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DRAFT REPORT PRELIMINARY RESOURCE CONSERVATION AND RECOVERY FIELD INVESTIGATION ACTIVITY SOIL GAS AND GEOPHYSICS CNC CHARLESTON SC
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ENSAFE

# DRAFT REPORT
# PRELIMINARY RFI FIELD ACTIVITY
# (SOIL-GAS, GEOPHYSICS)

**Prepared for:**

**COMPREHENSIVE LONG-TERM**
**ENVIRONMENTAL ACTION NAVY (CLEAN)**
**CHARLESTON NAVAL SHIPYARD**
**CHARLESTON, SOUTH CAROLINA**

**CONTRACT N62467-89D-0318**

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## EXECUTIVE SUMMARY

This report summarizes the results of preliminary field investigations conducted May-November 1992 by EnSafe/Allen & Hoshall at the Charleston Naval Shipyard, Charleston, South Carolina, solid waste management units (SWMUs) #9 (closed landfill) and #14 (chemical disposal area). The survey was conducted to screen for possible subsurface contaminants and to guide the next phase of investigations.

The field objectives were to identify the boundaries of the SWMUs, to find possible soil contaminants, to identify clusters of buried drums and other possible sources of contaminants, and to identify any detectable leachate plumes. Methodology included a geophysics study (gradient magnetics and frequency-domain electromagnetics) and a soil-gas study (field gas chromatograph, sampling for total volatiles and BTEX and chlorinated hydrocarbons).

**SWMU #9 — Closed Landfill**

The geophysical survey provided a significant refinement of the landfill boundaries to the south and east. The boundary locations are somewhat different than previously believed. Culture prevented boundary definition to the north and northwest; limited soil sampling will be done to complete the boundary definition. Within the landfill, zones of higher and lower metal content were identified and mapped.

The soil-gas survey showed several contiguous anomalies of elevated total FID volatiles, usually in the low-tens to several-hundred $\mu$g/l range. Other mostly isolated and small anomalies were also identified. Many but not all anomalies had BTEX analytes above the detection level for the survey.

Benzene was the most significant BTEX component, with maximum values of less than 10 $\mu$g/l. A few stations had elevated concentrations of 1,1-DCE and one had a high concentration of 1,1-DCA.

The magnetics geophysical survey identified a very large number of anomalies. An integrated interpretation of the geophysics and soil-gas data allowed these anomalies to be prioritized according to potential environmental importance. A total of 119 prioritized anomalies was identified. The highest-priority anomalies had soil-gas anomalies and geophysical responses which resemble those typical of buried drums. Past experience suggests that a majority of these anomalies may be due to non-drum sources such as buried metal trash, electronic equipment, pipes, etc., but the specificity provided by the geophysics effectively reduces the specific area considered for soil sampling and trenching by over 90 percent.

Due to high electrical conductivities arising from shallow saline water, the electromagnetics geophysical survey did not discern a high-TDS leachate plume. Future investigations of leachate at this site will thus be directed to detecting leachate contaminants directly via sampling of soils and groundwater. The magnetics and soil-gas data provide considerable information as to where the sampling efforts might be most effective.

The geophysical data indicate that few if any large pieces of steel or iron of landfill origin are presently buried in the tidal marshes south of the landfill. This suggests that drums and other metal containers of waste are not currently being carried into Shipyard Creek from the landfill. However, on the molecular level, several soil-gas anomalies located at the boundary between the landfill and the marsh are regarded as possible sources for leakage of contaminants into the marsh waters. The data suggest sediment and water sampling in the tidal waters. Parts of the marsh had ~~rust-orange waters with an oily surface, and these should be sampled~~ as well.

**SWMU #14**

The magnetics geophysical data identified 33 anomalies which had the character suggestive of metal pails or drums. If so, the data outline, for the first time, the true location of the disposal area, an issue which has been unresolved in previous investigations. The data reduce by well over 95 percent the surface area considered at this time for soil sampling. Past experience has shown that not all of the 34 anomalies should be expected to be drums or pails; some may be various types of buried or bulldozed metal debris. However, the well-defined nature of the anomalies and the relative absence of magnetic noise (as opposed to the high metal content of SWMU #9) suggest that perhaps a fair percentage of anomalies might be due to potential sources of contamination.

Nine of the better-defined geophysical anomalies were tested by soil-gas analyses; only three showed total volatiles exceeding the detection limit, and these values were relatively low. None of the nine locations produced individual analytes at concentrations above the detection limits. Sampling work in the next phase of the project should determine if the results truly indicate a low level of contamination at the site, or if alternative explanations prevail.

Due to high electrical conductivities, the electromagnetics geophysical survey did not discern a high-TDS leachate plume at SWMU #14. Future investigations of leachate at this site will thus be directed to detecting leachate contaminants directly via sampling of soils and groundwater.

**Recommendations**

The preliminary field results provide a definite focus to the next phase of field investigations. This report identifies specific locations for soil sampling, trenching, collection of samples of marsh sediments and standing waters, and location of monitoring wells.

# 1.0 INTRODUCTION

This report summarizes the results of preliminary field work performed by EnSafe/Allen & Hoshall (E/A&H) in 1992 as a part of the RCRA Facility Investigation (RFI) at the Charleston Naval Shipyard (CLEAN contract #N62467-89D-0318). Geophysical and soil-gas surveys were completed at two of the 36 identified SWMUs. SWMU 9 and 14, the closed landfill and chemical disposal area, represent environmental concerns and potential construction hazards that are to be addressed in the RFI work.

The preliminary field work was designed to help identify the best locations for followup soil sampling, trenching, and groundwater investigations. Specific survey objectives are outlined below.

**SWMU #9 Objectives:**

- To identify the edges of the landfill, which were poorly defined at the start of the field work.
- To identify clusters of drums buried in the landfill.
- To identify any geophysically detectable leachate plumes or spills originating in the landfill.
- To identify anomalous soil-gas total volatiles or individual constituents (EPA methods 601 and 602, using a field gas chromatograph).

**SWMU #14 Objectives:**

- To identify the true location of chemical disposal, which was known only very generally at the start of the field work.
- To identify clusters of drums and/or pails buried at the site.
- To identify any geophysically detectable leachate plumes originating in the SWMU.
- To identify anomalous soil-gas total volatiles or individual constituents (EPA methods 601 and 602, using a field gas chromatograph).

Field work began on May 18, 1992, with sub-contracted surveying of both SWMUs by Whitworth & Associates, Inc. A followup survey was done by George A. Z. Johnson, Jr., Inc. in September. Geophysical studies by EnSafe's geophysics department started May 19 and ended on November 12. Geophysical work consisted of gradient magnetics and frequency-domain electromagnetics. The soil-gas survey was subcontracted to Target Environmental Services, and field work was done June 3 through 22.

The numbers of stations sampled at each SWMU during the geophysical survey are outlined below.

| | Soil Gas Survey | Magnetic Geophysical Survey | Electromagnetic Geophysical Survey |
|---|---|---|---|
| **SWMU 9** | 426 | 31,411 | 3,134 |
| **SWMU 14** | 14 | 4,530 | 2,319 |

## 2.0 BACKGROUND INFORMATION

SWMU #9 and #14 are located on the southeastern portion of the Charleston Naval Shipyard facility. The general location of these units is shown in Figure 2-1. The rectangular borders depict the sampling zone boundaries used for the data plots in this report.

### 2.1 Historical Summary

SWMU #9 is a closed landfill which received the shipyard's solid and liquid waste from the 1930s until the early 1970s. Air photos and personal communications between EnSafe employees and base employees indicate that landfill operations began in the northwest part of the SWMU, progressed to the southeast, then south. The landfill was then closed and covered. The site is approximately 100 acres in size.

No records of types and quantities of materials dumped at SWMU #9 are known to exist, but the fill material is known to include office wastes, rubbish, construction debris, scrap metal, and various wastes from workshops on the base (E/A&H 1992, ~~Kemron 1991~~). Hazardous substances include asbestos, varnish sludge, mercury, acid neutralization sludge, paint sludge, metal sludge, paint wastes, and various toxic water chemicals. Solid wastes were pushed into the marsh; combustible wastes were burned daily and their remains deposited with the other wastes. Liquid wastes were placed in drums dumped along the leading edge of the landfill. It is not believed that any trenching was done for the disposal of drums (personal communication with Todd Daniels, project EIC).

Preliminary environmental studies at SWMU #9 in 1982 and 1991 included drilling and sampling monitoring wells and soil sampling. Soil samples showed elevated metals and petroleum constituents typical of heavier products; groundwater samples showed elevated benzene levels and metals below the established drinking water standards. Previous data are summarized in the RFI Work Plan (E/A&H 1992).

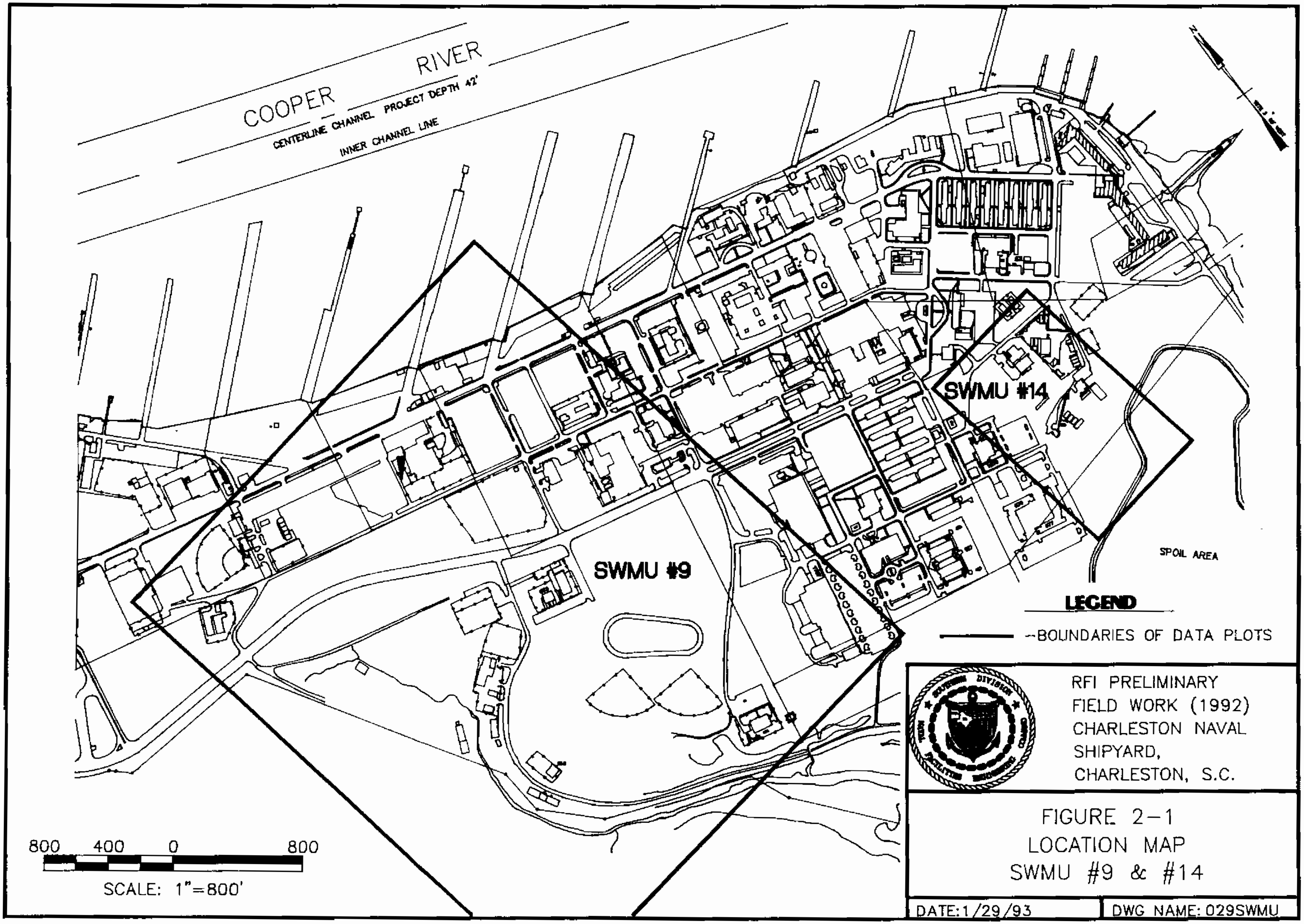



FIGURE 2-1
LOCATION MAP
SWMU #9 & #14

SWMU #14 is the chemical disposal area on the southeast end of the shipyard. Before the present field work, the exact location of disposals was unknown, and various Navy maps show differing locations for the site. The quantities and types of disposed chemicals are undocumented, but are known to include Decontaminating Agent Non-Corrosive (DANC) and DS-2 (a mixture of 70 percent diethylene triamine, 28 percent methyl cellosolve, and 3 percent sodium hydroxide). Previous work (Kemron, 1991) suggests that degreasing agents may be buried at the site. Ten 5-gallon canisters of DS-2 were reportedly buried in 1977 at the old skeet range. Drums of chemicals were excavated at the skeet range in 1972 and 1974, resulting in minor chemical burns to some of the workers. In addition to drums and other metal containers, some chemicals may have been disposed of in bags.

Previous groundwater investigations showed low metals but elevated chlorobenzene and methylene chloride. The results of these studies are summarized in the RFI Work Plan (E/A&H 1992).

## 2.2 Geology and Hydrology

~~The RFI Final Report (Kemron, 1991) and~~ the Draft-Final RFI Work Plan (E/A&H, 1992) details the area and local geology, summarized here to help understand the current field data.

Area geology consists of coastal sediments of clays and clayey sands and silts. In many areas surface materials have been disturbed or covered during base construction and landfill activity. Drilling indicates that fill material is as thick as 13 feet at the landfill.

There is no shallow, potable water aquifer beneath the two SWMUs. The water table is typically 3 to 7 feet from the ground surface, although there is standing water in some low areas and in drainage ditches, especially during high tide. Water is essentially seawater; high total dissolved solids (TDS) ranging from about 1,000 mg/l to well over 20,000 mg/l have been recorded. An east-west trending topographic high runs across the middle of SWMU #9; north of the ridge, water flows north into the Cooper River, while south of the ridge water flows south into Shipyard Creek. The hydraulic gradient, estimated from water elevation tests a decade ago, averages about $4x10^{-3}$ feet per foot. Groundwater flow direction is not established at SWMU #14.

## 3.0 FIELD PROCEDURES AND QUALITY CONTROL

Field work consisted of a planar survey, a soil-gas survey, and magnetics and electromagnetics geophysical surveys.

### 3.1 Station Surveying

Both SWMUs were surveyed on a 100 x 100 foot grid using arbitrarily placed east-west baselines referencing true magnetic north (magnetic declination N3°W). The survey positional error was held to less than half a foot at all stations; frequent checking by EnSafe showed no measurable positional errors greater than an inch. Stations were marked by orange plastic tent stakes driven flush with the soil surface to minimize destruction by lawn mowers. Small iron nails or spray paint were used to mark stations in areas where plastic stakes could not be driven into the ground. At the end of the survey, Ensafe placed above-ground plastic and wood stakes at selected stations to facilitate recovery of the grid system at a later date.

Three months after the original survey, the geophysics results required brushing survey lines in forested areas. At the same time, the originally surveyed grid was extended past the original grid to allow additional data to be collected. The station precision of this work was adequate, but the second grid is skewed with respect to the original grid, resulting in relative displacements of the two grids of up to 2 feet. This error has no practical effect on the results of the field work.

### 3.2 Soil-Gas Survey

Details of the soil-gas survey procedure are contained in the Target Environmental Services report, included as Appendix A in this report. The following overview is an aid to understanding the data.

The soil-gas work was implemented as a screening device to identify if significant volatiles are present and to see if the volatiles follow some pattern. Sampling was done mostly at surveyed points on the established 100 x 100 foot grid, with some additional samples taken to detail plan-view anomalies. Samples were drawn through a 1/2 inch hole from an average depth of 2 feet from the ground surface. The soil gas was encapsulated in an evacuated glass vial, labeled, and transported to a nearby field laboratory for analysis, usually on the same day. Quality control procedures in sample collection are detailed in Appendix A.

The laboratory analysis consisted of two suites:

- Chlorinated hydrocarbons, by EPA Method 601 (modified), using a gas chromatograph with an electron capture detector, analyzing for:
  - 1,1-dichloroethene (1,1-DCE)
  - methylene chloride ($CH_2Cl_2$)
  - trans-1,2-dichloroethene (t-1,2-DCE)
  - 1,1-dichloroethane (1,1-DCA)
  - cis-1,2-dichloroethene (c-1,2-DCE)
  - chloroform ($CHCl_3$)
  - 1,1,1-trichloroethane (1,1,1-TCA)
  - carbon tetrachloride ($CCl_4$)
  - trichloroethene (TCE)
  - 1,1,2-trichloroethane (1,1,2-TCA)
  - tetrachloroethene (PCE)
- Volatile hydrocarbons, by EPA Method 602 (modified), using a gas chromatograph with an FID, analyzing for:
  - total FID volatiles (referenced to toluene)
  - benzene
  - toluene
  - ethylbenzene
  - meta- and para- xylene
  - ortho-xylene

The total FID volatiles values were calculated by summing the areas of the chromatogram peaks (excluding methane and injection peaks) and referencing to the instrument response of toluene. All data are in units of $\mu g/l$.

Quality control procedures in analysis include field control samples, duplicate analyses for every tenth field sample, and laboratory blanks for every tenth field sample. The results of these procedures are acceptable (see Appendix A for details).

### 3.3 Geophysics Surveys

Geophysical methodology was selected according to three criteria: likelihood of contributing to meeting survey objectives, appropriateness to the field conditions, and relative cost. The relevant field conditions included the large size of the survey area (over 100 acres), the required resolution (objects smaller than 10 feet), the presence of saline sea water at depths of 0 to 15 feet, heavy brush in some areas, high clay content in soils, considerable subsurface and above-ground culture, and extensive use and maintenance of the area by Navy base personnel.

Gradient magnetics was selected as the primary technology for mapping metals within the two SWMUs. Magnetics has the advantage of specificity; it responds almost exclusively to ferrous metals, making it well suited to identifying metal drums. In choosing magnetics, it was recognized at the outset that the method responds to all ferrous metals, not just drums. In fact, the landfill was expected to have a large quantity of metals of no interest to an environmental study (e.g., rebar, scrap metal of all sizes, construction debris). It follows that most magnetic responders would not be drums, and the survey would focus on pattern recognition to help discriminate between drum and non-drum sources. Various case studies (e.g., EG & G paper M-TR54) have shown magnetics to be helpful in narrowing the scope of investigation for drums even in landfills with high spurious metal content.

Electromagnetics (EM) was selected as a secondary tool for locating leachate plumes at both sites. The general suitability of EM in mapping conductive plumes is well established in the literature. At this site, however, the lack of conductivity contrast between a high-TDS plume and the high-TDS shallow water makes the site conditions unfavorable to the use of EM. Nevertheless, EM served as a screen for any unexpected anomalies due to plumes and for other features of interest in the investigation.

The magnetc survey utilized the GEM GSM-19 proton-precession gradiometer with an Overhauser device and a continuous-recording base station. Electromagnetics utilized the Geonics EM-31 frequency-domain device. All data were recorded digitally to facilitate computer processing and plotting. Specialized software (Geosoft) was used to perform the type of advanced processing needed for complex data sets (Hinze 1990, Roberts et al. 1990).

Magnetic data collection was initiated each day by synchronizing identical crystal clocks in the roving-magnetometer receiver and the base-station receiver. Synchronization allowed for simultaneous data collection by the two devices, which improved accuracy. Two base stations were set up in magnetically non-responsive areas at SWMU #14. Base station #1 was used for correcting data collected at SWMU #14, and Base #2 for data at SWMU #9. Base station data were recorded every 3 seconds throughout the day.

With the base established for the day, the roving magnetometer was taken to the field and data collection began. All magnetics lines were run in a north-south orientation. Stations at 10 x 10 foot intervals were located with respect to the surveyed 100 x 100 foot grid by using fiberglass tapes. A field assistant was usually required to make this efficient. All data used the gradiometer configuration, which employs two magnetic sensors at a fixed 56 cm separation. The lower sensor, which was placed atop a 2.25 m staff for work at SWMU #14, was raised to 2.8 m at SWMU #9 in response to strong surface metal noise. Data were recorded digitally. An inventory of lines run, along with relevant notes, was made in two field notebooks. Every evening a base station correction was made to the data. Then the raw data, as well as the corrected data, including base station data, were dumped to a field computer. The data were then edited for field errors or other problems, referring to the field notebooks. Data were processed and plotted on a regular basis to provide logistical direction and to ensure data quality.

Electromagnetics data acquisition always began with a verification of proper instrument response. A Geonics EM-31 instrument was used with an Omni data recorder. At SWMU #9, lines were run in an east-west direction, with an east-west oriented boom; lines were run in both directions at SWMU #14, but predominantly in a north-south direction. At all stations, conductivity and in-phase EM data were collected using vertical dipoles at a boom height of 3 feet from the ground (using the Geonics shoulder strap). At some stations additional configurations were used for testing or for detailed studies. At the end of each day, the data were dumped to a field computer and edited as dictated by field notes. Plotting was done as needed throughout the field work.

At all times, meticulous attention was paid to quality control. Station locations were checked regularly on each survey line to prevent errors in line or station number identification and data plots were used as an effective cross-check. Field logistics such as instrument hookup, orientation, etc. were kept constant throughout the work. To identify bad data, instrument readings were constantly monitored and compared to previous readings in similar areas or conditions. Unusual or suspicious responses, particularly in areas of culture or high noise, were repeated to establish their validity. Data plots were made periodically and used to check for unusual responses. Certain stations were frequently re-occupied to check on long-term repeatability of the measurements and as a check on instrument or procedural problems. Two stations at SWMU #14 (base station #1 and 1400E/1000N) were repeated approximately once a week throughout the magnetics surveys. In the electromagnetics work at SWMU #9, line 3000N was repeated a number of times to check both instrument repeatability and the effect of tides (depth to water table) on the measurements.

Was there any?

Final data processing of the magnetics data included reduction-to-pole, bandpass filtering, continuation, first to third derivative, smoothing, trend removal, parameter ratioing, and other anomaly-enhancement approaches. Electromagnetics data were subjected to various plotting techniques and parameter ratioing. In addition, various tests were run in selected areas and processed specifically to investigate issues such as spatial aliasing, resolution, the effect of groundwater and tides, and the effectiveness of various configuration options. Most of these plots and tests are not presented in this report but were used in the interpretation process.

## 4.0 SURVEY RESULTS — SWMU #9

The following presents the final data plots for SWMU #9 (Section 4.1), then discusses the specific practical findings (Sections 4.2-4.7). All figures for this section are grouped in the back of the section to facilitate easy comparison.

### 4.1 Data Presentation and Description

Figure 4-1 shows the base map for SWMU #9, with streets, buildings, and other features located in relationship to the surveyed grid. This and all other SWMU #9 maps bound in this report are reproduced at a scale of 1"=500' (1:6,000). As a convenience, a version of this map is presented as a clear overlay in the back pocket of this report.

Figure 4-2 summarizes landfill development based upon available aerial photographs. Some of the original photographs were difficult to interpret, and some were reproduced at a small scale and had to be enlarged considerably. Hence, the boundaries in Figure 4-2 are only approximate. Maps from the 1970s were not received in time for this report, so their results will be synopsized and considered at a later date.

#### 4.1.1 Soil-Gas Data

Figure 4-3, which shows the total FID volatiles data from the soil-gas survey, is a "discrete-sample plot," which best represents the manner in which the data were obtained. Total FID volatiles below the 1 $\mu$g/l detection limit are shown as small dots; values above the detection limit but less than 20 $\mu$g/l are indicated by small color blocks; values of 20 $\mu$g/l or greater are indicated by the larger color blocks. The color blocks are color-coded so that warmer colors represent higher FID values (see the color legend). Note that the color scale is compressed to represent the range of 0 to 200 $\mu$g/l range, where the majority of the data fall. Nuances among the small number of high values (ranging up to 2,099 $\mu$g/l) are not shown with this color selection. Please consult Appendix A for a full listing of the numerical data.

Soil-gas data were obtained everywhere feasible on the pre-surveyed grid. The blank areas in Figure 4-3 are locations where data could not be obtained due to standing water or the presence of buildings.

Although Figure 4-3 is an appropriate way to present the data, it does not show overall trends and patterns as well as a contiguously colored or contoured plot. To determine if the latter type of plot is justified, the data were analyzed for spatial aliasing. Tables 4-1 and 4-2 show the data distribution. One-third of the data are above the detection limit of 1 $\mu$g/l. Note that the data are heavily skewed to the lowest values, with nearly 66 percent below the detection limit and more than 88 percent in the 0-9.9 $\mu$g/l range. Values over 10 $\mu$g/l are somewhat under sampled. But a look at spatial coherency reveals strong statistical significance, as shown in Table 4-3. The table considers how many of the 146 data points above the detection limit are "one-point anomalies," defined for this data set as anomalous data points over 1 $\mu$g/l which are more than 150 feet from any other anomalous point. Only 8 percent of the anomalies are isolated; the vast majority are spatially adjacent to at least one other anomalous data point. Hence, while under sampled in a rigorous statistical sense, the data show a high degree of spatial coherency.

Figure 4-4 shows a contiguous-color plot of the total FID volatiles data. For statistical reasons just stated, this plot should be regarded as a useful overview of the data rather than a plot from which a detailed interpretation can be derived. In effect, this kind of a plot can easily lead to over-interpretation of the data.

**Table 4-1**
**Total FID Volatiles Data Distribution - SWMU #9 (Large Bins)**

| Data Range (μg/l) | Number of Samples | Percent of Total |
|---|---|---|
| <1.0 - 9.9 | 377 | 88.5 |
| 10 - 19.9 | 9 | 2.1 |
| 20 - 29.9 | 3 | 0.7 |
| 30 - 39.9 | 4 | 0.9 |
| 40 - 49.9 | 3 | 0.7 |
| 50 - 59.9 | 3 | 0.7 |
| 60 - 69.9 | 0 | 0 |
| 70 - 79.9 | 1 | 0.2 |
| 80 - 89.9 | 1 | 0.2 |
| 90 - 99.9 | 3 | 0.7 |
| ≥100 | 22 | 5.2 |
| **TOTALS** | **426** | **99.9** |

**Table 4-2**
**Total FID Volatiles Data Distribution - SWMU #9 (Small Bins)**

| Data Range (μg/l) | Number of Samples | Percent of Total |
|---|---|---|
| <1.0 | 280 | 65.7 |
| 1.0 - 1.9 | 50 | 11.7 |
| 2.0 - 2.9 | 17 | 4.0 |
| 3.0 - 3.9 | 6 | 1.4 |
| 4.0 - 4.9 | 9 | 2.1 |
| 5.0 - 5.9 | 4 | 0.9 |
| 6.0 - 6.9 | 2 | 0.5 |
| 7.0 - 7.9 | 2 | 0.5 |
| 8.0 - 8.9 | 3 | 0.7 |
| 9.0 - 9.9 | 4 | 0.9 |
| ≥10.0 | 49 | 11.5 |
| **TOTALS** | **426** | **99.9** |

| Table 4-3<br>Spatial Coherency of Total FID Volatiles Anomalies - SWMU #9 | | | |
|---|---|---|---|
| **Data Range (μg/l)** | **Number of Anomalous Points** | **Number of 1 - Point Anomalies [a]** | **Percent of 1 - Point Anomalies [a]** |
| 1.0 - 19.9 | 106 | 9 | 8.5 |
| ≥20 | 40 | 3 | 7.5 |
| **TOTALS** | **146** | **12** | **8.2** |

**Note:**
[a] Defined in text.

In Figure 4-4, zones of soil-gas anomalies are numbered for future reference and include points where total FID volatiles exceed 20 μg/l or where the concentration of any individual analyte was viewed as significant. Nineteen anomalies are identified in this plot, but other, more subtle anomalies also may be important at this site. Note that some of the 19 anomalies are complex and could have more than one source. This is especially possible for anomalies SG-10, SG-16, and SG-19. Also note that the apparent anomaly north of SG-17 is an artificial effect due to certain selections of software parameters; data in this area are at or near the non-detect level.

The location of each anomaly was visually inspected during the geophysical study and few show any obvious clues to their origin directly at the ground surface. There are several exceptions. (where?) Anomaly SG-6 is located amidst bulldozed rubble which included a number of creosote-soaked wood blocks. Anomaly SG-10 is partly located in the yard of a small recycling plant, extending to the southwest, where some large abandoned storage bins are located. There is some question as to whether a single anomaly or several features are involved in Anomaly SG-10. Anomaly SG-16 is in an area with a large amount of metal and other surface debris, with little or no landfill cover. This feature is located partly in a fenced contractor's yard, where debris was removed in November 1992.

Historical air photos show that anomaly SG-4 lies east of the old oil-sludge pits (SWMU #8). Note that Data farther to the north, also east of the pits, are non-anomalous. Sampling does not extend over the pits themselves in the present data set.

Air photos suggest a correlation between the apparently larger soil-gas features (anomalies SG-16 through SG-18) and landfill material deposited between 1956 and 1960. This can be appreciated by comparing Figure 4-2 to Figure 4-4. In particular, the anomalies seem to follow the edges of the fill boundaries from this period. This is discussed further in Section 4.6. Possibly there was something unique about materials dumped during this time. Note that anomalies which occur outside the 1956-1960 fill area tend to be smaller in size and are usually smaller in amplitude.

Fifteen compounds were examined in the soil-gas survey. The maximum values encountered for each compound are listed in Table 4-4. The table includes the maximum contaminant level (MCL) in water for each compound, according to EPA standards resulting from the Safe Drinking Water Act. Although soil-gas concentration and MCL are two very different quantities, a compound's MCL can be used to suggest what soil-gas concentrations might be relatively "significant." For example, given soil-gas concentrations of 10 $\mu$g/l for both benzene and xylene, one might regard the benzene concentration as more significant because its MCL is 2,000 times lower than the MCL for xylene. Thus, one might infer from Table 4-3 that benzene, 1,1-DCE, and 1,1-DCA would be among the more significant individual analytes at SWMU #9. However, any analyte with values exceeding its detection limit remains of potential interest because of the complexity of relating soil vapors to the actual extent of environmental contamination.

Figures 4-5 through 4-7 show plotted data for benzene, 1,1-DCE, and 1,1-DCA, respectively. Color scales are rather arbitrarily established for each analyte according to its analog MCL (the MCL for 1,2-DCA was used for the plot of 1,1-DCA data). Only discrete-sample plots are used due to the small amount of data above the detection limits. Consult Appendix A for a complete review of the data.

**Table 4-4**
**Maximum Analyte Concentrations in Soil-Gas Survey - SWMU #9**

| Analyte | Maximum Soil-Gas Concentration Measured (µg/l) | Analog MCL in Water (µg/l) |
|---|---|---|
| Total FID Volatiles | 2099 | — |
| Benzene | 8.9 | 5 |
| Toluene | 5.5 | 1,000 |
| Ethylbenzene | 42 | 700 |
| Xylene | 114 | 10,000 |
| 1,1-dichlorethene (1,1 - DCE) | 70 | 7 |
| Methylene chloride ($CH_2Cl_2$) | < 1 | — |
| Trans - 1,2-dichlorethene (t-1,2-DCE) | < 1 | 100 |
| 1,1-dichloroethane (1,1-DCA) | 122 | —[a] |
| cis-1,2-dichloroethene (c-1,2-DCE) | < 1 | — |
| Chloroform ($CHCl_3$) | 1.6 | —[b] |
| 1,1,1-trichloroethane (1,1,1-TCA) | < 1 | 200 |
| Carbon tetrachloride ($CCl_4$) | < 1 | 5 |
| Trichloroethene (TCE) | < 1 | 5 |
| 1,1,2-trichloroethane (1,1,2-TCA) | < 1 | 5 |
| tetrachloroethene (PCE) | < 1 | 5 |

**Notes:**
[a] MCL for 1,2-DCA is 5 µg/l.
[b] MCL for total trihalomethanes, including chloroform, is 100 µg/l.

Figure 4-5 shows that most of the benzene data are below the 1 µg/l detection limit for this survey, and few are higher than 2 µg/l. Anomalies SG-3, SG-15, and SG-18 contain the highest values. Note that all but one of the benzene anomalies coincide with total volatile anomalies. It is interesting to note that previous water sampling (E/A&H 1992) showed benzene levels exceeding the MCL at monitoring well CSY-FMW-2 (20 μg/l) and CSY-FMW-4 (5 μg/l). Soil-gas benzene measurements are below the detection limit near both of these wells. The elapsed decade between sampling efforts, as well as methodology and sampling density differences, make it difficult to conclude much from this. Future work will provide a more complete database to correlate the results of soil sampling with those of water sampling.

Figure 4-6 shows that only four 1,1-DCE data points are above the detection limit. The strongest occur at soil-gas anomaly SG-9, where only a modest total volatiles anomaly is found. SG-9 in Figure 4-7 shows a single 1,1-DCA data point with a concentration above the detection limit; but, that value is quite high and bears followup investigation. It is located at soil-gas anomaly SG-15.

### 4.1.2 Geophysics Data

Figure 4-8 shows the total magnetic field data from the magnetics geophysical survey. The data represent the magnetic field strength in nanoTeslas (nT), measured at the lower magnetic sensor. Repeatability of the data was typically around ±1 nT in areas of low gradient, increasing in areas of high gradients. "Background" magnetic field intensity, measured at Base Station #2 at SWMU #14 during daylight hours from June to November, averaged 51,464 nT/m. Values larger than this in Figure 4-8 are depicted as warm colors, defined on the color bar; values lower than background are in cool colors. The range in magnetic intensity is typically less than ±1000 nT outside the average, although some data obtained near "culture" (steel pipes, powerlines, etc.) show an even larger range. The color scale of the plot depicts the ±500 nT range with respect to background. The data show a normal, highly symmetric distribution, indicating highly significant statistical sampling. The mean value of the total gridded data set (including highly skewed samples near culture) is 51,442 nT — not far from the background average determined at the base station.

Spatial aliasing is an important consideration in these data. Recall that a 10 x 10 ft grid is optimized for clusters of drums, not individual drums. The problem is not one of mere sensitivity of the instrument, but rather the interpretation of a number of superimposed anomalies from closely spaced metals of many sizes, shapes, and perhaps depths. For example, consider the worst-case scenario of a single drum buried 1 m deep, sensed by the sensor at a height of 2.8 m. Assuming a $r^{-2}$ response (r is the distance between the drum and the sensor), one can calculate the difference in anomaly amplitude between the case of the drum lying directly beneath the measurement station, and being maximally aliased by lying 5 ft (1.5 m) from that station. The difference is only 14 percent, which is insignificant for purposes of anomaly detectability. Hence, in a magnetically noise-free environment, a 10 x 10 ft grid would sense most single drums in the landfill. Although such a grid would not properly sample the anomaly response curve, this level of effort is not needed for merely locating an isolated response, except when the sensor is placed right at the zero-crossover of a dipolar anomaly. However, consider the complicating case of a number of adjacent drums. Here the responses of each drum would superpose in complex patterns, and that pattern would have to be sampled at a much tighter interval to fully resolve the complexities and provide an opportunity for discerning the individual drums. At least, for drums at 1 m depth, 1 sample per meter would be required to identify individual drums. This would dictate a 3 x 3 ft grid or better. In such a complex case, the additional data would provide only modest improvement in the interpretability of individual drums at the expense of nearly 10 times the level of effort for the work. Field tests at SWMU #9 (a 5 x 5 ft grid and a 2 x 2 ft grid) show little improvement in overall resolution of the data. Hence, the 10 x 10 ft grid spacing is a good balance between technical effectiveness and cost factors.

Maximum effort was made to obtain data over as much of SWMU #9 as possible. Data could not be obtained inside buildings, in certain areas of high subsurface cultural interference, near a few prohibitively noisy powerlines, in deep water, and in areas with high metallic surface scrap such as the "corral." The larger blank spaces in Figure 4-8 are usually due to these features. Smaller blank spaces, such as those outlining the dual-ballfield fences, are usually due to heavy cultural interference or water-filled ditches.

The data show a number of complex features. The strongest features are often associated with man-made objects and utilities that represent a noise source for a geophysics survey (e.g., an iron sewer line in a magnetics survey). Such objects are referred to as "culture." A comparison of culture in Figure 4-1 to the data in Figure 4-8 shows strong anomalies over buried utilities along roads and along the steam and power lines at this site. Some linear features not associated with known culture are seen northeast of the dual ballfield area. These are discussed in Section 4.5.

In addition to cultural effects, one can see zonation of the magnetic response, with higher field intensities in a broad band sweeping across the northern parts of the landfill. Lower overall intensities are observed south of this band. Considerable local variations are seen throughout the landfill, while areas outside the fill are characterized by a more homogeneous response.

The data show a very large number of local magnetic anomalies in complex patterns. Some of these are clearly dipolar, with high and low field bulls eyes adjacent to one another; others are monopolar high-field bullseyes. Anomalies also vary in amplitude, symmetry, lateral dimensions, and spatial wavelength. The density of metals in the landfill causes many of the anomalies to overlap, adding to the complexity of interpretation. As discussed later, various processing techniques and an integrated interpretation of all the field data are needed to produce a practical interpretation of these data.

The recognition of anomalies due to drums and clusters of drums is of primary importance in this survey. A typical 55-gallon drum buried at this landfill would give a response as low as a few tens of nT, depending on factors such as its remanent magnetism from the manufacturing process, orientation, depth, and degree of physical degredation. A cluster of drums would give a larger response, perhaps several hundred nT. But note that many anomalies in Figure 4-8 are larger in amplitude, and an anomaly from a single drum or a small cluster of drums would be subtle compared to the typical anomalies recorded at this site. Hence even the smallest amplitude anomaly in the data set is of potential interest.

It is important to note that most magnetic responses over a typical landfill will not be due to drums, but originate from the wide range of metal trash and debris. Hence, followup field work is required to investigate the sources of the anomalies.

Total magnetic field anomalies include regional effects due to building complexes, whose effects can be sensed thousands of feet away. These effects can sometimes mask the local anomalies one seeks to identify on a survey like this. Hence, the magnetic gradient data, which in effect are insensitive to regional effects, are used as the primary interpretation tool in magnetics work.

The magnetic gradient data in Figure 4-9 represent the vertical change in magnetic field intensity between the top and the bottom magnetic sensor, expressed in nT/m. The sign of the gradient gives a positive gradient in an area where a positive field intensity is sensed. Background in an area free of magnetic sources is zero; most data fall within the range of ±1000 nT/m on this survey, and the majority of useful information falls within a range of about ±250 nT/m. Data repeatability is around ±1 nT/m in low gradients, but increases in high-gradient areas.

The data clearly contains cultural effects, many of which are identified by strong linear features along roads, powerlines, and pipelines. The strongest features mask the identity of smaller magnetic sources in their immediate vicinity, but the vast majority of the surface area surveyed is readily interpretable.

As with the magnetic field data, a large number of small but potentially significant anomalies are found throughout the landfill. As described in Section 4.5, the interpretation process simplifies this picture and prioritizes anomalies for further investigation.

Figure 4-10 shows the ground conductivity data from the electromagnetic (EM) geophysical survey. Data are in units of milli-Siemens per meter (mS/m), the equivalent of millimhos per meter (mmho/m) and the inverse of resistivity. Higher conductivities are in warm colors, and lower values are in cool colors. Most values fall within a range of 80 to 250 mS/m — a very high conductivity caused by shallow seawater. Although repeatability was within a few mS/m at most stations, this very high regional conductivity makes the numerical results less reliable because of departure from inherent theoretical assumptions (the effect of high induction numbers). This does not affect the interpretation in any significant way, but it is important to note should numerical modeling be attempted.

The vertical-dipole data shown in Figure 4-10 represent a bulk average conductivity of the ground within about a 1 meter radius of the station and down to a depth of about 6 meters, with sensitivity decreasing with greater depth. Hence, the data are theoretically sensitive to most conductive features present in the landfill. Since the main objective of the work was to screen for leachate plumes, a 10-foot station spacing and larger line-to-line spacings were used. Hence the EM data are primarily sensitive to larger, pervasive conductive features, but are heavily aliased with respect to small, local conductors. Statistical analyses show that the area is well sampled for the intended purpose.

The electromagnetics data cover only the open ballfield area of the landfill. Since that area was easily accessible and contained minimum culture, it served as a good test of whether leachate plumes might be mapped there. The results of this test did not argue for extending coverage to the rest of the SWMU.

The data show an apparent north-south striated pattern. This pattern is an artifact of the differential aliasing of a 10 x 50 ft grid, wherein the more densely sampled data in the east-west direction is preferentially contoured as north-south trends. This effect did not influence the interpretation. The data show a high baseline of high conductivities due to a conductive subsurface. The data suggest that saline groundwater and clayey, moist coastal sediments cause the conductive response. Highest conductivities are found in lower areas, such as ditches, where the instrument was closer to the groundwater surface and perhaps to subsurface clay units. For example, a northeast-trending band of low conductivities (cool colors) near soil-gas anomaly 16 follows a topographic high, while the most conductive trend along the southeast edge of data coverage follows the water-filled ditch in that area. In fact, it was noted in the field that just moving the instrument up and down a few centimeters would produce a noticeable change in conductivity reading. Hence, local depth to groundwater and clays dominates this data set.

With groundwater effects so dominant in this data set, it was prudent to consider the effects of tides during acquisition of the data. Line 3000N was run six times. Data at 13 stations were analyzed for changes from high to low tide. All but one station showed differences of less than 4 percent of the conductivity; all stations averaged together yielded a +1.4 percent conductivity change between high and low tides — less than the precision of the measurements. Hence, tidal effects appear to be insignificant in this data set. Of far greater significance is the height of the instrument above the highly conductive water surface and clay horizons.

Superimposed on groundwater effects is a pattern of higher conductivities over the more magnetically responsive parts of the landfill. For example, note the cone-shaped overall pattern of higher conductivities in Figure 4-10 (the top of the cone being just north of SG-17). At least the northeast boundary of this cone correlates with the edge of magnetic (and almost certainly conductive) landfill debris. Local anomalies within this pattern partly reflect stronger concentrations of metals in the landfill, though with less resolution and specificity than the magnetics data.

Due to the dominant effects of groundwater and metals, there is no convincing evidence for a conductive leachate plume in the data. This finding is detailed in Section 4.6.

Figure 4-11 shows the second part of the EM data set, the in-phase data. This component is slightly more sensitive to buried metals than is the conductivity (quadrature) component. Values are relative and not absolute, and are unitless. The data show trends which are similar to those in the conductivity data, adding little information.

Figure 4-12 is an overview of the final interpreted results. Due to the large number of interpreted features, a larger scale map is presented as Plate 1 (back pocket). The following section explains the figure and describes the interpretation in light of the project goals.

## 4.2 Landfill Boundary Definition

Figure 4-12 identifies the magnetic boundary of the landfill. Based upon the magnetics data, this boundary identifies the edge of ferrous metal contents. Theoretically this may or may not correspond to the actual physical boundaries of the landfill, depending upon the spatial distribution of ferrous metals in the fill material. For example, if the fill had been segregated into areas for metals and areas for non-metals, the magnetic boundary would map only the area containing metals. Nevertheless, a strong correlation is observed between known edges of the landfill inferred from historical air photos (Figure 4-2) and the magnetic boundary derived from the data, suggesting that the magnetic boundary approximates the actual landfill boundary fairly well.

Figure 4-12 shows that the magnetic boundary to the landfill is well defined to the northeast and south, fairly well defined to the east, and poorly defined to the west, northwest and north. Boundary identifications to the north are isolated and are quite tentative. In general, better definition was achieved in areas of less culture, and poor definition occurred in areas masked by heavy cultural interference.

The new data provide a significantly better boundary determination than previously available. Earlier boundaries were drawn only very generally (Kemron 1991), but the present data provide detail and precision to their locations. The new data also show a different boundary position than previously thought (Kemron 1991). The southern edge is farther north and its northern edge is farther south, with a more complex edge than previous information had suggested. The better boundary definition will help narrow the scope of future work. In areas where the boundary is poorly defined by the geophysics survey, auger holes might fill in the missing data.

Not all areas outside the boundary show zero geophysical response. In the bird sanctuary on the southeast edge of the landfill, a few magnetic anomalies suggest occasional buried metal some over 100 feet outside the defined landfill. Indeed, in some areas of the bird sanctuary, scattered landfill-type debris (glass bottles, cans, sheet metal, fiberglass parts, plastics, etc.) is exposed at the surface. This included a heavily rusted 55-gallon drum. The low anomaly density in this area suggests this may have been an informal dumping area, but is not part of the landfill. Other anomalies outside the landfill are found in the marshes to the south (culture from old communications towers) and to the northeast (roadside culture).

Note also that soil-gas anomalies SG-4, SG-11, and perhaps SG-1 and part of SG-10 are found outside the landfill boundary, along with weaker soil-gas features not specifically discussed in this report. These may be related to road-construction activities and non-landfill installations on the property.

## 4.3 Tidal Movement of Landfill Metals

A considerable amount of data was obtained in the marshes and tidal flats south of the landfill. Magnetics data from this area show no evidence of ferrous-metal material larger than the size of a foot across. The data virtually rule out the presence of buried drums outside the landfill in the areas of the marshes where geophysical data were obtained. Visual searches revealed

Was the grid tighter in this area?

little landfill debris of any kind. From this it can be inferred that, at present, there is little movement of larger metal debris from the landfill into the marshes due to tides.

During data acquisition in the tidal flats, it was noted that very slightly higher magnetic gradients were measured at high tide than at low tide. The effect, which amounts to no more than 2 nT/m (some 0.004 percent of the average measurement of 51,464 nT), was noticed during tidal changes as small as 0.5 foot. Perhaps the water invading the tidal flats transports enough iron to produce this very subtle anomaly. The iron could be due to rusting of the considerable metal in the landfill or from ships and shoreline installations in Shipyard Creek.

## 4.4 Landfill Metals Zonation

The magnetics data show subtle but consistent zones of differing geophysical character, as noted in Figure 4-8. Figure 4-12 shows the zones identified in this survey. Zone 1 contains massive quantities of metals beneath at least several feet of fill cover. Zone 2 contains lower quantities of metals under fill cover. Zone 3 has little if any fill cover. Zone 4 contains much smaller metal such as rebar-reinforced concrete and small metal trash, probably near the surface. The electromagnetics data correlate quite strongly with the Zone 1/Zone 2 boundary. The zones are probably an artifact of changes in types of materials during expansion of the landfill. Indeed, there are some correlations between the zonation patterns and historical edges of the fill.

## 4.5 Specific Anomaly Identification and Interpretation

A very large number of magnetic anomalies have been identified in the data, as expected during the survey planning. The sources of these anomalies range from a few feet or less to several hundred feet, although the large majority are small. The great density of anomalies, coupled with their complexity of character, amplitude, and spatial patterns makes it difficult to deliver a straightforward, definitive interpretation (like that at SWMU #14, described in Section 5). Nevertheless, integration of all the available data helps considerably in prioritizing the anomalies.

The interpretation process focused primarily on four types of anomalies:

1. **Magnetic anomalies near soil-gas anomalies**. Soil-gas total FID volatile data and individual analyte concentration data were compared to the magnetic data. Magnetic anomalies lying a reasonable distance from soil-gas anomalies defined in Figure 4-4 were identified as being of interest as potential sources of the volatile gases. "Reasonable distance" was determined by the soil-gas sampling density and by the magnitude of the soil-gas response. In areas where the direction of groundwater flow could be reasonably assumed, a slight interpretation bias was given to magnetic anomalies which lay upgradient from the soil-gas anomalies. Interpretation focused on anomalies consistent with expected drum-type responses, but other types of features were also included to cover the possibility of a non-drum source of soil gases (such as buried fuel tanks).

2. **Magnetic anomalies along magnetic linears but not near soil-gas anomalies**. Magnetic anomalies along linear magnetic features are of interest as possible buried drums. Although it is believed that no trenches were dug at the landfill for drum disposal, it is possible that drums were buried at historical edges of the landfill or along roads, producing a linear magnetic feature. Another possibility, especially for linear anomaly A, is that some of the features may be old metal dewatering, leachate-collection, or utility lines; as such, they could constitute unwanted pathways for leachate migration off the landfill. Even in the absence of soil-gas anomalies, it would be prudent to investigate at least some of these anomalies.

Where is this anomaly?

3. **Isolated magnetic anomalies**. Individual magnetic anomalies showing the sort of classic character one might expect from a well-defined, tight cluster of buried drums were also identified as being of interest. Only a fraction of magnetic anomalies were included in this category, so Figure 4-12 by no means represents all potential drum locations. Instead, it includes some well-defined features suitable for checking in followup work.

The absence of strong soil-gas anomalies near these features suggests that they are of lower priority for further investigation.

4. **Isolated soil-gas anomalies**. Some soil-gas anomalies could not be surveyed with geophysics due to culture or logistical reasons. Although the anomalies are located with far less precision than possible with the geophysics information, the generalized anomaly locations are shown in Figure 4-12.

Features from these four categories were identified and prioritized according to importance based upon all the available data. Three rankings were used: high-, medium-, and lower- priority. The results are shown in Figure 4-12, which is also presented as a clear overlay in the back pocket of this report. Higher-priority targets are more heavily shaded. The anomalies are numbered to facilitate future discussions.

The anomalies in Figure 4-12 and Plate 1 are summarized in the table found in Appendix B. Geophysical anomalies associated with soil-gas anomalies are grouped according to the soil-gas anomaly number (i.e., SG-1, SG-2, etc.) and labeled sequentially as anomaly 1-99. Geophysical anomalies not associated with soil-gas anomalies are numbered sequentially 1000-1019. The table characterizes the nature of the soil-gas anomaly and comments upon specific proposed actions. E/A&H will rely upon this information for the next phase of field work. It may not be necessary to sample all anomalies, but only the ones which might help characterize any potential soil or groundwater contamination. These determinations are best made in the field in response to new information. Conversely, additional sample or trenching sites may be added as needed. Hence, the table is a preliminary guide to the investigation activities, which may vary in detail from these recommendations.

In considering the interpreted features, it is important to keep several things in mind. First, only a small fraction of the total number of anomalies identified in the geophysics survey are presented as candidates for follow-up work. These are the most important targets at this stage of the investigation, but other targets may prove to be important as more information becomes available. Second, past experience suggests that a significant majority of magnetic anomalies will likely be due to sources other than drums. But the data do serve as a very effective way of reducing the focus of future investigation to the highest priority areas.

## 4.6 Leachate Plume Definition

The preliminary field work addresses the possibility of a leachate plume via the soil-gas and the EM data sets. The soil-gas data show several features which could be regarded as possible vadose-zone plumes. Soil-gas anomaly SG-19 has the appearance of a plume-like feature, although it is unclear whether this is a contiguous anomaly with one source, or multiple, overlapping anomalies with multiple sources. The same is true for anomaly SG-10 and SG-16. Followup field work should resolve this and related questions.

There is one point worth noting. As mentioned earlier, there is a fair correlation between soil-gas anomalies 17-19 and the leading edge of the landfill during 1956-1960. This most interesting observation may have some bearing on the issue of mobility of volatiles within and without the landfill. For example, might anomalies SG-17 to SG-19 be soil-gas fossil anomalies indicative of a nearby source, suggesting low mobility of volatiles? Or might they be a plume, far from its source, guided by some subsurface artifact of landfill deposition? Is adsorption by clays a factor? These and other questions will be considered in selecting followup sampling sites.

The EM data address the possibility of a plume of high total dissolved solids in saturated soils or in the groundwater. As noted earlier, however, a leachate plume, if present, would be a difficult target at this particular site. In order for a leachate plume to be detectable with EM, it must exhibit a significant conductivity contrast relative to its environment. At the shipyard, however, shallow conductive brines tend to dominate other conductive signatures. Under such circumstances, even small variations in distance between the field instrument and the water table can result in relatively pronounced changes in measured conductivity, causing false anomalies in places of slightly lower elevation. It is difficult to imagine a scenario where leachate could be more conductive than seawater. Conversely, it is also difficult to imagine the needed combination of factors to make a leachate plume far less conductive than seawater — low dissolved solids, significant thickness and areal extent, and displacement of brine waters. Thus the chances of detecting a leachate plume with EM are not good at this site. The EM survey thus serves as a screen to confirm this thinking and to act as a supplement to the magnetics data.

The data show no strong arguments for a conductive plume, as mentioned in Section 4.1. This does not rule out the possibility of leachate migration, but only suggests that there is no strong, geophysically definable plume where the data were obtained.

The most pressing concern, that of a leachate plume in the groundwater, is one that will be addressed in the next phase of field work via monitoring well installation and sampling. But the present data suggest the need for additional work not originally included in the RFI Work Plan. The additional work will involve sediment and surface-water sampling in the marshes south of the landfill to investigate the potential leaching of contaminants from soil-gas anomalies SG-10 through SG-13. Soil and perhaps groundwater sampling will also be required north of anomaly SG-19 to investigate any leachate moving downgradient out of the northeast edge of the landfill.

While the present data suggest several key locations for monitoring wells, soil sampling and analysis will be useful in selecting additional locations.

## 4.7 Field Observations

During this phase of investigation a search was made for drums at the surface, other potential contaminant sources, and for traces of previous wells.

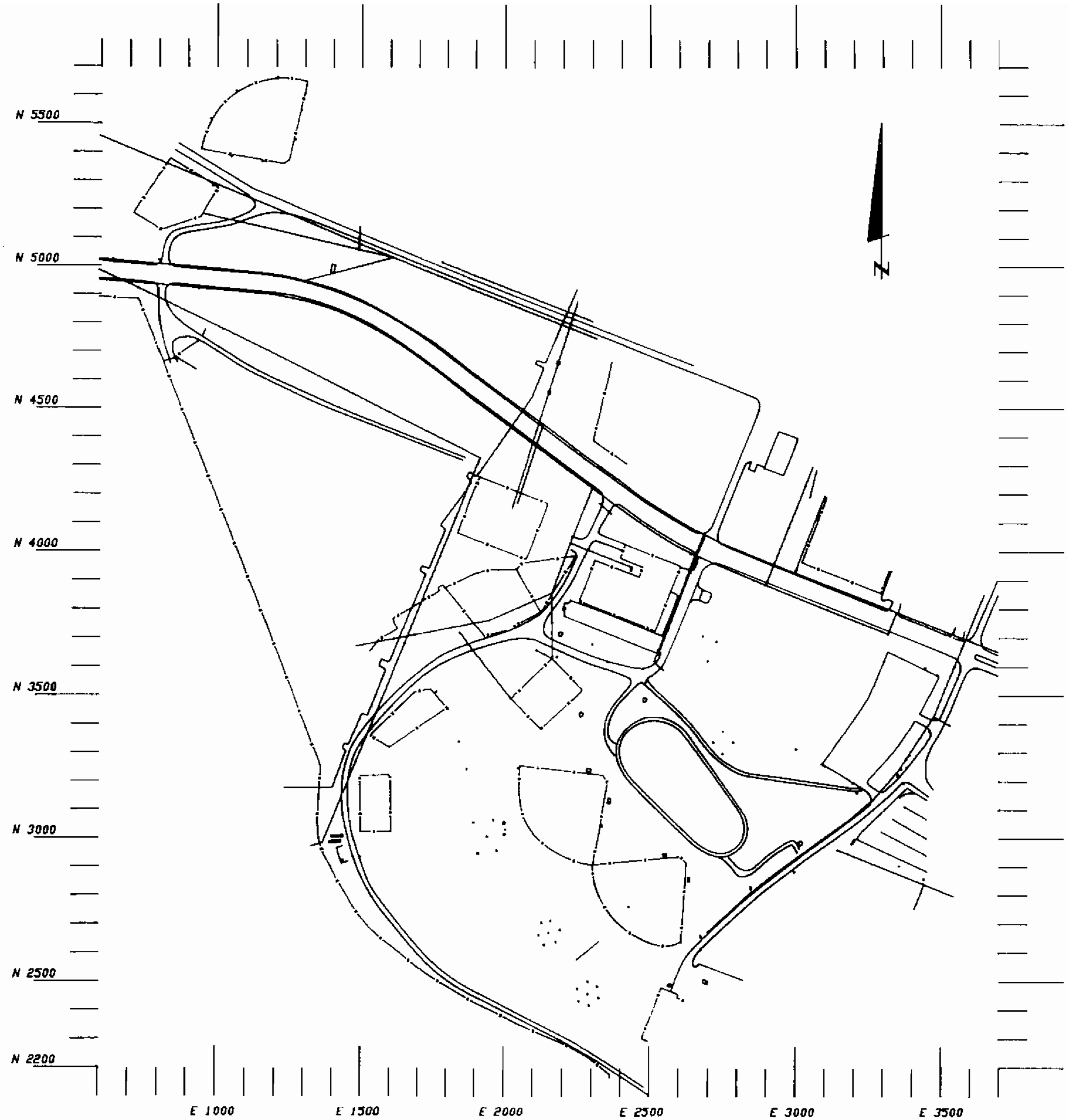
Only three drums were seen at the surface:

- In the bird sanctuary, approx. 2825E/2650N, no label, rusted through.
- At the marsh edge on the SW part of the SWMU, between lines 1600 and 1800, no label, possibly a large trash can.
- In a contractor's yard, very roughly 1950E/3350N, vertical position, probably empty.

In the marshes directly south and east of the two ballfields, tidal waters in certain areas had a strong rust-orange color with a thin, iridescent, oily surface film. In some areas this was accompanied by smells of rust and fuel or decaying plants. No other, obvious sources of contaminants were observed at the surface during the field work.

is this correct

Only four wells were identified. CSY-FMW2 and FMW47 were found with steel cap in place. A white PVC tube was found near where LF4 was thought to be. LF3 was found during field scouting in March 1992 but was not seen during a brief search in November. A specific search was made for LF6, LF10, LF8, and CSY-FMW1, with no success. A brief search was made for DLF1, LF1, and LF2, but they were not seen. CSY-FMW3 and LF9 should have been seen during the geophysics work, but were not. LF5 has probably been destroyed by bulldozing operations. No search was made for LF7.




Where?

**LEGEND**

UTILITIES

FENCE

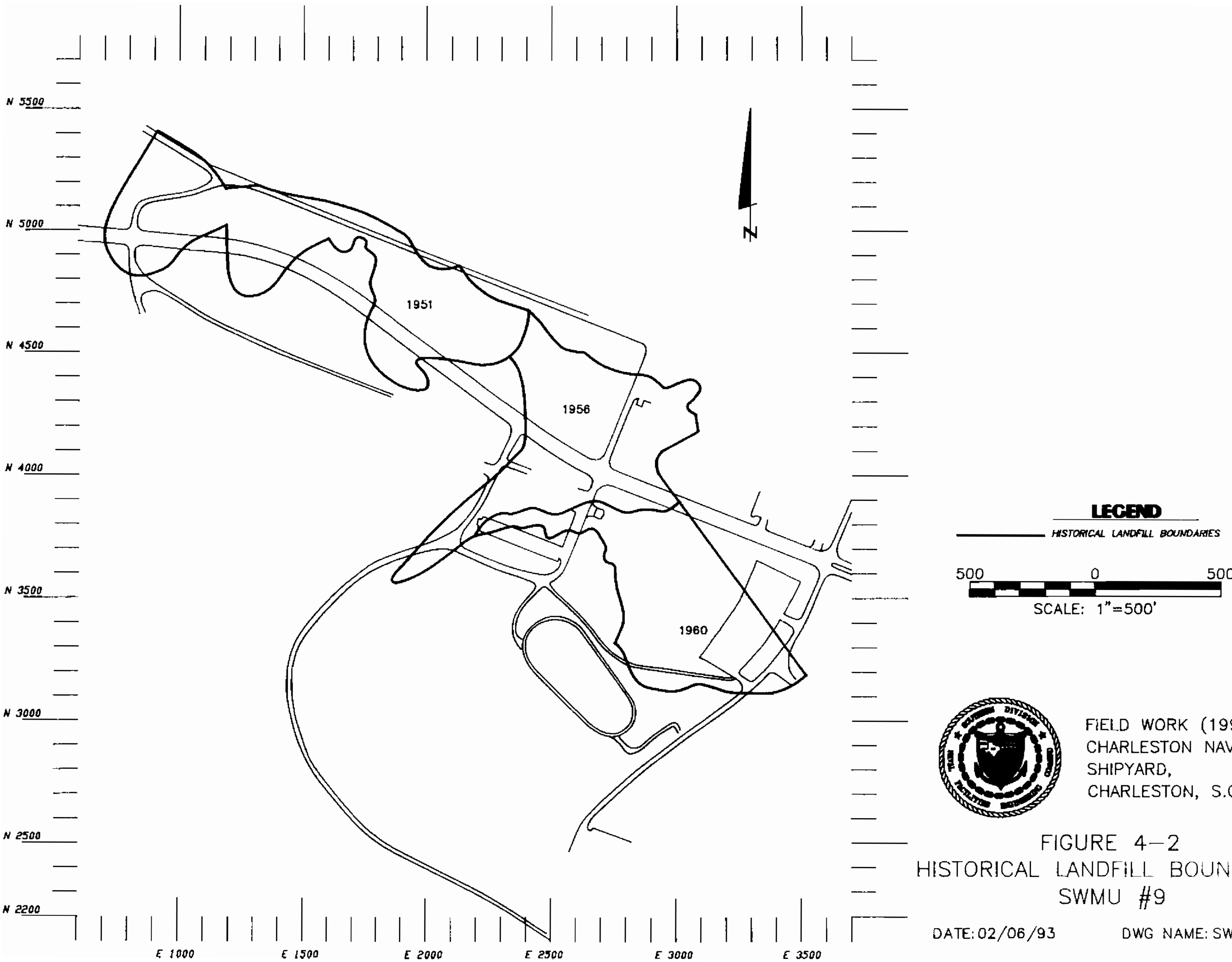
500 0 500

SCALE: 1"=500'

FIELD WORK (1992)
CHARLESTON NAVAL
SHIPYARD,
CHARLESTON, S.C.

FIGURE 4-1
BASE MAP
SWMU #9

DATE: 02/06/93 DWG NAME: SWMU9-A




FIELD WORK (1992)
CHARLESTON NAVAL
SHIPYARD,
CHARLESTON, S.C.

FIGURE 4-2
HISTORICAL LANDFILL BOUNDARIES
SWMU #9

DATE: 02/06/93 DWG NAME: SWMU9-A

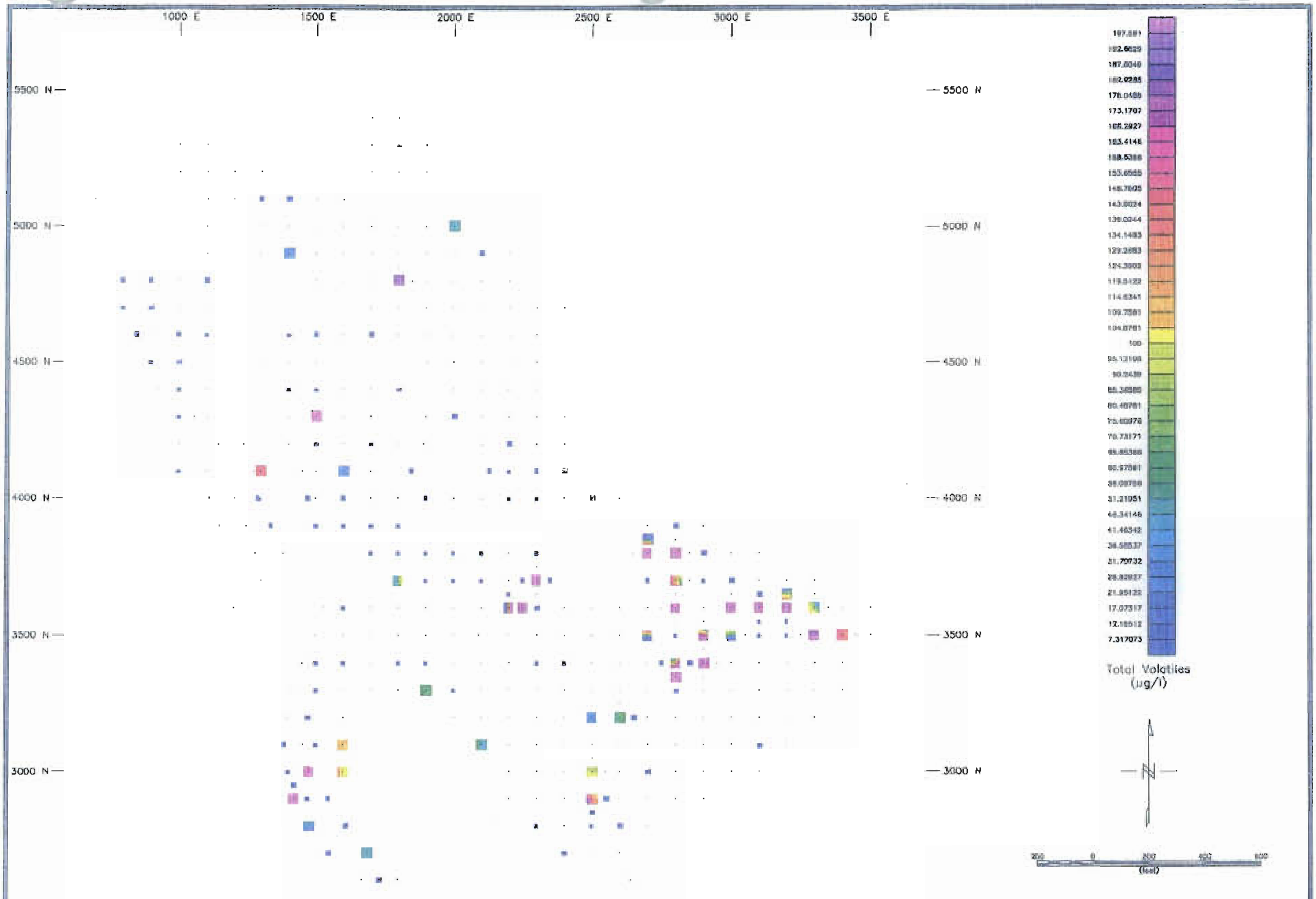



Figure 4-3

SWMU #9 -- CNSY

TOTAL FID VOLATILES
(DISCRETE-SAMPLE PLOT)

Units: µg/l
Dots: data stns; Tiny color blocks: volatiles < 20 µg/l;
Large color blocks: volatiles ≥ 20 µg/l

ENSAFE/ALLEN & HOSHALL

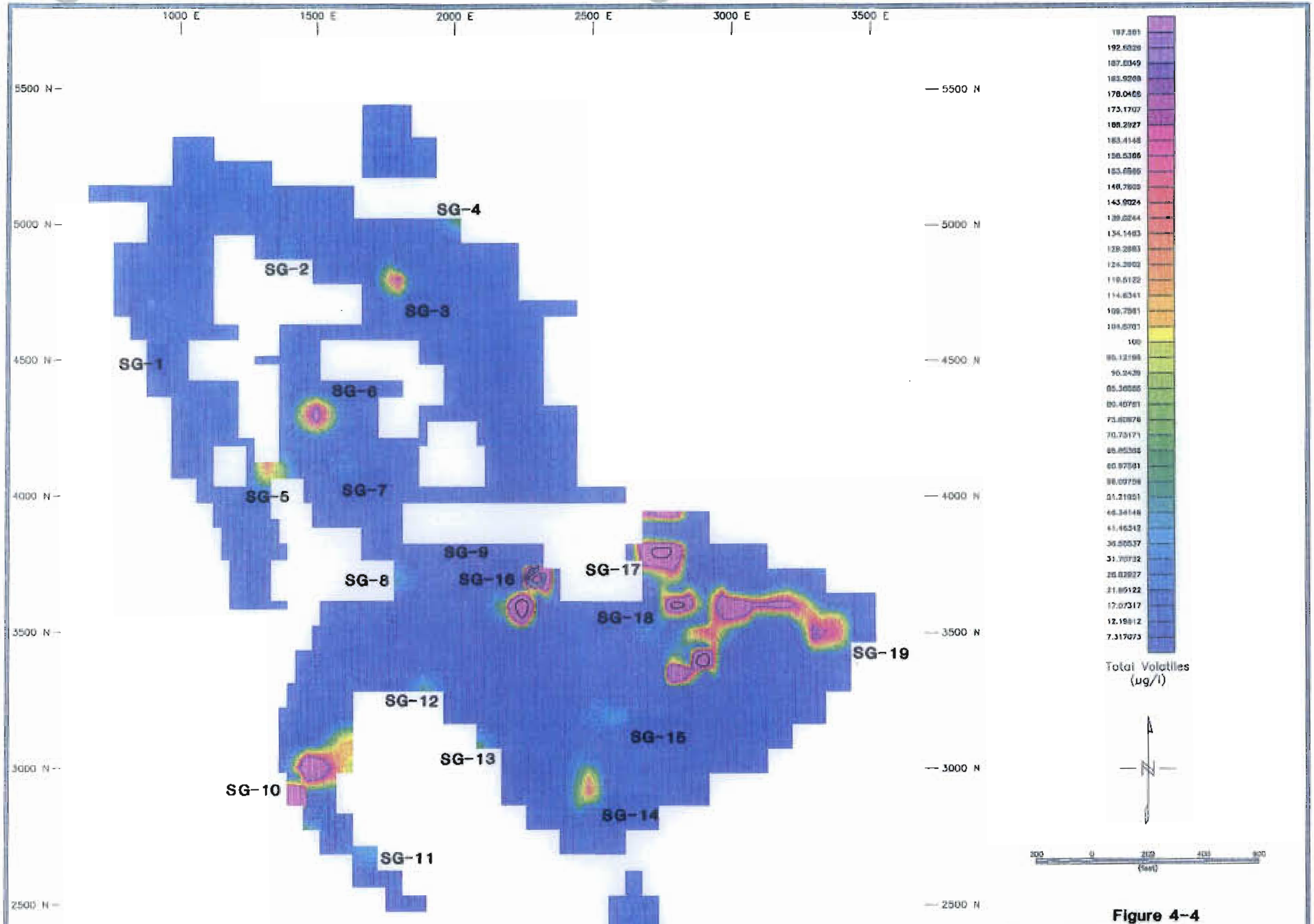



**Figure 4-4**

SWMU #9 – CNSY

TOTAL FID VOLATILES
(CONTIGUOUS-COLOR PLOT)

Units: µg/l
Contours: high values 400,600,800,... µg/l
Data from 1992 soil-gas survey

ENSAFE/ALLEN & HOSHALL

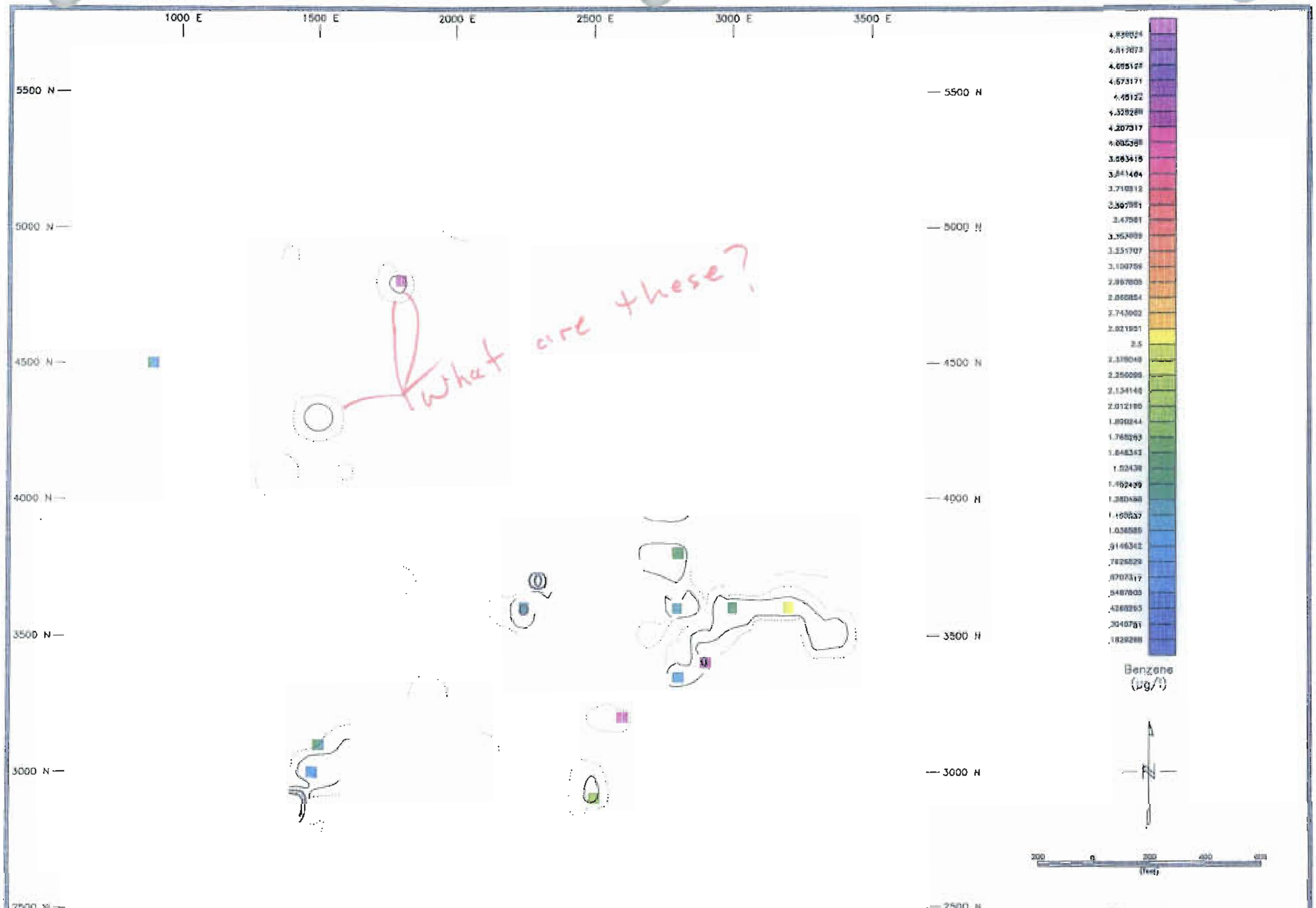



Figure 4-5

SWMU #9 — CNSY
BENZENE
SOIL-GAS CONCENTRATION

Units: µg/l
Contours: FID volatiles 20,100,500 µg/l
Data from 1992 soil-gas survey

ENSAFE/ALLEN & HOSHALL

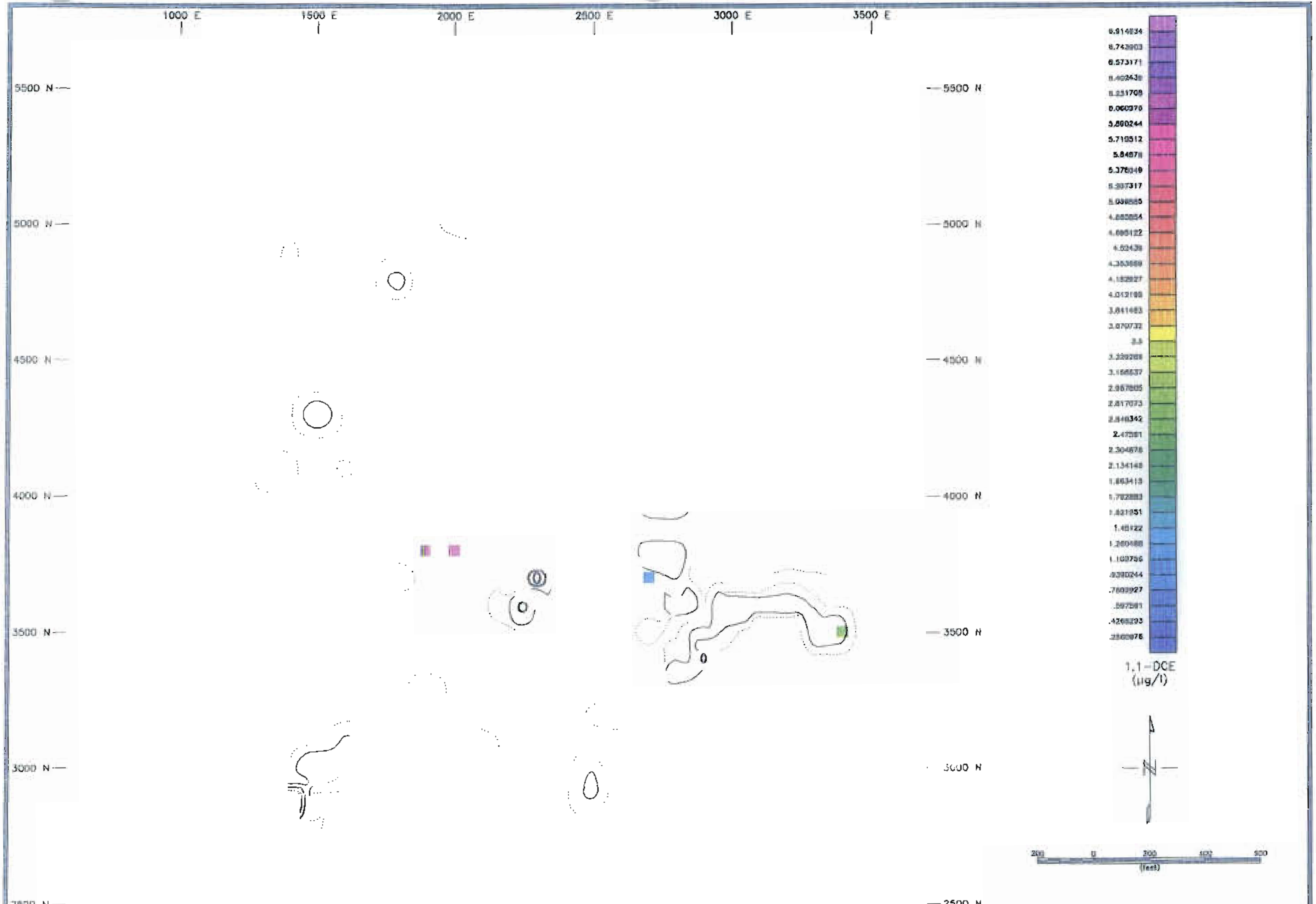



**Figure 4-6**

SWMU #9 – CNSY

**1,1-DICHLOROETHENE (1,1-DCE)**
**SOIL-GAS CONCENTRATION**

Units: µg/l
Contours: FID volatiles 20,100,500 µg/l
Data from 1992 soil-gas survey

ENSAFE/ALLEN & HOSHALL

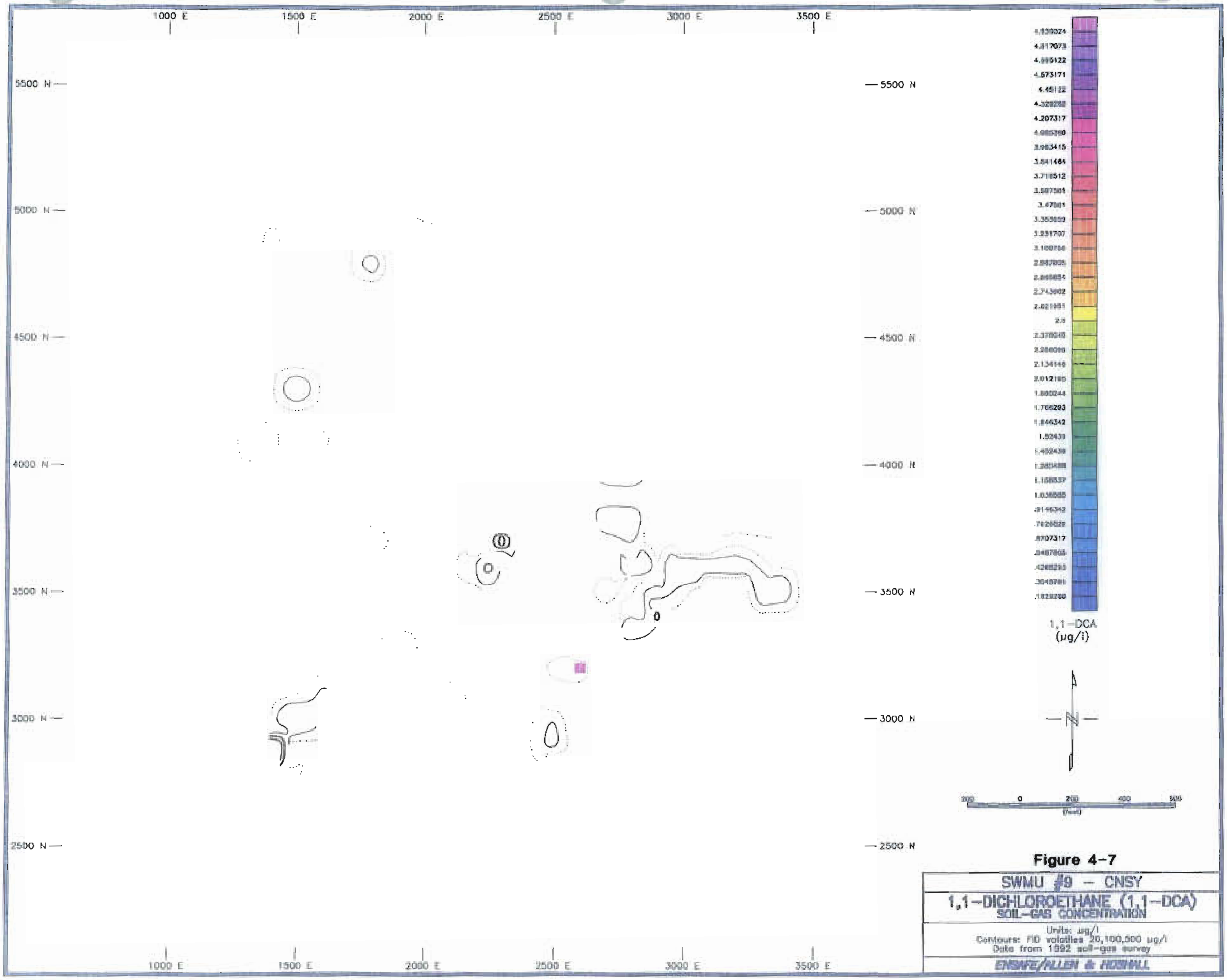



Figure 4-7

SWMU #9 – CNSY

1,1-DICHLOROETHANE (1,1-DCA)
SOIL-GAS CONCENTRATION

Units: μg/l
Contours: FID volatiles 20,100,500 μg/l
Data from 1992 soil-gas survey

ENSAFE/ALLEN & HOSHALL

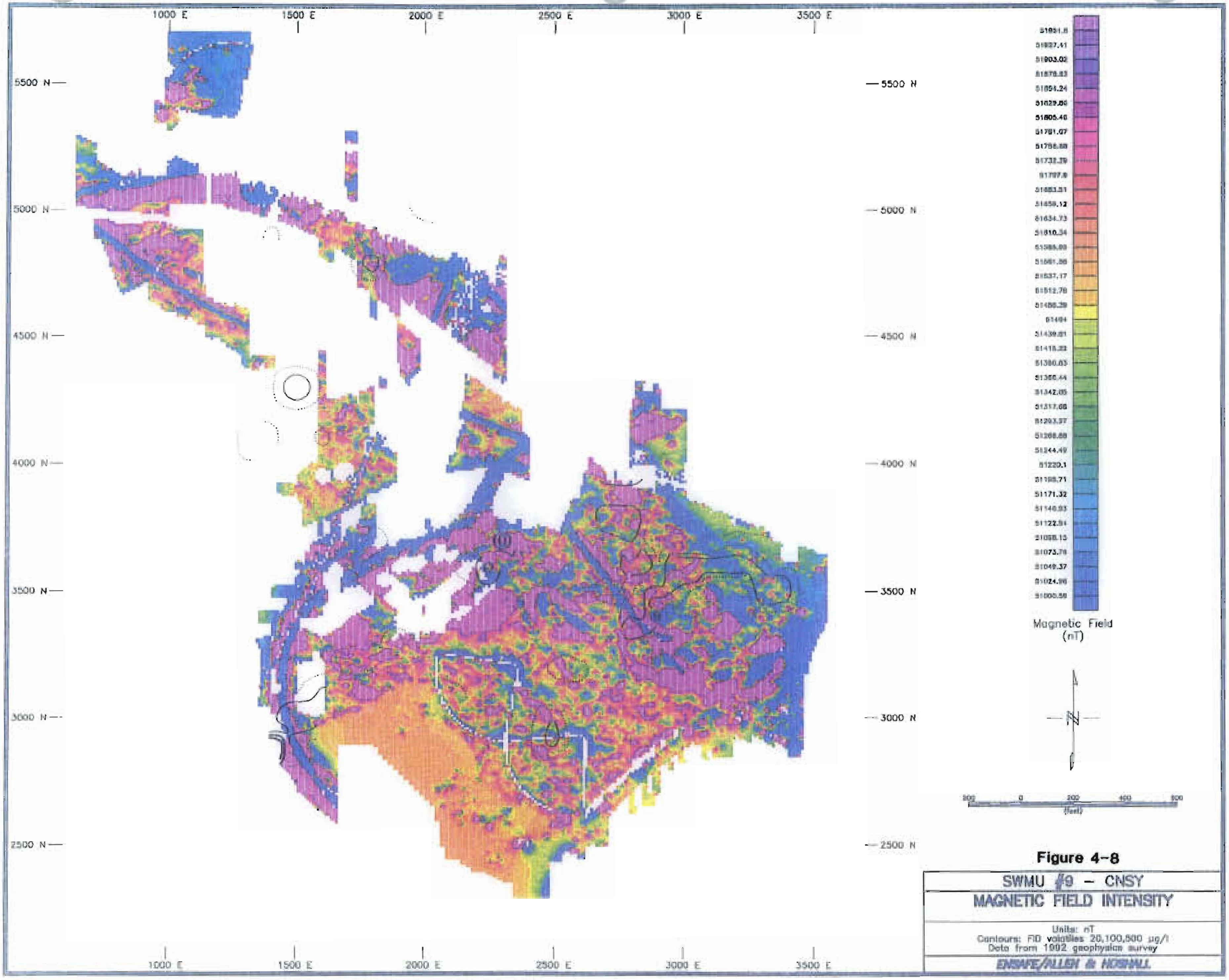



**Figure 4-8**

SWMU #9 – CNSY

MAGNETIC FIELD INTENSITY

Units: nT
Contours: FID volatiles 20,100,500 µg/l
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

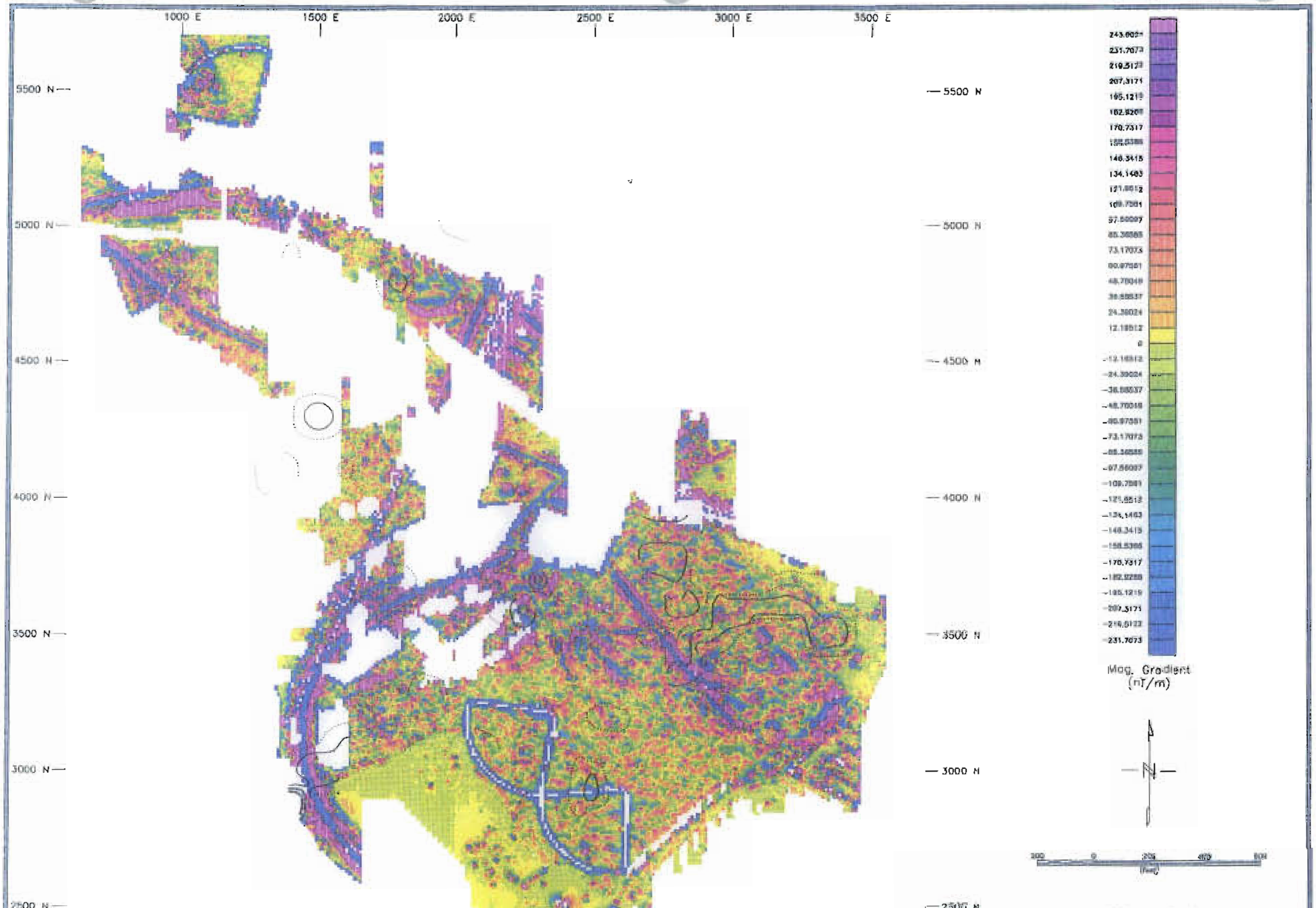



Figure 4-9

SWMU #9 -- CNSY
MAGNETIC GRADIENT

Units: nT/m
Contours: FID volatiles 20,100,500 µg/l
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

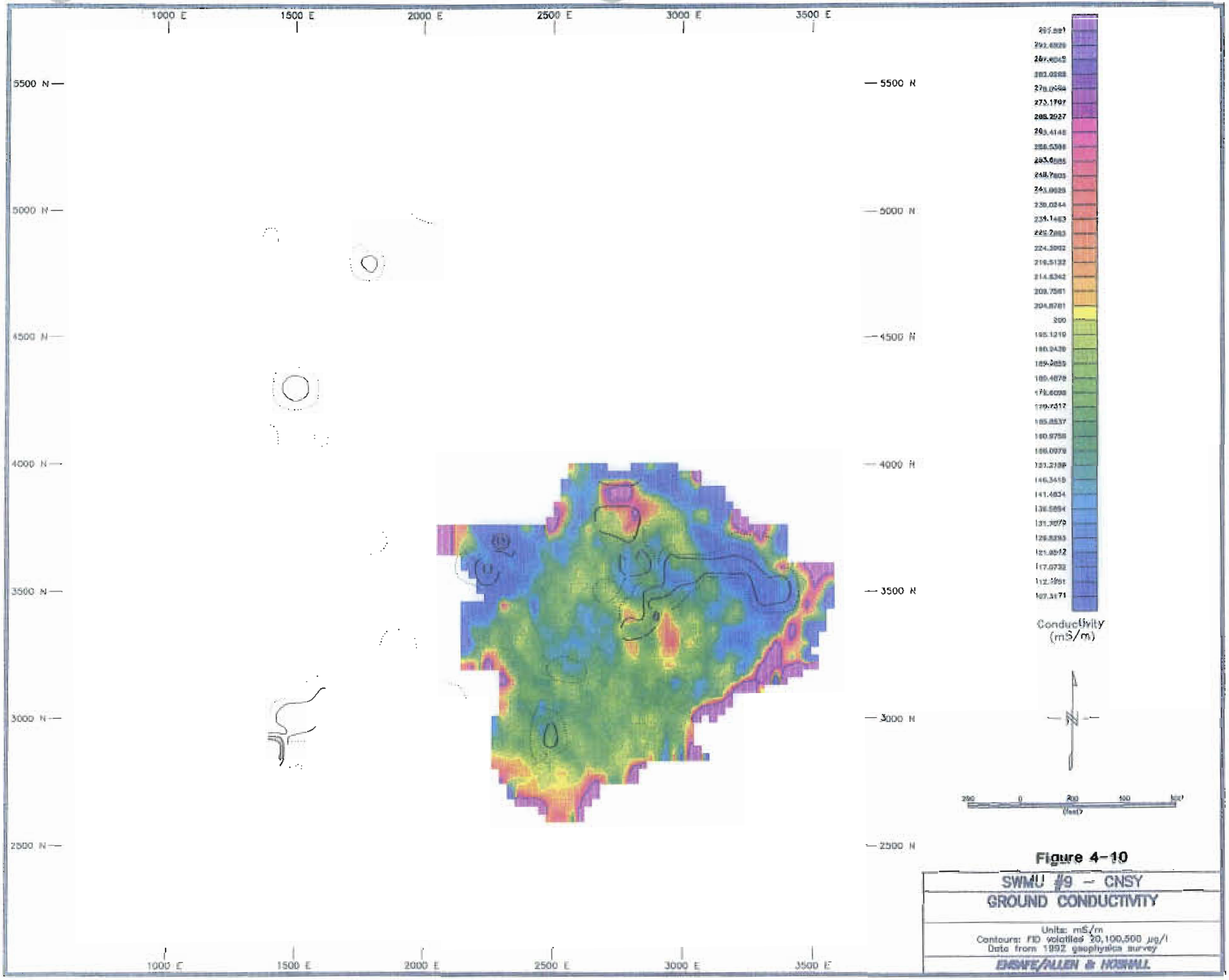



Figure 4-10

SWMU #9 — CNSY
GROUND CONDUCTIVITY

Units: mS/m
Contours: FID volatiles 20,100,500 µg/l
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

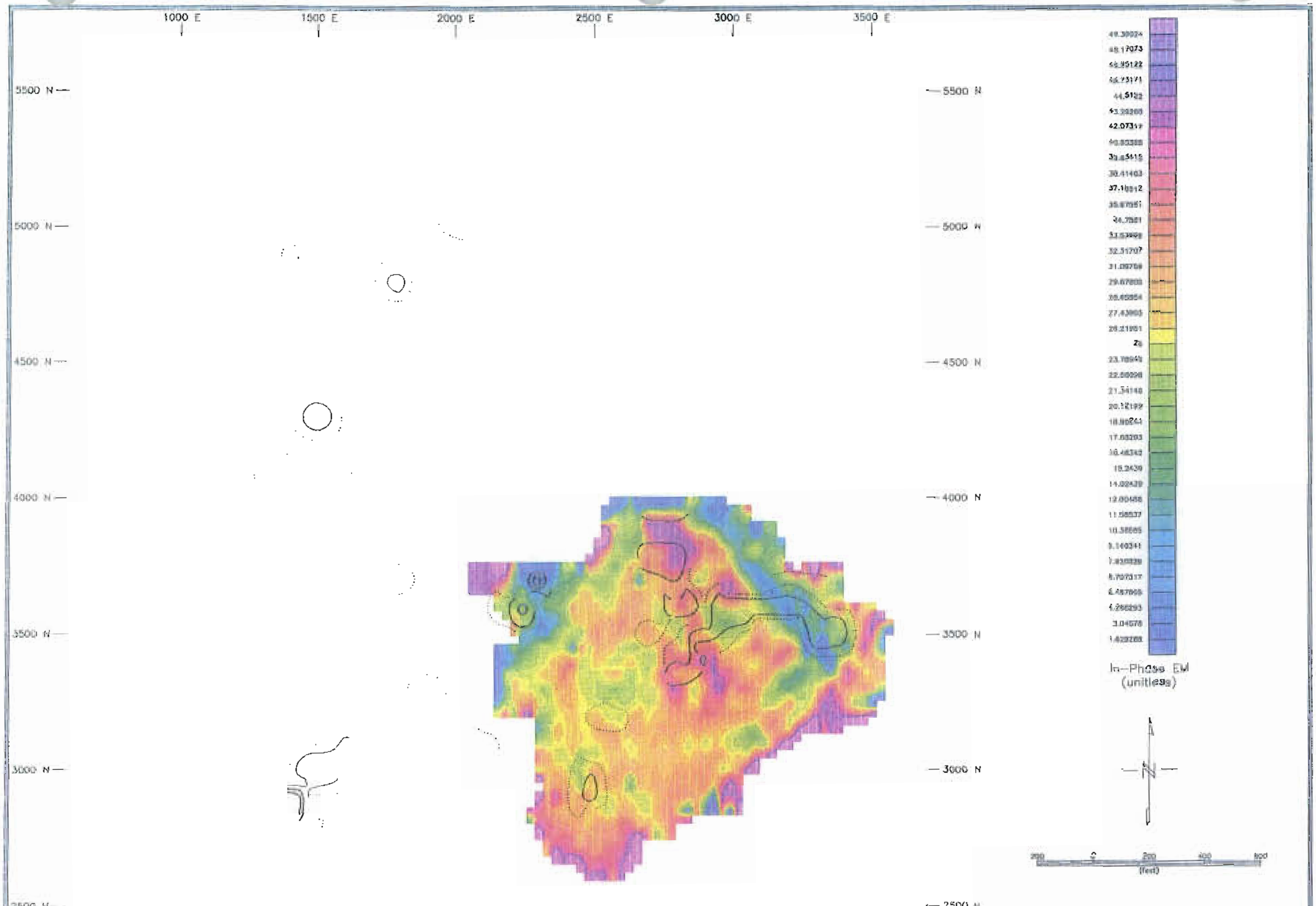



Figure 4-11

SWMU #9 - CNSY

IN-PHASE EM

Unitless
Contours: FID volatiles 20,100,500 µg/l
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

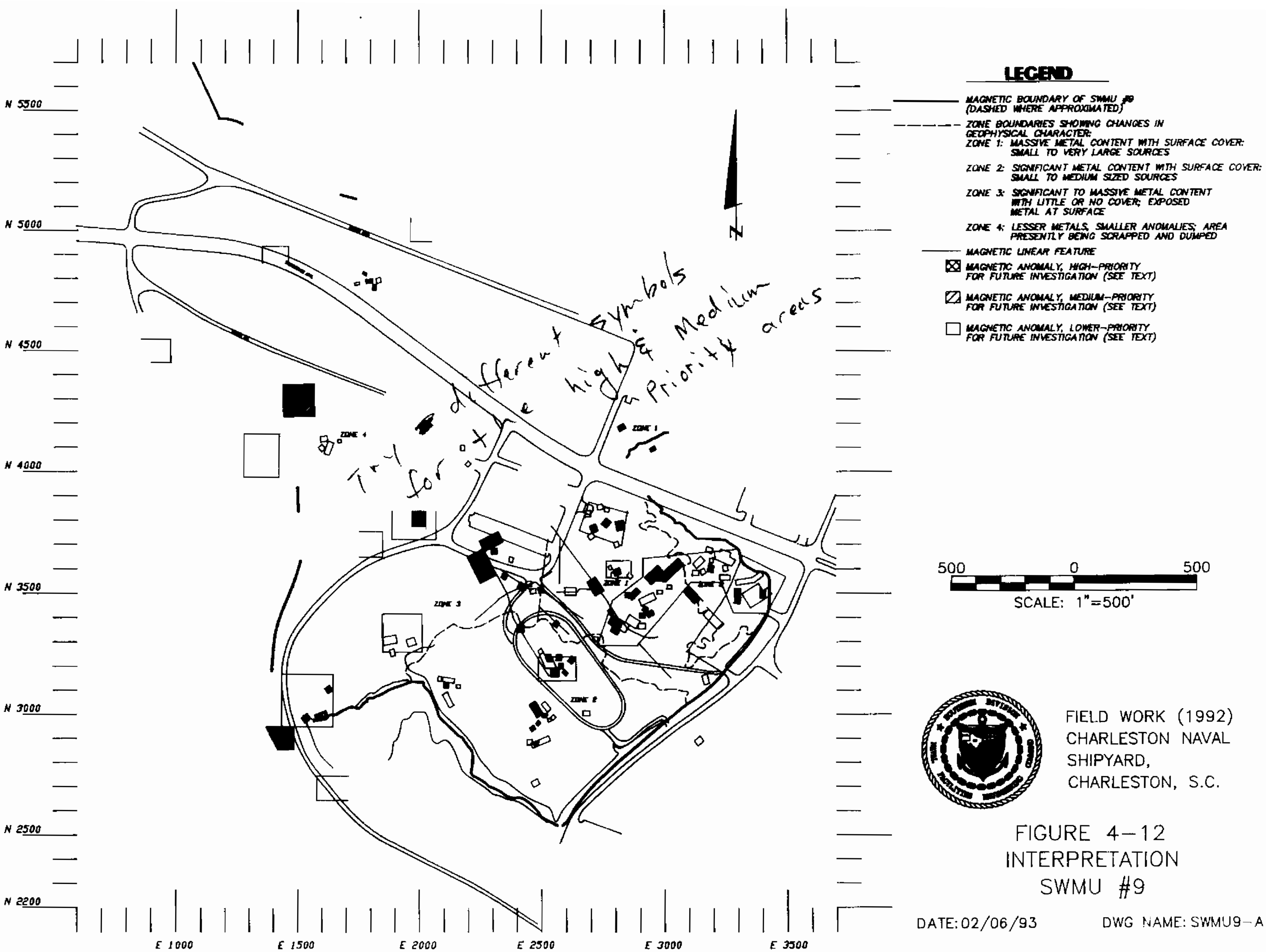



FIGURE 4-12
INTERPRETATION
SWMU #9

DATE: 02/06/93 DWG NAME: SWMU9-A

## 5.0 SURVEY RESULTS, SWMU #14

The data are presented with minimal interpretation (Section 5.1), then are interpreted in terms of the survey objectives (Sections 5.2 to 5.5). All figures for this section are grouped in the back of the section to facilitate easy comparison.

### 5.1 Data Presentation

Figure 5-1 shows the base map for SWMU #14, with streets, buildings, the two magnetics base stations, and other features located relative to the surveyed grid. SWMU #14 maps in this report are reproduced at a scale of 1"=200' (1:2,400). As a convenience, this map is also presented, in simplified form, as a clear overlay in the back pocket of this report.

Figure 5-2 shows the total FID volatiles data from the soil-gas survey. The few data obtained here were placed as a followup to several well-defined geophysical anomalies. The plotting conventions and colors are similar to those used for SWMU #9. Only one data point exceeds 20 $\mu$g/l, and only 5 points are above the detection limit. All individual analytes are below the detection limit except for one xylene measurement at one station (1080N/1380E), which was 1.6 $\mu$g/l.

Figure 5-3 shows the total magnetic field data from the magnetics geophysical survey. Plotting conventions are identical to those used for SWMU #9. They show regional lateral gradients due to buildings in the area.

Unlike the complex magnetic patterns from ubiquitous metals in SWMU #9, the geophysical pattern at SWMU #14 is one of extensive background response with a scattering of isolated anomalies.

This results in less spatial aliasing of the data because, with widely separated anomalies, any anomalous response is likely to be recognized. Hence, most individual drums and even small clusters of metal pails , if present, are likely to be seen in the data at SWMU #14. Their precise depths, orientations, and plan-view locations would require a tighter grid spacing, but the information from the 10 x 10 ft grid is sufficient for purposes of detecting them and showing their approximate locations.

The magnetic gradient data (Figure 5-4) remove the regional effects and allow a closer inspection of the more interesting anomalies near buildings and near culture such as power poles, signs, etc. The subtle north-south striation of the data is an artificial enhancement effect of the zero-gradient contour line due to reversal of line directions every other line. The magnetometer sensors were slightly closer to metal screws in sunglasses, steel-shank boots, etc. worn by the operator when surveying in one direction versus the other.

Classic dipolar and monopolar magnetic anomalies in this data set represent individual metal objects or small, tight clusters of objects. The anomaly wavelengths suggest a depth of burial of 3 to 10 feet in most cases, although a tighter sample spacing would be needed to refine this estimate further. Some anomalies appear to be slightly deeper or shallower than others, but most seem to be at roughly the same depth.

Figure 5-5 shows the ground conductivity data from the electromagnetic geophysical survey. Most of the data are located in the north part of the SWMU, where early trends suggested a subtle plume-like structure (which subsequently proved to be related to topography). The EM data were obtained prior to acquisition of the magnetic data, and tend to be under-sampled over some of the magnetic anomalies. The major responses occur in topographically lower places, especially in water-filled ditches, where the field instrument was closer to the conductive water table and clay-rich soils. The data are also strongly affected near buildings and metal utilities. Note that some of the color overlaps smaller buildings; this is an artifact of the best-choice gridding parameters for the plot.

Figure 5-6 shows the second part of the EM data set, the in-phase data. This component is slightly more sensitive to buried metals than is the conductivity (quadrature) component. Note that the general trends are similar to those in the conductivity data, although the relative magnitudes of the responses are different.

A detailed grid (Grid A) was run with the geophysics in the volleyball area immediately west of the pistol range building. The detail work was done in response to the location of several small conductive anomalies, second-hand information that this was the location of the chemical disposal area, accounts of surface discoloration after rains, and observation of an irregularly shaped zone of devegetation (see Figure 5-1). Grid A was surveyed more tightly and both magnetics and EM were run on a 5 x 5 ft grid. This grid density should be sufficient in this magnetically clean area to identify most if not all individual metal pails and drums in the subsurface.

Figure 5-7 shows the magnetic gradient data for Grid A, with superimposed total FID volatile ($\mu$g/l) numbers. The data provide more detail to the existing anomalies but reveal no new anomalies (suggesting the adequacy of the 10 x 10 ft grid at SWMU #14). The two southernmost anomalies are very strong, and the strongest one has a more pronounced amplitude than one would expect of one drum or several pails. Note that soil-gas volatiles numbers are not consistently higher over the anomalies tested.

Figure 5-8 shows the ground conductivity data for Grid A, with total volatile numbers and key magnetic gradient contours superimposed. The major conductive features follow changes in ground elevation almost exactly; the boundary along 1050N corresponds to a significant slope (higher elevations to the south), and the conductive north-trending feature at 1290E is along a water-filled ditch. Note that most of the magnetic anomalies are not obviously more conductive, a surprising result. Perhaps the effect of groundwater conductivity simply overwhelms the conductive responses one might expect of the magnetic sources.

Figure 5-9 shows the in-phase EM component. Despite its increased sensitivity to metal conductors, this component also shows little correlation with specific subsurface magnetic anomalies.

Figure 5-10 presents the final interpreted results for SWMU #14, based upon all data obtained to date. The following discussions explain this figure and interpret it in light of the project goals. Figure 5-10 is also presented, at a larger scale, as Plate 2 (back pocket).

## 5.2 Chemical Disposal Area Location

Prior to the survey, there was considerable uncertainty about the location of the disposal area. Navy maps showed only general outlines and disagreement from map to map as to the size and location of the site.

The present data suggest definite locations for buried metals. These may or may not be pails or drums, but they have all the geophysical characteristics of such features. Most of the buried metals occur in a roughly north-south line in the open field at the south half of the SWMU. Several isolated anomalies occur in other parts of the open field. In addition, anomalies are also found near the pistol range building and in the northern part of the SWMU.

If it can be assumed that the anomalies are truly drums and pails of chemicals, the data provide a firm location for the SWMU. In such a case, the southern open field would be considered as the primary disposal area, with other disposal sites to the north possible.

## 5.3 Specific Anomaly Identification and Interpretation

Anomaly identification at SWMU #14 is far simpler than at SWMU #9 due to the absence of interfering metallic fill material. Anomalies were interpreted from the magnetic gradient data, then prioritized according to distinctiveness of the magnetic response, soil-gas results, and EM response. The results are shown in Figure 5-10. Anomalies are numbered and are shaded according to their priority for further investigation.

Figure 5-10 is complete in the sense that all identified geophysical anomalies which might be due to subsurface metals are shown. The outlined anomalies should include most drums and pails buried in the investigation area, with the exception of areas influenced by culture or beneath buildings. It should be borne in mind, however, that not all of the anomalies may be due to metal containers; anomalies of this type can arise from other sources such as small pipes, rebar, sheet metal, and metal trash. Anomalies on the far south part of survey coverage where the open field meets the forest are to be regarded with caution, as there is evidence of bulldozing and scrap metal there. Also, it is important to note that wastes buried in plastic or other non-metallic containers would go undetected by the geophysics.

The table in Appendix C summarizes the anomalies in Figure 5-10. The notes provide some recommendations for future work. Part or all of these recommendations will be implemented according to the best judgement of field personnel. However, given the definition of these anomalies, a good number will be sampled or trenched. The Draft-Final RFI Work Plan (E/A&H 1992) calls for 25 soil borings and samples. Based on the preliminary field work results, this should be adequate. The high definition of the magnetics anomalies suggests due caution in augering to avoid contacting the sources themselves. Prior to sampling, the data will be reviewed to provide the best guidance for field activities.

## 5.4 Leachate Plume Definition

The limited soil-gas work was done to investigate gases associated with a sample of the geophysical anomalies, and hence does not fully address the issue of leachate plumes. It is interesting to note, however, that most stations returned below-detection levels on individual analytes and total volatiles. For example, nine magnetic anomalies were sampled by soil-gas work; of these, only three had total FID volatiles over the detection limit, with the highest being

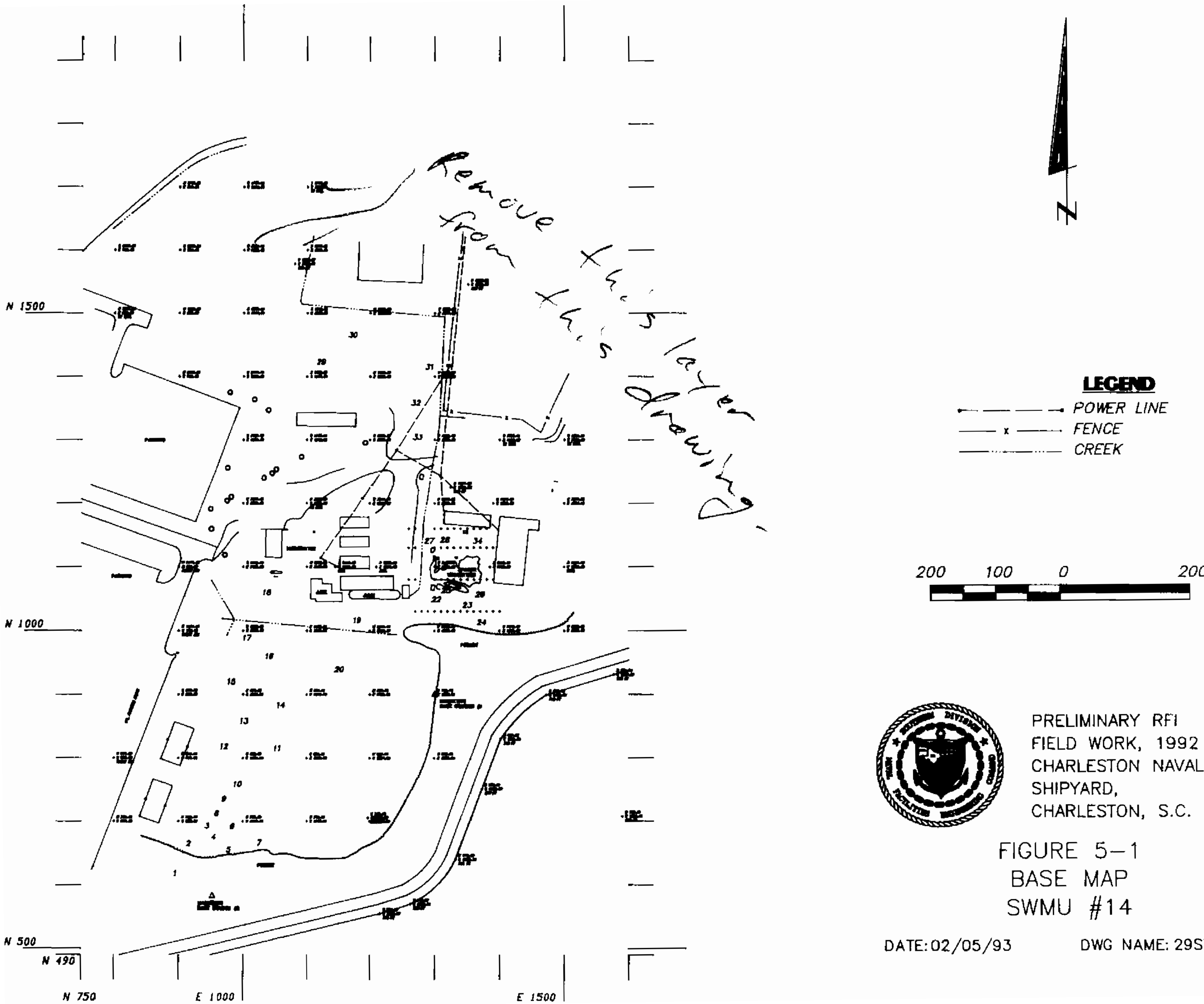
11 μg/l. None of the magnetic sources showed an anomaly in any single analyte. If the magnetic sources are indeed metal containers for paint- or fuel-related waste, the soil-gas data suggest that contaminants in the soil itself may not be significant. One can envision several explanations for this: it is possible that spills have never occurred, or that spills were of substances not tested for, or that contamination is deeper than the soil-gas sampling, or that contaminants have migrated or diffused. It is also possible that hydrocarbon contaminants are still present but are bound up in clays, giving low soil-gas values. Future work, if any, should involve soil sampling and analysis to investigate the possible mitigating effect of clays on soil gas hydrocarbons, and to further test the possibility of a chemical leachate plume.

The possibility of a high-TDS plume in or near the water table was examined with EM. Unfortunately, the ground is even more conductive at SWMU #14 than at SWMU #9, making the detection of a leachate plume with EM unlikely. Indeed, the finding that the EM data seem to be relatively insensitive to buried magnetic sources (which presumably should be conductive) suggests that the data are overwhelmed by effects due to conductive groundwater. The data show no evidence of a conductive plume at this site. Data to the south are not sufficiently sampled to draw a conclusion in that area. The issue is best addressed, in our opinion, by chemical sampling in soils and groundwater rather than in further geophysical work in this area.

The issue of a leachate plume in the groundwater was not part of the objectives in the preliminary field work. Well drilling and sampling will address this issue directly. Soil sampling should be done first in order to expand the data base needed to select optimal sampling locations.

### 5.5 Field Observations

No indication of drums or other possible sources of contaminants was observed at the surface at SWMU #14. No wells were seen. A specific search was made only for CD-5; a suggestion of bentonite was observed under the grass cover, but nothing else.




PRELIMINARY RFI
FIELD WORK, 1992
CHARLESTON NAVAL
SHIPYARD,
CHARLESTON, S.C.

FIGURE 5-1
BASE MAP
SWMU #14

DATE: 02/05/93 DWG NAME: 29SWMU14

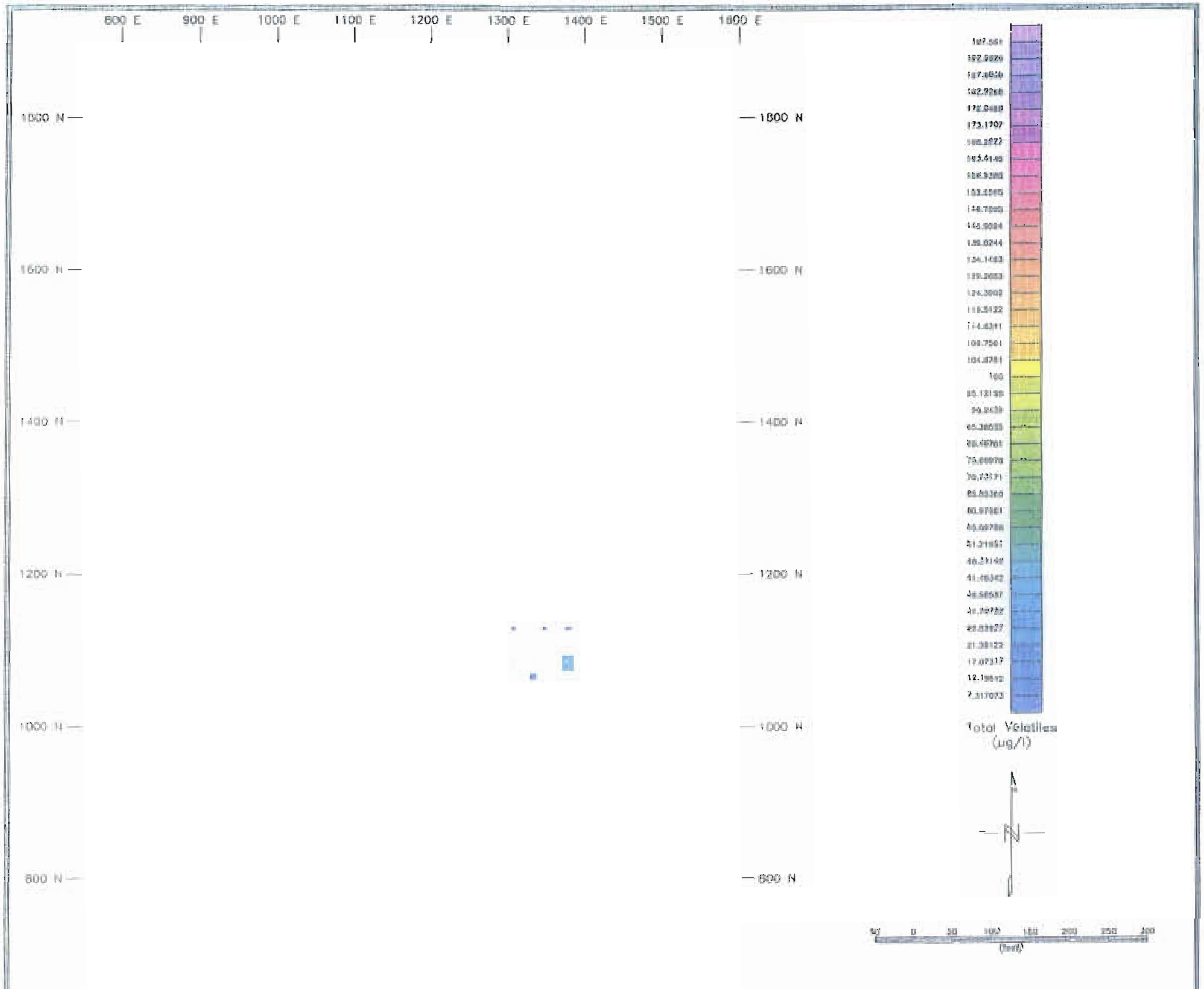



**Figure 6-2**

SWMU #14 – CNSY

TOTAL FID VOLATILES

Units: µg/l
Dots: data sites; Tiny color blocks: volatiles < 20 µg/l;
Large color blocks: volatiles ≥ 20 µg/l

ENSAFE/ALLEN & HOSHALL

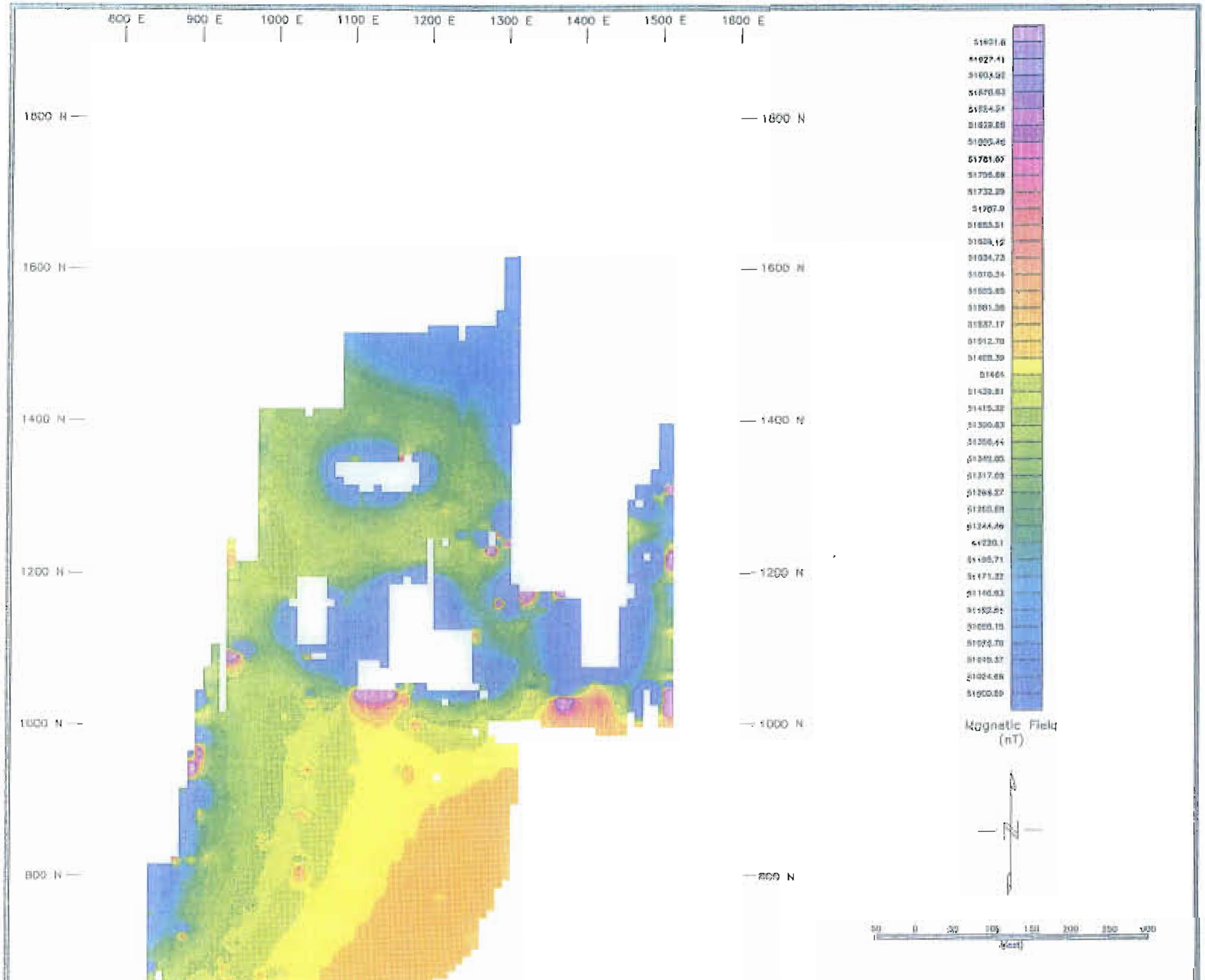



**Figure 5-3**

SWMU #14 — CNSY

MAGNETIC FIELD INTENSITY

Units: nT
Data: soil-gas data points
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

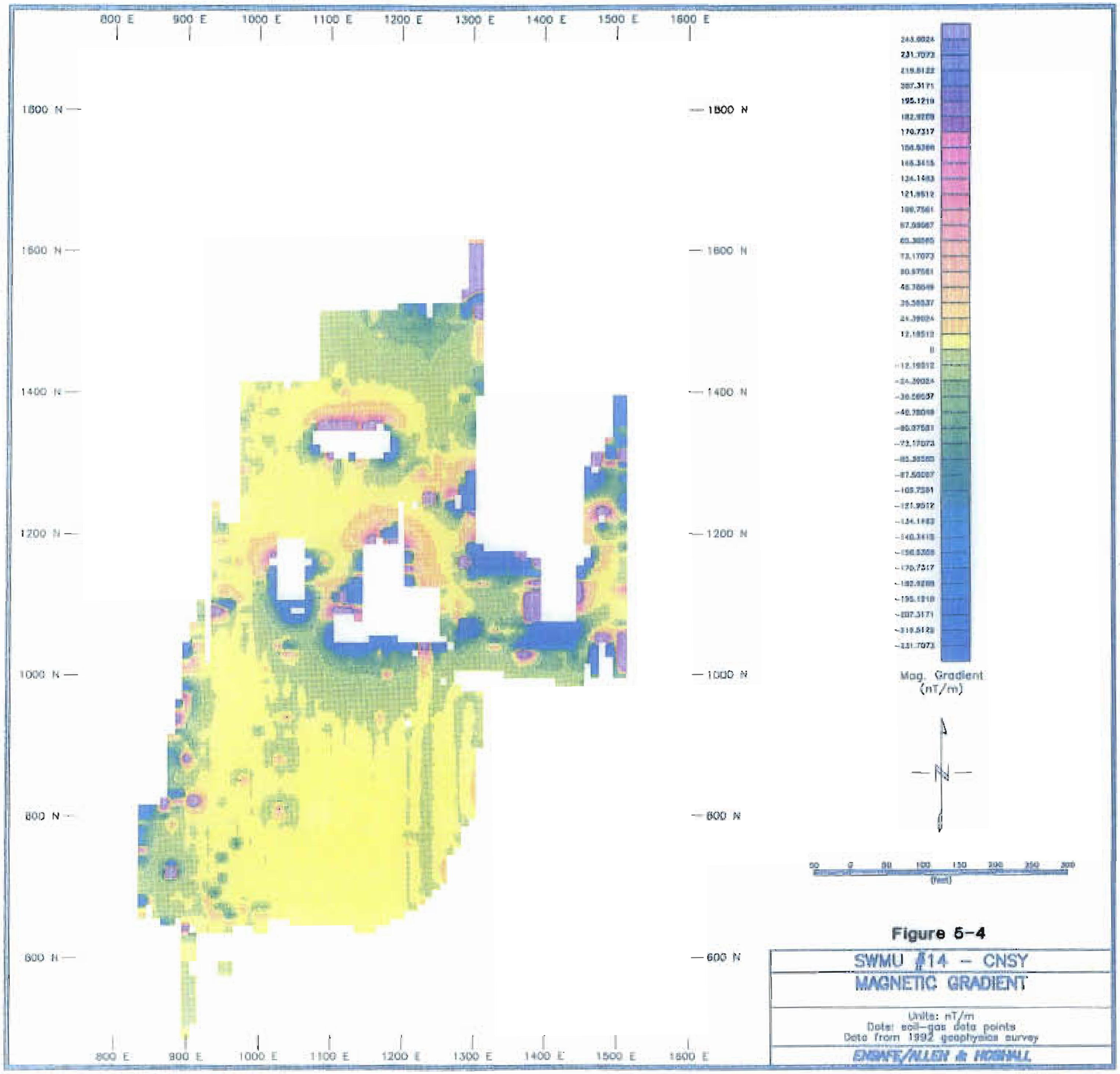



**Figure 5-4**

SWMU #14 – CNSY

MAGNETIC GRADIENT

Units: nT/m
Data: soil-gas data points
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

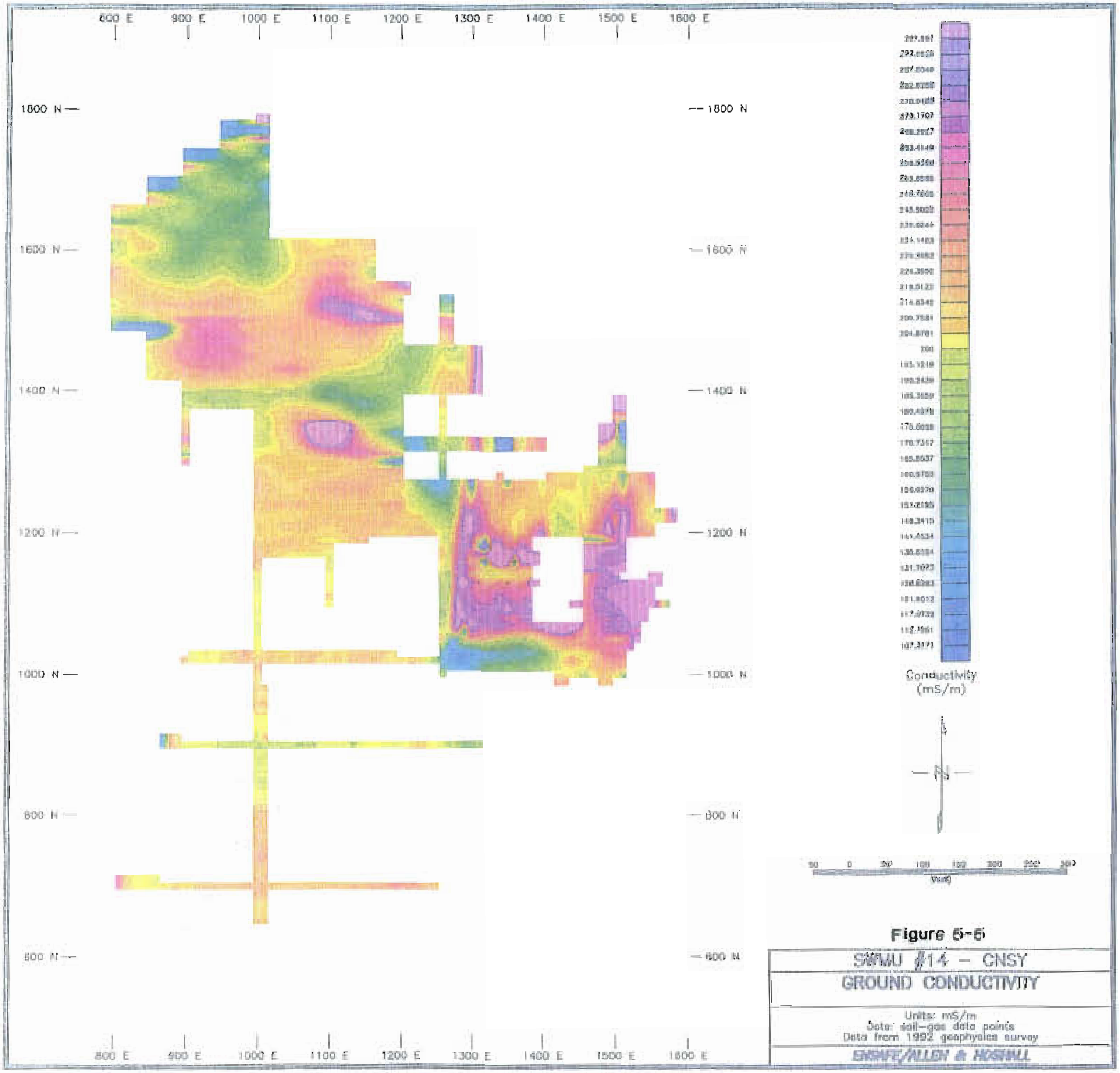



Figure 5-5

SWMU #14 – CNSY

GROUND CONDUCTIVITY

Units: mS/m
Dots: soil-gas data points
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

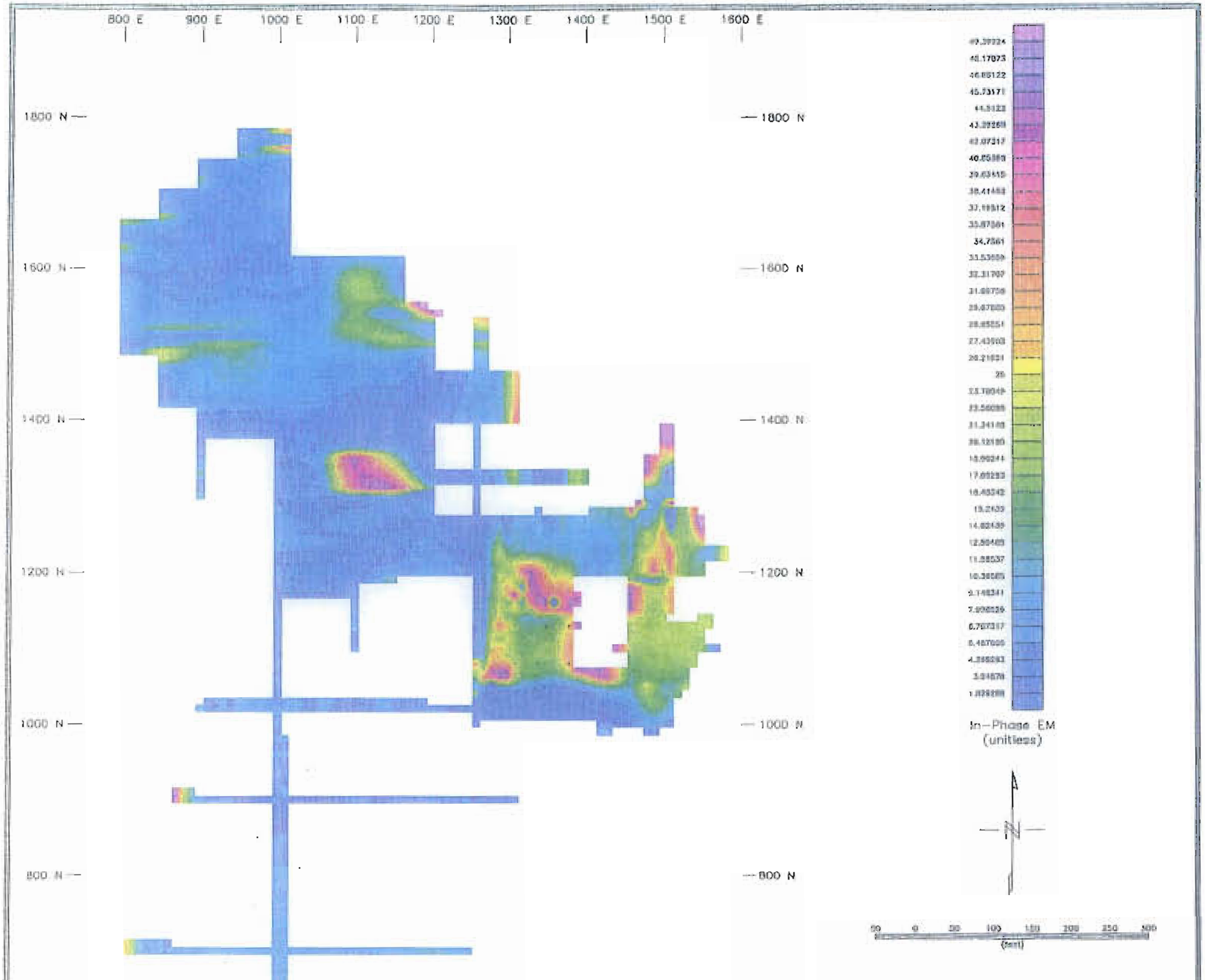



**Figure 6-6**

SWMU #14 – CNSY

IN-PHASE EM

Unitless
Data: soil-gas data points
Data from 1992 geophysics survey

ENSAFE/ALLEN & HOSHALL

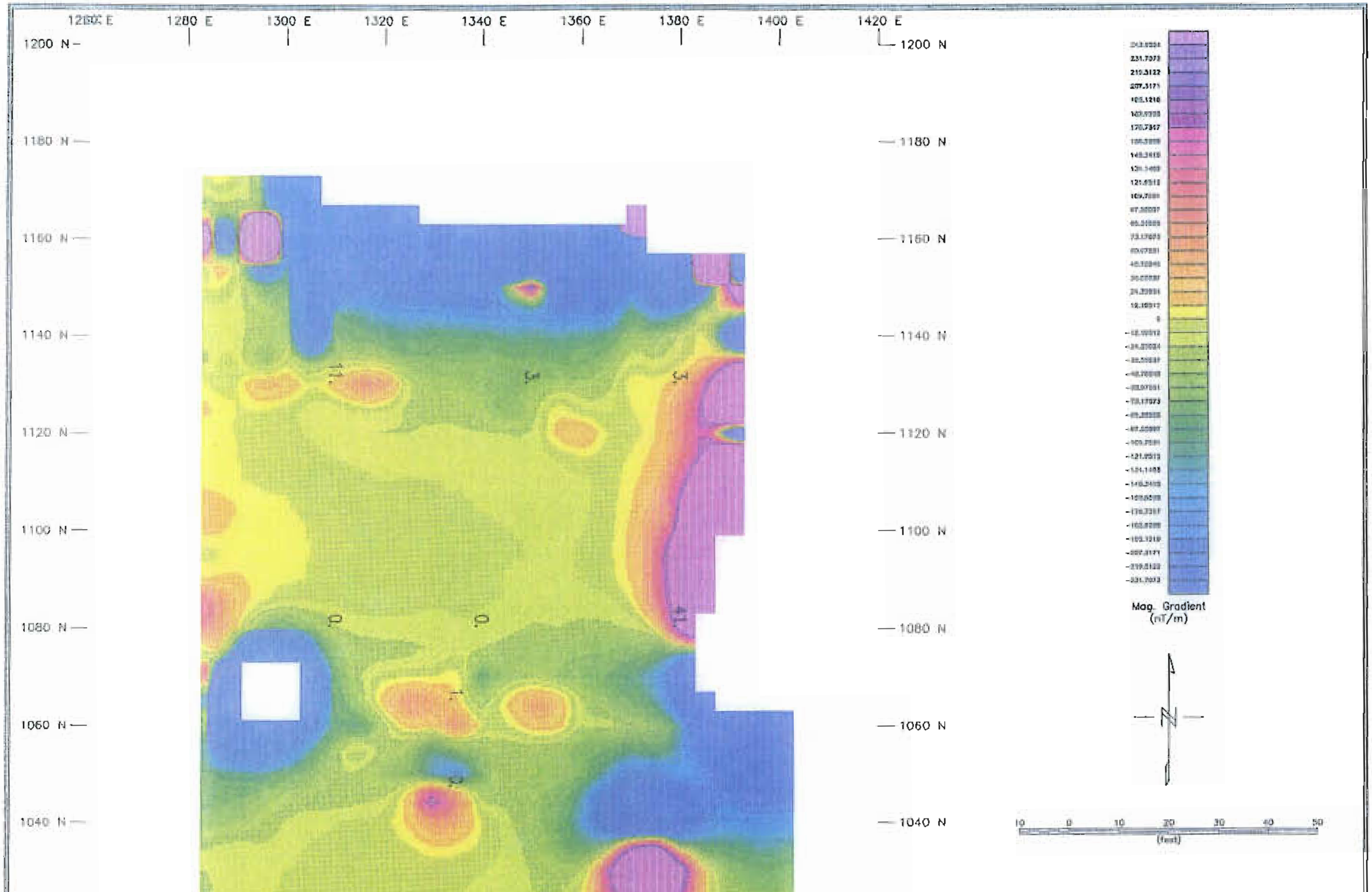



**Figure 6-7**

SWMU #14 GRID A – CNSY

MAGNETIC GRADIENT

Units: nT/m
Numbers: total FID volatiles in µg/l
Data from 1992 geophysics/soil-gas surveys

ENSAFE/ALLEN & HOSHALL

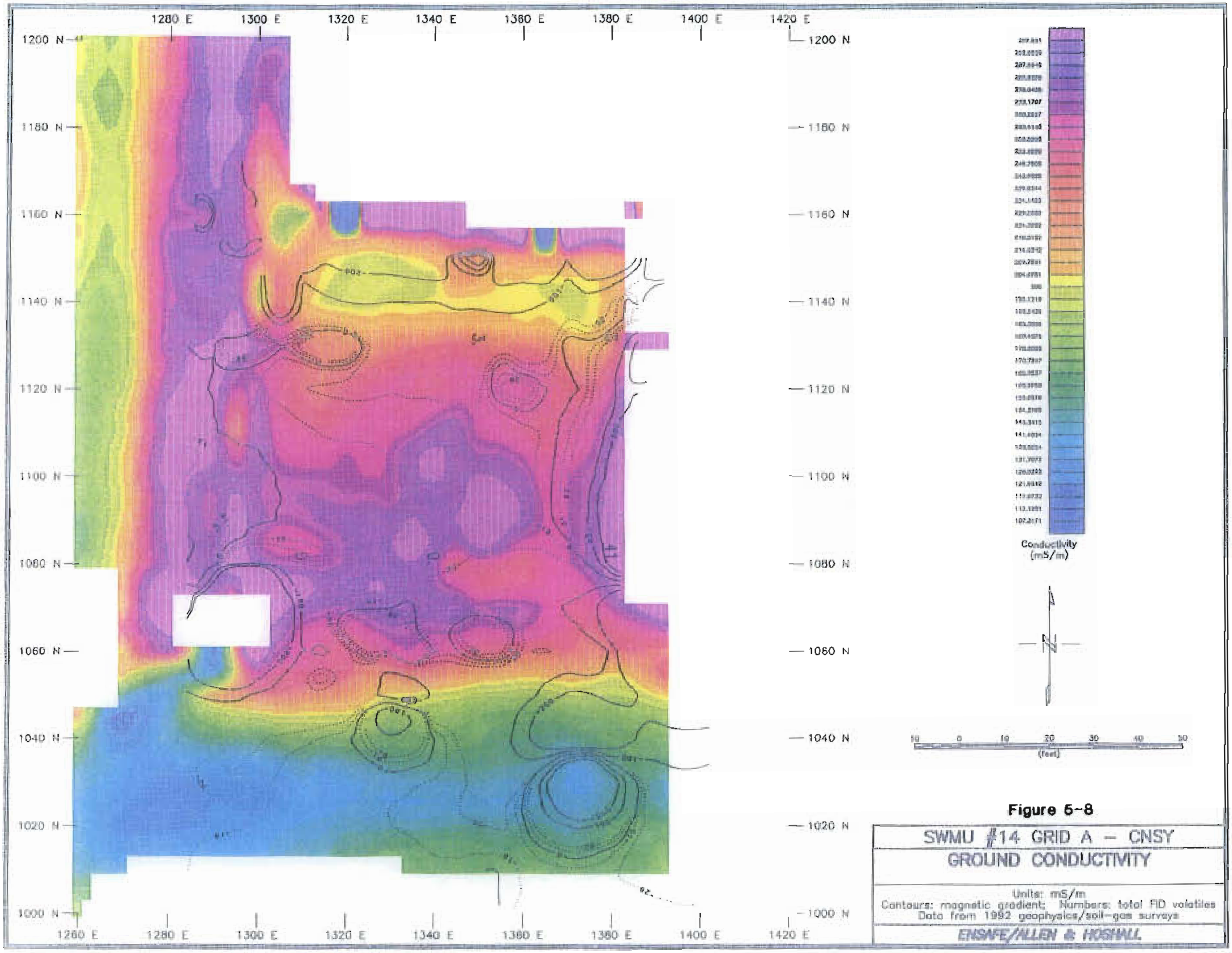



**Figure 5-8**

SWMU #14 GRID A — CNSY

GROUND CONDUCTIVITY

Units: mS/m
Contours: magnetic gradient; Numbers: total FID volatiles
Data from 1992 geophysics/soil-gas surveys

ENSAFE/ALLEN & HOSHALL

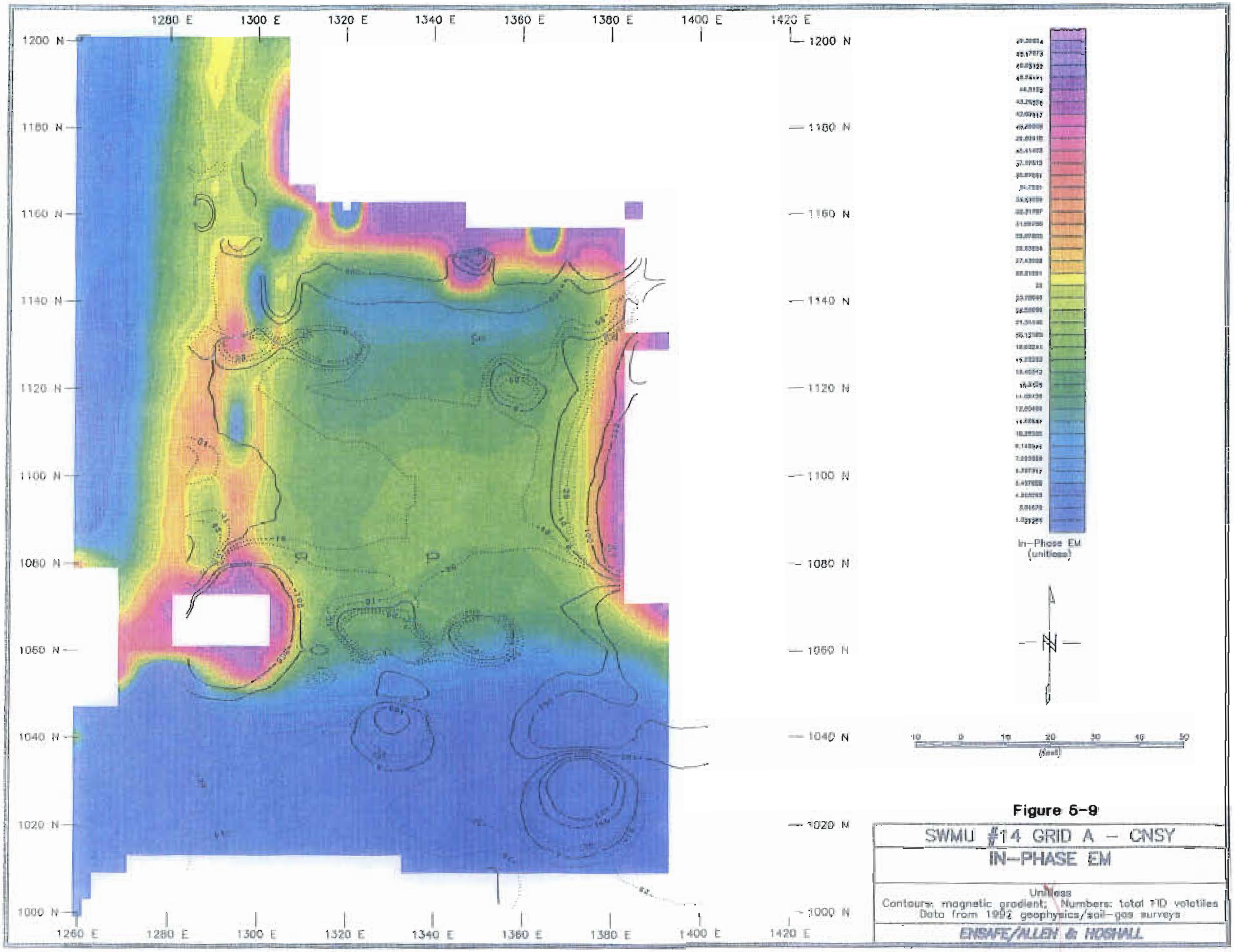



**Figure 6-9**

SWMU #14 GRID A – CNSY

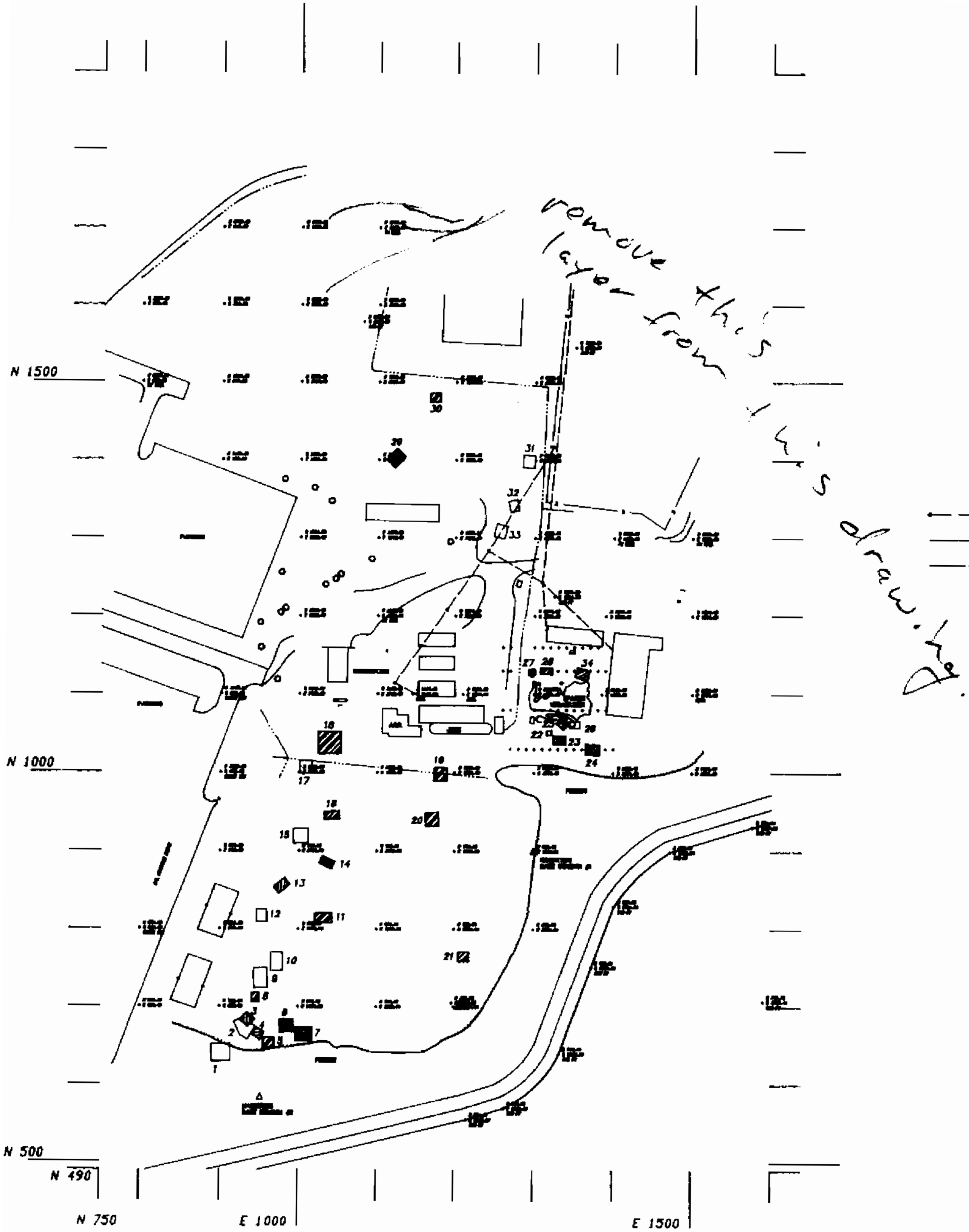
IN-PHASE EM

Unitless

Contours: magnetic gradient; Numbers: total FID volatiles

Data from 1992 geophysics/soil-gas surveys

ENSAFE/ALLEN & HOSHALL




N

**LEGEND**

- MAGNETIC ANOMALY, HIGH-PRIORITY FOR FOR FUTURE INVESTIGATION (SEE TEXT)
- MAGNETIC ANOMALY, MEDIUM-PRIORITY FOR FUTURE INVESTIGATION (SEE TEXT)
- MAGNETIC ANOMALY, LOWER-PRIORITY FOR FUTURE INVESTIGATION (SEE TEXT)
- POWER LINE
- FENCE
- CREEK

200 100 0 200

PRELIMINARY RFI
FIELD WORK, 1992
CHARLESTON NAVAL
SHIPYARD,
CHARLESTON, S.C.

FIGURE 5-10
INTEGRATED INTERPRETATION
SWMU #14

DATE: 02/05/93 DWG NAME: 29SWMU14

## 6.0 CONCLUSIONS

The present study has produced specific targets for followup investigation. Targets have been listed in order of importance by an interactive interpretation of the data sets. These findings will help EnSafe/Allen & Hoshall implement a very focused and well informed plan of action for field work in 1993.

No additional soil-gas or geophysical data are required at these two sites. The outlined objectives have been sufficiently addressed to move directly to sampling, trenching, and drilling work. Future work may show the need for additional geophysical surveys to assist in field work. The general issues outlined below will be addressed in future work at each site.

**Future Considerations for SWMU 9:**

- To determine the areal extent and pattern to impact of contaminants on groundwater.

- To determine the sources of soil-gas volatiles by soil sampling, trenching, and water sampling, using specific information from the preliminary work to help focus followup efforts.

- To investigate the problem of mobility of volatiles in and outside the landfill, differential mobility of various compounds, the role of clays in leachate migration, etc.

- To investigate linear features seen in the magnetics data as possible linear placements of drums.

- To investigate linear feature A and others as possible pipes or channels which might allow leachate to escape or move within the landfill.

- Sample sediments and standing water in the marshes south of the landfill and soils and groundwater northeast of the landfill to see whether or not contaminants are moving off the landfill from anomalies identified in the soil-gas and geophysics data.

- To drill auger samples to further refine the northern and western edges of the landfill, if deemed important.

- To install and sample monitoring wells to test the impact of any contaminated soil samples found. The locations will be guided by the soil-gas and magnetics anomaly locations, future soil sampling results, groundwater flow direction, and soil geology.

**Future Considerations for SWMU #14:**

- Geophysical anomalies not sampled by the soil-gas survey should be investigated by soil sampling. The sampling methodology should aid in investigating whether contamination might be bound in clays.

- Multi-depth sampling, as called for in the Draft-Final RFI Work Plan, will be important in this effort.

- The installation of monitoring wells will determine the impact, if any, of this site on the groundwater quality. Especially at SWMU #14, soil sampling will be useful to help select the best well locations.

## 7.0 REFERENCES

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Roberts, R. L., Hinze, W. J. and Leap, D. I. (1990). *Data Enhancement Procedures on Magnetic Data from Landfill Investigations*. Geotechnical and Environmental Geophysics, vol. 2, p.261-266. Stanley H. Ward, Editor. Society of Exploration Geophysicists.

# APPENDIX A

# TARGET ENVIRONMENTAL SERVICES, INC.

# SOIL-GAS REPORT

# SOIL GAS DATA

# CHARLESTON NAVAL SHIPYARD
# CHARLESTON, SOUTH CAROLINA

PREPARED FOR

**ENSAFE/ALLEN & HOLSHALL**
5720 SUMMER TREES DRIVE, SUITE 8
MEMPHIS, TENNESSEE 38134

PREPARED BY


**TARGET ENVIRONMENTAL SERVICES, INC.**
9180 RUMSEY ROAD
COLUMBIA, MARYLAND 21045
(410) 992-6622


JULY 1992

## BACKGROUND

Ensafe/Allen & Hoshall contracted TARGET Environmental Services, Inc. (TARGET) to perform a soil gas survey at the Charleston Naval Shipyard in Charleston, South Carolina. The survey was performed at a closed landfill, selected solid waste management unit (SSWM #9), in support of Ensafe's NAVY CLEAN Contract #N62467-89-D-0318.

The survey was designed by Ensafe to cover SSWM #9 with a grid spacing of approximately 100 feet between samples. A 10 foot sampling depth was planned. Additional site information was not provided. The field phase of the soil gas survey was conducted from June 3 through June 22, 1992.

## SAMPLE COLLECTION AND ANALYSIS

Soil gas samples were collected at a total of 440 locations at the site, as shown in Figure 1. Samplings depths ranged from 1 to 4 feet due to the presence of shallow ground water. The majority of the samples were collected at 2 feet.

To collect the samples a 1/2 inch hole was produced by using a drive rod. The entire sampling system was purged with ambient air drawn through an organic vapor filter cartridge, and a stainless steel probe was inserted to the full depth of the hole and sealed off from the atmosphere. A sample of in-situ soil gas was then withdrawn through the probe and used to purge atmospheric air from the sampling system. A second sample of soil gas was withdrawn through the probe and encapsulated in a pre-evacuated glass vial at two atmospheres of pressure (15 psig). The self-sealing vial was detached from the sampling system, packaged, labeled, and stored for laboratory analysis.

Prior to each day's field activities all sampling equipment, slide hammer rods and probes were decontaminated by washing with soapy water and rinsing thoroughly. Internal surfaces were flushed dry using pre-purified nitrogen or filtered ambient air, and external surfaces were wiped clean using clean paper towels.

All of the samples collected during the field phase of the survey were subjected to dual analyses. One analysis was conducted according to EPA Method 601 (modified) on a gas chromatograph equipped with an electron capture detector (ECD), and using direct injection. Specific analytes standardized for this analysis were:

1,1-dichloroethene (11DCE)
methylene chloride ($CH_2Cl_2$)
trans-1,2-dichloroethene (t12DCE)
1,1-dichloroethane (11DCA)
cis-1,2-dichloroethene (c12DCE)
chloroform ($CHCl_3$)
1,1,1-trichloroethane (111TCA)
carbon tetrachloride ($CCl_4$)
trichloroethene (TCE)
1,1,2-trichloroethane (112TCA)
tetrachloroethene (PCE)

The chlorinated hydrocarbons in this suite were chosen because of their common usage in industrial solvents, and/or their degradational relationship to commonly used compounds.

The second analysis was conducted according to EPA Method 602 (modified) on a gas chromatograph equipped with a flame ionization detector (FID), and using direct injection. The analytes selected for standardization in this analysis were:

benzene
toluene
ethylbenzene
meta- and para- xylene
ortho-xylene

These compounds were chosen because of their utility in evaluating the presence of fuel products, or petroleum based solvents.

The analytical equipment was calibrated using a 3-point instrument-response curve and injection of known concentrations of the target analytes. Retention times of the standards were used to identify the peaks in the chromatograms of the field samples, and their response factors were used to calculate the analyte concentrations.

Total FID Volatiles values were generated by summing the areas of all integrated chromatogram peaks and calculated using the instrument response factor for toluene. Injection peaks, which also contain the light hydrocarbon methane, were excluded to avoid the skewing of Total FID Volatiles values due to injection disturbances and biogenic methane. For samples with low hydrocarbon concentrations, the calculated Total FID Volatiles concentration is occasionally lower than the sum of the individual analytes. This is because the response factor used for the Total FID Volatiles calculation is a constant, whereas the individual analyte response factors are compound specific. It is important to understand that the Total FID Volatiles levels reported are relative, not absolute, values.

The tabulated results of the laboratory analyses of the soil gas samples are reported in micrograms per liter ($\mu g/l$) in Tables 1 and 2. Although "micrograms per liter" is equivalent to "parts per billion (v/v)" in water analyses, they are not equivalent in gas analyses, due to the difference in the mass of equal volumes of water and gas matrices. The xylenes concentrations reported in Table 1 are the sum of the m- and p-xylene and the o-xylene concentrations for each sample.

The Total FID Volatiles have been mapped and contoured in Figure 2. The results of the ECD analysis are mapped in Figure 3.

## Quality Assurance/Quality Control (QA/QC) Evaluation

### Field QA/QC Samples

Field control samples were collected at the beginning and end of each day's field activities and after every twentieth soil gas sample. These QA/QC samples were obtained by inserting the probe tip into a tube flushed by a 20 psi flow of pre-purified nitrogen and encapsulating as described above. The laboratory results of the analysis of these samples are reported in Tables 1 and 2. Field Control Sample 9 contained low levels of volatile petroleum hydrocarbons and $CHCl_3$. This sample was collected following Sample N2900E2700 and prior to N2900E2600. Neither of these samples contained detectable levels of volatile hydrocarbons. The source of the contamination in Field Control Sample 9 is unclear, however, it has not influenced the overall survey results. Field Control Sample 9 was analyzed twice to confirm the concentrations, shown as Sample 9A and 9B in the tables. Concentrations of all analytes were below the reporting limit in all remaining field control samples.

### Laboratory QA/QC Samples

A duplicate analysis was performed on every tenth field sample. Laboratory blanks of nitrogen gas were also analyzed after every tenth field sample. The results of these analyses are reported in Tables 1 and 2. All duplicate analyses were within acceptable limits. Concentrations of all analytes were below the reporting limit in all laboratory blanks.


FIGURE 3. Analyte Concentrations via GC/ECD ($\mu$g/l)

CHARLESTON NAVAL SHIPYARD
CHARLESTON, SOUTH CAROLINA

ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.


FIGURE 2. Total FID Volatiles
(calc'd μg/l)

CHARLESTON NAVAL SHIPYARD
CHARLESTON, SOUTH CAROLINA

TARGET ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

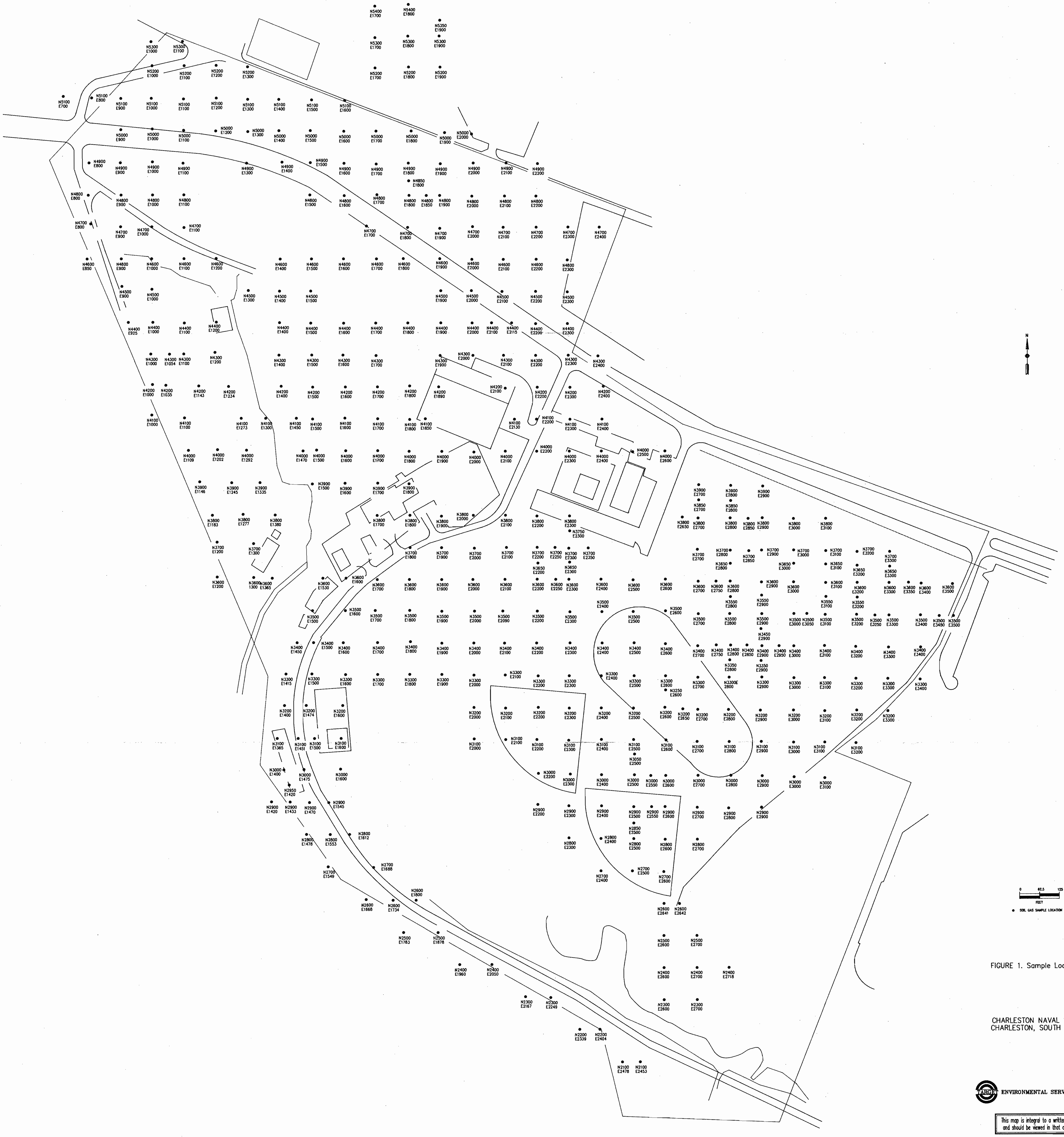


FIGURE 1. Sample Locations

CHARLESTON NAVAL SHIPYARD
CHARLESTON, SOUTH CAROLINA

ENVIRONMENTAL SERVICES, INC.

This map is integral to a written report and should be viewed in that context.

TABLE 1

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N640E900 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 |
| N685E935 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N760E970 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N810E1030 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N850E975 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N940E1040 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1047E1335 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1065E1335 | <1.0 | <1.0 | <1.0 | <1.0 | 1.3 |
| N1080E1310 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1080E1340 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1080E1380 | <1.0 | <1.0 | <1.0 | 1.6 | 41 |
| N1130E1310 | <1.0 | <1.0 | <1.0 | <1.0 | 11 |
| N1130E1350 | <1.0 | <1.0 | <1.0 | <1.0 | 3.4 |
| N1130E1380 | <1.0 | <1.0 | <1.0 | <1.0 | 2.6 |
| N2100E2453 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2100E2478 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2339 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 |
| N2200E2404 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2300E2167 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2300E2249 | <1.0 | <1.0 | <1.0 | <1.0 | 2.9 |
| N2300E2600 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N2300E2700 | <1.0 | <1.0 | <1.0 | <1.0 | 1.6 |
| N2400E1960 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E2050 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E2700 | <1.0 | <1.0 | <1.0 | <1.0 | 1.7 |
| N2400E2817 | <1.0 | <1.0 | <1.0 | <1.0 | 13 |
| N2500E1783 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2500E1878 | <1.0 | <1.0 | <1.0 | <1.0 | 3.0 |
| N2500E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2500E2700 | <1.0 | <1.0 | <1.0 | <1.0 | 9.5 |
| N2600E1668 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1734 | <1.0 | <1.0 | <1.0 | <1.0 | 2.2 |
| N2600E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E2641 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2700E1549 | <1.0 | <1.0 | <1.0 | <1.0 | 2.7 |
| N2700E1688 | <1.0 | <1.0 | 1.5 | 1.3 | 47 |
| N2700E2400 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N2700E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2700E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E1478 | <1.0 | <1.0 | <1.0 | <1.0 | 30 |
| N2800E1612 | <1.0 | <1.0 | <1.0 | <1.0 | 1.8 |
| N2800E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E2300 | <1.0 | 1.4 | <1.0 | <1.0 | 2.6 |
| N2800E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1]CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N2800E2500 | <1.0 | 2.1 | <1.0 | 2.0 | 11 |
| N2800E2600 | <1.0 | 1.8 | <1.0 | <1.0 | 7.2 |
| N2850E2500 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N2900E1420 | <1.0 | <1.0 | 4.0 | 17 | 2,099 |
| N2900E1470 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N2900E1545 | <1.0 | <1.0 | <1.0 | <1.0 | 11 |
| N2900E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2500 | 2.0 | <1.0 | <1.0 | 7.3 | 151 |
| N2900E2550 | <1.0 | <1.0 | <1.0 | <1.0 | 19 |
| N2900E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2950E1420 | <1.0 | <1.0 | <1.0 | <1.0 | 6.5 |
| N3000E1400 | <1.0 | <1.0 | <1.0 | <1.0 | 1.3 |
| N3000E1475 | 1.0 | 2.8 | 3.2 | 2.5 | 331 |
| N3000E1600 | <1.0 | <1.0 | 2.3 | 5.2 | 94 |
| N3000E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2500 | <1.0 | 2.3 | <1.0 | 5.7 | 90 |
| N3000E2550 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2700 | <1.0 | <1.0 | <1.0 | <1.0 | 11 |
| N3000E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3050E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1385 | <1.0 | <1.0 | <1.0 | <1.0 | 9.6 |
| N3100E1451 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1500 | 1.4 | <1.0 | <1.0 | <1.0 | 7.0 |
| N3100E1600 | <1.0 | <1.0 | <1.0 | 4.5 | 115 |
| N3100E2100 | <1.0 | 5.5 | 1.9 | 3.2 | 51 |
| N3100E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E3100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |

[1]CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3100E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E1474 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 |
| N3200E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2500 | <1.0 | 2.4 | 1.2 | 2.4 | 27 |
| N3200E2600 | 6.3 | <1.0 | 1.2 | 3.3 | 55 |
| N3200E2650 | <1.0 | 2.8 | <1.0 | <1.0 | 4.3 |
| N3200E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3250E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1415 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1500 | <1.0 | <1.0 | <1.0 | <1.0 | 4.7 |
| N3300E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1900 | <1.0 | <1.0 | <1.0 | 1.7 | 58 |
| N3300E2000 | <1.0 | <1.0 | <1.0 | <1.0 | 6.2 |
| N3300E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2800 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N3300E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3350E2800 | 1.1 | 1.1 | 42 | 45 | 465 |
| N3350E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1450 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1500 | <1.0 | <1.0 | <1.0 | <1.0 | 11 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3400E1600 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N3400E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | 5.8 |
| N3400E1900 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N3400E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2300 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N3400E2400 | <1.0 | <1.0 | <1.0 | <1.0 | 2.3 |
| N3400E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2750 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N3400E2800 | <1.0 | <1.0 | 3.7 | 4.3 | 100 |
| N3400E2850 | <1.0 | <1.0 | <1.0 | <1.0 | 1.9 |
| N3400E2900 | 7.3 | <1.0 | 14 | 25 | 777 |
| N3400E2950 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3450E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2090 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2700 | <1.0 | <1.0 | 2.7 | 3.1 | 38 |
| N3500E2800 | <1.0 | <1.0 | <1.0 | <1.0 | 2.1 |
| N3500E2900 | <1.0 | <1.0 | 5.5 | 11 | 197 |
| N3500E3000 | <1.0 | <1.0 | <1.0 | 1.6 | 39 |
| N3500E3050 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3100 | <1.0 | <1.0 | <1.0 | <1.0 | 4.9 |
| N3500E3200 | <1.0 | <1.0 | <1.0 | <1.0 | 1.8 |
| N3500E3250 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3300 | <1.0 | <1.0 | 2.9 | 9.6 | 201 |
| N3500E3400 | <1.0 | <1.0 | <1.0 | 11 | 147 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3500E3450 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N3550E3200 | <1.0 | <1.0 | <1.0 | <1.0 | 1.3 |
| N3600E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1365 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1530 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1600 | <1.0 | <1.0 | <1.0 | <1.0 | 3.6 |
| N3600E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2200 | <1.0 | <1.0 | <1.0 | 8.1 | 92 |
| N3600E2250 | 1.2 | <1.0 | 3.5 | 15 | 744 |
| N3600E2300 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N3600E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2750 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2800 | 1.2 | <1.0 | 11 | 24 | 546 |
| N3600E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3000 | 1.4 | 1.5 | 6.9 | 16 | 358 |
| N3600E3100 | <1.0 | 1.1 | <1.0 | 4.8 | 207 |
| N3600E3200 | 2.5 | <1.0 | 4.7 | 11 | 243 |
| N3600E3300 | <1.0 | <1.0 | 2.4 | 4.3 | 77 |
| N3600E3350 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2200 | <1.0 | <1.0 | <1.0 | <1.0 | 3.4 |
| N3650E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N3650E3200 | <1.0 | <1.0 | <1.0 | <1.0 | 84 |
| N3650E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E1800 | <1.0 | <1.0 | <1.0 | 3.2 | 48 |
| N3700E1900 | <1.0 | <1.0 | <1.0 | <1.0 | 1.7 |
| N3700E2000 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3700E2100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.9 |
| N3700E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2250 | <1.0 | <1.0 | <1.0 | <1.0 | 1.7 |
| N3700E2300 | <1.0 | <1.0 | <1.0 | 39 | 1,629 |
| N3700E2350 | <1.0 | 1.0 | <1.0 | <1.0 | 1.2 |
| N3700E2700 | <1.0 | <1.0 | <1.0 | 3.4 | 14 |
| N3700E2800 | <1.0 | <1.0 | 4.6 | 5.7 | 124 |
| N3700E2850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2900 | <1.0 | <1.0 | <1.0 | <1.0 | 2.7 |
| N3700E3000 | <1.0 | <1.0 | <1.0 | 1.6 | 4.8 |
| N3700E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3750E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1183 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1277 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1380 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1700 | <1.0 | <1.0 | <1.0 | <1.0 | 2.2 |
| N3800E1800 | <1.0 | <1.0 | <1.0 | <1.0 | 3.6 |
| N3800E1900 | <1.0 | <1.0 | <1.0 | <1.0 | 2.2 |
| N3800E2000 | <1.0 | <1.0 | <1.0 | <1.0 | 2.2 |
| N3800E2100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.8 |
| N3800E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2300 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 |
| N3800E2650 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2700 | <1.0 | <1.0 | 6.3 | 13 | 380 |
| N3800E2800 | 1.5 | <1.0 | 12 | 19 | 383 |
| N3800E2850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2900 | <1.0 | <1.0 | <1.0 | <1.0 | 5.2 |
| N3800E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3850E2700 | <1.0 | <1.0 | <1.0 | 3.2 | 36 |
| N3850E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1146 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1245 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1335 | <1.0 | <1.0 | <1.0 | <1.0 | 8.0 |
| N3900E1500 | <1.0 | <1.0 | <1.0 | <1.0 | 1.9 |
| N3900E1600 | <1.0 | <1.0 | <1.0 | <1.0 | 4.0 |
| N3900E1700 | <1.0 | <1.0 | <1.0 | <1.0 | 2.3 |
| N3900E1800 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 |
| N3900E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2800 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N3900E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1109 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1202 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| **REPORTING LIMIT** | **1.0** | **1.0** | **1.0** | **1.0** | **1.0** |
| N4000E1292 | <1.0 | <1.0 | <1.0 | <1.0 | 11 |
| N4000E1470 | <1.0 | <1.0 | <1.0 | <1.0 | 9.9 |
| N4000E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1600 | <1.0 | <1.0 | <1.0 | <1.0 | 2.2 |
| N4000E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1900 | <1.0 | <1.0 | <1.0 | <1.0 | 3.4 |
| N4000E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2300 | <1.0 | <1.0 | <1.0 | <1.0 | 2.4 |
| N4000E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2500 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 |
| N4000E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1000 | <1.0 | <1.0 | <1.0 | <1.0 | 4.7 |
| N4100E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1300 | <1.0 | 1.3 | <1.0 | 5.4 | 148 |
| N4100E1450 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1600 | <1.0 | <1.0 | <1.0 | <1.0 | 29 |
| N4100E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1850 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N4100E2130 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N4100E2200 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N4100E2300 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N4100E2400 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N4200E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1143 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1234 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1500 | <1.0 | <1.0 | <1.0 | <1.0 | 8.4 |
| N4200E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1700 | <1.0 | 1.1 | <1.0 | <1.0 | 2.0 |
| N4200E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1890 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E2200 | <1.0 | <1.0 | <1.0 | <1.0 | 1.8 |
| N4200E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1000 | <1.0 | 2.0 | <1.0 | <1.0 | 9.7 |
| N4300E1054 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N4300E1500 | <1.0 | <1.0 | 34 | 114 | 219 |
| N4300E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2000 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 |
| N4300E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E925 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1000 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N4400E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1400 | <1.0 | <1.0 | <1.0 | <1.0 | 5.9 |
| N4400E1500 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 |
| N4400E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N4400E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E900 | 1.1 | 1.4 | <1.0 | <1.0 | 4.6 |
| N4500E1000 | <1.0 | 1.5 | <1.0 | <1.0 | 5.7 |
| N4500E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E850 | <1.0 | 1.0 | <1.0 | <1.0 | 2.9 |
| N4600E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1000 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N4600E1100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N4600E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1400 | <1.0 | <1.0 | <1.0 | <1.0 | 2.7 |
| N4600E1500 | <1.0 | <1.0 | <1.0 | <1.0 | 14 |
| N4600E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1700 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N4600E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1]CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N4600E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E800 | <1.0 | <1.0 | <1.0 | <1.0 | 8.7 |
| N4700E900 | <1.0 | <1.0 | <1.0 | <1.0 | 2.4 |
| N4700E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E800 | <1.0 | <1.0 | <1.0 | <1.0 | 3.7 |
| N4800E900 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N4800E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.1 |
| N4800E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1800 | 8.9 | <1.0 | <1.0 | 1.7 | 185 |
| N4800E1850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1400 | <1.0 | <1.0 | <1.0 | <1.0 | 29 |
| N4900E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E2100 | <1.0 | <1.0 | <1.0 | <1.0 | 1.7 |
| N4900E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (μg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N5000E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E2000 | <1.0 | <1.0 | <1.0 | 1.8 | 48 |
| N5000E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1300 | <1.0 | <1.0 | <1.0 | <1.0 | 4.7 |
| N5100E1400 | <1.0 | <1.0 | <1.0 | <1.0 | 4.0 |
| N5100E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1800 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 |
| N5300E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5350E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5400E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| FIELD CONTROL SAMPLES | | | | | |
| 1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 7 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 9A | <1.0 | 1.4 | <1.0 | <1.0 | 6.1 |
| 9B | <1.0 | <1.0 | <1.0 | <1.0 | 3.2 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **FIELD CONTROL SAMPLES (cont)** | | | | | |
| 10 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 11 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 13 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 14 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 15 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 16 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 17 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 18 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 19 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 20 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 21 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 22 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 23 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 24 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 26 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 27 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 28 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 29 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 30 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 31 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 |
| 32 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| 33 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 34 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 35 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 36 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 37 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 38 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 39 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| **LABORATORY DUPLICATE ANALYSIS** | | | | | |
| 3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 3R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2404 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2404R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1734 | <1.0 | <1.0 | <1.0 | <1.0 | 2.2 |
| N2600E1734R | <1.0 | 1.0 | <1.0 | <1.0 | 2.3 |

[1]CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| LABORATORY DUPLICATE ANALYSIS (cont) | | | | | |
| N2900E2550 | <1.0 | <1.0 | <1.0 | <1.0 | 19 |
| N2900E2550R | <1.0 | <1.0 | <1.0 | <1.0 | 23 |
| N2900E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2550 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2550R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1500 | 1.4 | <1.0 | <1.0 | <1.0 | 7.0 |
| N3100E1500R | 1.4 | <1.0 | <1.0 | <1.0 | 6.3 |
| N3100E2100 | <1.0 | 5.5 | 1.9 | 3.2 | 51 |
| N3100E2100R | <1.0 | 4.9 | 1.9 | 3.3 | 46 |
| N3200E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2100R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2100R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2400 | <1.0 | <1.0 | <1.0 | <1.0 | 2.3 |
| N3400E2400R | <1.0 | <1.0 | <1.0 | <1.0 | 2.1 |
| N3400E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2700R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3200 | <1.0 | <1.0 | <1.0 | <1.0 | 1.3 |
| N3550E3200R | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 |
| N3600E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2400R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2200 | <1.0 | <1.0 | <1.0 | <1.0 | 3.4 |
| N3650E2200R | <1.0 | <1.0 | <1.0 | <1.0 | 3.0 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **LABORATORY DUPLICATE ANALYSIS (cont)** | | | | | |
| N3650E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2800 | 1.5 | <1.0 | 12 | 19 | 383 |
| N3800E2800R | 1.5 | <1.0 | 11 | 18 | 348 |
| N3900E2800 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| 03900E2800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2600R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2200 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N4100E2200R | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 |
| N4200E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1600R | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 |
| N4200E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | 1.5 |
| N4400E1800R | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 |
| N4600E850 | <1.0 | 1.0 | <1.0 | <1.0 | 2.9 |
| N4600E850R | <1.0 | <1.0 | <1.0 | <1.0 | 2.6 |
| N4600E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1500R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **LABORATORY DUPLICATE ANALYSIS (cont)** | | | | | |
| N4900E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| **LABORATORY BLANKS** | | | | | |
| 3B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2404B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1734B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2550B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2550B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1500B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2100B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2100B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2100B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2700B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2130B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1] CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TABLE 1 (CONT)

ANALYTE CONCENTRATIONS VIA GC/FID (µg/l)

| SAMPLE | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENES | TOTAL FID VOLATILES[1] |
|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| LABORATORY BLANKS (cont) | | | | | |
| N4200E1600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E850B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1500B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

[1]CALCULATED USING THE SUM OF THE AREAS OF ALL INTEGRATED CHROMATOGRAM PEAKS AND THE INSTRUMENT RESPONSE FACTOR FOR TOLUENE

TARGET Project MECS

<u>TABLE 2</u>

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N640E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N685E935 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N760E970 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N810E1030 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N850E975 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N940E1040 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1047E1335 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1065E1335 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1080E1310 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1080E1340 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1080E1380 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1130E1310 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1130E1350 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N1130E1380 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2100E2453 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2100E2478 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2339 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2404 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2300E2167 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2300E2249 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2300E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2300E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E1960 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E2050 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2400E2817 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2500E1783 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2500E1878 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2500E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2500E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1668 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1734 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E2641 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2700E1549 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2700E1688 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2700E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2700E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2700E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N2800E1478 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E1612 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2800E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2850E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E1420 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E1470 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E1545 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2550 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2950E1420 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E1475 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2550 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3050E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1385 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1451 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene

$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (μg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3100E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E1474 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2600 | <1.0 | <1.0 | <1.0 | 122 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2650 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3250E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1415 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

## TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (μg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3300E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3350E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3350E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1450 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2750 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2950 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3450E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3500E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2090 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3050 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3250 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3400 | 2.5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3450 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E3500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1365 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1530 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2250 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

| | | | | | |
|---|---|---|---|---|---|
| 11DCE | = | 1,1-dichloroethene | $CH_2Cl_2$ | = | methylene chloride |
| t12DCE | = | trans-1,2-dichloroethene | 11DCA | = | 1,1-dichloroethane |
| c12DCE | = | cis-1,2-dichloroethene | $CHCl_3$ | = | chloroform |
| 111TCA | = | 1,1,1-trichloroethane | $CCl_4$ | = | carbon tetrachloride |
| TCE | = | trichloroethene | 112TCA | = | 1,1,2-trichloroethane |
| PCE | = | tetrachloroethene | | | |

TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3600E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2750 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3350 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2250 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2350 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2700 | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3700E3300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3750E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N3800E1183 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1277 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1380 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E1900 | 7.9 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2000 | 70 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2650 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E3100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3850E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3850E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1146 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1245 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1335 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1109 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1202 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1292 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1470 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

**TABLE 2 (CONT)** — **TARGET Project NECS**

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N4000E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1450 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2130 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1143 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1234 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1890 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1054 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

## TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N4300E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E925 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4500E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N4600E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

## TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| N4900E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5300E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5350E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5400E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

## TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **FIELD CONTROL SAMPLES** | | | | | | | | | | | |
| 1 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 2 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 4 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 6 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 7 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 8 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 9A | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | 1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 9B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 10 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 11 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 13 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 14 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 15 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 16 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 17 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 18 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 19 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 20 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 21 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 22 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 23 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 24 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 25 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 26 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 27 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 28 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 29 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 30 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 31 | 21 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 32 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 33 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 34 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 35 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 36 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 37 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 38 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 39 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene

$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

TABLE 2 (CONT) TARGET Project MECS

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| LABORATORY DUPLICATE ANALYSIS | | | | | | | | | | | |
| 3 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 3R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2404 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2404R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1734 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1734R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2550 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2550R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2550 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2550R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1500R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2100R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2100R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2100 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2100R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2400R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene

$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **LABORATORY DUPLICATE ANALYSIS** | | | | | | | | | | | |
| N3400E2700 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2700R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2400R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2600R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1600R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

## TABLE 2 (CONT)

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **LABORATORY DUPLICATE ANALYSIS** | | | | | | | | | | | |
| N4300E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E850 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E850R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1200 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1200R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1500 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1500R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E900 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E900R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000R | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| **LABORATORY BLANKS** | | | | | | | | | | | |
| 3B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 5B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| 12B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2200E2404B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2600E1734B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene
$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

ANALYTE CONCENTRATIONS VIA GC/ECD (µg/l)

| SAMPLE | 11DCE | $CH_2Cl_2$ | t12DCE | 11DCA | c12DCE | $CHCl_3$ | 111TCA | $CCl_4$ | TCE | 112TCA | PCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| REPORTING LIMIT | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| **LABORATORY BLANKS (cont)** | | | | | | | | | | | |
| N2900E2550B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N2900E2900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2550B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3000E2900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E1500B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3100E2100B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3200E2100B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E1700B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3300E2100B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3400E2700B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3500E2300B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3550E3200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E2400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3600E3400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E2200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3650E3000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3800E2800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N3900E2800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4000E2600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E1273B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4100E2130B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4200E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1400B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4400E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4300E1200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E850B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4600E1200B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4700E1900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E1500B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4800E2000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4850E1800B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N4900E900B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5000E1600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5100E1600B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |
| N5200E1000B | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 | <1.0 |

11DCE = 1,1-dichloroethene
t12DCE = trans-1,2-dichloroethene
c12DCE = cis-1,2-dichloroethene
111TCA = 1,1,1-trichloroethane
TCE = trichloroethene
PCE = tetrachloroethene

$CH_2Cl_2$ = methylene chloride
11DCA = 1,1-dichloroethane
$CHCl_3$ = chloroform
$CCl_4$ = carbon tetrachloride
112TCA = 1,1,2-trichloroethane

## APPENDIX B

## INTERPRETED SUBSURFACE FEATURES, SWMU #9

**Appendix B**
**Interpreted Subsurface Features, SWMU #9**

| Soil Gas Anomaly Number & Characteristics[a] | Anomaly Number[b] | Priority Levels[c] | Notes & Recommendations |
|---|---|---|---|
| SG-1<br>TV = 5.7<br>benzene = 1.1 | 1 | L | • General location only; no geophysics data |
| SG-2<br>TV = 29 | 2 | L | • General location only; no geophysics data |
| SG-3<br>TV = 185<br>benzene = 8.9<br>xylene = 1.7 | 3<br>4<br>5<br>6<br>7 | L<br>M<br>H<br>M<br>L | • Detail-grid geophysical data available for pinpointing sampling or trenching location. |
| SG-4<br>TV = 48<br>xylene = 1.8 | 8 | L | • General location only; no geophysical data. Source could be SWMU #8 (oil sludge pits) rather than SWMU #9 (landfill). |
| SG-5<br>TV = 148<br>toluene = 1.3<br>xylene = 5.4 | 9 | L | • Recommend visual search for sources in or near the stream nearby; numerous industrial scrap metals seen in the stream. |
| SG-6<br>TV = 219<br>ethylbenzene = 34<br>xylene = 114 | 10 | M | • Located in rubble piles which are being constantly shifted and bulldozed. No geophysics data due to activity & surface metals. Creosote-soaked wood blocks noted nearby on the surface. Visual inspection of surface and of bulldozed rubble recommended. |
| SG-7<br>TV = 29<br>toluene = 1.1 | 11<br><br>12<br>13<br>14 | L<br><br>L<br>L<br>L | • SG-7 located on a 5m high rubble/soil hill which was bulldozed flat following field work. |
| SG-8<br>TV = 48<br>xylene = 3.2 | 15 | L | • SG-8 is in the vicinity of a contractor's trailer and piled junk. General location only; geophysics anomalies partly masked by culture. |

## Appendix B
## Interpreted Subsurface Features, SWMU #9

| Soil Gas Anomaly Number & Characteristics[a] | Anomaly Number[b] | Priority Levels[c] | Notes & Recommendations |
|---|---|---|---|
| SG-9<br>TV - 2.2<br>1,1-DCE .= 70 | 16 | L | • SG-9 is in a fenced yard where asphalt and/or bottom ash is sometimes piled up. General location only; no geophysics data. Main concern is high 1,1-DCE measurement |
| | 17 | H | • General location centered on high 1,1-DCE measurement at 3800N/2000E. If rubble has been cleared, possible use of geophysics to pinpoint sampling locations in the fenced yard. |
| SG-10<br>TV=2099<br>benzene = 1.4<br>toluene = 2.8<br>ethylbenzene = 4.0<br>xylene = 17 | — | | SG-10 is semi-contiguous and may have one or multiple sources: landfill material, storage bins, or the recycling plant. Highest volatiles number on SW part of anomaly near storage bins.<br><br>Note proximity to marsh & possibility of contaminant loss to tidal waters. Rust-colored waters & some foul smells located in parts of marsh waters at landfill's SW boundary. Recommend sediment & water sampling in marsh S & SE of SG-10. Note also possibility of contaminant loss across W boundary fence into Shipyard Creek. |
| | 18 | H | • Highest volatiles number in SG-10. General location; geophysics data not available. If a source is found, note possible loss of contaminants to W into Shipyard Creek.<br>• Surface visual check first; anomaly might be due to considerable surface metals. |
| | 19 | M | • Surface visual check first; anomaly might be due to near-surface metals at edge of landfill. |
| | 20 | M | • Surface visual check first; anomaly could be due to near-surface metal. Geophysics suggests shallow source. |
| | 21 | M | • General location of search if results inconclusive over anomalies 18-21. |
| | 22 | L | |
| SG-11<br>TV=47<br>ethylbenzene = 1.5<br>xylene = 1.3 | 23 | L | • Strongest volatile number at 2700N/1688E, on built-up NE side of dirt road. General location only; geophysics limited by culture. |

**Appendix B**
**Interpreted Subsurface Features, SWMU #9**

| Soil Gas Anomaly Number & Characteristics[a] | Anomaly Number[b] | Priority Levels[c] | Notes & Recommendations |
|---|---|---|---|
| SG-12<br>TV = 58<br>xylene = 1.7 | — | — | SG-12 south of junk-filled contractor's storage yard in an area with little surface cover. Visual surface inspection of anomalies recommended before sampling.<br><br>• Highest volatiles number at this location |
| | 24 | L | • Small, shallow source indicated. |
| | 25 | L | • Larger or deeper source indicated. |
| | 26 | L | • General search area if results from anomalies 24-26 are inconclusive. Consider surface junk in contractor's yard as possible source. Note that junk is moved regularly in this area, so original source (if any) may be gone. |
| | 27 | L | |
| SG-13<br>TV = 51<br>toluene = 5.5 | — | — | SG-13 at edge of marsh. Sediment/soil sampling in semi-dry tidal flats to SW recommended to investigate potential for contaminant migration into tidal waters. |
| ethylbenzene = 1.9 | 28 | L | • Anomalies 28 & 29 may be one linear feature. |
| xylene = 3.2 | 29 | L | |
| | 30 | M | • Shallow source suggested by geophysics. |
| | 31 | L | |
| | 32 | L | |
| SG-14 | 33 | M | |
| TV = 151 | 34 | L | |
| benzene = 2.0 | 35 | M | • Shallow source indicated |
| toluene = 2.3 | 36 | L | • Shallow source indicated |
| xylene = 7.3 | 37 | L | • Shallow source indicated |
| | 38 | M | • Shallow source indicated |
| | 39 | M | • Shallow source indicated |
| | 40 | L | |
| | 41 | L | • Located on weak magnetic linear |
| | 42 | M | |

**Appendix B**
**Interpreted Subsurface Features, SWMU #9**

| Soil Gas Anomaly Number & Characteristics[a] | Anomaly Number[b] | Priority Levels[c] | Notes & Recommendations |
|---|---|---|---|
| SG-15 | — | — | Benzene and 1,1-DCA data at 3200N/2500E are main concerns. Multiple geophysical anomalies in this area. |
| TV = 55 | | | |
| benzene = 6.3 | | | |
| toluene = 2.8 | 43 | L | |
| ethylbenzene = 1.2 | 44 | M | |
| xylene = 3.3 | 45 | L | • Poorly defined anomaly. |
| 1,1-DCA = 122 | 46 | M | • Strong magnetic response does not necessarily make this the best target. |
| | 47 | M | • Shallow source indicated. |
| | 48 | H | • Best target due to position & geophysical definition. |
| | 49 | M | |
| | 50 | M | |
| | 51 | L | • General investigation area if anomalies 43-50 yield inconclusive results. |
| SG-16 | — | — | Complex anomaly with one or multiple sources. Northern lobe in an area with little surface cover over landfill metal trash; note its position SW of buildings & parking lot. Southern lobe partly in contractor's fenced yard where tractor-trailers & metal junk were located (junk removed after field work). Two stations with total volatiles over 500 $\mu$g/l. |
| TV = 1629 | | | |
| benzene = 1.2 | | | |
| toluene - 1.0 | | | |
| ethylbenzene = 3.5 | | | |
| xylene = 39 | | | • Southern lobe. Larch search area includes several geophysics anomalies. Extend |
| | 52 | H | investigation to SW if results inconclusive. |
| | | | • Northern lobe. Note surface metals in area. |
| | 53 | H | • Strong, sharply-defined magnetic anomaly does not necessarily make it the best target. |
| | 54 | H | |
| SG-17 | 55 | L | • It is possible that SG-17 may be related to SG-18 and/or SG-19. |
| TV = 383 | 56 | L | |
| benzene = 1.5 | 57 | L | |
| ethylbenzene = 12 | 58 | L | |
| xylene = 19 | 59 | M | |
| 1,1-DCE = 1.2 | 60 | M | |
| $CHCl_3$ = 1.6 | 61 | M | |
| | 62 | L | |
| | 63 | L | • General investigation area if specific site analyses are inconclusive. |

Appendix B
Interpreted Subsurface Features, SWMU #9

| Soil Gas Anomaly Number & Characteristics[a] | Anomaly Number[b] | Priority Levels[c] | Notes & Recommendations |
|---|---|---|---|
| SG-19<br>TV = 777<br>benzene = 7.3<br>toluene = 1.5<br>ethylbenzene = 42<br>xylene = 45<br>1,1-DCE = 2.5 | — | — | • SG-19 is a long, apparently contiguous anomaly which could have one or multiple sources. Part of it seems to correlate with the edge of the landfill, and as such poses the question of possible migration of contaminants off the landfill. Suggest sampling N & NE of the anomaly. Individual analyte concentrations show no strong patterns. Note that SW lobe crosses Linear A. |
| | 69 | M | • On linear A. Trench recommended to sample anomaly 69 and Linear A |
| | 70 | M | • Over high volatile data point |
| | 71 | H | • Not well defined geophysically; complex |
| | 72 | L | • Not well defined geophysically; complex |
| | 73 | L | • High-resolution magnetics grid available to further pinpoint locations |
| | 74 | L | • On highest-volatile data point |
| | 75 | H | |
| | 76 | M | • Well defined magnetic anomaly. |
| | 77 | M | • Well defined; shallow source indicated |
| | 78 | M | |
| | 79 | M | |
| | 80 | L | • Shallow source indicated. |
| | 81 | L | • Shallow source indicated. |
| | 82 | L | |
| | 83 | H | |
| | 84 | M | |
| | 85 | L | |
| | 86 | L | |
| | 87 | L | |
| | 88 | M | |
| | 89 | L | |
| | 90 | L | |
| | 91 | L | |
| | 92 | L | |
| | 93 | L | • Long, linear anomaly |
| | 94 | L | |
| | 95 | | |

| Appendix B<br>Interpreted Subsurface Features, SWMU #9 | | | |
|---|---|---|---|
| **Soil Gas Anomaly Number & Characteristics**[a] | **Anomaly Number**[b] | **Priority Levels**[c] | **Notes & Recommendations** |
| SG-18<br>TV = 546<br>benzene = 1.2<br>ethylbenzene = 11<br>xylene = 24 | — | — | Station 3600N/2800E shows elevated total volatiles. SG-18 may be related to SG-17 and/or SG-19 |
| | 64 | L | |
| | 65 | L | |
| | 66 | H | • Well defined magnetic anomaly |
| | 67 | L | |
| | 68 | L | • General investigation area if specific site analyses are inconclusive. |

| Appendix B<br>Interpreted Subsurface Features, SWMU #9 | | | |
|---|---|---|---|
| Soil Gas Anomaly Number & Characteristics[a] | Anomaly Number[b] | Priority Levels[c] | Notes & Recommendations |
| SG-19 - (Continued) | 95<br>96<br>97<br>98<br>99 | M<br>H<br>L<br>M<br>L | • Anomalous area; hard to identify specific priorities within it.<br>• General SG-19 investigation area. A number of geophysical targets exist within this area and may be followed up, depending on the results from anomalies 69-98. |
| NONE<br>Power Substation | 1001<br>1002 | L<br>L | • Strong geophysical anomaly; but low priority |
| NONE<br>Near SG-16 | 1003 | L | • Well defined geophysical anomaly |
| NONE<br>Linears | -<br>1004<br>1005<br>1006<br>1007<br>1008<br>1009<br>1010<br>1011<br>1012 | —<br>M<br>M<br>L<br>L<br>M<br>M<br>M<br>L<br>M | • Trenches or pits recommended at some of these sites to investigate their origin; particularly if they are caused by drums. Sites are selected partly on enhanced magnetic responses.<br>• Linear E<br>• Intersection of Linears E & F. Trench recommended here<br>• Linear F<br>• Linear E<br>• Linear H<br>• Linear D<br>• Linear C - Trench recommended<br>• Linear G<br>• Linear A - Trench recommended if work of anomaly 69 inconclusive. The SE portion of Linear A might be worth investigating, depending on these results. Definition of Linear A's origin is a top priority. In particular, the possibility of a migration channel for leachate should be addressed. |
| NONE<br>Linears (Continued) | 1013<br>1014 | M<br>L | • Linear B - Trench is an option<br>• Linear B |

| Appendix B<br>Interpreted Subsurface Features, SWMU #9 | | | |
|---|---|---|---|
| Soil Gas Anomaly Number & Characteristics[a] | Anomaly Number[b] | Priority Levels[c] | Notes & Recommendations |
| NONE<br>SE ballfield area | 1015<br>1016 | L<br>L | • Well defined magnetic anomaly in ballfield<br>• NE of ballfield |
| NONE<br>Miscellaneous | 1017<br>1018<br><br>1019<br>1020 | L<br>L<br><br>M<br>L | • Strong magnetic anomaly<br>• Well defined anomaly in bird sanctuary; tests whether or not a problem might exist in this area<br>• Near post office<br>• Well defined anomaly outside landfill near post office |

**Notes:**

a See figure 4-4 for locations. Maximum soil-gas concentrations in small print ($\mu$g/l); TV = total FID volatiles. All soil-gas components above the detection level are reported.

b See Plate 1 (back pocket) for locations.

c H = highest, M = medium, L = lower. See text for details.

## APPENDIX C
## INTERPRETED SUBSURFACE FEATURES, SWMU #14

## Appendix C
## Interpreted Subsurface Features, SWMU #14

| Anomaly Number[a] | Priority Level[b] | Notes & Recommendations |
|---|---|---|
| 1 | L | Tested with soil-gas survey: TV[c] = 1.4. On bulldozed berm; could be due to bulldozed scrap metals. |
| 2 | L | Poorly defined geophysical anomaly; follow up not a priority. |
| 3 | L | Tested with soil-gas survey: all values below detection limits well defined geophysical anomaly. |
| 4 | M | Well-defined |
| 5 | M | Well-defined |
| 6 | H | Well-defined anomaly, possibly a single source. |
| 7 | H | Slightly linear, posing the possibility of several features in a line. High priority for soil sampling. |
| 8 | M | |
| 9 | L | Negative magnetic anomaly. |
| 10 | L | Negative magnetic anomaly. Tested with soil-gas survey: all values below detection limits. No followup recommended. |
| 11 | M | Tested with soil-gas survey: all values below detection limits. One of the largest, best-defined geophysical anomalies. Sampling needed to see if soil-gas correlates with soil-samples analyses. |
| 12 | L | Negative magnetic anomaly. No followup recommended. |
| 13 | M | Tested with soil-gas survey: all values below detection limits. Well defined magnetic anomaly. |
| 14 | H | Well-defined anomaly. |
| 15 | L | Negative magnetic anomaly. |
| 16 | M | Tested with soil-gas survey: all values below detection limits. Fairly well-defined geophysically. |
| 17 | L | Weak geophysical anomaly. |
| 18 | M | Complex, possibly multiple anomaly; difficult to depict source location. Its location near the incineration plant and working areas suggests sampling here. |
| 19 | M | |
| 20 | M | |
| 21 | M | Small amplitude but well defined anomaly. |
| 22 | L | Very small, weak anomaly; possibly just burned trash |
| 23 | H | Tested with soil-gas survey: all values below detection limits. Very well-defined anomaly. Sampling recommended. |
| 24 | H | Large or deeper source, very well-defined. Sampling or excavation recommended. |

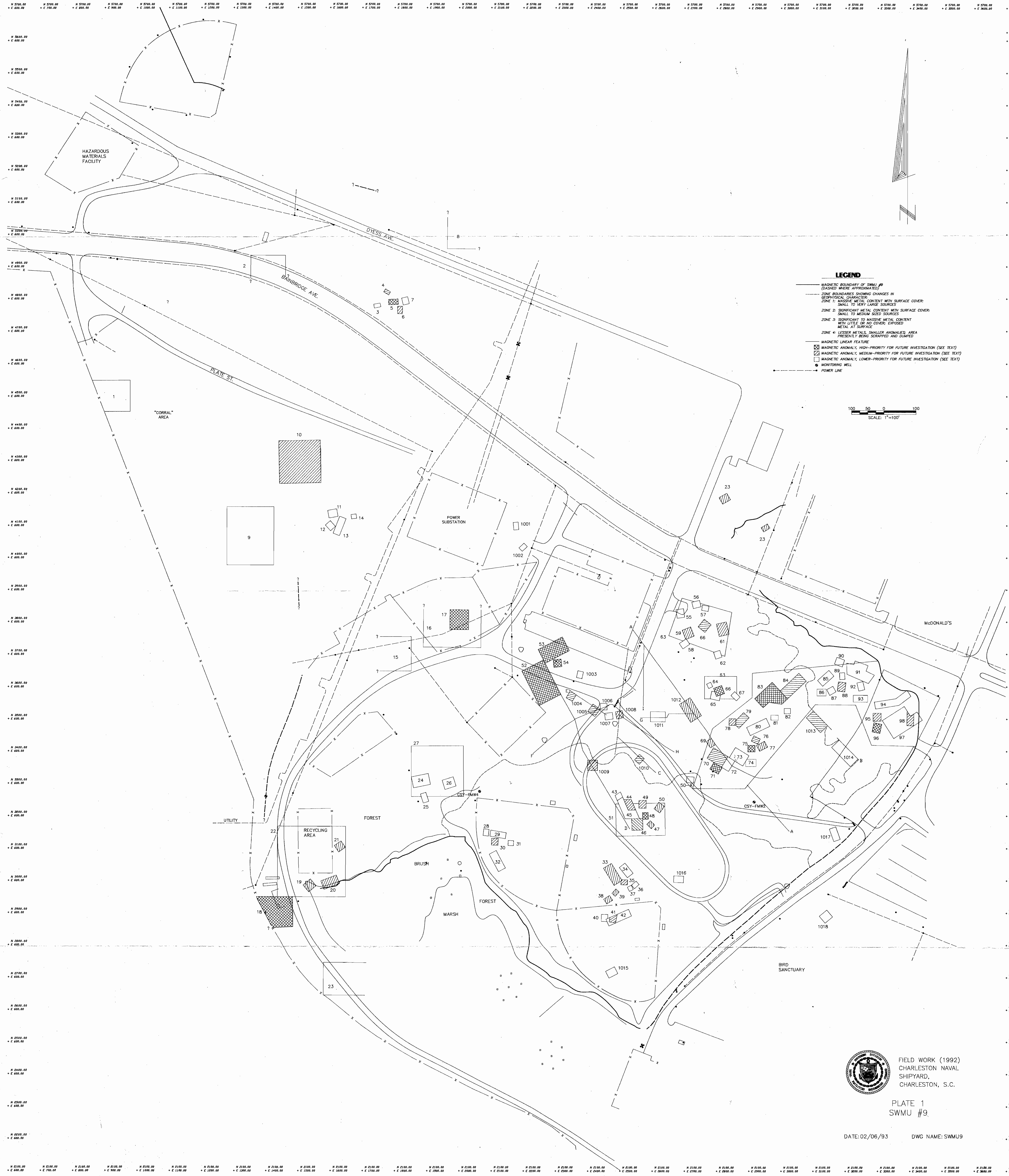
| Appendix C<br>Interpreted Subsurface Features, SWMU #14 | | |
|---|---|---|
| **Anomaly Number[a]** | **Priority Level[b]** | **Notes & Recommendations** |
| 25 | M | Tested with soil-gas survey: TV = 1.3. Anomaly only fairly defined. Sampling possibility. |
| 26 | L | Fair definition to anomaly. |
| 27 | M | |
| 28 | M | Tested with soil-gas survey: TV = 11. Not a well defined anomaly, but merits soil sampling. |
| 29 | M | Well defined anomaly. Should be sampled. |
| 30 | M | Subtle anomaly; sampling possibility. |
| 31 | L | Moderate definition. Followup optional. |
| 32 | L | Poor definition; possible cultural origin. |
| 33 | L | Poor definition; possible cultural origin. |
| 34 | M | Tested with soil-gas survey in nearby location: TV = 2.6. Fairly good definition. |

**Notes:**

[a] See Figure 5-10 for locations.

[b] H = highest; M = medium; L = lower. See test for details.

[c] TV = total FID volatiles ($\mu$g/l).


HAZARDOUS MATERIALS FACILITY
DYESS AVE.
BAINBRIDGE AVE.
PLATE ST.
"CORRAL" AREA
POWER SUBSTATION
McDONALD'S
UTILITY
RECYCLING AREA
FOREST
BRUSH
MARSH
FOREST
BIRD SANCTUARY
CSY-FMW4
CSY-FMW2
LEGEND
MAGNETIC BOUNDARY OF SWMU #9 (DASHED WHERE APPROXIMATED)
ZONE BOUNDARIES SHOWING CHANGES IN GEOPHYSICAL CHARACTER:
ZONE 1: MASSIVE METAL CONTENT WITH SURFACE COVER: SMALL TO VERY LARGE SOURCES
ZONE 2: SIGNIFICANT METAL CONTENT WITH SURFACE COVER: SMALL TO MEDIUM SIZED SOURCES
ZONE 3: SIGNIFICANT TO MASSIVE METAL CONTENT WITH LITTLE OR NO COVER; EXPOSED METAL AT SURFACE
ZONE 4: LESSER METALS, SMALLER ANOMALIES; AREA PRESENTLY BEING SCRAPPED AND DUMPED
MAGNETIC LINEAR FEATURE
MAGNETIC ANOMALY, HIGH-PRIORITY FOR FUTURE INVESTIGATION (SEE TEXT)
MAGNETIC ANOMALY, MEDIUM-PRIORITY FOR FUTURE INVESTIGATION (SEE TEXT)
MAGNETIC ANOMALY, LOWER-PRIORITY FOR FUTURE INVESTIGATION (SEE TEXT)
MONITORING WELL
POWER LINE
100 50 0 100
SCALE: 1"=100'
SOUTHERN DIVISION NAVAL FACILITIES ENGINEERING COMMAND
FIELD WORK (1992)
CHARLESTON NAVAL SHIPYARD,
CHARLESTON, S.C.
PLATE 1
SWMU #9
DATE: 02/06/93
DWG NAME: SWMU9

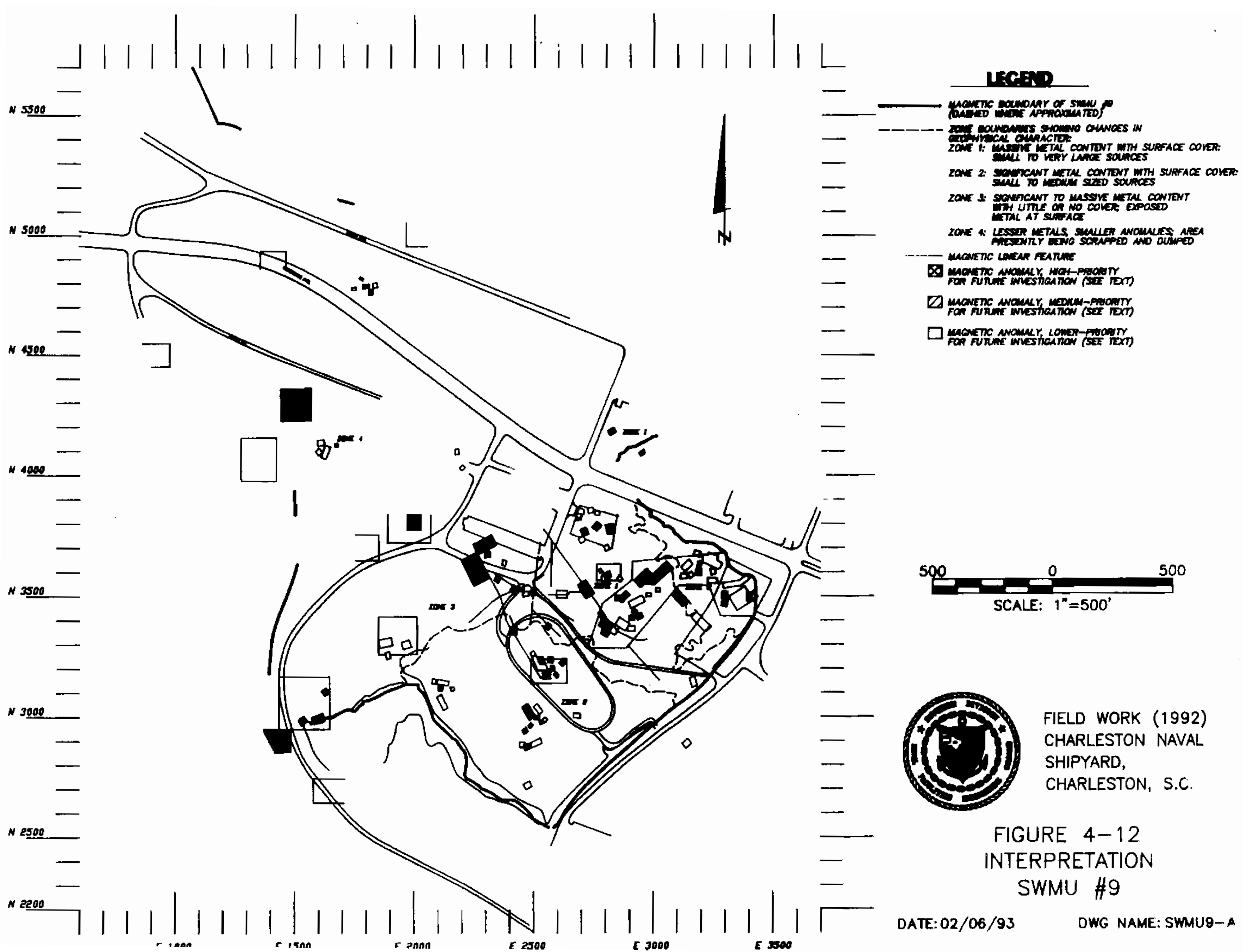
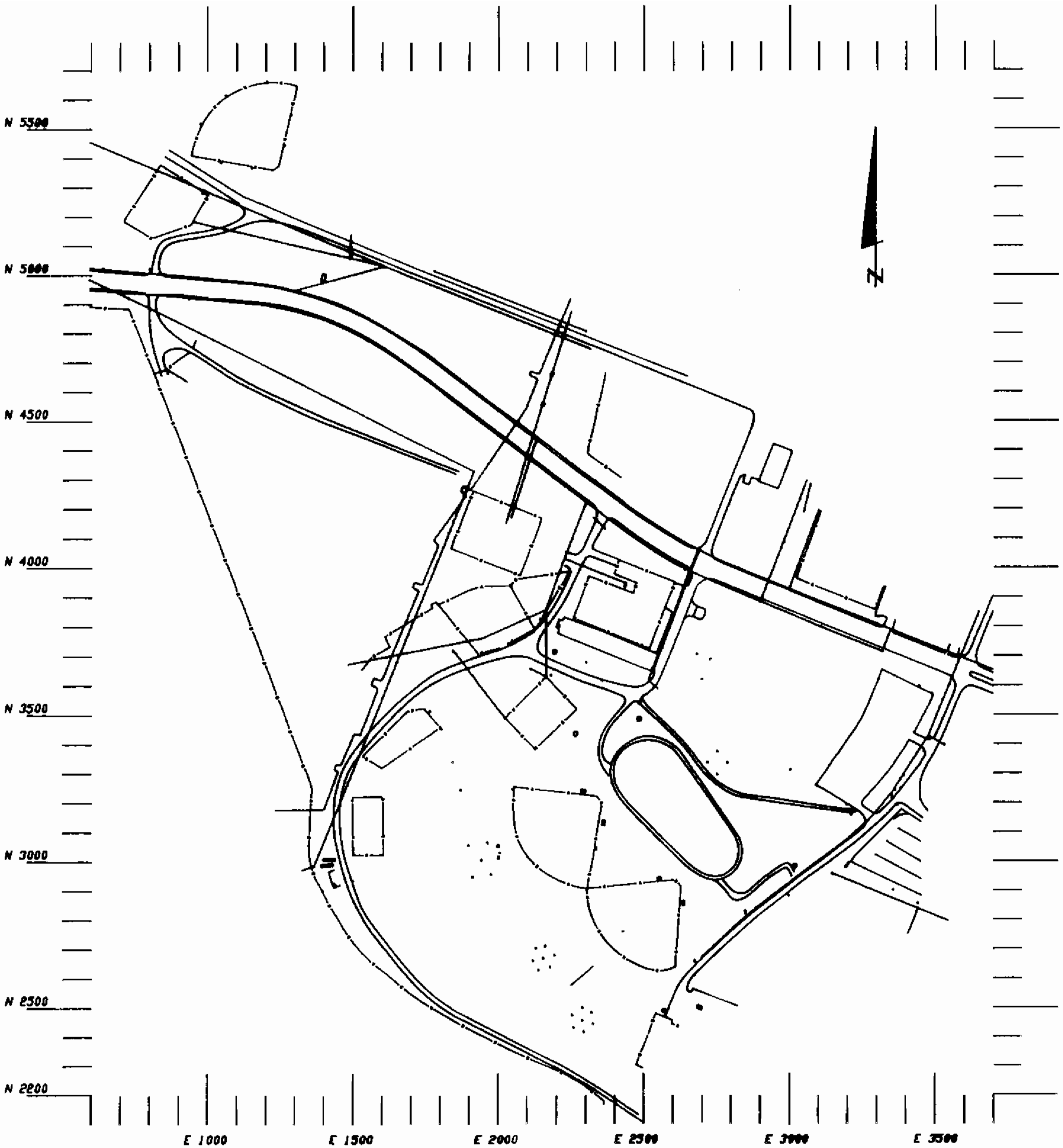



FIGURE 4-12
INTERPRETATION
SWMU #9




LEGEND

UTILITIES

FENCE

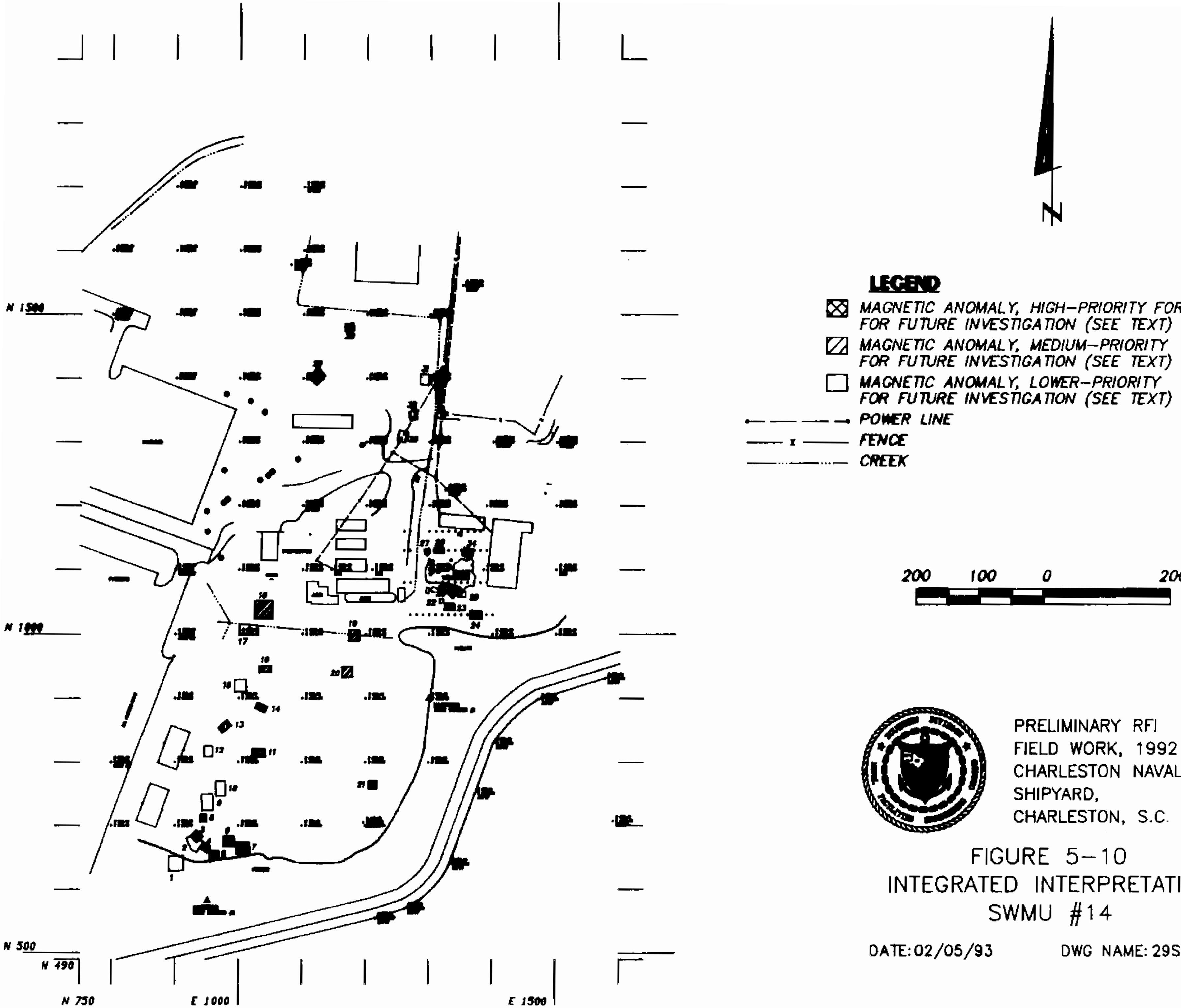
500 0 500

SCALE: 1"=500'

FIELD WORK (1992)
CHARLESTON NAVAL
SHIPYARD,
CHARLESTON, S.C.

FIGURE 4–1
BASE MAP
SWMU #9

DATE: 02/06/93 DWG NAME: SWMU9–A



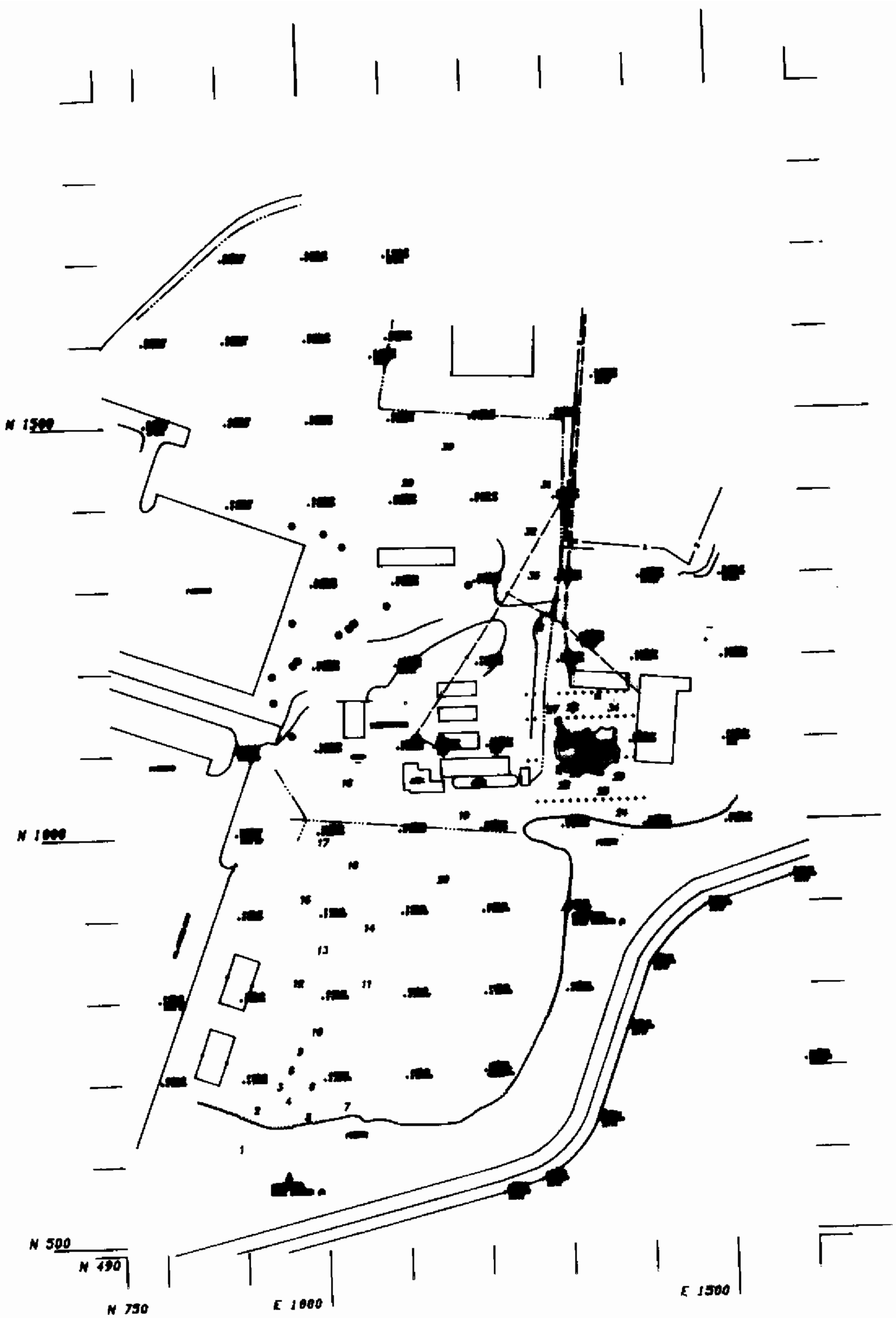

**LEGEND**

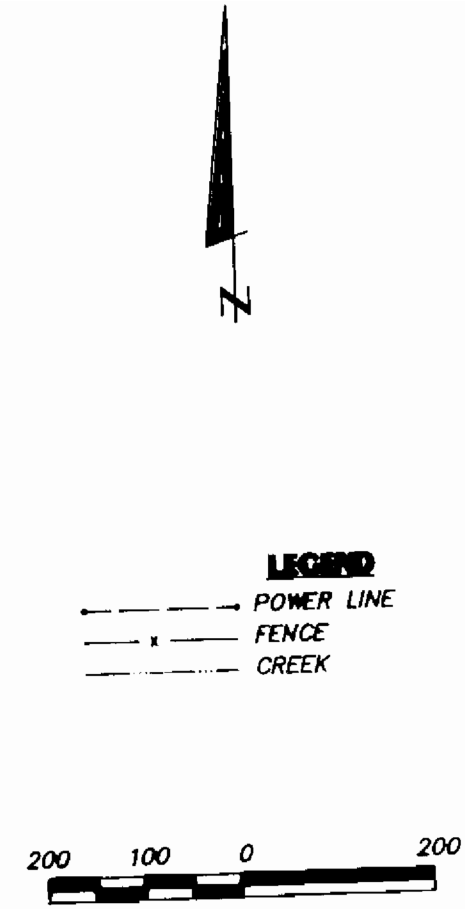
- MAGNETIC ANOMALY, HIGH-PRIORITY FOR FOR FUTURE INVESTIGATION (SEE TEXT)
- MAGNETIC ANOMALY, MEDIUM-PRIORITY FOR FUTURE INVESTIGATION (SEE TEXT)
- MAGNETIC ANOMALY, LOWER-PRIORITY FOR FUTURE INVESTIGATION (SEE TEXT)
- POWER LINE
- FENCE
- CREEK

PRELIMINARY RFI
FIELD WORK, 1992
CHARLESTON NAVAL
SHIPYARD,
CHARLESTON, S.C.

FIGURE 5-10
INTEGRATED INTERPRETATION
SWMU #14

DATE: 02/05/93 DWG NAME: 29SWMU14




PRELIMINARY RFI
FIELD WORK, 1992
CHARLESTON NAVAL
SHIPYARD,
CHARLESTON, S.C.

FIGURE 5–1
BASE MAP
SWMU #14

DATE: 02/05/93

DWG NAME: 29SWMU14