Phorate	13.93	75	25006	2.6305	ug/ml#	40
94) 4-Bromophenyl Phenyl Ether	13.94	248	160263	35.0801	ug/ml	99
95) Hexachlorobenzene	14.13	284	200492	41.8310	ug/ml	99
97) 4-Aminobiphenyl	14.22	169	109069	6.5953	ug/ml	99
98) Pentachlorophenol	14.30	266	131482	56.9668	ug/ml	100
100) Pentachloronitrobenzene	14.30	237	4049	2.6711	ug/ml#	14
101) Disulfoton	14.48	88	88042	10.8498	ug/ml#	3
102) Phenanthrene	14.48	178	1080397	41.8446	ug/ml	100
103) Anthracene	14.53	178	1121782	43.3867	ug/ml	100
104) Carbazole	14.68	167	1140632	48.6852	ug/ml	99
106) Di-n-Butyl Phthalate	15.00	149	1350462	47.4231	ug/ml	100
111) Fluoranthene	15.74	202	1246656	49.7393	ug/ml	99
113) Benzidine	15.81	184	87600	7.6275	ug/ml	100
114) Pyrene	15.99	202	1295109	48.3050	ug/ml	100
120) Butyl Benzyl Phthalate	16.54	149	612097	48.9343	ug/ml	99
124) bis(2-Ethylhexyl)phthalate	17.13	149	861575	46.6012	ug/ml	98
125) 3,3'-Dichlorobenzidine	17.17	252	417367	48.9303	ug/ml	100
126) Benzo[alanthracene	17.26	228	1174345	47.6762	ug/ml	99
127) Chrysene	17.32	228	1137423	47.7659	ug/ml	100
129) Di-n-Octyl Phthalate	17.92	149	1447743	47.7951	ug/ml	99
131) Benzo[b]fluoranthene	18.88	252	1225522	45.6049	ug/ml	96
132) Benzo[k]fluoranthene	18.92	252	1115582	45.7437	ug/ml	99
133) Benzo[a]pyrene	19.52	252	1126937	47.3578	ug/ml	98
135) Indeno[1,2,3-cd]pyrene	22.28	276	1259897	47.1776	ug/ml	96
136) Dibenz[ah]anthracene	22.27	278	1084001	47.0442	ug/ml	98
137) Benzo[ghi]perylene	23.09	276	1081588	46.7700	ug/ml	97

(#) = qualifier out of range (m) = manual integration
 5M47855.D MEGAMIX.M Thu Sep 06 12:33:33 2007

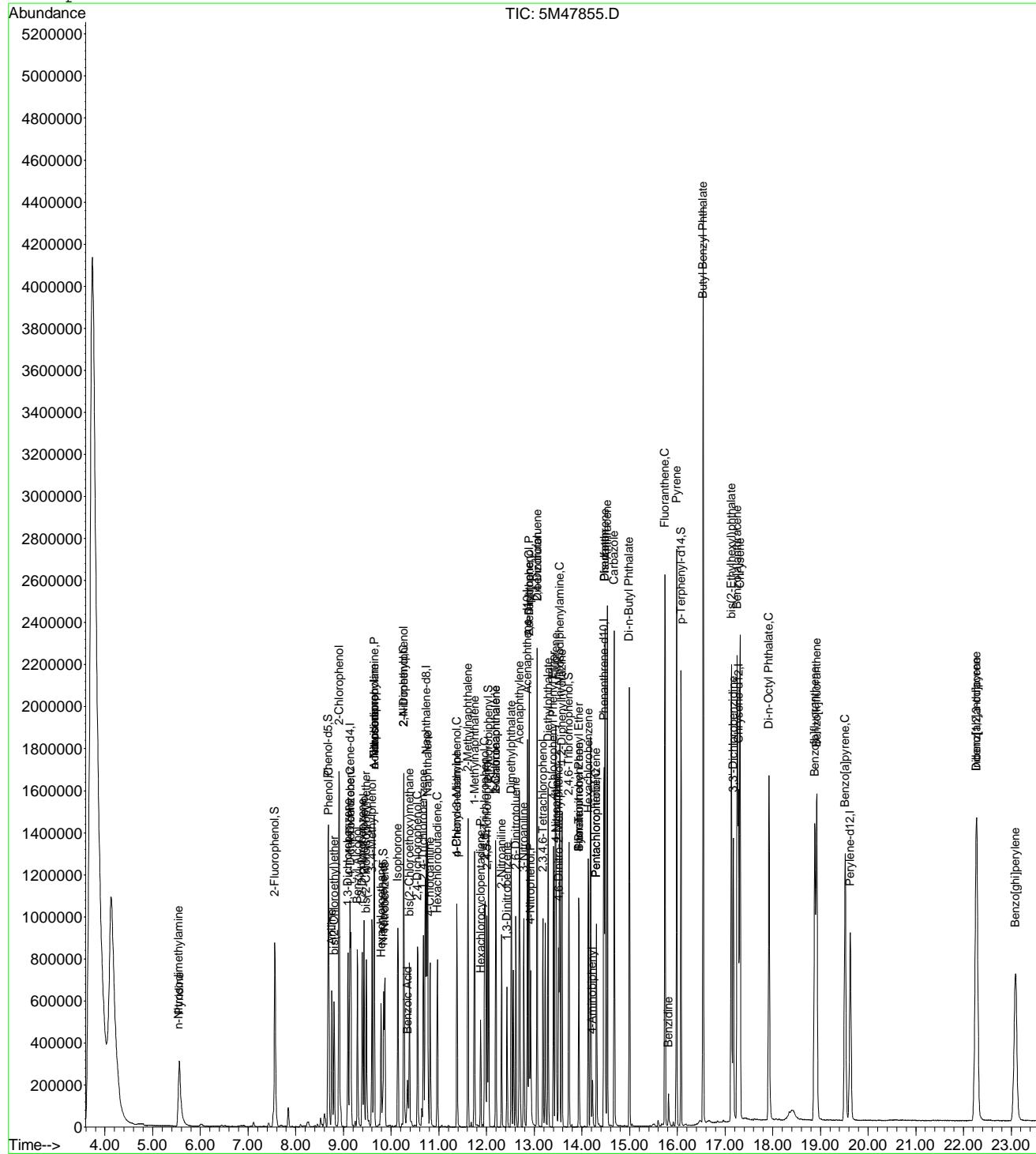
Data File : C:\MSDCHEM\1\DATA\090507\5M47855.D
Acq On : 5 Sep 2007 12:42 pm
Sample : WG249164-03 LCS EP286P97 SOIL
Misc : 7,1 SOIL
MS Integration Params: RTEINT.P
Quant Time: Sep 6 12:33 2007

Vial: 4
Operator: ASP
Inst : HPM55
Multiplr: 1.00

Quanta TIME: Sep 6 12:55 2007

Quant Results File: MEGAMIX.RES

Method : C:\MSDCHEM\1\METHODS\MEGAMIX.M (RTE Integrator)
Title : 8270 megamix/Initial cal. 08/24/07
Last Update : Thu Sep 06 12:32:27 2007
Response via : Initial Calibration



2.2 General Chemistry Data

2.2.1 Percent Solids Data

2.2.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:

WT1 = Weight, in grams, of the empty container 1.30 g

WT2 = Weight, in grams, of the container and wet sample 21.274 g

WT3 = Weight, in grams, of the container and dried sample 5.21 g

F = Factor to get units as percent weight 100

%Solids = Percent solids present in sample. 19.58%

PERCENT SOLIDS

SOP K0003 Rev: 4

Balance: CHAUS EIRW50 Other

Sample	Empty Pan WT 1	WET WT2	DRY WT 3A	WET WT 3B	DRY WT 3C
L07088203-01	1.27	25.92	21.52		
L0708822-02	1.29	27.57	22.42		
03	1.28	26.64	22.05		
04	1.27	21.45	13.37		
05	1.28	21.18	13.02		
06	1.25	20.40	17.03		
07	1.26	31.71	26.39		
08	1.99	39.45	34.57		
09	1.32	28.32	20.85		
10	1.30	38.26	29.82		
11	1.28	33.63	25.33		
12	1.30	36.39	27.45		
13	1.28	30.45	19.08		
L0708779-01	1.24	17.39	15.23		
02	1.20	36.57	19.26		
03	1.22	34.06	21.40		
04	1.25	27.90	24.21		
05	1.25	23.11	21.29		
06	1.24	30.38	27.95		
07, 9, 1.22	20.74	18.63			
Duplicate: L0708779-01	1.26	20.72	18.61		

Analyst: Jutta Hanson

ADT (on): 9/3/2007 @ 0827

ADT (off): 9/4/2007 0750

AUT (off): _____

DCN#70820



Approved: September 05, 2007

Jenna Hanson

KEMRON ENVIRONMENTAL SERVICES
PERCENT SOLID REPORT

Workgroup (AAB#): MG249213
Method: D2216-90

Run Date: 09/04/2007
Run Time: 02:27
Analyst: EJR

SAMPLE NUMBER	PAN WT.	INT WT.	PDI WT.	% SOLID	% MOIST	UNITS
L0708079-01	1.240	17.39	15.23	86.63		
L0708079-02	1.200	20.57	18.26	88.07		
L0708079-03	1.220	24.06	21.40	88.35		
L0708079-04	1.250	27.90	24.31	86.25		
L0708079-05	1.250	23.11	21.29	91.47		
L0708079-06	1.240	30.39	27.95	91.66		
L0708079-07	1.220	20.74	18.63	89.19		
L0708079-08	1.220	20.74	18.63	89.19		
L0708079-09	1.220	20.74	18.63	89.19		
L0708093-01	1.270	25.92	21.52	82.15		
L0708092-02	1.290	27.57	22.42	80.40		
L0708092-03	1.280	26.64	22.05	81.90		
L0708092-04	1.230	21.45	13.37	59.96		
L0708092-05	1.280	21.18	13.62	68.99		
L0708092-06	1.250	20.40	17.09	62.40		
L0708092-07	1.260	31.71	26.39	82.53		
L0708092-08	1.290	29.45	24.57	82.67		
L0708092-09	1.220	20.32	20.85	72.33		
L0708092-10	1.300	28.26	25.82	77.16		
L0708092-11	1.280	31.63	25.33	74.34		
L0708092-12	1.300	36.39	27.45	74.52		
L0708092-13	1.280	30.45	19.08	61.03		
MG249213-01	1.220	20.74	18.63	89.19	10.81	
MG249213-02	1.260	20.32	18.61	89.16	10.84	

KEMRON FORMS - Modified 02/25/2007
Version 1.2
Report generated 09/04/2007 12:47

Approved: September 05, 2007

3.0 Attachments

Kemron Environmental Services
Analyst Listing
October 3, 2007

AJF - AMANDA J. FICKIESEN	ALB - ANNIE L. BOCK	AML - ANTHONY M. LONG
ARA - ADRIAN R. ACHTERMANN	ASP - AARON S. PETRIE	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CLC - CHRYS L. CRAWFORD	CLW - CHARISSA L. WINTERS	CM - CHARLIE MARTIN
CMS - CRYSTAL M. STEPHENS	CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL
DD - DIANE M. DENNIS	DDE - DEBRA D. ELLIOTT	DEL - DON E. LIGHTFRITZ
DEV - DAVID E. VANDENBERG	DGB - DOUGLAS G. BUTCHER	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE	DLR - DIANNA L. RAUCH
DR - DEANNA ROBERTS	DRP - DAVE R. PITZER	DSF - DEBRA S. FREDERICK
DST - DENNIS S. TEPE	ECL - ERIC C. LAWSON	ED - EMILY E. DECKER
ERE - ERIN R. ELDER	FJB - FRANCES J. BOLDEN	HAV - HEMA VILASAGAR
HJR - HOLLY J. REED	JAB - JUANITA A. BECKER	JAL - JOHN A. LENT
JBK - JEREMY B. KINNEY	JCO - JOE C. OWENS	JDH - JUSTIN D. HESSON
JKP - JACQUELINE K. PARSONS	JKT - JANE K. THOMPSON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU	KCZ - KEVIN C. ZUMBRO
KEB - KATHRYN E. BARNES	KHR - KIM H. RHODES	KJW - KATIE J. WIEFERICH
KRA - KATHY R. ALBERTSON	KRV - KATHRINE R. VICKERS	LKN - LINDA K. NEDEFF
LSB - LESLIE S. BUCINA	MDA - MIKE D. ALBERTSON	MDC - MICHAEL D. COCHRAN
MES - MARY E. SCHILLING	MKZ - MARILYN K. ZUMBRO	MLR - MARY L. ROCHOTTE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NJB - NATALIE J. BOOTH	PJM - PAUL J. MILLER	RAH - ROY A. HALSTEAD
RB - ROBERT BUCHANAN	REK - ROBERT E. KYER	RLF - RACHEL L. FRYE
RLK - ROBIN L. KLINGER	RNP - RICK N. PETTY	RWC - RODNEY W. CAMPBELL
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF	SMH - SHAUNA M. HYDE
TDH - TRICIA D. HUCK	TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WFM - WALTER F. MARTIN	

KEMRON Environmental Services

List of Valid Qualifiers

October 03, 2007

Qualkey: STD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Result is greater than the associated numerical value.
A	See the report narrative
B	Analyte present in method blank
C	Confirmed by GC/MS
CG	Confluent growth
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
FL	Free Liquid
I	Semiquantitative result (out of instrument calibration range)
J	The analyte was positively identified, but the quantitation was below the RL
J,B	Analyte detected in both the method blank and sample above the MDL.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
L	Sample reporting limits elevated due to matrix interference
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Tentatively identified compound(TIC)
NA	Not applicable
ND	Not detected at or above the reporting limit
ND,L	Not detected; sample reporting limit (RL) elevated due to interference
ND,S	Not detected; analyzed by method of standard addition (MSA)
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria fail. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
U	Undetected; the concentration is below the reported MDL.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

*****Special Notes for Organic Analytes**

1. Acrolein and acrylonitrile by method 624 are semi-quantitative screens only.
2. 1,2-Diphenylhydrazine is unstable and is reported as azobenzene.
3. N-nitrosodiphenylamine cannot be separated from diphenylamine.
4. 3-Methylphenol and 4-Methylphenol are unresolvable compounds.
5. m-Xylene and p-Xylene are unresolvable compounds.
6. The reporting limits for Appendix II/IX compounds by method 8270 are based on EPA estimated PQLs referenced in 40 CFR Part 264, Appendix IX. They are not always achievable for every compound and are matrix dependent.

COC No. A 76063

156 Starlite Drive
Marietta, OH 45750

KEMTRON
ENVIRONMENTAL SERVICES
CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071

Fax: 740-373-4835

Company Name: USARC - MARION								Program <input type="checkbox"/> NPDES <input type="checkbox"/> AFCEE <input type="checkbox"/> RCRA <input type="checkbox"/> USAGE <input type="checkbox"/> CWA		
Project Contact: Mary Lou R.		Contact Phone #: 373-4308								
Turn Around Requirements: 3 DAY		Location: Marion OH								
Project #: USARC		Project Name: Marion USARC								
Sampler (print): CHARLES MARTIN		Signature: Charles Martin								
Sample I.D. No. LTA1P-CS-01A	Comp:	Grab	Date 8/30/11	Time 1000	Protocol		NUMBER OF CONTAINERS 1	Hold	TCL SWOC	
					CWA	SW846				
<p style="margin-left: 100px; margin-top: 10px;">(CH)</p>										
Relinquished by: (Signature) Charles Martin	Date 8/31/11	Time 0845	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)			
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature) Edna Tyler	Date 8-3-07	Time 0845	Cooler Temp in °C: 3,2	Remarks:			

*Homogenize all composite samples prior to analysis

Client:	US AEC				
Workorder Number:	B-1				
Date Received:	8-31-07				
Delivered by:	(<input type="checkbox"/>) FedEx	(<input type="checkbox"/>) UPS	(<input type="checkbox"/>) Client	(<input checked="" type="checkbox"/>) Courier	Time:
Opened by:	CC				
IR Temp Gun:	(<input type="checkbox"/>) D	(<input checked="" type="checkbox"/>) G			
Logged by:	BAG		L-8-103		

Cooler Information

Cooler ID	Temp C	Airbill#	COC#	Other
280	3	N/A		Soils
143	2			WATers
509	5			Terra Cores

Inspection Checklist

	Y	N	NA	Discrepancy ID
Were shipping coolers sealed?			✓	
Were custody seals intact?			✓	
Were cooler temperatures in range of 0 - 6?	✓			
Was ice present?	✓			
Were COC's received/information complete/signed/dated?	✓			
Were sample containers and labels intact?	✓			
Were correct containers used?	✓			
Were correct preservatives used (water only)?	✓			
Were pH ranges acceptable?	✓			
Were VOA samples free of headspace?	✓			
Were samples received within EPA hold times?	✓			

Discrepancy/Comments/Other Problems

Distribution

Name of KEMRON representative
Client/Company:
Person Contacted:
Date contacted:

Resolution/other comments:

KEMRON Environmental Services

Internal Chain of Custody Report

Login: L0708803**Account:** 2820**Project:** 2820.079**Samples:** 1**Due Date:** 06-SEP-2007

<u>Samplenum</u>	<u>Container ID</u>	<u>Products</u>
L0708803-01	369616	827-SPE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish
1	LOGIN	COOLER	W1	31-AUG-2007 10:20	BRG	
2	PREP	W1	EXT	31-AUG-2007 11:27	CEB	ERE
3	STORE	EXT	W1	31-AUG-2007 15:03	ERE	CEB
4	ANALYZ	W1	WET	31-AUG-2007 16:44	DIH	JKT
5	STORE	WET	W1	04-SEP-2007 08:30	ERE	JDH
6	STORE	W1	A2	17-SEP-2007 13:42	RLK	RLK

A1 - Sample Archive (COLD)

A2 - Sample Archive (AMBIENT)

F1 - Volatiles Freezer in Login

V1 - Volatiles Refrigerator in Login

W1 - Walkin Cooler in Login