US EPA RECORDS CENTER REGION 5

1000706

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

RCRA Facility Assessment Summary

Keystone Steel and Wire
Peoria, IL
ILD 000 714 881
September, 1989

1. Introduction

A RCRA Facility Assessment (RFA) was completed for Keystone Steel and Wire, Bartonville Plant in Peoria, Illinois. The main objective of the RFA was to determine whether there is sufficient evidence of, or the potential for, a release of hazardous waste or hazardous constituents. Evidence of a release would require the Keystone Group to undertake additional investigations to characterize the nature, extent, and rate of migration of the contaminant releases of concern. With information gained from the investigation, appropriate corrective measures can then be undertaken. The reasoning for additional investigations is to protect human health and the environment.

The RFA for Keystone included: (1) a Preliminary Review (PR) of all available files, and (2) Visual Site Inspections (VSI) on October 27, 1987 and November 10, 1987, and (3) a Sampling Visit (SV) on December 8th and 9th 1987.

The PR and VSI revealed that the Keystone facility has several Solid Waste Management Units (SWMUs) which need further investigation.

2. General

The following is a summary of the main activities of the facility and a brief description of the waste products and the solid waste management units of concern.

The Keystone Group, Bartonville Plant is located at 7000 South Adams Street, Peoria County, Peoria Illinois 61641. The facility is just east of U.S. Route 24, south of the intersection of Route 24 and Route 474, and about one mile west of the Illinois River. Keystone has operated at this site since around 1900. The facility occupies about 1410 acres. The actual manufacturing area is much smaller. The surrounding area is industrial and residential.

This facility manufactures iron and steel including semi-finished and finished wire products, producing nails, barbed wire, and fence wire. Hot rolled iron and steel products and cold drawn carbon steel wire are the main production methods.

In Keystone's original Part A, listed wastes included: K061, K062, and K063. The K063 has been delisted. The process codes for K061 include S03 and D80. The K062 has process code T04. There are presently no

RCRA units at the facility. Keystone successfully had their Part A withdrawn due to protective filing a delisting. However, RCRA enforcement has pursued clean-up of earthen ditches which were used to send spent pickle liquor (K062) to the WWTP. The earthen ditches were essentially surface impoundments, resulting in Keystone being in violation of RCRA and now having interim status. Keystone is not seeking a permit, although they are a generator.

Up until October 1, 1986, sulfuric and hydrochloric waste acids used in cleaning and galvinizing were diluted with large quantities (5,000,000 galllons/day) of plant water before discharge into the surface impoundments. This was discharged to the Mid-Mill Ditch and South Ditch via a drainage ditch. The water flowed from the North Ditch (impoundment), to the Mid-Mill Ditch to the South Ditch. From the South Ditch the wastewater, via sump pump, was placed in the 24 hour retention reservoir (see attached maps). Before this water was sent to Keystones WWTP, it was again mixed with more water. The South Ditch was eventually dredged, leaving two "hazardous" piles.

The facility managed a K061 (electric arc furnace) (EAF) landfill from 1970-1976, closure in 1978, was monitored by IEPA and permitted by Army Corp of Engineers; One million cubic feet were disposed; Groundwater monitoring of the landfill was concluded in 12/7/81. K061 was sent to PDC from 1980. Keystone has been cited for numerous violations concerning uncontrolled escape of EAF dust to the atmosphere due to poor baghouse operations through 1982. Questions exist regarding prior management of other hazardous wastes generated onsite, ie: K062 waste prior to operation of treatment plan in 1969 and F002 listed wastes.

3. Geologic and Hydrologic Setting

On the Keystone property there is about a 1% slope in the flats towards the River. The Bartonville Area, north-west of U.S. 24, has more relief. The Keystone Industrial Area is on a alluvial fan 10-20 feet above the water level of the Illinois River. This area is classified as Cahokia Alluvium, fine grained, poorly sorted sand or clayey silt 10-40 feet thick with sand lenses overlying shale bedrock, of the Carbondale/Modesto Formation (Middle Pennsylvaian). A clean sand and gravel aquifer (Sankaty Sand (Pliestocene)) supplies water for Keystone Steel and Wire. The groundwater flow generally trends toward the south-east or towards the River. The site is located in a wetland area in the flood plain of the Illinois River and would be affected by a 100-year flood event.

In 1986, Keystone installed 11 groundwater monitoring wells for one-time monitoring. Six wells were set at the water table (W-1, W-6) immediately around the K062 discharge/storage ditches. The other five wells (W-1D, W-5D) were set around 50 feet or at the shale bedrock surface.

4. Waste Characterization

K061 (EAF)/Disposal at Peoria Disposal Co. (PDC)
K062/Storage and Treatment (Neutralizing) including surface impoundments

D001 (Solidified Paint Waste)/Disposal at PDC

F002- 1,1,1, TCE still Bottoms. In 1983, 858 gallons of still bottoms went to ESL landfill in Joliet. F002 is currently permitted for acceptance at McKesson Chemical Company for recovery no record of material manifested there. Before 1983, it is unknown how Keystone managed this waste.

Machine Shop Dust - Disposal at Tazewill County Landfill
Drawing Compound & Waste Lime - disposal at PDC
K062 Waste water Treatment Sludge - disposal onsite in surface impoundments

K061- Baghouse for Electric Arc Furnace (EAF) Dust. Generation of K061 waste began around 1970. The dust is presently collected in a baghouse and sent off-site for disposal. Prior to this, between about 1970 to 1976, K061 was landfilled. This landfill was covered and closed in 1978 under U.S. Army Corp and IEPA supervision.

K062- Waste water treatment plant for Spent Pickle liquor and all facility waste waters. The waste water treatment plant was built in 1969. Before this the spent pickle liquor was reportedly sent to the Illinois River via channels from the facility and through Mud Lake. Mud Lake is believed to be located somewhere south of the present day sludge lagoons. The Channels which were used to transport the K062 are presently undergoing clean closure under a RCRA enforcement action.

K063- Pickle Liquor Sludge Lagoons. The Pickle Liquor sludge was delisted in 1980. It is assumed that the north lagoon is active, with the south lagoon acting as a drying/dewatering pond. Both lagoons have a noticeable rust/orange bottom sediment.

Hazardous waste drum storage- There are three Drum storage areas (all less than 90 days), two for paint waste and 1,1,1,-trichloroethane, and one for PCBs and Asbestos.

The PCB/asbestos storage area is reportedly not now being used. PCB's were on site from transformers and hydraulic fluids. Keystone said the last PCB disposal was in 1981, and that a PCB transformer was disposed of in October of 1985.

Lead and zinc are used in production for galvanizing and would most likely be contained in the waste water. Chromium, nickel, cadmium, barium are trace metals found on site, a by-product of production and are most likely contained in waste water. Methyl ethyl ketone (MEK), toluene, benzene are from paint waste and are drummed. 1-1-1

trichloroethane is used as a cleaner/degreaser and is drummed. Vinyl chloride and methylene chloride are used for nail coating. Finally, small quantities of naphthalene are on site, used as a cleaning solvent.

5. Specific Unit Summary

Keystone has apparently not operated any hazardous waste management units under interim status with the exception of the earthen ditches closed under RCRA enforcement activities.

SWMUs

SO3- K061 waste pile, 300,000 cubic yards
2.1 D80- K061 Landfill, 180 acre feet
T04- K062 Tank, 20,000 gal/day treatment (lime neutralization and pcp)
D83- Surface Impoundment for K063, 36,500,000 gallons

Keystone at one time generated 10,000 gal/day of waste pickle liquor (K062) which was pumped to the WWTP (20,000 gal/day capacity) with other liquids (Stormwater) on site. Acidic waste was pre-neutralized to pH-5, lime neutralized and solids precipitated in basin. K063 was pumped to sludge storage lagoons (Ponds)

Pre-existing units: K061 landfill closed in 1978; existing SWMUs: sludge disposal ponds used to dispose of sludge generated from treatment of K062 waste. No monitoring exists for either unit.

1. K061- Baghouse Electric Arc Furnace Dust
   2.1 K061- Landfilled 1970-76 closed in 1978 → SO3
   K061- Waste Pile on Part A → SO3

2. K062 WWTP 1969
   2.11 Mud Lake south of sludge lagoons
   Channels under closure

3. K063 Pickle Liquor sludge lagoons
   Delisted 1980
   2.10 North Lagoon, South Lagoon, outflows NPDES

4. Hazardous Waste Drum Storage Area (by Production Buildings)
   2.12 3 Areas less than 90 days
   2 for paint & 1 for 1,1,1, TCE.

5. 2.15 PCB, Asbestos Storage Area
   1981 last PCB disposal
   Last PCB transformer disposal in 1985

6. 2.13 River Water Storage Pond (H-waste pond). This pond is supposed to contain only river water used in production; and also serves as an emergency fire reservoir.

7. Vertical tanks- The tanks reportedly contain production boiler oil. There is extensive, and "oil" staining and standing liquid within the containment area.

8. Mud Lake- an oil film on the water east of the path about 1000' south of the sludge lagoons.

9. Discarded drums- North of old K061 landfill across canal and SW of production area its estimated that there are 100 scattered barrels, with many tipped on their sides, with a tar-like substance in several of them and an "absorbent" material in others. No free liquid was observed.

6. Contamination

Along with waste listed in Section 4, of this RFA, D001, solidified paint waste is produced, but was not listed as such in the Part A or in the list of potential contaminants listed in Section 4. Listed non-hazardous wastes include: Machine shop dust, drawing compound and waste lime, and the delisted WWTP pickle liquor sludge (K063).

Prior to construction and operation of WWTP in 1968, the process wastewaters (K062) were discharged through a drainage channel eventually leading to the Illinois River. Supposedly there may be 7 feet deep sludge deposits through the entire Mud Lake Area.

Sheen on the drainage channels, poorly constructed secondary containment around the storage tanks, and generally poor housekeeping practices, and discharges from the sludge lagoons and waste ponds were identified as the most probable sources of pollution. Surface runoff would enter the drainage network that empties into the Illinois River.

At the southern end of the facility; PDC removed, analyzed, and disposed of the waste solvents and odorous oily waste. Three drums were said to contain waste toluene and xylene, with 10 drums of solidified paint/tar sludge, and 20 cubic yards of contaminated soil were said to be removed.

On December 8th and 9th, 1987, a SV consisting of a total of 23 samples were collected, by Metcalf and Eddy, Inc. (M&E) personnel, from several areas around the facility, as specified in the U.S. EPA sampling plan for Keystone.

Based on the sampling results, several areas are identified as having significant contamination, suggesting that a release of hazardous constituents to the environment has occurred.

In the surface water samples lead, chromium, and cadmium were detected. Lead was consistently appearing in almost every water sample with the highest value topping out at 1890 ug/ml. The sludge sample showed both chromium and lead. Organics detected at the site included 1,1,1, TCE; Trichloroethylene, tetra chloroethane, toluene, xylenes, 1-1-

dichlorethane, tetra-1-2 dichlorethane, and the pesticide Arochlor-1254

In all the soil samples, elevated levels of heavy metals were found ranging from 102 ppm to 12,700 ppm for lead; 54 ppm to 529 ppm for chromium; and from 13 ppm to 96 ppm for cadmium. Most of these levels were twice as high as the concentrations detected in the background soil samples.

7. Conclusions

Chronological History

11/14/80 - Part A Submmited
5/22/81 - CERCLA Notification of landfill

8/6/81 - Keystone's K063 waste temporarily exempted as a listed RCRA Hazardous Waste based on 2/13/81 delisting petition.

6/28/82 - Keystone requests withdrawal of Part A based on generator status & delisting of waste stream (K063).

2/15/83 - U.S. EPA grants Keystones request to withdraw Part A.

6/21/83 - A CERCLA PA/SI was conducted, oxides of Cd, Cr, Pb, Ni, and Zn were discovered in the river flood plain.

6/5/84 - U.S. EPA excludes K063 from listing as a RCRA Hazardous Waste.

6/28/85 - U.S. EPA issues Complaint & Compliance Order regarding Keystone's failure to submit a complete Part A & the omission of facts that resulted in U.S. EPA granting Keystone's request to withdraw Part A. (Order based on IEPA referral of 1/8/85). U.S. EPA Referral to Department of Justice (DOJ) 3/10/86. Violations included storage of K062 in earthen ditches, holding ponds and aeration basin. Penalty was set at $232,000 against Keystone.

1/8/85 - IEPA disclaimed Keystones exemption status.

10/15/85 - Keystone's Part B Permit Application submittal due, Part B called in by U.S. EPA on 4/15/85.

4/4/86 - IEPA site visit and subpart F inspection

12/8/87 - U.S. EPA RFA Sampling Visit

The facility was under enforcement action initiated by IEPA referral. As a result a Complaint and Compliance Order was issued by U.S. EPA in June 28, 1985 (refer to Docket No. V-W-85, R-3). Major violations

consist of not fully describing or including all hazardous waste activities on Part A permit application and subsequently violating related interim status standards for these activities, particularly subpart F Groundwater Monitoring.

The DLPC was concerned with the proper closure of ditches (that recieved wastewater discharges), holding ponds, (earthen) aeration basin, and the waste piles that were issued a permit for construction. The IEPA wanted the U.S. EPA to continue civil action to require proper closure of the facility under RCRA.

K061 landfill is a definite SWMU that needs to be pursued for corrective actions. This area should be one of the highest concerns because of the indiscriminate dumping of a variety of hazardous materials with release to the F-pond, the surrounding wetlands and the Illinois River.

Facility records reveal that this site has made every attempt in the past to claim exemption from RCRA permitting including omission of information from request to withdraw Part A, resulting in approval of the request by U.S. EPA based on false/inadequate information. In addition, no certification of SWMUs or of compliance with subparts F, G and H has been received by this Agency, as required by the HSWA of 1984.

This facility obviously needs a more extensive investigation of the environmental threat to human health and the environment. It appears based on the material that there is sufficient evidence to begin a RFI or proper closure of all areas of contamination.

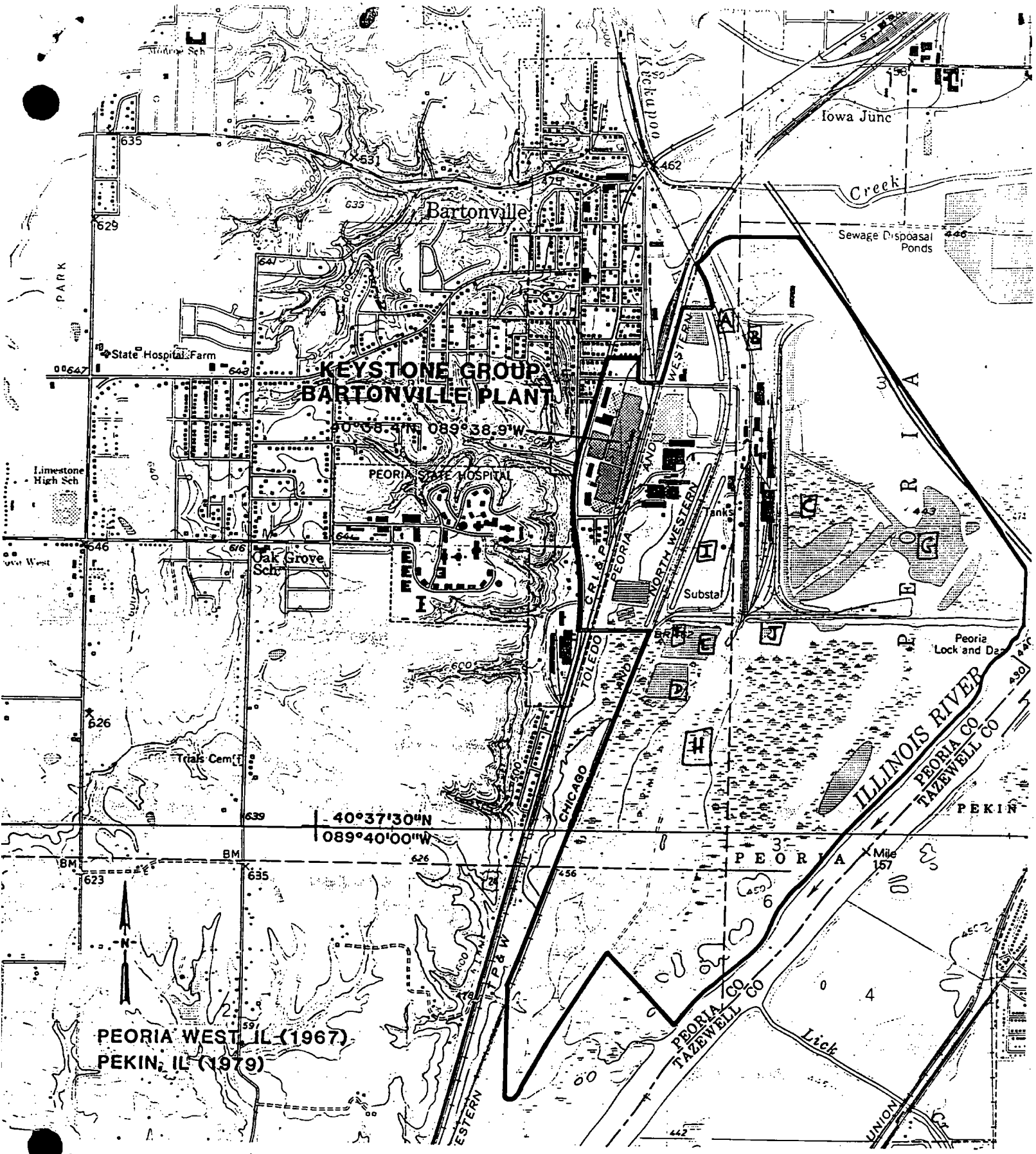

Figure 2. Local Site Location Map Peoria, Illinois. Scale 1:24,000.

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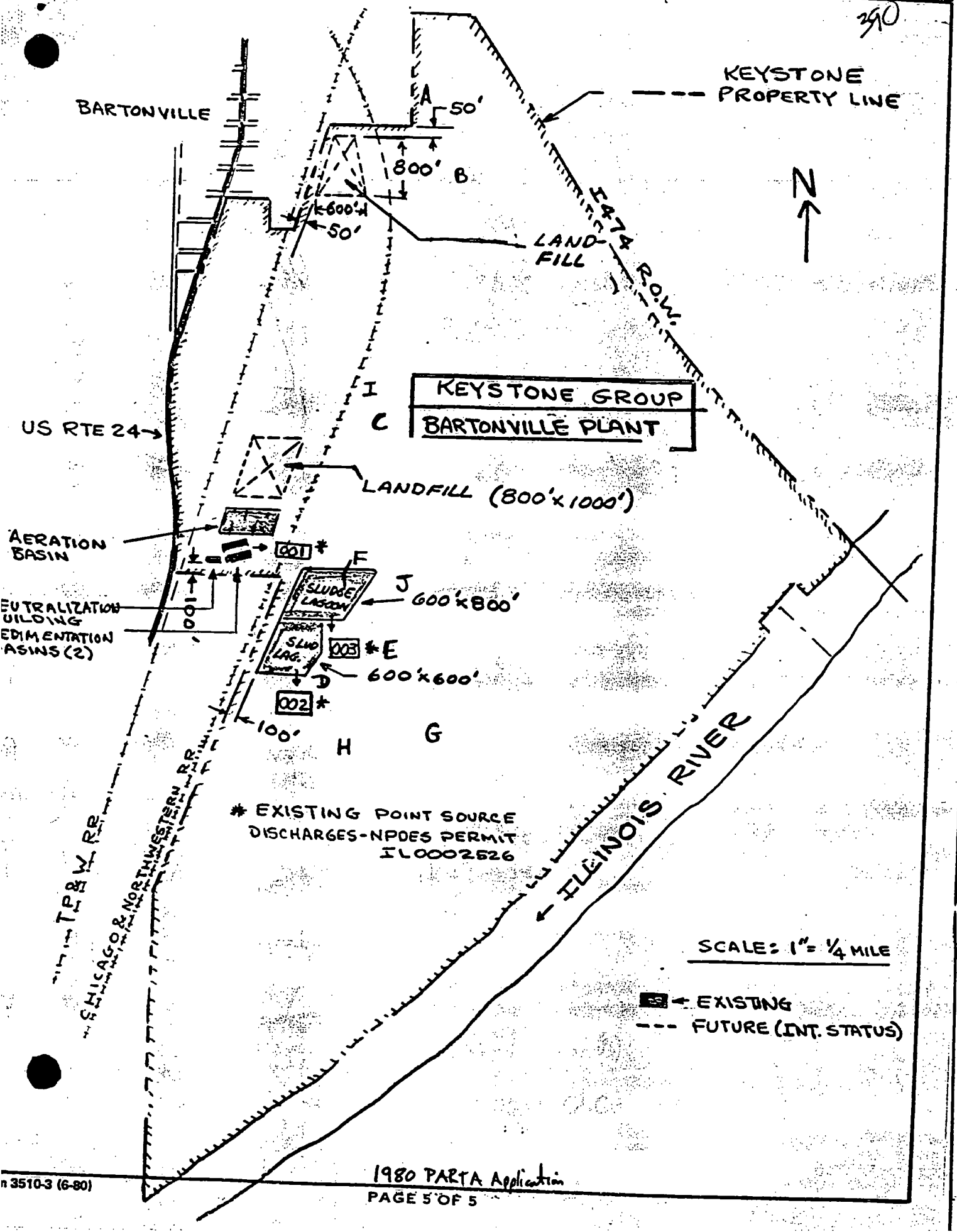
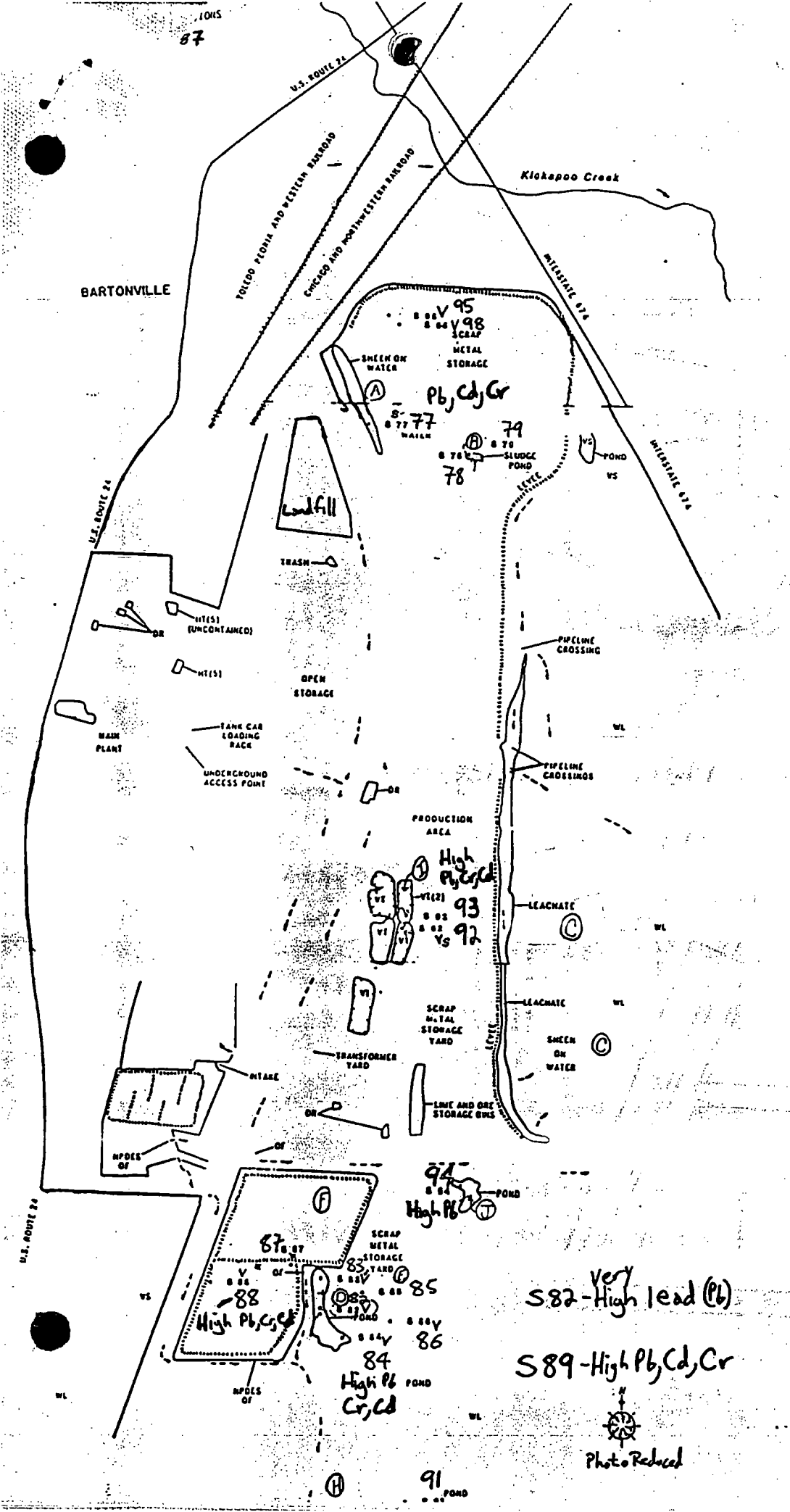
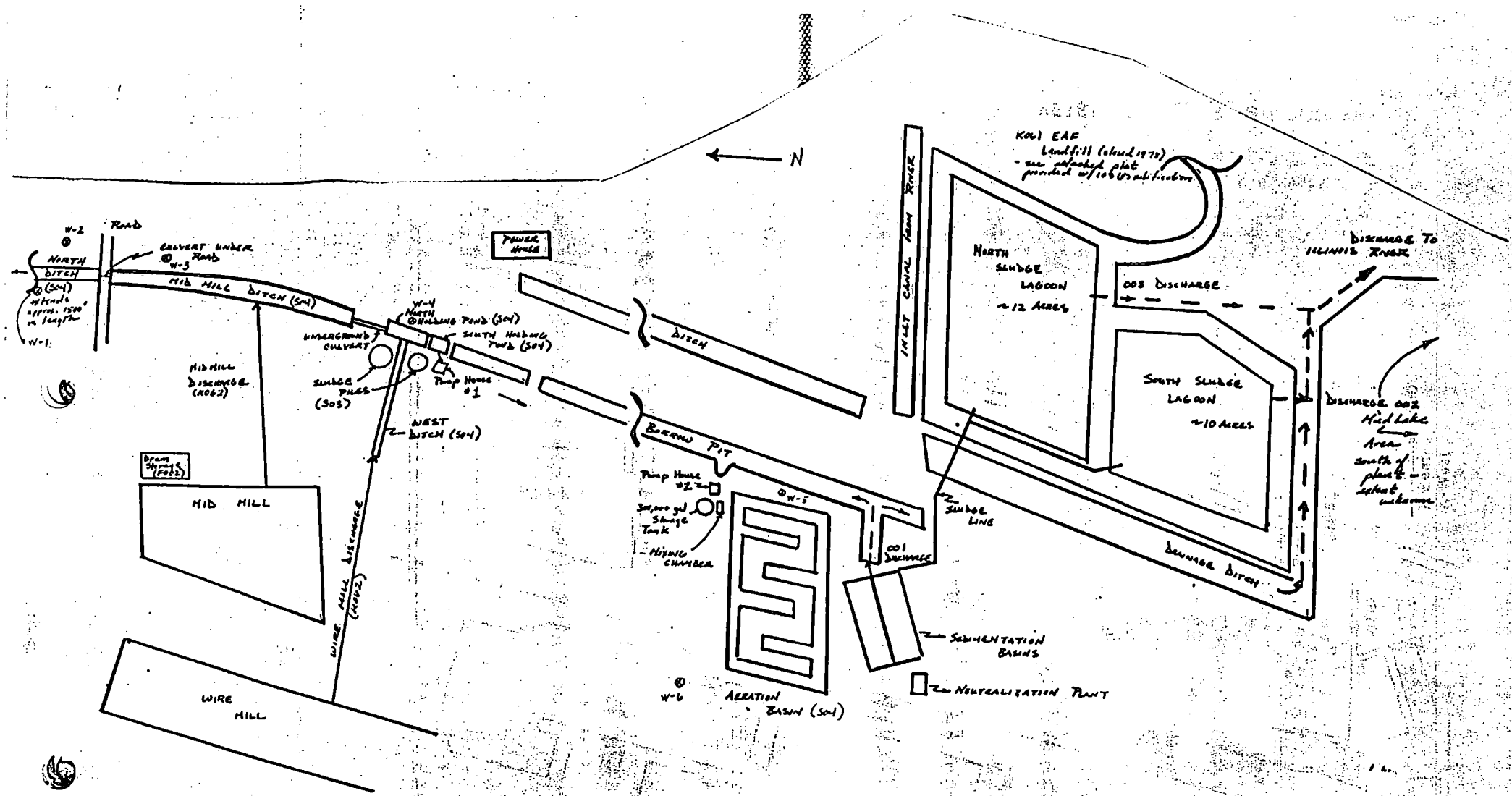
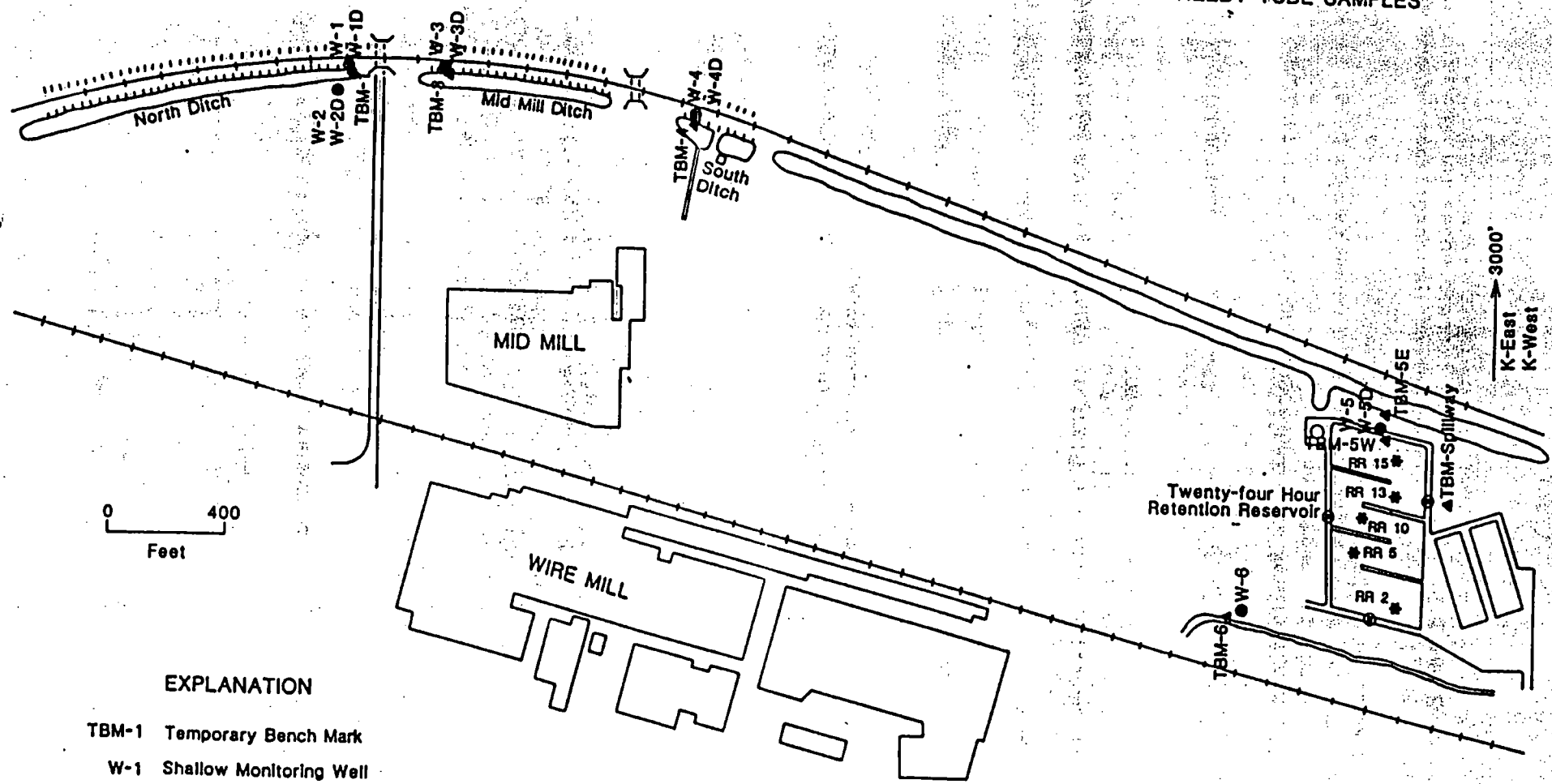



U.S. ROUTE 24
TOLEDO PEORIA AND WESTERN RAILROAD
CHICAGO AND NORTHWESTERN RAILROAD
Kickapoo Creek
BARTONVILLE
INTERSTATE 474
SCRAP METAL STORAGE
SHEEN ON WATER
Pb, Cd, Cr
MAIN
SLUDGE POND
POND
LEVEE
Landfill
TRASH
HT(5) (UNCONTAINED)
HT(5)
OPEN STORAGE
PIPELINE CROSSING
MAIN PLANT
TANK CAR LOADING RACK
UNDERGROUND ACCESS POINT
PIPELINE CROSSINGS
PRODUCTION AREA
High Pb, Cr, Cd
VT(2)
LEACHATE
SCRAP METAL STORAGE YARD
SHEEN ON WATER
TRANSFORMER YARD
INTAKE
LIME AND ORE STORAGE BINS
NPDES OF
High Pb
High Pb, Cr, Cd
High Pb
Cr, Cd
S82 - Very High lead (Pb)
S89 - High Pb, Cd, Cr
Photo Reduced


N
W-2
ROAD
NORTH DITCH (S04)
extends approx. 1500' in length
W-1
CULVERT UNDER ROAD
W-3
MID MILL DITCH (S04)
W-4
NORTH HOLDING POND (S04)
SOUTH HOLDING POND (S04)
UNDERGROUND CULVERT
SLUDGE PILES (S03)
Pump House #1
MID MILL DISCHARGE (K062)
WEST DITCH (S04)
Drum Storage (F062)
MID MILL
WIRE MILL DISCHARGE (K062)
WIRE MILL
POWER HOUSE
DITCH
BORROW PIT
Pump House #2
300,000 gal Storage Tank
MIXING CHAMBER
W-5
W-6
AERATION BASIN (S04)
001 DISCHARGE
SEDIMENTATION BASINS
NEUTRALIZATION PLANT
SLUDGE LINE
INLET CANAL FROM RIVER
K061 EAF Landfill (closed 1978)
- see attached plat provided w/ 105 (5) notification
NORTH SLUDGE LAGOON ~12 ACRES
003 DISCHARGE
SOUTH SLUDGE LAGOON ~10 ACRES
DISCHARGE TO ILLINOIS RIVER
DISCHARGE 002
Mud Lake Area south of plant - extent unknown
DRAINAGE DITCH

KEYSTONE STEEL & WIRE COMPANY

LOCATIONS OF MONITORING WELLS AND SHELBY TUBE SAMPLES



EXPLANATION

TBM-1	Temporary Bench Mark
W-1	Shallow Monitoring Well
W-1D	Deep Monitoring Well
K-East	Keystone Water Supply Well
⊙	Proposed Monitoring Well
✱	Shelby Tube Sample Location

Geosciences Research Associates, Inc.
627 North Morton Street
Bloomington, Indiana 47401

~4.5 hrs → Day 1 - 11 soil/sed samples taken

RFA Sampling Plan

Keystone Steel & Wire Company
ILD 000714881

Day 2 - need 1 sed
7 water
1 oil/sludge

7000 S.W. Adams Street
Peoria, IL 61641
(309) 697-7020

I. General Facility Information

Keystone Steel & Wire/Bartonville Plant is a manufacturer of iron and steel including semifinished and finished wire products. Keystone is located in Peoria, IL on approximately 1410 acres and has been in operation since around the turn of the century. The company produces 4 acknowledged hazardous waste streams, which include: electric arc furnace dust (K061), spent pickle liquor (K062), 1-1-1-trichloroethane still bottoms (F002), and solidified paint waste (D001). Keystone presently claims no regulated SWMUs. The facility can be divided into two main components, the main plant/production areas, and a large wetlands/grasslands region to the east and south of the plant. The majority of the sampling will take place in the wetlands/grasslands region and areas bordering the production facilities.

II. Sampling Objectives

Qestions still exist concerning Keystone's past disposal of K061, K062, and F002 wastes. There is also justification for concern over unacknowledged present and past disposal activities, from Keystone and leased properties on the Keystone site. Supplemental information suggests that volatile and semi-volatile compounds, metals, and possibly PCBs, may have been released to the environment (see attachment 1). Furthermore, considering the age and size of the facility, a RCRA enforcement action against Keystone, and generally poor housekeeping, a sampling visit is needed to characterize the site and see whether or not there have been releases of hazardous constituents which would pose a threat to human health and the environment.

III. Units to be sampled (see attached maps)

2nd A) "Sheen pond" - Area being filled w/material excavated from construction of Railroad spur.

1. Description - Natural depression identified on aerial photos as a pond with a sheen. During VSI no liquid was present. Area is surrounded by large amounts of construction/demolition debris.

2. Waste Managed - Unknown

Done 3. Samples - 1 soil, 6-12" depth - v. muddy - rained several days (continuing) prior to Sampling Visit

4. Potential Sampling Problems - loose debris on the sides of the pond, however the sides are not very steep.

2.9

B. "Oil Pond"

1. Description - approximately 40' x 120' stone debris depression containing a dark oily liquid.

2. Waste managed - Unknown, property leased to Scrap Products.

3. Samples - 1 sample at top of "liquid/sludge"
   1 sample at bottom of "liquid/sludge" - Done, sediment present, an oily odor present

4. Potential sampling problems - Depth to bottom of pond unknown, would not expect it to be greater than 4'. Sides of the pond are steep with "oil" about 3' below surface grade. Unsure of bottom characteristics, it could be sediment and/or rock debris.

2.8 C. Cooling Pond

1. Description - A large wetland area used to provide cooling water for production.

2. Waste managed - Unknown

3. Samples - 2, surface water - Very oily photo 12 S 13 N M & E said to go High Hwr

4. Potential sampling problems - Depending on exact sampling location, steep sided banks may be encountered. Potential surface contamination observed during VSI. Location of "contaminant" appeared, at least partially, to be controlled by prevailing winds, thus the uncertainty as to exact sampling location.

2.5 D. F pond

1. Description - Small irregularly shaped depression, identified with sheen by aerial photo. Located near old K061 landfill and sludge ponds.

2. Waste managed - Unknown; Keystone representative identified white precipitate as possible lime leachate.

3. Samples - 1 sediment and 2 surface water. sediment taken - at least 2 white/Beigh ppt locations noted

4. Potential Sampling Problems - Access road to area is steep and poorly maintained, but is passable.

2.1 E. Land Treatment

Pht 8 S. Pond under loc. ~~Beg~~ Beigh/pale orange sed. no surface H2O film.

Ph 10 - Loc F-pond (N) H2O Sample

1. Area atop old K061 landfill with topsoil disked and "treatment" machinery present. Keystone personnel attributes this activity to machinery cleaning and grounds maintenance.

2. Waste managed - Unknown

3. Samples - 2 soil samples, 6-12" depth. Dont

4. Potential sampling problems - same as for F-pond.

2.10 F. North Sludge Pond / Sludge

1. North sludge pond, active part of waste water treatment facility. K063 sludge dewatering area. Due to present enforcement action, concerning the waste water treatment operation, sampling is warranted here.

2. Waste managed - K062(?), K063 (delisted sludge). Potential may exist for other contaminants (see attachment 1).

3. Samples - 1 water/sludge
   1 sediment - Sample taken in N. Edge @ approx center.

4. Potential sampling problems - Access to ponds must be provided by Keystone personnel

2.8 G. East sludge/waste ponds

1. Description - Small shallow depressions in slag fill area.

2. Waste managed - Unknown

3. Samples - 1 Sediment - oil came to surface during sampling
   1 Surface water

Sample location

4. Potential sampling problems - none apparent

2.11 H. "Mud Lake"

1. Description - Open field/wetland, apparent site of old K062 disposal area.

2. Waste managed - K062?

3. Samples - 1 water sample - odor present (M&E, Gary -)

4. Potential sampling problems - same as for F-pond

2.9 2.13 I. Vertical Tanks

1. Description - Bermed vertical holding tank area, with standing liquid and heavy staining.

2. Waste managed - Production Boiler Oil

3. Samples - 2 soil samples, ~~6-12" depth~~ closer to surface J South tank - 2-5" - 6' @ N. at Wsk/Sed interface

4. Potential sampling problems - none apparent

2.6 J. Pond

1. Description - Small depression east of sludge lagoons and old K061 landfill. Uncharacteristic green bottom sediment.

2. Waste managed - Unknown

3. Samples - 1 Sediment pH 11 - ~~are~~ green sed.

4. Potential sampling problems - same as for F pond

K. Background samples

1. Description - 2 background locations will be determined on site.

2. Waste managed - N.A.

Scrap 3. Samples - 2 soil samples, 6-12" depth. Done in Tree area in N. end, in 2nd + 3rd ~~tier~~ tier

ynre 4. Potential sampling problems - N.A.

IV. Analytical Requirements

The objective for the analyses is to determine the presence or absence of contamination from activities that occurred at the site.

Parameters to be analyzed for are:

Regular Analytical Services (RAS) inorganics; metals only. RAS organics; volatiles, semi-volatiles, and PCBs.

V. Sampling

Use containers from the sample bottle repository program.

A. For soil samples, use augers to take samples to 15-18" depth, power drills to get down to eight feet depth. The samples are to be collected into 250-500 ml glass jars, equipped with Teflon lined screw caps. Tape the lid carefully, mark these and put on the initials of the collector. No refrigeration is needed. Pack the samples carefully with chain-of-custody papers (forms). Always prepare equipment blanks when equipment is reused; use appropriate aliquots for each parameter.

B. Sludge Sampling

Use hand covers for obtaining samples, other procedures as above. Samples for metal analysis should be preserved by refrigeration and chemical additives. First filter it on a coarse filter, then split the aqueous sample; filter one part of it on a 0.45 micron filter, transfer into container, add Nitric acid to pH<2. Preserve the other part.

C. Water Sampling

Use glass sample containers with a volume of a minimum 500 ml. Preserve samples for metal analysis as above.

VI. Prepare Sampling jars as follows:

A. For metals, clean with:

Nonphosphate detergent in tap water;
1:1 Nitric acid rinse;
1:1 HCl rinse;
Tap water rinse; and
Distilled, deionized water rinse.

B. For organic analysis, remove deposits with:

Chromic acid;
Rinse with tap water;
Wash with nonphosphate detergent in hot water;
Tap water rinse;
Distilled water rinse;
Acetone rinse; and
Pesticide-grade Hexane rinse.

VII. Sample documentation

Sampling procedures must be logged into a log book, including all sampling processes, special preparation, holding times, and chain-of-custody procedures.

VIII. Laboratory reports should include:

Objective of testing;
Test method used for each parameter;
Calibration procedures/Frequency;
Calibration Standards/Sources;
Data development;

ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT
AT HAZARDOUS WASTE SITES

TES IV
CONTRACT NO. 68-01-7351
WORK ASSIGNMENT NO. 201

RCRA FACILITY ASSESSMENT DATA EVALUATION REPORT

KEYSTONE STEEL AND WIRE COMPANY
PEORIA, ILLINOIS

EPA REGION V

JACOBS ENGINEERING GROUP, INC.
PROJECT NO. 05-B201-00

Report Prepared By:

METCALF & EDDY, INC.
85 WEST ALGONQUIN ROAD, SUITE 500
ARLINGTON HEIGHTS, ILLINOIS 60005

JULY, 1988

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1.0 Introduction

The Jacobs Engineering Group has been issued a work assignment (WA #201) under Technical Enforcement Support (TES) IV Contact No. 68-01-7351 to conduct RCRA Facility Assessment (RFA) sampling visits at thirty-eight RCRA facilities in Illinois. Metcalf & Eddy, Inc. has been subcontracted to perform this work assignment. As part of that work assignment, an RFA sampling visit was conducted at the Keystone Steel and Wire Company at 7000 S. W. Adams Street, Peoria, Illinois. The preliminary review (PR) and visual site inspection (VSI) had previously been conducted by U.S. EPA personnel. Based on the information obtained during these two initial phases of the RFA, a sampling plan was prepared by the U.S. EPA. The samples specified in the U.S. EPA sampling plan were collected by M&E personnel during a visit conducted at the Keystone Steel and Wire facility (EPA I.D. No. ILD 000 714 881) on December 8 and 9, 1987.

This report summarizes the data obtained from the chemical analysis of samples collected during that sampling visit. The samples were analyzed by the Contract Laboratory Program (CLP) and the raw data was QA reviewed by chemists in the EPA Region V Central Regional Laboratory (CRL).

Twenty-three on-site and off-site soil/sediment, sludge, and surface water samples were collected in order to determine if hazardous waste constituents have been released from the solid waste management units (SWMUs) into the soil. The sludge and surface water samples were collected on-site from several different waste management ponds at the facility. The soil/sediment samples were collected from on-site and off-site locations (See Figure 1,2,3 and 4).

The samples collected were analyzed for inorganic, volatile and semi-volatile parameters, and pesticides/PCB's. Four of the samples collected were classified as high hazard samples. Due to the potentially hazardous nature of these samples, use of the CLP's special analytical services protocol was required. A list of the regular analytical service parameters with the CLP contract required detection limits (CRDL) is presented in Appendix A.

SAMPLING LOCATIONS

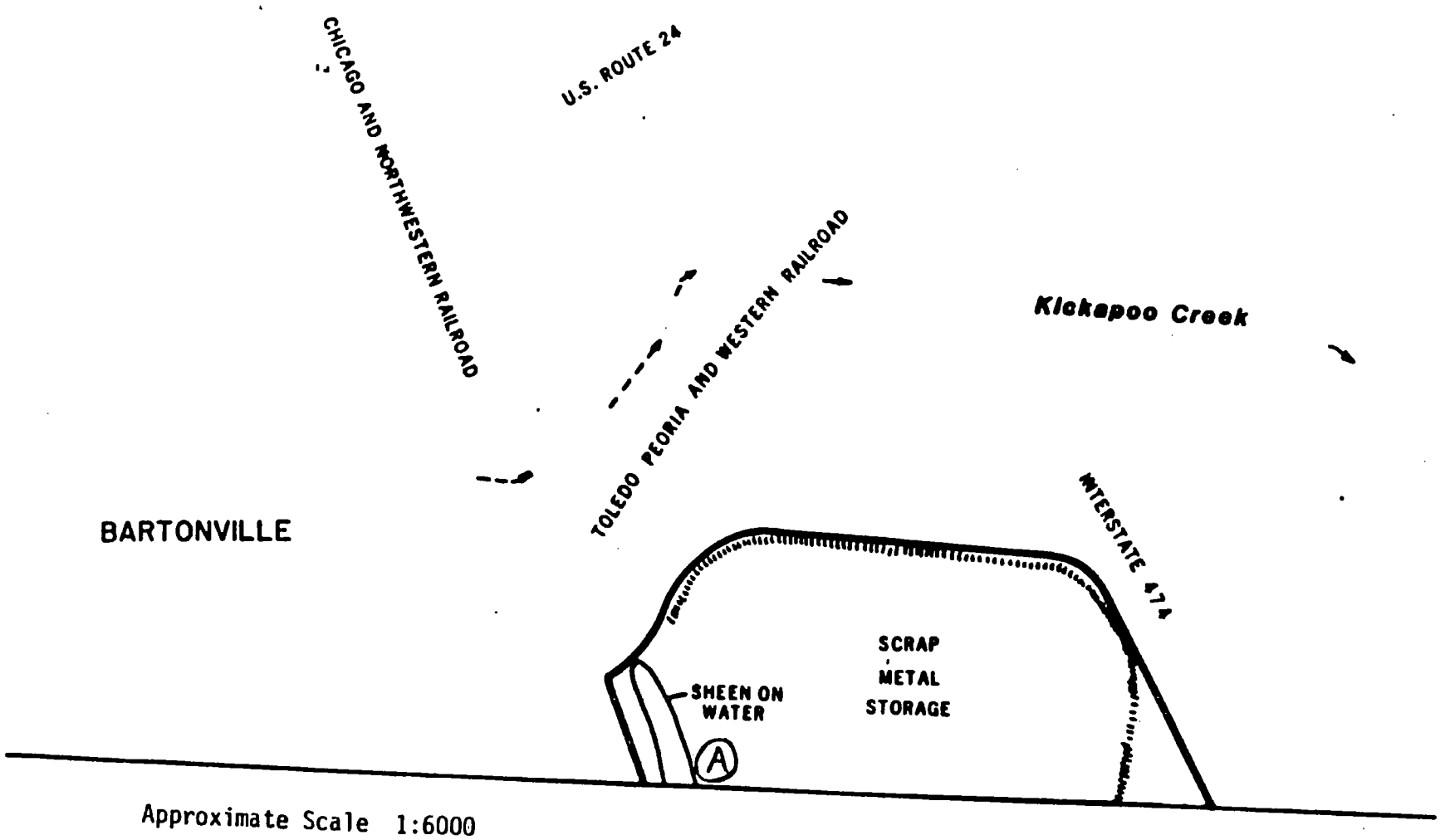
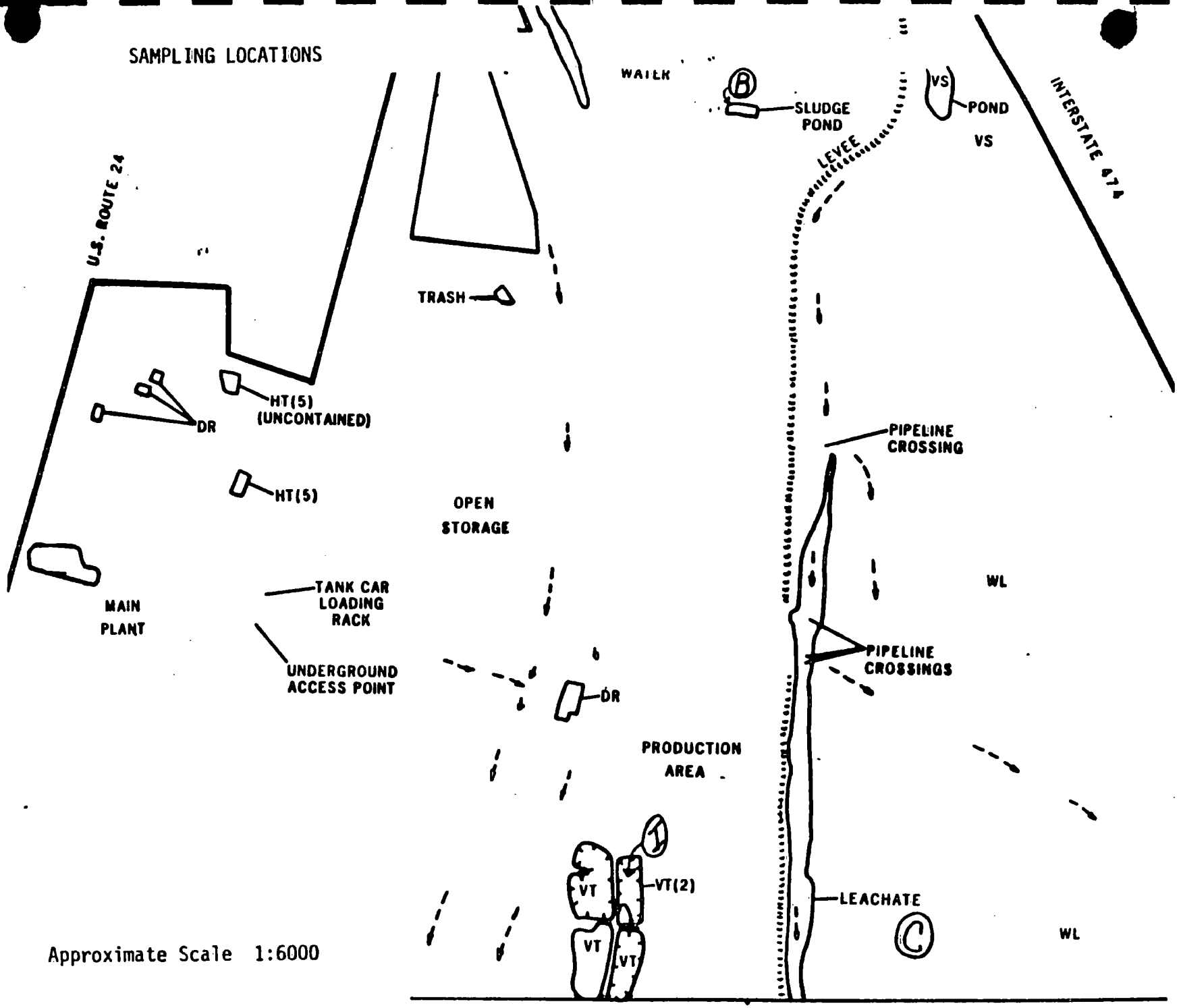


FIGURE 1

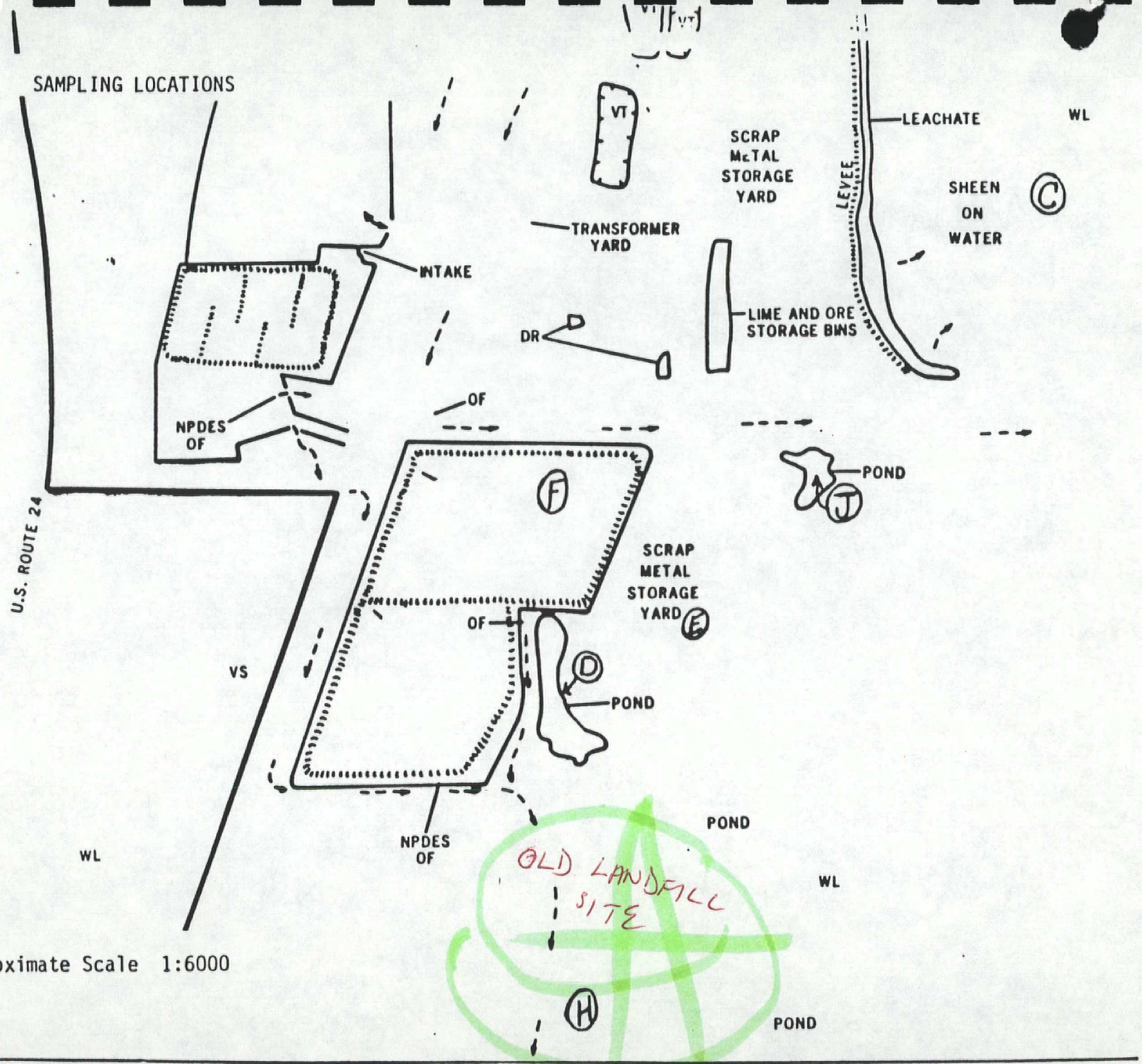
SAMPLING LOCATIONS



Approximate Scale 1:6000

FIGURE 2

N


SAMPLING LOCATIONS
VT
SCRAP
MeTAL
STORAGE
YARD
LEACHATE
WL
LEVEE
SHEEN
ON
WATER
C
TRANSFORMER
YARD
INTAKE
LIME AND ORE
STORAGE BINS
DR
OF
NPDES
OF
POND
J
F
U.S. ROUTE 24
SCRAP
METAL
STORAGE
YARD
E
OF
D
VS
POND
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OF
POND
WL
OLD LANDFILL
SITE
WL
Approximate Scale 1:6000
H
POND

FIGURE 3

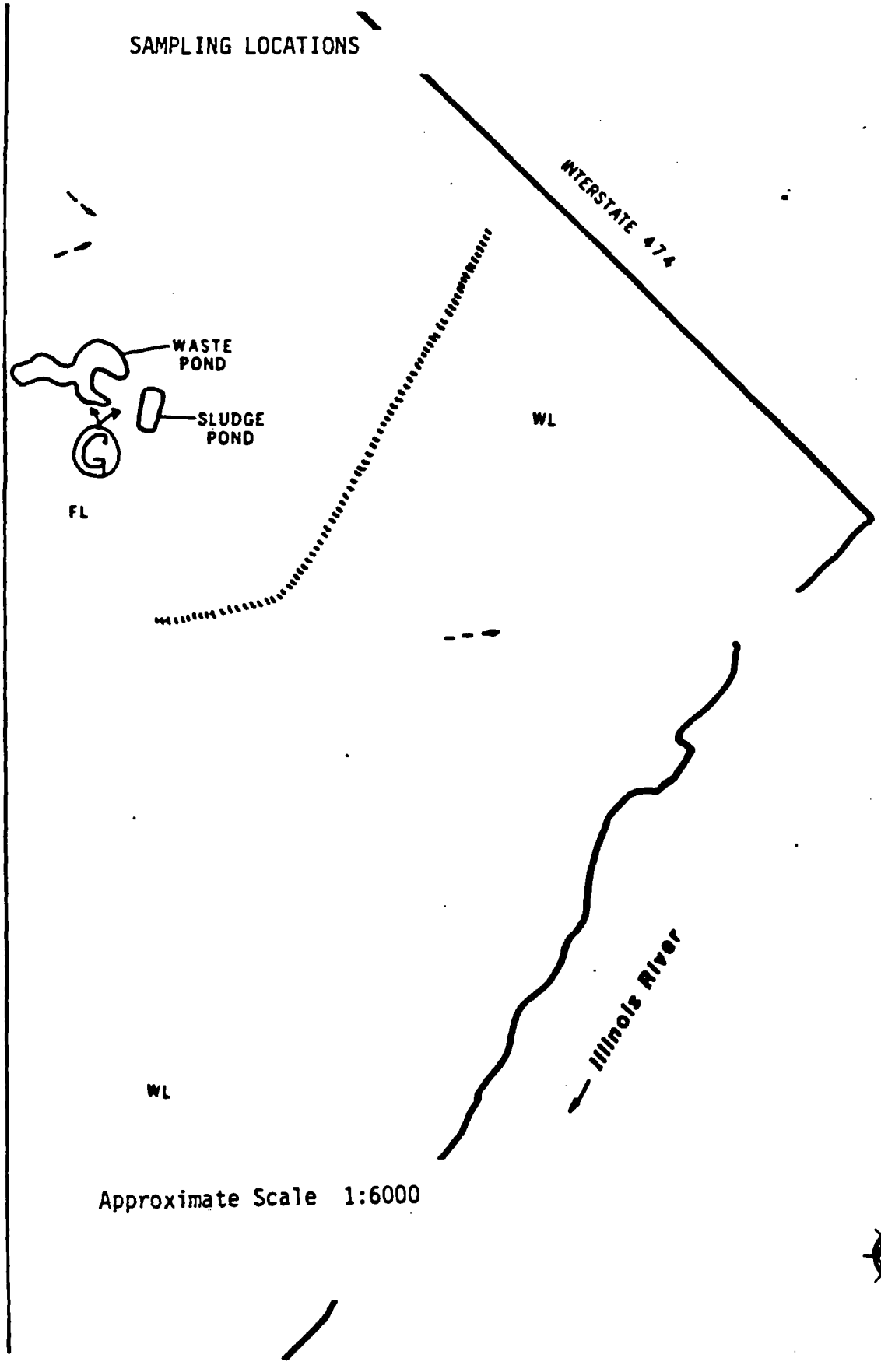
SAMPLING LOCATIONS
INTERSTATE 474
WASTE POND
SLUDGE POND
G
FL
WL
WL
Illinois River
Approximate Scale 1:6000
N

FIGURE 4

2.0 Sampling Visit Review

On December 8 and 9, 1987 a total of twenty-three (23) surface water, sludge, and soil/sediment samples were collected from on-site and off-site locations. The table in Appendix B lists the samples taken, the sample collection method used, and the analytical parameters measured. For more detailed information regarding the sampling visit, please refer to the January, 1988 Sampling Report.

3.0 Data Presentation

The soil/sediment, surface water, and sludge samples were analyzed for inorganic, volatile and semi-volatile organics, and pesticides/PCBs. The results of these analyses (listing only the compounds detected) are presented in Appendix C. The CLP Organic and Inorganic results are presented in Appendices D and E.

4.0 Data Evaluation

The following data evaluation is based upon the analyses of twenty-three (23) soil/sediment surface water, and sludge samples collected at Keystone Steel and Wire. The data are presented in Appendix C.

4.1 Comparison of Background Samples to Expected Levels

Background samples were collected in order to provide information describing natural conditions in the vicinity of Keystone Steel and Wire.

4.1.a Soils/Sediments

Two background composite soil samples (S95 and S96) were collected on-site from a wooded area, on the north end of the site. In order to determine if these background soil samples have been impacted by waste management or production activities, a comparison was made with published values of expected concentrations of naturally occurring analytes. For non-naturally occurring analytes, a comparison was made with expected values.

4.1.a.1 Volatile and Extractable Compounds

The background soil samples S95 and S96 contained volatile and extractable compounds which were specifically or tentatively identified by the CLP. The tentatively identified compounds and their concentrations are presented in Appendix C. The following is a discussion of the compounds specifically identified in the background soil samples collected at Keystone Steel and Wire.

Background soil sample S95 contained the following volatile organic compounds above the contract-required detection limit.

1,1,1-trichloroethane	26 ug/kg
trichloroethene	15 ug/kg
tetrachloroethene	7 ug/kg
toluene	12 ug/kg
total xylenes	7 ug/kg

Background soil sample S96 contained 1,1,1-trichloroethane at a concentration of 13 ug/kg. This was the only volatile organic compound found in the sample above contract-required detection limits.

These compounds detected in the background samples are considered as non-naturally occurring analytes. Their presence in the samples indicates that the samples may have been affected by activities on-site. The occurrence of these analytes in the background soil samples will be considered in the evaluation of environmental samples. Since no semi-volatile organic compounds or pesticides/PCBs were above contract-required detection limits, their presence in any environmental samples will be considered as nonindicative of natural soil conditions.

4.1.a.2 Metals

The background soil samples S95 and S96 were analyzed for metals concentrations. For evaluation, these background levels were compared with median values describing the elemental composition of soils (Table 1) to determine if the background soil samples represent natural soil conditions.

TABLE 1
MEDIAN ELEMENTAL COMPOSITION OF SOILS
(November 6, 1984 McClanahan 3370C)

CONCENTRATION IN SOILS mg/kg (ppm)

ELEMENT		MEDIUM RANGE	TYPICAL	SOURCE
Silver	Ag	0.01 - 8	0.4	5
Aluminum	Al	10,000 - 300,000	71,000	1
Arsenic	As	0.1 - 194	11	5
Boron	B	2 - 270	20	1
Barium	Ba	100 - 3,000	500	1
Beryllium	Be	0.1 - 40	0.3	1
Bromine	Br	1 - 110	10	1
Calcium	Ca	LT 150 - 320,000	24,000	7
Calcium	Ca	700 - 500,000	15,000	1
Cadmium	Cd	0.01 - 7	0.5	6
Chlorine	Cl	8 - 1,800	100	1
Cobalt	Co	0.05 - 65	8	1
Chromium	Cr	5 - 3,000	100	6
Copper	Cu	2 - 250	30	1
Flourine	F	6 - 7070	270	5
Iron	Fe	100 - 550,000	40,000	1 & 5
Mercury	Hg	0.01 - 4.6	0.098	5
Potassium	K	80 - 37,000	14,000	1
Magnesium	Mg	400 - 9,000	5,000	1
Manganese	Mn	20 - 18,300	1,000	1,5 & 6
Molybdenum	Mo	0.1 - 40	2	1 & 6
Sodium	Na	150 - 25,000	5,000	1
Nickel	Ni	0.1 - 1,530	50	1 & 5
Phosphorus	P	35 - 5,300	800	1
Lead	Pb	LT 1- 888	29	5 500-1000 ppm
Sulfur	S	30 - 1,600	700	1
Antimony	Sb	0.2 - 150	6	1,2,3 & 4
Selenium	Se	0.1 - 38	0.4	1 & 6
Silicon	Si	250,000 - 410,000	330,000	1
Tin	Sn	1 - 200	10	1 & 6
Strontium	Sr	LT 3 - 3,500	278	5
Thorium	Th	2 - 13	9	8
Titanium	Ti	150 - 25,000	5,000	1
Thallium	Tl	0.1 - 0.8	0.2	1
Vanadium	V	3 - 500	100	1,6 & 7
Zinc	Zn	1 - 2,000	90	1&5
Zirconium	Zr	60 - 2,000	90	1 & 5
Cyanide	Cn		0.09	9

Background soil sample S95 did not contain concentrations of metals beyond the medium ranges. Background soil sample S96 contained cadmium at a concentration of 8.6 mg/kg. This concentration exceeds the maximum concentration of cadmium for a typical soil, 7.0 mg/kg. This is not a significant difference therefore, this sample may be regarded as within the typical range of levels of cadmium. The concentrations of metals in both background samples S95 and S96 are within the accepted medium range for soils.

4.1.b Surface Water

No background samples of surface water were collected. One field blank water sample S99 was collected by filling sample bottles with distilled water. This sample was analyzed for inorganic, volatile and semi-volatile organic compounds, and pesticides/PCBs. For the purposes of this evaluation, the field blank sample will be used for comparison to surface water samples.

4.1.b.1 Volatile and Extractable Compounds

Laboratory analysis of the field blank water sample S99 indicated that the sample did not contain volatile or semi-volatile organic compounds or pesticides above contract-required detection limits. This sample may be regarded as unimpacted by waste management or production activities on site. Thus, any concentrations of volatile or extractable compounds measured above the analytical detection limit will cause the sample to be considered as nonindicative of natural surface water conditions, and possibly impacted by activities on-site.

4.1.b.2 Metals

The field blank water sample S99 contained copper at a concentration of 353 ug/L. This presence of Copper in the field blank water sample will be considered in evaluation of the surface water samples. For metals not detected in the field blank, any concentrations of metals measured in the surface water samples which are two times or more greater than the analytical detection limit will be considered as nonindicative of natural surface water conditions. Any of these metallic

compounds detected may be considered as a result of activities on-site.

4.2 Comparison of Environmental Samples to Background Samples

Soil/sediment and surface water samples were collected on-site at Keystone Steel and Wire. In order to determine if these samples have been impacted by waste management or production activities, their analytical results were compared to those of the background samples.

For volatiles and extractables that were not detected in any background samples, if the sample has any detectable amount of the constituent, it may be considered contaminated. If volatiles and/or extractables were detected in the background samples, their presence in the environmental samples at levels two times or more greater than the background levels may cause that sample to be considered contaminated.

For metals detected in the background samples, if the sample has these constituents at levels two times or more greater than the background samples, it may be considered contaminated. For metals not detected in the background samples, if the sample has these constituents at levels two times or more greater than the analytical detection limit, it may be considered contaminated.

4.2.a Soils/Sediments

The following is a comparison of concentrations of analytes measured in soil/sediment samples to levels in background soil samples.

4.2.a.1 Volatile and Extractable Compounds

Soil/sediment samples collected at Keystone Steel and Wire contained volatile and extractable compounds above contract-required detection limits. The compounds which were specifically or tentatively identified in the soil/sediment samples are listed in Appendix C. The following is a comparison of the compounds above contract-required limits in the environmental soil/sediment samples and background soil samples.

Soil sample S82 was collected from the F pond. This sample was found to contain the following compounds at concentrations significantly greater than the concentrations detected in the background soil samples (S95 and S96).

t-1,2-dichloroethene	58 ug/kg
trichloroethene	420 ug/kg
total xylenes	60 ug/kg

Soil Sample S92 was collected from the vertical tank. This sample contained ethylbenzene at a concentration of 78 ug/kg. Total xylenes were detected at a concentration of 250 ug/kg. These compounds detected are at concentrations significantly greater than the levels detected in the background soil samples (S95 and S96). The presence of these compounds in sample S92 indicate that they may be a result of activities on-site.

The pesticide arochlor-1254 was detected in soil samples S77 and S98. Sample S77, collected from the sheen pond, contained arochlor-1254 at 470 ug/kg. Sample S98, collected from the surface impoundment, contained arochlor-1254 at 230 ug/kg. Pesticides are considered as non-naturally occurring compounds. Therefore, the presence of arochlor-1254 indicates that the soil may have been affected by on-site activities.

Three sediment high hazard samples were collected at Keystone. Sample S79 was collected from the oil pond. Samples S80 and S81 were collected from the cooling pond. No volatile or semi-volatile organic compounds or pesticides/PCBs were above analytical detection limits in any of the high hazard sediment samples.

Soil samples S85, S89, S93 and S94 were collected from the land treatment, east sludge/waste pond, the vertical tank, and the pond respectively. These samples did not contain volatile or extractable compounds above contract-required detection limits. Soil samples S86 and S88 were collected from the land treatment and the south sludge pond respectively. No extractable compounds were detected above contract-required detection limits. Volatile organic compounds were detected in samples S86 and S88 but were not significantly greater than background levels. These

compounds detected are 1,1,1-trichloroethane and toluene.

4.2.a.2 Metals

Soil samples collected at Keystone Steel and Wire were found to contain metals. Their concentrations were compared to the levels of metals in the background soil samples S95 and S96.

Soil sample S77 was collected from the sheen pond. This sample contained metals at levels at least two times greater than the levels detected in the background soil samples. The following is a comparison of the metal concentrations in samples S77 and the background samples.

	S77 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Arsenic	17	6.2	6.2
Cadmium	13	5.7	8.6
Calcium	32500	15700	8730
Chromium	54	16	26
Copper	56	19	29
Lead	232	37	90
Zinc	1490	119	296

Soil sample S82 was collected from the F pond. This sample was found to contain the following metals at concentrations significantly greater than the background samples. The following is a listing of these metals.

	S82 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Barium	371	106	132
Cadmium	14	5.7	8.6
Calcium	170000	15700	8730
Chromium	59	16	26
Copper	64	19	29
Lead	12700	37	90
Magnesium	11700	8930	5250
Mercury	0.93	0.23	0.11
Potassium	3530	1410	2920
Sodium	[721]	[135]	[136]
Zinc	1930	119	296

[Value] - Concentration above analytical detection limit but below contract-required detection limit.

The soil samples S85 and S86 collected from the land treatment area (old landfill) did not contain metals at concentrations significantly greater than the background soil samples.

Soil sample S88 was collected from the south sludge pond. This sample contained the following metals at concentrations significantly greater than the background soil samples.

	S88 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Antimony	100	[6.0]	[5.5]
Cadmium	96	5.7	8.6
Calcium	118000	15700	8730
Chromium	230	16	26
Cobalt	31	[9.3]	[11]
Copper	82	19	29
Iron	399000	19400	24200
Lead	4000	37	90
Manganese	2140	611	726
Nickel	204	18	22
Sodium	[311]	[135]	[136]
Zinc	28600	119	296

[Value] - Concentration above analytical detection limit but below contract-required detection limit.

Soil sample S89 was collected from the east sludge/waste pond. This sample was found to contain levels of metals at least twice as high as the concentrations detected in the background soil samples. The analyte silver was found in sample S89 to be at least two times greater than the detection limit of the background samples. The analytical results are presented below.

	S89 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Antimony	[16]	[6.0]	[5.5]
Barium	279	106	132
Cadmium	48	5.7	8.6
Calcium	288000	15700	8730
Chromium	529	16	26
Copper	174	19	29
Iron	40400	19400	24200
Lead	1810	37	90
Magnesium	22400	8930	5250
Manganese	5870	611	726
Silver	[2.4]	0.8 U	0.8 U
Sodium	[540]	[135]	[136]
Vanadium	96	24	31
Zinc	10100	119	296

U - Concentration below analytical detection limit.
[Value] - Concentration above analytical detection limit but below contract-required detection limit.

The soil sample S92, collected from the vertical tank, contained elevated levels of metals. The following is a listing of the metals concentrations in S92 significantly greater than the levels in the background samples S95 and S96.

	S92 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Arsenic	14	6.2	6.2
Chromium	78	16	26
Copper	46	19	29
Lead	142	37	90
Zinc	474	119	296

Soil sample S93 was collected from the vertical tank. This sample contained levels of metals at least two times greater than the levels in the background soil samples S95 and S96. Beryllium was detected in S93 at a concentration twice as high as the detection limit of background sample S95. The following is a comparison of the metal concentrations in S93 and the background samples.

	S93 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Antimony	[12]	[6.0]	[5.5]
Beryllium	[0.5]	0.2 U	0.3 U
Cadmium	26	5.7	8.6
Calcium	29900	15700	8730
Chromium	115	16	26
Copper	111	19	29
Lead	847	37	90
Sodium	[396]	[135]	[136]
Zinc	2080	119	296

U - Concentration below analytical detection limit.

[Value] - Concentration above analytical detection limit but below contract-required detection limit.

A soil/sediment sample was collected from a pond on site and designated as sample S94. This sample contained the following metals at concentrations significantly greater than the background samples S95 and S96.

	S94 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Calcium	164000	15700	8730
Chromium	56	16	26
Copper	42	19	29
Lead	569	37	90
Sodium	[513]	[135]	[136]
Zinc	1140	119	296

[Value] - Concentration above analytical detection limit but below contract-required detection limit.

Soil sample S98 was collected from a surface impoundment. Metals at concentrations significantly greater than the background concentrations were detected in sample S98. The following is a listing of these metals.

	S98 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Arsenic	13	6.2	6.2
Calcium	27400	15700	8730
Lead	102	37	90
Magnesium	12800	8930	5250
Zinc	488	119	296

Three high hazard sediment samples were collected at Keystone. Sediment sample S79 was collected from the oil pond. This sample was found to contain nickel at a concentration significantly greater than the level in the background soil samples S95 and S96.

	S79 (mg/kg)	S95 (mg/kg)	S96 (mg/kg)
Nickel	56	18	22

High hazard sediment samples S80 and S81 were collected from the cooling pond. Neither of these samples contained metals at concentrations above analytical detection limits.

Elevated levels of metals were detected in the soil/sediment samples discussed above. These data indicate that activities on-site may be responsible for the presence of metallic compounds in the on-site soil/sediments.

4.2.b Surface Water

The following is a comparison of concentrations of analytes measured in surface water samples to levels in the field blank water sample.

4.2.b.1 Volatile and Extractable Compounds

Surface water samples collected at Keystone Steel and Wire contained volatile organic compounds above detection limits. No extractable compounds were above contract-required detection limits. The compounds which were specifically or tentatively identified in the surface water samples are presented in Appendix C. The following section discusses only the conpounds which were specifically identified in the surface water samples.

Surface water sample S83 was collected from the F pond. This sample was found to contain the following volatile organic compounds.

1,1-dichloroethane	5 ug/L
t-1,2-dichloroethene	8 ug/L
trichloroethene	38 ug/L
total xylenes	5 ug/L

Surface water sample S84 (collected from F pond) contained trichloroethene at 7 ug/L. These compounds were not detected in the field blank water sample. Therefore, the presence of volatile organic compounds in the surface water samples from the F pond may be caused from activities on-site.

Surface water sample S97 was collected from the D pond. Trichloroethene was detected at a concentration of 16 ug/L in this sample. This compound is considered as a non-naturally occurring analyte and therefore may be present due to activities at Keystone.

Surface water samples S87, S90, and S91 were collected from the north sludge pond, the east sludge/waste ponds, and the mud lake respectively. These samples did not contain volatile or extractable compounds above contract-required detection limits.

4.2.b.2 Metals

The surface water samples collected at Keystone Steel and Wire were found to contain metals. The concentrations detected were compared to the levels of metals in the field blank water sample S99. For metals which were detected in the surface water samples but not in the field blank sample, a comparison was made with the analytical detection limit of the field blank.

Surface water sample S87 was collected from the north sludge pond. S83 and S97 were collected from the F and D ponds respectively. These samples were found to contain levels of metals significantly greater than the levels detected in field blank water sample S99. The following comparison illustrates this difference.

	S87 (ug/L)	S83 (ug/L)	S97 (ug/L)	S99 (ug/L)
Barium	[13]	[28]	[28]	1.0 U
Calcium	336000	192000	185000	6.0 U
Iron	2170	113	101	3.0 U
Lead	10	286	255	5.0 U
Magnesium	33100	34800	33700	21 U
Manganese	182	168	160	1.0 U
Potassium	5160	22600	24200	[296]
Sodium	148000	99600	98400	[209]
Zinc	168	22	22	[8.6]

U - Concentration below analytical detection limit.
[Value] - Concentration above analytical detection limit but below contract-required detection limit.

Surface water sample S84 was collected from the F pond. This sample was found to contain the following elevated levels of metals.

	S84 (ug/L)	S99 (ug/L)
Aluminum	10300	17 U
Barium	[91]	1.0 U
Cadmium	5.3	[2.4]
Calcium	277000	6.0 U
Chromium	31	5.0 U
Iron	12900	3.0 U
Lead	1890	5.0 U
Magnesium	50700	21 U
Manganese	1120	1.0 U
Potassium	16900	[296]
Sodium	85300	[209]
Zinc	380	[8.6]

U - Concentration below analytical detection limit.
[Value] - Concentration above analytical detection limit but below contract-required detection limit.

A surface water sample was collected from the east sludge/waste pond. This sample was designated as S90. It was found to contain concentrations of metals

significantly greater than the metal levels in field blank sample S99. The following is a comparison of the elevated levels to background levels.

	S90 (ug/L)	S99 (ug/L)
Aluminum	[38]	17 U
Barium	[56]	1.0 U
Calcium	58600	6.0 U
Chromium	78	5.0 U
Iron	[22]	3.0 U
Magnesium	6540	21 U
Manganese	[3.2]	1.0 U
Potassium	17300	[296]
Sodium	46500	[209]
Vanadium	[12]	3.0 U

U - Concentration below analytical detection limit.
[Value] - Concentration above analytical detection limit but below contract-required detection limit.

Surface water sample S91 was collected from the mud lake. This sample was found to contain the following metals at elevated levels as compared to the field blank sample S99.

	S91 (ug/L)	S99 (ug/L)
Aluminum	267	17 U
Barium	[25]	1.0 U
Calcium	133000	6.0 U
Iron	1900	3.0 U
Magnesium	21900	21 U
Manganese	306	1.0 U
Potassium	9630	[296]
Sodium	57400	[209]

U - Concentration below analytical detection limit.
[Value] - Concentration above analytical detection limit but below contract-required detection limit.

Elevated levels of metals were detected in surface water samples collected at Keystone Steel and Wire.

The analytical results of these samples indicate that operations on-site may be responsible for their presence.

4.3 Sludge Sample

One sludge sample was collected at Keystone. This sample, number S78, was collected from the oil pond and designated as a high hazard sample due to its oily nature.

4.3.a Volatile and Extractable Compounds

No volatile or semi-volatile organic compounds or pesticides/PCBs were above detection limits in sludge sample number S78.

4.3.b Metals

Metals were detected in sludge sample number S78 at elevated concentrations. These analytes and their concentrations are listed below.

	S78 (mg/kg)
Aluminum	34900
Barium	365
Calcium	10400
Chromium	76
Iron	18000
Lead	129
Magnesium	5730
Manganese	321
Nickel	63
Silicon	169000
Titanium	2650
Zinc	411

The elevated levels of metals in this sludge sample may be a result of manufacturing and waste management practices at Keystone.

5.0 Discussion

The analytical results of the soil/sediment, surface water and sludge samples collected at Keystone Steel and Wire on December 8 and 9, 1987 indicate that the samples may be considered contaminated.

The F Pond was found to contain volatile organic compounds in the soil and surface water samples. The constituents detected are 1,1-dichloroethane, t-1,2-dichloroethene, trichloroethene, and xylenes. These compounds are used in manufacturing plants as solvents and vapor degreasers. Their presence in the F Pond may be a result of cleaning/degreasing operations in the plant.

The pesticide arochlor-1254 was detected in the soil at the surface impoundment and the sheen pond. The use of pesticides by the facility may have caused the presence of this compound.

Metals were detected in elevated concentrations at many different locations throughout the facility. The metals present in the highest concentrations are cadmium, chromium, lead and zinc. These metals were present in soil and surface water samples. The presence of these metals in the surface water and soil may be a result of iron and steel manufacturing processes at the facility.

The south sludge pond soil sample exhibited high concentrations of chromium, cadmium, antimony, cobalt, iron, lead, manganese, and zinc. These metals are commonly used in steel and paint. Keystone's manufacturing processes and the use of paint may be the cause of contamination of the soil at the south sludge pond.

The sludge sample collected from the oil pond contained elevated concentrations of metals. The presence of metals in the oil pond may be a result of manufacturing and painting processes at the facility.

Wastes produced at Keystone Steel and Wire include spent solvents, waste paint, and metals from the manufacture of iron and steel. Waste management practices, past and present, are unclear at Keystone Steel and Wire. The analytical results of this December, 1987 sampling event indicate that hazardous waste constituents, mainly metals, have been released to the soil and surface water at the facility.

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APPENDIX A

HSL Organic and Inorganic Compounds

APPENDIX A

HSL ORGANIC COMPOUNDS

	Organic Compounds	CAS Number	Detection Limit Low Water ug/L	Detection Limit Low Soil Sediment ug/kg
1.	Chloromethane	74-87-3	10	10
2.	Bromomethane	74-83-9	10	10
3.	Vinyl Chloride (1)	75-01-4	10	10
4.	Chloroethane	75-00-3	10	10
5.	Methylene Chloride	75-09-2	5	5
6.	Acetone	67-64-1	10	10
7.	Carbon Disulfide	75-15-0	5	5
8.	1,1-Dichloroethene	75-35-4	5	5
9.	1,1-Dichloroethane	75-35-3	5	5
10.	trans-1,2-Dichloroethene	156-60-5	5	5
11.	Chloroform	67-66-3	5	5
12.	1,2-Dichloroethane	107-06-2	5	5
13.	2-Butanone	78-93-3	10	10
14.	1,1,1-Trichloroethane	71-55-6	5	5
15.	Carbon Tetrachloride	56-23-5	5	5
16.	Vinyl Acetate	109-05-4	10	10
17.	Bromodichloromethane	75-27-4	5	5
18.	1,1,2,2-Tetrachloroethane	79-34-5	5	5
19.	1,2-Dichloropropane	78-87-5	5	5
20.	trans-1,3-Dichloropropene	10061-02-6	5	5
21.	Trichloroethene	79-01-6	5	5
22.	Dibramocloromethane	124-48-1	5	5
23.	1,1,2-Trichloroethane	79-00-5	5	5
24.	Benzene	71-43-2	5	5
25.	cis-1,3-Dichloropropene	10061-01-5	5	5
26.	2-Chloroethyl Vinyl Ether	110-75-8	10	10
27.	Bromoform	75-25-2	5	5
28.	2-Hexanone	591-78-6	10	10
29.	4-Methyl-2-pentanone	108-10-1	10	10
30.	Tetrachloroethene	127-18-4	5	5
31.	Toluene	108-88-3	5	5
32.	Chlorobenzene	108-90-7	5	5
33.	Ethyl Benzene	100-41-4	5	5
34.	Styrene	100-42-5	5	5
35.	Total Xylenes		5	5
36.	Phenol	108-95-2	10	330
37.	bis(2-Chloroethyl)ether	111-44-4	10	330
38.	2-Chlorophenol	95-57-8	10	330
39.	1,3-Dichlorobenzene	541-73-1	10	330
40.	1,4-Dichlorobenzene	106-46-7	10	330
41.	Benzyl Alcohol	100-51-6	10	330

HSL ORGANIC COMPOUNDS (continued)

	Organic Compounds	CAS Number	Detection Limit Low Water ug/L	Detection Limit Low Soil Sediment ug/kg
42.	1,2-Dichlorobenzene	95-50-1	10	330
43.	2-Methylphenol	95-48-7	10	330
44.	bis(2-Chloroisopropyl)ether	39638-32-9	10	330
45.	4-Methylphenol	106-44-5	10	330
46.	N-Nitroso-Dipropylamine	621-64-7	10	330
47.	Hexachloroethane	67-72-1	10	330
48.	Nitrobenzene	98-95-3	10	330
49.	Isophorone	78-59-1	10	330
50.	2-Nitrophenol	88-75-5	10	330
51.	2,4-Dimethlphenol	105-67-9	10	330
52.	Benzoic Acid	65-85-0	50	1600
53.	bis(2-Chloroethyoxy)methane	111-91-1	10	330
54.	2,4-Dichlorophenol	120-83-2	10	330
55.	1,2,4-Trichlorobenzene	120-82-1	10	330
56.	Naphthalene	91-20-3	10	330
57.	4-Chloroaniline	106-47-8	10	330
58.	Hexachlorobutadiene	87-68-3	10	330
59.	4-Chloro-methylphenol (para-chloro-meta-cresol)	59-50-7	10	330
60.	2-Methylnaphthalene	91-57-6	10	330
61.	Hexachlorocyclopentadiene	77-47-4	10	330
62.	2,4,6-Trichlorophenol	88-06-2	10	330
63.	2,4,5-Trichlorophenol	95-95-4	50	1600
64.	2-Chloronaphthalene	91-58-7	10	330
65	2-Nitroaniline	88-74-4	50	1600
66.	Dimethyl Phthalate	131-11-3	10	330
67.	Acenaphthylene	208-96-8	10	330
68.	3-Nitroaniline	99-09-8	10	330
70.	2,4-Dinitrophenol	51-28-5	50	1600
71.	4-Nitrophenol	100-02-7	50	1600
72.	Dibenzofuran	132-64-9	10	330
73.	2,4-Dinitrotoluene	121-14-2	10	330
74.	2,6-Dinitrotoluene	606-20-2	10	330
75.	Diethylphthalate	84-66-2	10	330
76.	4-Chlorophenyl Phenyl Ether	7005-72-3	10	330
77.	Fluorene	86-73-7	10	330
78.	4-Nitroaniline	100-01-6	50	1600
79.	4,6-Dinitro-2-methylphenol	534-52-1	50	1600
80.	N-nitrosodiphenylamine	86-30-6	10	330
81.	4-Bromophenyl Phenyl Ether	101-55-3	10	330
82.	Hexachlorobenzene	118-74-1	10	330
83.	Pentachlorophenol	87-86-5	50	1600
84.	Phenanthrene	85-01-8	10	330
85.	Anthracene	120-12-7	10	330

HSL ORGANIC COMPOUNDS (continued)

	Organic Compounds	CAS Number	Detection Limit Low Water ug/L	Detection Limit Low Soil Sediment ug/kg
86.	Fluoranthene	206-44-0	10	330
88.	Pyrene	129-00-00	10	330
89.	Butyl Benzl Phthalate	85-68-7	10	330
90.	3,3'-Dichlorobenzidine	91-94-1	20	660
91.	Benzo(a)anthracene	56-55-3	10	330
92.	bis(2-ethylhexyl) phthalate	117-81-7	10	330
93.	Chrysene	218-01-9	10	330
94.	Di-n-octyl Phthalate	117-84-0	10	330
95.	Benzo(b)fluoranthene	205-99-2	10	330
96.	Benzo(k)fluoranthene	207-08-9	10	330
97.	Benzo(a)pyrene	50-32-8	10	330
98.	Indeno(1,2,3-cd)pyrene	193-39-5	10	330
99.	Dibenz(a,h)anthracene	53-70-3	10	330
100.	Benzo(g,h,i)perylene	191-24-2	10	330
101.	alpha-BHC	319-84-6	0.05	8.0
102.	beta-BHC	319-85-7	0.05	8.0
103.	delta-BHC	319-86-8	0.05	8.0
104.	gamma-BHC	58-89-9	0.05	8.0
105.	Heptachlor	76-44-8	0.05	8.0
106.	Aldrin	309-00-2	0.05	8.0
107.	Heptachlor Epoxide	1024-57-3	0.05	8.0
108.	Endosulfan I	959-98-8	0.05	8.0
109.	Dieldrin	60-57-1	0.10	16.0
110.	4,4'-DDE	72-55-9	0.10	16.0
111.	Endrin	72-20-8	0.10	16.0
112.	Endosulfan II	33213-65-9	0.10	16.0
113.	4,4'-DDD	72-54-8	0.10	16.0
114.	Endosulfan Sulfate	1031-07-8	0.10	16.0
115.	4,4'-DDT	50-29-3	0.10	16.0
116.	Endrin Ketone	53494-70-5	0.10	16.0
117.	Methoxychlor	72-43-5	0.5	80.0
118.	Chlordane	57-74-5	0.5	80.0
119.	Toxaphene	8001-35-2	1.0	160.0
120.	AROCLOR-1016*	12674-11-2	0.5	80.0
121.	AROCLOR-1221*	11104-28-2	0.5	80.0
122.	AROCLOR-1232*	11141-16-5	0.5	80.0
123.	AROCLOR-1242*	53469-21-9	0.5	80.0
124.	AROCLOR-1248*	12672-29-6	0.5	80.0
125.	AROCLOR-1254*	11097-69-1	1.0	160.0
126.	AROCLOR-1260*	11096-82-5	1.0	160.0

* = PCB compounds

HSL INORGANIC COMPOUNDS

Element	Contract Required Detection Level (ug/L)
Aluminum	200
Antimony	60
Arsenic	10
Barium	200
Beryllium	5
Cadmium	5
Calcium	5000
Chromium	10
Cobalt	50
Copper	25
Iron	100
Lead	5
Magnesium	5000
Manganese	15
Mercury	0.2
Nickel	40
Potassium	5000
Selenium	5
Silver	10
Sodium	5000
Thallium	10
Vanadium	50
Zinc	20
Cyanide	10

APPENDIX B

Sampling Summary

Sample Number	Sample Type	Sample Location	Sampling Method	Analytical Method
88JG01S77	Soil	Sheen Pond, Center of Dry Pond	Bucket auger, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S78	Sediment	Oil Pond A, taken from northwest corner of pond.	Stainless steel ladle, grab, high hazard.	VOAs A/B N, pesticides/PCBs metals.
88JG01S79	Liquid	Oil Pond B, taken from northeast corner of pond.	Sample bottle submerged, grab, high hazard.	VOAs A/B N, pesticides/PCBs metals.
88JG01S80	Liquid	Cooling Pond A, taken from northern pond.	Sample bottle submerged, grab, high hazard.	VOAs A/B N, pesticides/PCBs metals.
88JG01S81	Liquid	Cooling Pond B, taken from southern pond.	Sample bottle submerged, grab, high hazard.	VOAs A/B N, pesticides/PCBs metals.
88JG01S82	Sediment	F Pond, taken from near center of pond at eastern edge.	Stainless steel ladle, grab.	VOAs A/B N, pesticides/PCBs metals.
88JG01S83	Liquid	F Pond A, taken near edge of pond, north of S82.	Sample bottle submerged, grab.	VOAs A/B N, pesticides/PCBs metals.
88JG01S84	Liquid	F Pond B, taken near edge at south end of pond.	Sample bottle submerged, grab.	VOAs A/B N, pesticides/PCBs metals.

Sample Number	Sample Type	Sample Location	Sampling Method	Analytical Method
88JG01S85	Soil	Land Treatment (Old Landfill) A, collected from 6-12" depth from west landfill (center).	Stainless steel trowel, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S86	Soil	Land treatment (Old Landfill) B, collected from 6-12" depth from east landfill.	Stainless steel trowel, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S87	Liquid	North Sludge Pond, collected near dock, south of outfall at shore edge.	Sample bottle submerged, grab.	VOAs A/B N, pesticides/PCBs metals.
88JG01S88	Sediment	South Sludge Pond, collected from north edge, mid section of pond.	Stainless steel ladle, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S89	Sediment	East Sludge/Waste Ponds, collected from southwest corner of pond.	Stainless steel ladle, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S90	Liquid	East Sludge/Waste Ponds, collected from north side of pond.	Sample bottle submerged, grab.	VOAs A/B N, pesticides/PCBs metals.
88JG01S91	Liquid	Mud Lake, collected from pond at southern edge of property on eastern edge of pond.	Sample bottle submerged, grab.	VOAs A/B N, pesticides/PCBs metals.
88JG01S92	Soil	Vertical Tank A, collected from 6-7" depth from southern end of bermed area.	Stainless steel trowel, composite.	VOAs A/B N, pesticides/PCBs metals.

Sample Number	Sample Type	Sample Location	Sampling Method	Analytical Method
88JG01S93	Soil	Vertical Tank B, collected from 2-5" depth from northern end of bermed area.	Stainless steel trowel, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S94	Sediment	Pond (Green Bottom), collected from southwest end of pond.	Stainless steel ladle, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S95	Soil	Background A, collected from wooded area, north section of site, approximately 20 ft west of S96.	Stainless steel trowel, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S96	Soil	Background B, collected from wooded area, north section of site, approximately 20 ft east of S95.	Stainless steel trowel, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S97	Liquid	D Pond, duplicate of S83.	Sample bottle submerged, grab.	VOAs A/B N, pesticides/PCBs metals.
88JG01S98	Soil	Sheen Pond, duplicate of S77.	Stainless steel bucket auger, composite.	VOAs A/B N, pesticides/PCBs metals.
88JG01S99	Liquid	Field Blank.	Distilled water poured into sample bottles.	VOAs A/B N, pesticides/PCBs metals.

APPENDIX C

CLP Analytical Results: Compounds Detected

Inorganic Traffic Report Number :	01	02	03	04
Field Sample Number :	S78	S79	S80	S81
Sample Name :	OIL POND A	OIL POND B	COOLING POND A	COOLING POND B
Matrix :	Sediment (mg/kg)	Sediment (mg/kg)	Sediment (mg/kg)	Sediment (mg/kg)
METALS ANALYSIS				
Aluminum	34900			
Antimony				
Arsenic				
Barium	365			
Beryllium				
Cadmium				
Calcium	10400	1310		
Chromium	76			
Cobalt				
Copper				
Iron	18000	277		
Lead	129			
Magnesium	5730			
Manganese	321			
Mercury				
Molybdenum				
Nickel	63	56		
Silicon	169000			
Silver				
Sodium				
Titanium	2650			
Zinc	411	99		

DATA REPORTING QUALIFIERS

U - Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (eg. 10U) based on necessary concentration/dilution action (this is not necessarily the instrument detection limit). The footnotes should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J - Indicates an estimated value: This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10 J). If limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, report as 3 J.

B - This flag is used when analyte is found in the blank as well as sample. It indicated possible/probable blank contamination and warns the data user to take appropriate action.

[value] - If the result is a value greater than or equal to the instrument detection limit but less than the contract-required detection limit, report the value in brackets (i.e., [10]).

E - Indicates a value estimated or not reported due to the presence of interference.

N - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

APPENDIX D

CLP Organic Analytical Results

KEYSTONE STEEL & WIRE
CRL Sample Numbers : RCRA 4736
Case Number : 8689

Organic Traffic Report Number :	ES307	ES308	ES309	ES310	ES311	ES312
Field Sample Number :	S92	S93	S94	S95	S96	S98
Sample Name :	VERTICAL TANK A	VERTICAL TANK B	POND	BACKGROUND A	BACKGROUND B	SURFACE IMPOUNDMENT
Matrix :	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)
VOLATILE ORGANIC COMPOUND						
Vinyl Chloride						
Methylene Chloride	110 B	330 B	15 B	52 B	23 B	15 B
Acetone	880 B	310 B	110 B	25 B	36 B	36 B
1,1-dichloroethane						
t-1,2-dichloroethene						
2-butanone						
1,1,1-trichloroethane				26	13	5 J
Trichloroethene				15	5 J	2 J
Tetrachloroethene				7	2 J	
Toluene				12	3 J	2 J
Chlorobenzene						
Ethylbenzene	78			1 J		
Total Xylenes	250			7	3 J	

KEYSTONE STEEL & WIRE
CRL Sample Numbers : RCRA 4736
Case Number : 8689

Organic Traffic Report Number :	ES314	ES315	ES316	ES317	ES318	ES319	ES320
Field Sample Number :	S87	S83	S84	S90	S91	S97	S99
Sample Name :	NORTH SLUDGE POND	F POND A	F POND B	EAST SLUDGE/ WASTE PONDS	MUD LAKE	D POND	FIELD BLANK
Matrix :	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)
VOLATILE ORGANIC COMPOUND							
Vinyl Chloride		1 J	2 J				
Methylene Chloride	4 J B	3 J B	3 J B	7 B	6 B	5 B	8 B
Acetone	18 B	21 B	23 B	23 B	21 B	15 B	11 B
1,1-dichloroethane		5					
t-1,2-dichloroethene		8	3 J			4 J	
2-butanone	12 B	12 B	15 B	15 B	13 B	14 B	12 B
1,1,1-trichloroethane	3 J	2 J	1 J			1 J	
Trichloroethene		38	7			16	
Tetrachloroethene							
Toluene		2 J		1 J			2 J
Chlorobenzene							
Ethylbenzene							
Total Xylenes		5					

KEYSTONE STEEL & WIRE
CRL Sample Numbers : RCRA 4736 HIGH LEVEL HAZARD SAMPLES
Case Number : 8689 CASE # 3155I

Organic Traffic Report Number :	SAS (SET 18)-1	SAS (SET 18)-2	SAS (SET 18)-3	SAS (SET 18)-4
Field Sample Number :	S78	S79	S80	S81
Sample Name :	OIL POND A	OIL POND B	COOLING POND A	COOLING POND B
Matrix :	Sediment (mg/kg)	Sediment (mg/kg)	Sediment (mg/kg)	Sediment (mg/kg)
VOLATILE ORGANIC COMPOUND				
Vinyl Chloride				
Methylene Chloride				2.4 J B
Acetone				7.2 J B
1,1-dichloroethane				
t-1,2-dichloroethene				
2-butanone				
1,1,1-trichloroethane				
Trichloroethene				
Tetrachloroethene				
Toluene				
Chlorobenzene				
Ethylbenzene				
Total Xylenes				

Organic Traffic Report Number :	ES301	ES302	ES303	ES304	ES305	ES306
Field Sample Number :	S77	S82	S85	S86	S88	S89
Matrix :	Soil	Soil	Soil	Soil	Soil	Soil
	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
SEMIVOLATILE COMPOUNDS						
Phenol	90 J	570 J				220 J
4-methylphenol		170 J				
1,2,4-Trichlorobenzene		440 J				
Naphthalene		170 J				
2-methylnaphthalene						
Diethylphthalate					4700 J	
Fluorene						
Phenanthrene		190 J				
Di-N-Butylphthalate						
Fluoranthene	110 J					
Pyrene	94 J					
bis(2-ethylhexyl)phthalate						
Chrysene						
Di-N-Octyl Phthalate						
Benzo(b)Fluoranthene						
Benzo(k)Fluoranthene						
Benzo(a)Pyrene						
Benzo(g,h,i)Perylene						
PESTICIDE TARGET COMPOUNDS						
alpha-BHC						
Arochlor-1254	470					

Organic Traffic Report Number :	ES307	ES308	ES309	ES310	ES311	ES312
Field Sample Number :	S92	S93	S94	S95	S96	S98
Matrix :	Soil	Soil	Soil	Soil	Soil	Soil
	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)	(ug/kg)
SEMIVOLATILE COMPOUNDS						
Phenol						
4-methylphenol						
1,2,4-Trichlorobenzene						
Naphthalene	4900 J					
2-methylnaphthalene	30000					
Diethylphthalate	4400 J		10000 J			
Fluorene	3400 J					
Phenanthrene	6700 J			86 J		
Di-N-Butylphthalate				270 J		
Fluoranthene				150 J	88 J	120 J
Pyrene	3600 J	20000 J		120 J		100 J
bis(2-ethylhexyl)phthalate	4600 J					
Chrysene		8500 J				95 J
Di-N-Octyl Phthalate						
Benzo(b)Fluoranthene				76 J		120 J
Benzo(k)Fluoranthene						86 J
Benzo(a)Pyrene		18000 J				80 J
Benzo(g,h,i)Perylene		13000 J				
PESTICIDE TARGET COMPOUNDS						
alpha-BHC						
Arochlor-1254						230

Organic Traffic Report Number :	ES314	ES315	ES316	ES317	ES318	ES319	ES320
Field Sample Number :	S87	S83	S84	S90	S91	S97	S99
Matrix :	Water	Water	Water	Water	Water	Water	Water
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
SEMIVOLATILE COMPOUNDS							
Phenol							
4-methylphenol							
1,2,4-Trichlorobenzene							
Naphthalene							
2-methylnaphthalene							
Diethylphthalate							
Fluorene							
Phenanthrene							
Di-N-Butylphthalate							
Fluoranthene							
Pyrene							
bis(2-ethylhexyl)phthalate							
Chrysene							
Di-N-Octyl Phthalate		2 J	2 J	2 J			
Benzo(b)Fluoranthene							
Benzo(k)Fluoranthene							
Benzo(a)Pyrene							
Benzo(g,h,i)Perylene							
PESTICIDE TARGET COMPOUNDS							
alpha-BHC		0.020 J					
Arochlor-1254							

Organic Traffic Report Number :	(SET 18)-1	(SET 18)-2	(SET 18)-3	(SET 18)-4
Field Sample Number :	S78	S79	S80	S81
Matrix :	Sediment	Sediment	Sediment	Sediment
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SEMIVOLATILE COMPOUNDS				
Phenol				
4-methylphenol				
1,2,4-Trichlorobenzene				
Naphthalene				
2-methylnaphthalene		8 J		
Diethylphthalate				
Fluorene				
Phenanthrene				
Di-N-Butylphthalate				
Fluoranthene				
Pyrene				
bis(2-ethylhexyl)phthalate				
Chrysene				
Di-N-Octyl Phthalate				
Benzo(b)Fluoranthene				
Benzo(k)Fluoranthene				
Benzo(a)Pyrene				
Benzo(g,h,i)Perylene				
PESTICIDE TARGET COMPOUNDS				
alpha-BHC				
Arochlor-1254				

Inorganic Traffic Report Number	MEQ 401	MEQ 402	MEQ 403	MEQ 404	MEQ 405	MEQ 406
Field Sample Number :	S77	S82	S85	S86	S88	S89
Sample Name :	SHEEN POND	F POND	LAND TREATMENT A	LAND TREATMENT B	SOUTH SLUDGE POND	EAST SLUDGE/WASTE PONDS
Matrix :	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)
METALS ANALYSIS						
Aluminum	9700	16100	9050	14100	992	8920
Antimony	[6.6] N		[8.7] N	[8.8] N	100 N	[16] N
Arsenic	17	5.6	4.5	5.5	5.5	10
Barium	90	371	99	140	[56]	279
Beryllium						
Cadmium	13 *	14 *	6.8 *	8.2 *	96 *	48 *
Calcium	32500 *	170000 *	8230 *	10700 *	118000 *	288000 *
Chromium	54 *	59 *	20 *	26 *	230 *	529 *
Cobalt	[11]	[8.1]	[11]	[12]	31	[5.9]
Copper	56 *	64 *	20 *	23 *	82 *	174 *
Iron	26400	22100	21100	25100	399000	40400
Lead	232 * N	12700 * N	40 * N	36 * N	4000 * N	1810 * N
Magnesium	6760 *	11700 *	5140 *	6840 *	8590 *	22400 *
Manganese	1010 *	958 *	745 *	804 *	2140 *	5870 *
Mercury		0.93				
Nickel	25	17	21	23	204	29
Potassium	1530 E	3530 E	1480 E	2050 E	[135] E	[1290] E
Silver		[1.1]				[2.4]
Sodium	[245]	[721]	[132]	[148]	[311]	[540]
Vanadium	25	25	22	31	31	96
Zinc	1490 *	1930 *	213 *	159 *	28600 *	10100 *
Percent Solids (%)	58.3	51.9	79.1	77.1	67.5	49.7

Inorganic Traffic Report Number	MEQ 407	MEQ 408	MEQ 409	MEQ 410	MEQ 411	MEQ 412
Field Sample Number :	S92	S93	S94	S95	S96	S98
Sample Name :	VERTICAL TANK A	VERTICAL TANK B	POND	BACKGROUND A	BACKGROUND B	SURFACE IMPOUNDMENT
Matrix :	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)	Soil (mg/kg)
METALS ANALYSIS						
Aluminum	11800	9070	14800	9400	13600	9160
Antimony	[8.9] N	[12] N	[5.9] N	[6.0] N	[5.5] N	[5.4] N
Arsenic	14	12	5.2	6.2	6.2	13
Barium	141	136	116	106	132	[59]
Beryllium		[0.5]		0.2 U	0.3 U	
Cadmium	10 *	26 *	10 *	5.7 *	8.6 *	7.0 *
Calcium	16100 *	29900 *	164000 *	15700 *	8730 *	27400 *
Chromium	78 *	115 *	56 *	16 *	26 *	29 *
Cobalt	13	[6.7]	[8.7]	[9.3]	[11]	[10]
Copper	46 *	111 *	42 *	19 *	29 *	29 *
Iron	31500	33400	21100	19400	24200	18300
Lead	142 * N	847 * N	569 * N	37 * N	90 * N	102 * N
Magnesium	5520 *	2510 *	9190 *	8930 *	5250 *	12800 *
Manganese	1110 *	882 *	756 *	611 *	726 *	463 *
Mercury	0.15			0.23	0.11	
Nickel	26	26	19	18	22	21
Potassium	1600 E	[1310] E	2470 E	1410 E	2920 E	[1420] E
Silver				0.8 U	0.8 U	
Sodium	[183]	[396]	[513]	[135]	[136]	[215]
Vanadium	35	30	25	24	31	22
Zinc	474 *	2080 *	1140 *	119 *	296 *	488 *
Percent Solids (%)	68.9	62.7	55.1	77.8	72.8	59.5

KEYSTONE STEEL & WIRE
CRL Sample Numbers : RCRA 4736
Case Number : 8689

Organic Traffic Report Number :	ES301	ES302	ES303	ES304	ES305	ES306
Field Sample Number :	S77	S82	S85	S86	S88	S89
Sample Name :	SHEEN POND	F POND	LAND TREATMENT A	LAND TREATMENT B	SOUTH SLUDGE POND	EAST SLUDGE/WASTE PONDS
Matrix :	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)	Soil (ug/kg)
VOLATILE ORGANIC COMPOUND						
Vinyl Chloride						
Methylene Chloride	31 B	33 J B	21 B	28 B	9 B	37 B
Acetone	45 B	160 B	41 B	34 B		1200 B
1,1-dichloroethane						
t-1,2-dichloroethene		58				
2-butanone	18 B		16 B			
1,1,1-trichloroethane	3 J			9		
Trichloroethene		420	3 J	2 J		
Tetrachloroethene						
Toluene	3 J	15 J		22	11	
Chlorobenzene						
Ethylbenzene		13 J				
Total Xylenes		60				

Inorganic Traffic Report Number	MEQ 414	MEQ 415	MEQ 416	MEQ 417	MEQ 418	MEQ 419	MEQ 420
Field Sample Number :	S87	S83	S84	S90	S91	S97	S99
Sample Name :	NORTH SLUDGE POND	F POND A	F POND B	EAST SLUDGE/WASTE PONDS	MUD LAKE	D POND	FIELD BLANK
Matrix :	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)	Water (ug/L)
METALS ANALYSIS							
Aluminum		[27]	10300	[38]	267		17 U
Antimony							17 U
Arsenic							10 U
Barium	[13]	[28]	[91]	[56]	[25]	[28]	1.0 U
Beryllium							1.0 U
Cadmium	[3.3]		5.3		[2.4]		[2.4]
Calcium	336000	192000	277000	58600	133000	185000	6.0 U
Chromium			31	78			5.0 U
Cobalt			[3.9]				3.0 U
Copper	[15]	[8.7]	[16]			[6.7]	353
Iron	2170	113	12900	[22]	1900	101	3.0 U
Lead	10	286	1890			255	5.0 U
Magnesium	33100	34800	50700	6540	21900	33700	21 U
Manganese	182	168	1120	[3.2]	306	160	1.0 U
Mercury		0.26				0.22	0.20 U
Nickel	[16]	[5.1]	[14]	[6.3]	[5.9]	[4.7]	[18]
Potassium	5160	22600	16900	17300	9630	24200	[296]
Silver							3.0 U
Sodium	148000	99600	85300	46500	57400	98400	[209]
Vanadium			[5.9]	[12]			3.0 U
Zinc	168	22	380	[7.1]	[14]	22	[8.6]
Percent Solids (%)							

COPY

package complete

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

18 APR 1988

APR 18 1988
U.S. EPA CENTRAL REGIONAL LAB

DATE:

SUBJECT: Review of Region 5 data for KEYSTONE STEEL & WIRE

FROM: Curtis Ross, Director
Region 5 Central Regional Laboratory

Data User: KARL BREMER
RCRA

Attached are the results for

CRL Data Set Numbers: RCRA 4736 CASE 8689
Sample Numbers: 88JG01577-599 19 SAMPLES
Parameter(s): ABN, VOA, PCB
Laboratory: S

Results Status

( ) DATA ACCEPTABLE FOR USE*
(✓) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced

Comments by the Quality Control Coordinator:

See attached comments + note review in synoptic

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE:

Comments:

Review on RCRA Contract Data

Case# 8689 Data Set RCRA 47[illegible]

This review covers 19 samples, 12 are soil ([illegible]01-312) and 7 are water (ES 314-320) for analysis of ABN, VOA and pesticides.

The following are findings:

(1) In VOA initial Calibration, 2-Butanone and Methylene Chloride are outliers in % RSD and RF. In Continuous Calibration, acetone, 2-Butanone, Chloromethane, Bromomethane, Vinylacetate, dibromochloromethane and Trans-1,3-dichloropropene have their %D > 25% and RF < 0.05, they are out of specified limits.

In Semivolatile Continuous Calibration, the outliers in %D are 4-nitroaniline, 4,6-dinitro-2-methylphenol, 3,3'-dichlorobenzidine (This compound should be eliminated from HSL due to its thermal unstability

(2) Pesticide/PCB — The Calibration factors linearity for aldrin, endrin, 4,4'-DDT and DBC at 3 concentration levels are ≤ 10% on both single phase (SP 1200) and mixed phase SP 2250/2401 columns. % degradation of 4,4' DDT and endrin are below QC specification. The retention time shift of DBC in standards, blank and real sample are ok. %D of calibration factors for pesticides are within QC limits on columns of SP 2250/2401 and SP 2100 for quantitation. 4,4'-DDT has RT > 12 min

(3) GC/MS tuning and mass calibration (DFTPP and BFB) are within their ion abundance criteria

(4) Water surrogate spike recovery — % recoveries are all inside QC limits in VOA. In Semivolatile fraction, the phenol in ES 317 MSD, 2-fluorophenol in ES 317 MS; 2,4,6-tribromophenol in ES 314, 315, 317, 318, 319 and 320 do not meet QC specifications. In pesticide fraction, the [illegible] DBC has QC specified recoveries. The recoveries of soil spikes in VOA meet all QC limits. In semivolatile spikes, 2-fluorobiphenyl in ES 300 and DBC pesticide spike in ES 311 are out of limits

(5) MS/MSD — Water sample ES 317 is chosen as MS/MSD. The following

are observed:

(a) The % recovery and RPD in VOA and BN [illegible] OK.

(b) The spikes of pentachlorophenol and 4-nitrophenol have higher recoveries than the upper QC limit.

(c) The pesticide spikes have their % recoveries and RPD in agreement with QC range.

All soil MS/MSD recoveries and RPD are within their QC limits, except 2,4-dinitrotoluene, 1,4-dichlorobenzene each has higher recoveries than the upper QC limits

(6) Method Blank — The contaminants in water and soil are methylene chloride, acetone, 2-butanone and several unknowns. Their concentrations are generally slightly higher than their CRDL

Comments: (1) The contractor S-cubed got consistently high recoveries of the spiked compound tribromophenol in analysis of water MS and also in soil at medium concentration levels, this is presumably due to the matrix effect of the sample itself.

(2) The data are acceptable for use with qualifications referenced above.

(3) The work of S-cube appears of being better organized and of more comprehensive and generally is of better quality.

(4) The analysis of 3,3'-dichlorobenzidine by GC is not appropriate due to its thermally unstable (Federal Register, 49 (209) P153.)

[illegible] Hsieh
[illegible]-9-88

S-CUBED
A Division of Maxwell Laboratories, Inc.

RCRA 4736

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January 15, 1988

Volume 1 of 2

NARRATIVE CASE 8689
S-CUBED CONTRACT NO. 68-01-7261

This case consists of 12 soils samples and 7 water samples for full analysis. Analysis of the water samples was straightforward with no dilutions required. Numerous volatile soil samples needed dilutions in order to keep acetone,trichloroethene and TICs at a reasonable level. These samples were as follows:

Sample	Dilution
ES302	1:3.3
ES306	1:2.4
ES307	1:4.6
ES308	1:4.9

Extractable analyses were carried out using medium level techniques for samples ES305, ES307, ES308, and ES309. Sample ES308 required a 1:2 dilution prior to ABN analysis due to the high level of TICs.

QC analyses were generally successful. Water samples yielded a consistently high tribromophenol recovery. Soil samples yielded excellent surrogate recoveries. Matrix analyses of the ABN water and medium level soils yielded a few consistently high recoveries. This behavior is probably due to interferences from the sample matrix.

Pesticide analyses yielded Aroclor 1254 in Samples ES301 and ES302. Many samples may contain α-BHC, but the levels are so far below the detection limit that they are not entered on Form 1.

JoAnn Wilkinson
JoAnn Wilkinson, Project Manager

P.O. Box 1620, La Jolla, California 92038-1620
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3398 Carmel Mountain Road, San Diego, California 92121-1095
Telecopier: (619) 755-0474

12/29/87
RCRA 4156 DEC 14 PM

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

DUE DATE: 1-19-88

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER 8689 SITE NAME KEYSTONE STEEL & WIRE LABORATORY ORG. - S-CUBED INORG. - NORTHERN LABS DATE SHIPPED 12-9-87

SUPERFUND CU NUMBER DB07 EPA RPM (S.M.S.)/(CES) KEVIN MOSS PAGE 1 OF 1

ACTIVITY NUMBER C27150

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER	INORGANIC TRAFFIC REPORT NUMBER	WATER OR LIQUIDS: ACID BASE NEUTRAL CPDS ORGANIC SCAN UG/L TDX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TDX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET111	WATER CYANIDE UG/L MIN74919	NITRATE/NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7382	RESIDUE, NON-FILT TSS MG/L MIN7372			SEDIMENTS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TDX215722	VOLATILE ORGANIC ANALYSIS SCAN MG/KG TDX215822	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	NITRATE/NITRITE MG/KG	AMMONIA MG/KG MIN42925				
88JG01577	ES 301	MEQ 401													X	X	X		X							
88JG01582	ES 302	MEQ 402													X	X	X		X							
88JG01585	ES 303	MEQ 403													X	X	X		X							
88JG01586	ES 304	MEQ 404													X	X	X		X							
88JG01588	ES 305	MEQ 405													X	X	X		X							
88JG01589	ES 306	MEQ 406													X	X	X		X							
88JG01592	ES 307	MEQ 407													X	X	X		X							
88JG01593	ES 308	MEQ 408													X	X	X		X							
88JG01594	ES 309	MEQ 409													X	X	X		X							
88JG01595	ES 310	MEQ 410													X	X	X		X							
88JG01596	ES 311	MEQ 411													X	X	X		X							
88JG01598	ES 312	MEQ 412													X	X	X		X							
88JG01583	ES 315	MEQ 415	X	X	X		X																			
88JG01584	ES 316	MEQ 416	X	X	X		X																			
88JG01587	ES 314	MEQ 414	X	X	X		X																			
88JG01590	ES 317	MEQ 417	X	X	X		X																			
88JG01591	ES 318	MEQ 418	X	X	X		X																			
88JG01597	ES 319	MEQ 419	X	X	X		X																			
88JG01599	ES 320	MEQ 420	X	X	X		X																			

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S- CUBED

Contract No. 6801 -7261 GC Column SP 2250/2401 GC Instrument ID HP 5890 III

	DATE OF ANALYSIS 12-JAN-88				DATE OF ANALYSIS 13-JAN-88			
	TIME OF ANALYSIS 1239				TIME OF ANALYSIS 0357			
	LABORATORY ID IND A (INT)				LABORATORY ID IND A C1			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	2.94	±0.03	4.20		2.92	4.20	QUANT	0.0
Heptachlor	3.58	± 0.03	3.20		3.56	3.20		0.0
Aldrin	4.29	± 0.05	2.30		4.26	2.30		0.0
Heptachlor Epoxide	6.32	± 0.06	15048		6.28	14811		1.6
Endosulfan I	7.91	± 0.09	15052		7.85	15092		0.27
Dieldrin	9.57	± 0.09	13936		9.51	13571		2.6
4,4'-DDE								
Endrin								
Endosulfan II	13.93	± 0.20	14931		13.80	15153		1.5
4,4'-DDD								
Endosulfan Sulfate								
4,4'-DDT	16.19	± 0.25	9331		16.09	9123		2.2
Methoxychlor	30.33	± 0.43	6760		30.05	7002		3.6
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

7/86

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S-CUBED

Contract No. 6801-7261 GC Column SP2250/2401 GC Instrument ID HP5890 III

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 13:18 LABORATORY ID IND B INT				DATE OF ANALYSIS 13-JAN-88 TIME OF ANALYSIS 12:51 LABORATORY ID IND B CZ			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.36	±0.03	19163		2.36	19358	QUANT	1.0
beta-BHC	3.32	±0.05	11927		3.32	11401		4.4
delta-BHC	3.85	±0.07	13280		3.85	13256		0.18
gamma-BHC								
Heptachlor								
Aldrin	4.29	±0.05	20979		4.29	20420		2.7
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE	8.93	±0.10	18015		8.93	17124		4.9
Endrin	11.60	±0.18	15094		11.58	14704		2.6
Endosulfan II								
4,4'-DDD	13.50	±0.18	11085		13.51	10899		1.8
Endosulfan Sulfate	21.90	±0.35	14944		21.90	15474		3.5
4,4'-DDT								
Methoxychlor								
Endrin Ketone	29.58	±0.45	18986		29.56	18937	✓	0.26
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

7/85

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S-CUBED

Contract No. 6801-7261 GC Column SP 2250/2401 GC Instrument ID HP 5890 III

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 1239 LABORATORY ID IND A (INT)				DATE OF ANALYSIS 13-JAN-88 TIME OF ANALYSIS 2147 LABORATORY ID IND A C3			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	2.94	± 0.03	4.2		2.93	4.0	QUANT	4.8
Heptachlor	3.58	± 0.03	3.2		3.56	3.0		6.2
Aldrin	4.29	± 0.05	2.3		4.28	2.2		4.3
Heptachlor Epoxide	6.32	± 0.06	1.8		6.29	1.8		Ø
Endosulfan I	7.91	± 0.09	15052		7.87	15485		2.9
Dieldrin	9.57	± 0.09	13936		9.55	14046		0.79
4,4'-DDE								
Endrin								
Endosulfan II	13.93	± 0.20	14931		13.84	15536	↓	4.0
4,4'-DDD								
Endosulfan Sulfate								
4,4'-DDT	16.19	± 0.25	0.45		16.12	0.37	CONF	18
Methoxychlor	30.33	± 0.43	6760		30.15	6063	QUANT	10
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

7/86

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S-CUBED

Contract No. 6801-7261 GC Column SP2250/2401 GC Instrument ID HP5890III

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 1318 LABORATORY ID IND B INT				DATE OF ANALYSIS 14-JAN-88 TIME OF ANALYSIS 0721 LABORATORY ID IND B C4			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.36	±0.03	19163		2.35	18694	QUANT	2.4
beta-BHC	3.32	±0.05	11927		3.29	11880		0.39
delta-BHC	3.85	±0.07	13280		3.81	13939		5.0
gamma-BHC								
Heptachlor								
Aldrin	4.29	±0.05	20979		4.26	21205		1.1
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE	8.93	±0.10	18015		8.87	17684		1.8
Endrin	11.60	±0.18	15094		11.49	14513		3.8
Endosulfan II								
4,4'-DDD	13.50	±0.18	11085		13.40	11193		0.97
Endosulfan Sulfate	21.90	±0.35	14944		21.70	16550		11.0
4,4'-DDT								
Methoxychlor								
Endrin Ketone	29.58	±0.45	0.40		29.31	0.36	↓	10
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

7/86

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

[redacted] PEAK HEIGHT [redacted]

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S- CUBED

Contract No. 6801-7261 GC Column SP2250/2401 GC Instrument ID HP5890 III

	DATE OF ANALYSIS 12-JAN-88				DATE OF ANALYSIS 14-JAN-88			
	TIME OF ANALYSIS 1239				TIME OF ANALYSIS 1913			
	LABORATORY ID IND A (INT)				LABORATORY ID IND A C5			
COMPOUND	RT*	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	2.94	± 0.03	77808		2.93	80358	QUANT	3.3
Heptachlor	3.58	± 0.03	29608		3.57	30627		3.4
Aldrin	4.29	± 0.05	17138		4.28	17769		3.7
Heptachlor Epoxide	6.32	± 0.06	15048		6.30	15358		2.1
Endosulfan I	7.91	± 0.09	15052		7.88	15278		1.5
Dieldrin	9.57	± 0.09	13936		9.56	14050		0.82
4,4'-DDE								
Endrin								
Endosulfan II	13.93	± 0.20	14931		13.88	15867		6.3
4,4'-DDD								
Endosulfan Sulfate								
4,4'-DDT	16.19	± 0.25	9331		16.13	8312		11
Methoxychlor	30.33	± 0.43	6760		30.20	6459	↓	4.4
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

7/85

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S-CUBED

Contract No. 6801-7261 GC Column SP 2100 GC Instrument ID HP 5890 III

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 1201 LABORATORY ID IND A (INT)				DATE OF ANALYSIS 13-JAN-88 TIME OF ANALYSIS 0319 LABORATORY ID IND A C1			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	3.00	±0.03	8703		2.98	9044	QUANT	3.9
Heptachlor	4.66	±0.05	9886		4.63	10645		7.7
Aldrin	5.70	±0.08	7786		5.65	8223		5.6
Heptachlor Epoxide	6.85	±0.08	9289		6.80	9698		4.4
Endosulfan I	8.44	±0.11	9004		8.37	9360		4.0
Dieldrin	9.76	±0.12	9042		9.68	9472		4.8
4,4'-DDE								
Endrin								
Endosulfan II	11.03	±0.14	8968		10.94	9451		5.4
4,4'-DDD								
Endosulfan Sulfate								
4,4'-DDT	15.50	±0.19	5086		15.38	5407		6.3
Methoxychlor	22.48	±0.24	4060		22.33	4283		5.5
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

7/86

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S - CUBED

Contract No. 6801 - 7261 GC Column SP 2100 GC Instrument ID HP 5890 II

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 1239 LABORATORY ID IND B INT				DATE OF ANALYSIS 13-JAN-88 TIME OF ANALYSIS 1213 LABORATORY ID IND B C2			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.60	±0.03	8073		2.60	8711	QUANT	7.9
beta-BHC	2.76	± 0.03	7234		2.76	7677		6.1
delta-BHC	3.08	± 0.03	6616		3.08	7375		12
gamma-BHC								
Heptachlor								
Aldrin	5.72	± 0.12	12188		5.72	12934		6.1
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE	9.63	± 0.20	0.94		9.64	1.00		6.4 *'
Endrin	10.91	± 0.23	0.52		10.90	0.58		12.0 *'
Endosulfan II								
4,4'-DDD	12.01	± 0.20	7454		12.00	8128		9.0
Endosulfan Sulfate	14.08	± 0.28	7837		14.04	8323		6.2
4,4'-DDT								
Methoxychlor								
Endrin Ketone	17.94	± 0.34	11000		17.91	11472		4.3
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

7/86

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFE[illegible]CE)
QUANT. = QUANTITATION (<15% DIFFE[illegible]CE)

[illegible] CAL[illegible] AT [illegible] 3X PEAK HEIGHT [illegible]

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S-CUBED
Contract No. 6801-7261 GC Column SP 2100 GC Instrument ID HP 5890 III

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 1201 LABORATORY ID IND A (INT)				DATE OF ANALYSIS 13-JAN-88 TIME OF ANALYSIS 2109 LABORATORY ID IND A C3			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	3.00	± 0.03	8703		2.99	8925	QUANT	2.6
Heptachlor	4.66	± 0.05	9886		4.64	10529		6.5
Aldrin	5.70	± 0.08	7786		5.67	8425		8.2
Heptachlor Epoxide	6.85	± 0.08	9289		6.82	10086		8.6
Endosulfan I	8.44	± 0.11	9004		8.39	9738		8.2
Dieldrin	9.76	± 0.12	9042		9.72	9620		6.4
4,4'-DDE								
Endrin								
Endosulfan II	11.03	± 0.14	8968		10.99			9.4
4,4'-DDD								
Endosulfan Sulfate								
4,4'-DDT	15.50	± 0.19	0.29		15.40	0.25		14 *'
Methoxychlor	22.48	± 0.24	4060		22.36	3509		14
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

7/86

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (≤15% DIFFERENCE)

*' CALCULATED BY PEAK HEIGHT

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S-CUBED

Contract No. 6801-7262 GC Column SP 2100 GC Instrument ID HP 5890 III

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 1239 LABORATORY ID IND B (INT)				DATE OF ANALYSIS 14-JAN-88 TIME OF ANALYSIS 0643 LABORATORY ID IND B C4			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC	2.60	±0.03	8073		2.60	9042	QUANT	12
beta-BHC	2.76	±0.03	7234		2.74	7921		9.5
delta-BHC	3.08	±0.03	6616		3.06	7619		15
gamma-BHC								
Heptachlor								
Aldrin	5.72	±0.12	12188		5.65	13274		8.9
Heptachlor Epoxide								
Endosulfan I								
Dieldrin								
4,4'-DDE	9.63	±0.20	10768		9.52	11745		9.1
Endrin	10.91	±0.23	7713		10.77	7943		3.0
Endosulfan II								
4,4'-DDD	12.01	±0.20	7454		11.89	7734		3.8
Endosulfan Sulfate	14.08	±0.28	7837		13.90	8827		12.6
4,4'-DDT								
Methoxychlor								
Endrin Ketone	17.94	±0.34	11000		17.73	11861	↓	7.8
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

7/86

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

PESTICIDE/PCB STANDARDS SUMMARY

Case No. 8689 Laboratory S-CUBED
Contract No. 6801-7261 GC Column SP 2100 GC Instrument ID HP 5890 III

	DATE OF ANALYSIS 12-JAN-88 TIME OF ANALYSIS 1201 LABORATORY ID IND A INT				DATE OF ANALYSIS 14-JAN-88 TIME OF ANALYSIS 1835 LABORATORY ID IND A C5			
COMPOUND	RT	RETENTION TIME WINDOW	CALIBRATION FACTOR	CONF. OR QUANT.	RT	CALIBRATION FACTOR	CONF. OR QUANT.	PERCENT DIFF.**
alpha-BHC								
beta-BHC								
delta-BHC								
gamma-BHC	3.00	± 0.03	8703		3.00	9675	QUANT	11
Heptachlor	4.66	± 0.05	1.74		4.67	1.90		9.2 *'
Aldrin	5.70	± 0.08	7786		5.70	8974		15
Heptachlor Epoxide	6.85	± 0.08	1.20		6.85	1.30		8.3 *'
Endosulfan I	8.44	± 0.11	9004		8.44	10334		15
Dieldrin	9.76	± 0.12	9042		9.75	10136		12
4,4'-DDE								
Endrin								
Endosulfan II	11.03	± 0.14	0.69		11.03	0.75		8.7
4,4'-DDD								
Endosulfan Sulfate								
4,4'-DDT	15.50	± 0.19	5086		15.48	4863		4.4
Methoxychlor	22.48	± 0.24	0.15		22.47	0.152		1.3
Endrin Ketone								
Tech. Chlordane								
alpha-Chlordane*								
gamma-Chlordane*								
Toxaphene								
Aroclor - 1016								
Aroclor - 1221								
Aroclor - 1232								
Aroclor - 1242								
Aroclor - 1248								
Aroclor - 1254								
Aroclor - 1260								

7/85

* SEE EXHIBIT E, PART 7

** CONF. = CONFIRMATION (<20% DIFFERENCE)
QUANT. = QUANTITATION (<15% DIFFERENCE)

*' [illegible] OX PEAK HEIGHT

88JG01577

Sample Number: ES301

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 11DV1031(VOA); DC18051(ABN)
Sample Matrix: SOIL
Data Release Authorized By: N

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-11-87
Conc/Dil Factor: 0.99 pH: 6.0
Percent Moisture (Not Decanted): 41.6

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	17	U	78-87-5	1,2-DICHLOROPROPANE	8	U
74-83-9	BROMOMETHANE	17	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	8	U
75-01-4	VINYL CHLORIDE	17	U	79-01-6	TRICHLOROETHENE	8	U
75-00-3	CHLOROETHANE	17	U	124-48-1	DIBROMOCHLOROMETHANE	8	U
75-09-2	METHYLENE CHLORIDE	31	B	79-00-5	1,1,2-TRICHLOROETHANE	8	U
67-64-1	ACETONE	45	B	71-43-2	BENZENE	8	U
75-15-0	CARBON DISULFIDE	8	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	8	U
75-35-4	1,1-DICHLOROETHENE	8	U	110-75-8	2-CHLOROETHYLVINYLETHER	17	U
75-34-3	1,1-DICHLOROETHANE	8	U	75-25-2	BROMOFORM	8	U
156-60-5	TRANS-1,2-DICHLOROETHENE	8	U	591-78-6	2-HEXANONE	17	U
67-66-3	CHLOROFORM	8	U	108-10-1	4-METHYL-2-PENTANONE	17	U
107-06-2	1,2-DICHLOROETHANE	8	U	127-18-4	TETRACHLOROETHENE	8	U
78-93-3	2-BUTANONE	18	B	79-34-5	1,1,2,2-TETRACHLOROETHANE	8	U
71-55-6	1,1,1-TRICHLOROETHANE	3	J	108-88-3	TOLUENE	3	J
56-23-5	CARBON TETRACHLORIDE	8	U	108-90-7	CHLOROBENZENE	8	U
108-05-4	VINYL ACETATE	17	U	100-41-4	ETHYLBENZENE	8	U
75-27-4	BROMODICHLOROMETHANE	8	U	100-42-5	STYRENE	8	U
					TOTAL XYLENES	8	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
ES301

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-18-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle One)
108-95-2	PHENOL	90 J
111-44-4	BIS(2-CHLOROETHYL)ETHER	850 U
95-57-8	2-CHLOROPHENOL	850 U
541-73-1	1-3,DICHLOROBENZENE	850 U
106-46-7	1,4-DICHLOROBENZENE	850 U
100-51-6	BENZYL ALCOHOL	850 U
95-50-1	1,2-DICHLOROBENZENE	850 U
95-48-7	2-METHYLPHENOL	850 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	850 U
106-44-5	4-METHYLPHENOL	850 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	850 U
67-72-1	HEXACHLOROETHANE	850 U
98-95-3	NITROBENZENE	850 U
78-59-1	ISOPHORONE	850 U
88-75-5	2-NITROPHENOL	850 U
105-67-9	2,4-DIMETHYLPHENOL	850 U
65-85-0	BENZOIC ACID	4100 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	850 U
120-83-2	2,4-DICHLOROPHENOL	850 U
120-82-1	1,2,4-TRICHLOROBENZENE	850 U
91-20-3	NAPHTHALENE	850 U
106-47-8	4-CHLOROANILINE	850 U
87-68-3	HEXACHLOROBUTADIENE	850 U
59-50-7	4-CHLORO-3-METHYLPHENOL	850 U
91-57-6	2-METHYLNAPHTHALENE	850 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	850 U
88-06-2	2,4,6-TRICHLOROPHENOL	850 U
95-95-4	2,4,5-TRICHLOROPHENOL	4100 U
91-58-7	2-CHLORONAPHTHALENE	850 U
88-74-4	2-NITROANILINE	4100 U
131-11-3	DIMETHYL PHTHALATE	850 U
208-96-8	ACENAPHTHYLENE	850 U
99-09-2	3-NITROANILINE	4100 U

CAS Number		ug/l or ug/kg (circle One)
83-32-9	ACENAPHTHENE	850 U
51-28-5	2,4-DINITROPHENOL	4100 U
100-02-7	4-NITROPHENOL	4100 U
132-64-9	DIBENZOFURAN	850 U
121-14-2	2,4-DINITROTOLUENE	850 U
606-20-2	2,6-DINITROTOLUENE	850 U
84-66-2	DIETHYLPHTHALATE	850 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	850 U
86-73-7	FLUORENE	850 U
100-01-6	4-NITROANILINE	4100 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	4100 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	850 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	850 U
118-74-1	HEXACHLOROBENZENE	850 U
87-86-5	PENTACHLOROPHENOL	4100 U
85-01-8	PHENANTHRENE	850 U
120-12-7	ANTHRACENE	850 U
84-74-2	DI-N-BUTYLPHTHALATE	850 U
206-44-0	FLUORANTHENE	110 J
129-00-0	PYRENE	94 J
85-68-7	BUTYLBENZYLPHTHALATE	850 U
91-94-1	3,3'-DICHLOROBENZIDINE	1700 U
56-55-3	BENZO(a)ANTHRACENE	850 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	850 U
218-01-9	CHRYSENE	850 U
117-84-0	DI-N-OCTYL PHTHALATE	850 U
205-99-2	BENZO(b)FLUORANTHENE	850 U
207-08-9	BENZO(k)FLUORANTHENE	850 U
50-32-8	BENZO(a)PYRENE	850 U
193-39-5	INDENO(1,2,3-CD)PYRENE	850 U
53-70-3	DIBENZ(a,h)ANTHRACENE	850 U
191-24-2	BENZO(g,h,i)PERYLENE	850 U

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: B689

Sample Number
ES 301

ORGANICS ANALYSIS DATA
(Page 3)

MB

Pesticide/PCBs

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	14 u
319-85-7	BETA-BHC	14 u
319-86-8	DELTA-BHC	14 u
58-89-9	GAMMA-BHC (LINDANE)	14 u
76-44-8	HEPTACHLOR	14 u
309-00-2	ALDRIN	14 u
1024-57-3	HEPTACHLOR EPOXIDE	14 u
959-98-8	ENDOSULFAN I	14 u
60-57-1	DIELDRIN	27 u
72-55-9	4,4'-DDE	27 u
72-20-8	ENDRIN	27 u
33213-65-9	ENDOSULFAN II	27 u
72-54-8	4,4'-DDD	27 u
7421-93-4	ENDRIN ALDEHYDE	27 u
1031-07-8	ENDOSULFAN SULFATE	27 u
50-29-3	4,4'-DDT	27 u
72-43-5	METHOXYCHLOR	140 u
53494-70-5	ENDRIN KETONE	27 u
57-74-9	CHLORDANE	140 u
8001-35-2	TOXAPHENE	270 u
12674-11-2	AROCLOR-1016	140 u
11104-28-2	AROCLOR-1221	140 u
11141-16-5	AROCLOR-1232	140 u
53469-21-9	AROCLOR-1242	140 u
12672-29-6	AROCLOR-1248	140 u
11097-69-1	AROCLOR-1254	470 **
11096-82-5	AROCLOR-1260	270 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

Form I 7/85 REV.

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name E. Purdy

Case No 8689

Sample Number ES 301

11DV1031 (VOA)
DC18051 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. NA	UNKNOWN	ABN	67	2100 JB
4. NA	UNKNOWN		245	530 J
5. 100-52-7	benzaldehyde		268	910 JB
6. NA	UNKNOWN		926	1700 JB
7. 10544-50-0	sulfur		1261	1100 J
8. NA	UNKNOWN		1293	480 J
9.	UNKNOWN		1304	1200 J
10.	UNKNOWN		1576	1000 J
11.	UNKNOWN HYDROCARBON		1660	700 J
12.	UNKNOWN		1720	380 J
13.	UNKNOWN HYDROCARBON		1760	1900 J
14.	UNKNOWN HYDROCARBON		1854	1400 J
15.	UNKNOWN		1864	490 J
16.	UNKNOWN		1868	450 J
17.	UNKNOWN		1880	350 J
18.	UNKNOWN		1914	420 J
19.	UNKNOWN		1931	700 J
20.	UNKNOWN		1962	1600 J
21.	UNKNOWN		1968	1700 J
22. NA	UNKNOWN		1982	420 J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88JQ01582

: Sample Number:
ES302 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: B11V1041(VOA); DC18061(ABN)
Sample Matrix: SOIL
Data Release Authorized By: N

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-11-87
Conc/Dil Factor: 3.3 pH: 10.5
Percent Moisture (Not Decanted): 51.1

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	67 U	78-87-5	1,2-DICHLOROPROPANE	34 U
74-83-9	BROMOMETHANE	67 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	34 U
75-01-4	VINYL CHLORIDE	67 U	79-01-6	TRICHLOROETHENE	420
75-00-3	CHLOROETHANE	67 U	124-48-1	DIBROMOCHLOROMETHANE	34 U
75-09-2	METHYLENE CHLORIDE	33 J B	79-00-5	1,1,2-TRICHLOROETHANE	34 U
67-64-1	ACETONE	160 B	71-43-2	BENZENE	34 U
75-15-0	CARBON DISULFIDE	34 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	34 U
75-35-4	1,1-DICHLOROETHENE	34 U	110-75-8	2-CHLOROETHYLVINYLETHER	67 U
75-34-3	1,1-DICHLOROETHANE	pw ~~10 J~~ 34u	75-25-2	BROMOFORM	34 U
156-60-5	TRANS-1,2-DICHLOROETHENE	58	591-78-6	2-HEXANONE	67 U
67-66-3	CHLOROFORM	34 U	108-10-1	4-METHYL-2-PENTANONE	67 U
107-06-2	1,2-DICHLOROETHANE	34 U	127-18-4	TETRACHLOROETHENE	34 U
78-93-3	2-BUTANONE	67 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	34 U
71-55-6	1,1,1-TRICHLOROETHANE	pw ~~11 J~~ 67u	108-88-3	TOLUENE	15 J
56-23-5	CARBON TETRACHLORIDE	34 U	108-90-7	CHLOROBENZENE	34 U
108-05-4	VINYL ACETATE	67 U	100-41-4	ETHYLBENZENE	13 J
75-27-4	BROMODICHLOROMETHANE	34 U	100-42-5	STYRENE	34 U
				TOTAL XYLENES	60

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: G-CUBED
Case No: 8689

Sample Number
EB302

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-18-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	570 J
111-44-4	BIS(2-CHLOROETHYL)ETHER	1000 U
95-57-8	2-CHLOROPHENOL	1000 U
541-73-1	1-3,DICHLOROBENZENE	1000 U
106-46-7	1,4-DICHLOROBENZENE	1000 U
100-51-6	BENZYL ALCOHOL	1000 U
95-50-1	1,2-DICHLOROBENZENE	1000 U
95-48-7	2-METHYLPHENOL	1000 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	1000 U
106-44-5	4-METHYLPHENOL	170 J
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	1000 U
67-72-1	HEXACHLOROETHANE	1000 U
98-95-3	NITROBENZENE	1000 U
78-59-1	ISOPHORONE	1000 U
88-75-5	2-NITROPHENOL	1000 U
105-67-9	2,4-DIMETHYLPHENOL	1000 U
65-85-0	BENZOIC ACID	4900 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1000 U
120-83-2	2,4-DICHLOROPHENOL	1000 U
120-82-1	1,2,4-TRICHLOROBENZENE	440 J
91-20-3	NAPHTHALENE	170 J
106-47-8	4-CHLOROANILINE	1000 U
87-68-3	HEXACHLOROBUTADIENE	1000 U
59-50-7	4-CHLORO-3-METHYLPHENOL	1000 U
91-57-6	2-METHYLNAPHTHALENE	1000 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	1000 U
88-06-2	2,4,6-TRICHLOROPHENOL	1000 U
95-95-4	2,4,5-TRICHLOROPHENOL	4900 U
91-58-7	2-CHLORONAPHTHALENE	1000 U
88-74-4	2-NITROANILINE	4900 U
131-11-3	DIMETHYL PHTHALATE	1000 U
208-96-8	ACENAPHTHYLENE	1000 U
99-09-2	3-NITROANILINE	4900 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	1000 U
51-28-5	2,4-DINITROPHENOL	4900 U
100-02-7	4-NITROPHENOL	4900 U
132-64-9	DIBENZOFURAN	1000 U
121-14-2	2,4-DINITROTOLUENE	1000 U
606-20-2	2,6-DINITROTOLUENE	1000 U
84-66-2	DIETHYLPHTHALATE	1000 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	1000 U
86-73-7	FLUORENE	1000 U
100-01-6	4-NITROANILINE	4900 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	4900 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	1000 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	1000 U
118-74-1	HEXACHLOROBENZENE	1000 U
87-86-5	PENTACHLOROPHENOL	4900 U
85-01-8	PHENANTHRENE	190 J
120-12-7	ANTHRACENE	1000 U
84-74-2	DI-N-BUTYLPHTHALATE	1000 U
206-44-0	FLUORANTHENE	1000 U
129-00-0	PYRENE	1000 U
85-68-7	BUTYLBENZYLPHTHALATE	1000 U
91-94-1	3,3'-DICHLOROBENZIDINE	2000 U
56-55-3	BENZO(a)ANTHRACENE	1000 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	1000 U
218-01-9	CHRYSENE	1000 U
117-84-0	DI-N-OCTYL PHTHALATE	1000 U
205-99-2	BENZO(b)FLUORANTHENE	1000 U
207-08-9	BENZO(k)FLUORANTHENE	1000 U
50-32-8	BENZO(a)PYRENE	1000 U
193-39-5	INDENO(1,2,3-CD)PYRENE	1000 U
53-70-3	DIBENZ(a,h)ANTHRACENE	1000 U
191-24-2	BENZO(g,h,i)PERYLENE	1000 U

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 302

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

MB

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup __Yes ✓NO
Separatory Funnel Extraction __Yes
Continuous Liquid-Liquid Extraction __Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	16 u
319-85-7	BETA-BHC	16 u
319-86-8	DELTA-BHC	16 u
58-89-9	GAMMA-BHC (LINDANE)	16 u
76-44-8	HEPTACHLOR	16 u
309-00-2	ALDRIN	16 u
1024-57-3	HEPTACHLOR EPOXIDE	16 u
959-98-8	ENDOSULFAN I	16 u
60-57-1	DIELDRIN	33 u
72-55-9	4,4'-DDE	33 u
72-20-8	ENDRIN	33 u
33213-65-9	ENDOSULFAN II	33 u
72-54-8	4,4'-DDD	33 u
7421-93-4	ENDRIN ALDEHYDE	33 u
1031-07-8	ENDOSULFAN SULFATE	33 u
50-29-3	4,4'-DDT	33 u
72-43-5	METHOXYCHLOR	160 u
53494-70-5	ENDRIN KETONE	33 u
57-74-9	CHLORDANE	160 u
8001-35-2	TOXAPHENE	330 u
12674-11-2	AROCLOR-1016	160 u
11104-28-2	AROCLOR-1221	160 u
11141-16-5	AROCLOR-1232	160 u
53469-21-9	AROCLOR-1242	160 u
12672-29-6	AROCLOR-1248	160 u
11097-69-1	AROCLOR-1254	330 u
11096-82-5	AROCLOR-1260	330 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES 302

D11V1041 (VOA)
DC18061 (APDN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. NA	UNKNOWN	APDN	89	12000 JB
4. 100-52-7	benzaldehyde		269	820 JB
5. NA	UNKNOWN HYDROCARBON		379	1900 J
6.	UNKNOWN		922	870 JB
7.	UNKNOWN HYDROCARBON		1030	710 J
8.	UNKNOWN		1138	820 J
9.	UNKNOWN		1220	570 J
10.	UNKNOWN		1322	800 J
11.	UNKNOWN HYDROCARBON		1660	440 J
12.	UNKNOWN		1708	560 J
13.	UNKNOWN		1726	600 J
14.	UNKNOWN HYDROCARBON		1759	920 J
15.	UNKNOWN		1858	560 J
16.	UNKNOWN		1863	1400 J
17.	UNKNOWN		1921	560 J
18 NA	UNKNOWN		1961	1400 J
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88J601585

Sample Number: E5303

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D11V1021 (VOA); DC18071 (ABN)
Sample Matrix: SOIL
Data Release Authorized By: N

Case No: 8689
GC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-11-87
Conc/Dil Factor: 0.99 pH: 8.3
Percent Moisture (Not Decanted): 21.2

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (Circle one)
74-87-3	CHLOROMETHANE	13 U	78-87-5	1,2-DICHLOROPROPANE	6 U
74-83-9	BROMOMETHANE	13 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	6 U
75-01-4	VINYL CHLORIDE	13 U	79-01-6	TRICHLOROETHENE	3 J
75-00-3	CHLOROETHANE	13 U	124-48-1	DIBROMOCHLOROMETHANE	6 U
75-09-2	METHYLENE CHLORIDE	21 B	79-00-5	1,1,2-TRICHLOROETHANE	6 U
67-64-1	ACETONE	41 B	71-43-2	BENZENE	6 U
75-15-0	CARBON DISULFIDE	6 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	6 U
75-35-4	1,1-DICHLOROETHENE	6 U	110-75-8	2-CHLOROETHYLVINYLETHER	13 U
75-34-3	1,1-DICHLOROETHANE	6 U	75-25-2	BROMOFORM	6 U
156-60-5	TRANS-1,2-DICHLOROETHENE	6 U	591-78-6	2-HEXANONE	13 U
67-66-3	CHLOROFORM	6 U	108-10-1	4-METHYL-2-PENTANONE	13 U
107-06-2	1,2-DICHLOROETHANE	6 U	127-18-4	TETRACHLOROETHENE	6 U
78-93-3	2-BUTANONE	16 B	79-34-5	1,1,2,2-TETRACHLOROETHANE	6 U
71-55-6	1,1,1-TRICHLOROETHANE	6 U	108-88-3	TOLUENE	6 U
56-23-5	CARBON TETRACHLORIDE	6 U	108-90-7	CHLOROBENZENE	6 U
108-05-4	VINYL ACETATE	13 U	100-41-4	ETHYLBENZENE	6 U
75-27-4	BROMODICHLOROMETHANE	6 U	100-42-5	STYRENE	6 U
				TOTAL XYLENES	6 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged. However, the definition of each flag must be explicit.

value: If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with the U (eg. 10U) based on necessary concentration/dilution action. (this is not necessarily the instrument detection limit.) The footnotes should read: U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value: This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J). If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated, report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS. Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
ES303

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-18-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	630 U	83-32-9	ACENAPHTHENE	630 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	630 U	51-28-5	2,4-DINITROPHENOL	3000 U
95-57-8	2-CHLOROPHENOL	630 U	100-02-7	4-NITROPHENOL	3000 U
541-73-1	1-3,DICHLOROBENZENE	630 U	132-64-9	DIBENZOFURAN	630 U
106-46-7	1,4-DICHLOROBENZENE	630 U	121-14-2	2,4-DINITROTOLUENE	630 U
100-51-6	BENZYL ALCOHOL	630 U	606-20-2	2,6-DINITROTOLUENE	630 U
95-50-1	1,2-DICHLOROBENZENE	630 U	84-66-2	DIETHYLPHTHALATE	630 U
95-48-7	2-METHYLPHENOL	630 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	630 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	630 U	86-73-7	FLUORENE	630 U
106-44-5	4-METHYLPHENOL	630 U	100-01-6	4-NITROANILINE	3000 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	630 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3000 U
67-72-1	HEXACHLOROETHANE	630 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	630 U
98-95-3	NITROBENZENE	630 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	630 U
78-59-1	ISOPHORONE	630 U	118-74-1	HEXACHLOROBENZENE	630 U
88-75-5	2-NITROPHENOL	630 U	87-86-5	PENTACHLOROPHENOL	3000 U
105-67-9	2,4-DIMETHYLPHENOL	630 U	85-01-8	PHENANTHRENE	630 U
65-85-0	BENZOIC ACID	3000 U	120-12-7	ANTHRACENE	630 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	630 U	84-74-2	DI-N-BUTYLPHTHALATE	630 U
120-83-2	2,4-DICHLOROPHENOL	630 U	206-44-0	FLUORANTHENE	630 U
120-82-1	1,2,4-TRICHLOROBENZENE	630 U	129-00-0	PYRENE	630 U
91-20-3	NAPHTHALENE	630 U	85-68-7	BUTYLBENZYLPHTHALATE	630 U
106-47-8	4-CHLOROANILINE	630 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	630 U	56-55-3	BENZO(a)ANTHRACENE	630 U
59-50-7	4-CHLORO-3-METHYLPHENOL	630 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	630 U
91-57-6	2-METHYLNAPHTHALENE	630 U	218-01-9	CHRYSENE	630 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	630 U	117-84-0	DI-N-OCTYL PHTHALATE	630 U
88-06-2	2,4,6-TRICHLOROPHENOL	630 U	205-99-2	BENZO(b)FLUORANTHENE	630 U
95-95-4	2,4,5-TRICHLOROPHENOL	3000 U	207-08-9	BENZO(k)FLUORANTHENE	630 U
91-58-7	2-CHLORONAPHTHALENE	630 U	50-32-8	BENZO(a)PYRENE	630 U
88-74-4	2-NITROANILINE	3000 U	193-39-5	INDENO(1,2,3-CD)PYRENE	630 U
131-11-3	DIMETHYL PHTHALATE	630 U	53-70-3	DIBENZ(a,h)ANTHRACENE	630 U
208-96-8	ACENAPHTHYLENE	630 U	191-24-2	BENZO(g,h,i)PERYLENE	630 U
99-09-2	3-NITROANILINE	3000 U			

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 303

MB

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	10 u
319-85-7	BETA-BHC	10 u
319-86-8	DELTA-BHC	10 u
58-89-9	GAMMA-BHC (LINDANE)	10 u
76-44-8	HEPTACHLOR	10 u
309-00-2	ALDRIN	10 u
1024-57-3	HEPTACHLOR EPOXIDE	10 u
959-98-8	ENDOSULFAN I	10 u
60-57-1	DIELDRIN	20 u
72-55-9	4,4'-DDE	20 u
72-20-8	ENDRIN	20 u
33213-65-9	ENDOSULFAN II	20 u
72-54-8	4,4'-DDD	20 u
7421-93-4	ENDRIN ALDEHYDE	20 u
1031-07-8	ENDOSULFAN SULFATE	20 u
50-29-3	4,4'-DDT	20 u
72-43-5	METHOXYCHLOR	100 u
53494-70-5	ENDRIN KETONE	20 u
57-74-9	CHLORDANE	100 u
8001-35-2	TOXAPHENE	200 u
12674-11-2	AROCLOR-1016	100 u
11104-28-2	AROCLOR-1221	100 u
11141-16-5	AROCLOR-1232	100 u
53469-21-9	AROCLOR-1242	100 u
12672-29-6	AROCLOR-1248	100 u
11097-69-1	AROCLOR-1254	200 u
11096-82-5	AROCLOR-1260	200 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

++ CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES303

D11V1021 (VOA)
DC18071 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. NA	UNKNOWN	ABN	67	1300 JB
4. NA	UNKNOWN		245	420 J
5. 100-52-7	benzaldehyde		268	260 JB
6. NA	UNKNOWN		924	1000 JB
7.	UNKNOWN HYDROCARBON		1660	350 J
8.	UNKNOWN HYDROCARBON		1760	1400 J
9.	UNKNOWN		1826	370 J
10.	UNKNOWN HYDROCARBON		1854	1300 J
11.	UNKNOWN		1914	270 J
12.	UNKNOWN		1921	350 J
13.	UNKNOWN		1931	420 J
14. NA	UNKNOWN		1961	1000 J
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88JG01S86

: Sample Number:
ES304 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D11V1031(VBA); DC19081 (ABN)
Sample Matrix: SOIL
Data Release Authorized By: N

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-11-87
Conc/Dil Factor: 1.0 pH: 7.3
Percent Moisture (Not Decanted): 21.9

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	13	U	78-87-5	1,2-DICHLOROPROPANE	6	U
74-83-9	BROMOMETHANE	13	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	6	U
75-01-4	VINYL CHLORIDE	13	U	79-01-6	TRICHLOROETHENE	2	J
75-00-3	CHLOROETHANE	13	U	124-48-1	DIBROMOCHLOROMETHANE	6	U
75-09-2	METHYLENE CHLORIDE	28	B	79-00-5	1,1,2-TRICHLOROETHANE	6	U
67-64-1	ACETONE	34	B	71-43-2	BENZENE	6	U
75-15-0	CARBON DISULFIDE	6	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	6	U
75-35-4	1,1-DICHLOROETHENE	6	U	110-75-8	2-CHLOROETHYLVINYLETHER	13	U
75-34-3	1,1-DICHLOROETHANE	6	U	75-25-2	BROMOFORM	6	U
156-60-5	TRANS-1,2-DICHLOROETHENE	6	U	591-78-6	2-HEXANONE	13	U
67-66-3	CHLOROFORM	6	U	108-10-1	4-METHYL-2-PENTANONE	13	U
107-06-2	1,2-DICHLOROETHANE	6	U	127-18-4	TETRACHLOROETHENE	6	U
78-93-3	2-BUTANONE	13	U	79-34-5	1,1,2,2-TETRACHLOROETHANE	6	U
71-55-6	1,1,1-TRICHLOROETHANE	9		108-88-3	TOLUENE	22	
56-23-5	CARBON TETRACHLORIDE	6	U	108-90-7	CHLOROBENZENE	6	U
108-05-4	VINYL ACETATE	13	U	100-41-4	ETHYLBENZENE	6	U
75-27-4	BROMODICHLOROMETHANE	6	U	100-42-5	STYRENE	6	U
					TOTAL XYLENES	6	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
EB304

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-18-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	630 U	83-32-9	ACENAPHTHENE	630 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	630 U	51-28-5	2,4-DINITROPHENOL	3100 U
95-57-8	2-CHLOROPHENOL	630 U	100-02-7	4-NITROPHENOL	3100 U
541-73-1	1-3,DICHLOROBENZENE	630 U	132-64-9	DIBENZOFURAN	630 U
106-46-7	1,4-DICHLOROBENZENE	630 U	121-14-2	2,4-DINITROTOLUENE	630 U
100-51-6	BENZYL ALCOHOL	630 U	606-20-2	2,6-DINITROTOLUENE	630 U
95-50-1	1,2-DICHLOROBENZENE	630 U	84-66-2	DIETHYLPHTHALATE	630 U
95-48-7	2-METHYLPHENOL	630 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	630 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	630 U	86-73-7	FLUORENE	630 U
106-44-5	4-METHYLPHENOL	630 U	100-01-6	4-NITROANILINE	3100 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	630 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3100 U
67-72-1	HEXACHLOROETHANE	630 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	630 U
98-95-3	NITROBENZENE	630 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	630 U
78-59-1	ISOPHORONE	630 U	118-74-1	HEXACHLOROBENZENE	630 U
88-75-5	2-NITROPHENOL	630 U	87-86-5	PENTACHLOROPHENOL	3100 U
105-67-9	2,4-DIMETHYLPHENOL	630 U	85-01-8	PHENANTHRENE	630 U
65-85-0	BENZIDIC ACID	3100 U	120-12-7	ANTHRACENE	630 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	630 U	84-74-2	DI-N-BUTYLPHTHALATE	630 U
120-83-2	2,4-DICHLOROPHENOL	630 U	206-44-0	FLUORANTHENE	630 U
120-82-1	1,2,4-TRICHLOROBENZENE	630 U	129-00-0	PYRENE	630 U
91-20-3	NAPHTHALENE	630 U	85-68-7	BUTYLBENZYLPHTHALATE	630 U
106-47-8	4-CHLOROANILINE	630 U	91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
87-68-3	HEXACHLOROBUTADIENE	630 U	56-55-3	BENZO(a)ANTHRACENE	630 U
59-50-7	4-CHLORO-3-METHYLPHENOL	630 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	630 U
91-57-6	2-METHYLNAPHTHALENE	630 U	218-01-9	CHRYSENE	630 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	630 U	117-84-0	DI-N-OCTYL PHTHALATE	630 U
88-06-2	2,4,6-TRICHLOROPHENOL	630 U	205-99-2	BENZO(b)FLUORANTHENE	630 U
95-95-4	2,4,5-TRICHLOROPHENOL	3100 U	207-08-9	BENZO(k)FLUORANTHENE	630 U
91-58-7	2-CHLORONAPHTHALENE	630 U	50-32-8	BENZO(a)PYRENE	630 U
88-74-4	2-NITROANILINE	3100 U	193-39-5	INDENO(1,2,3-CD)PYRENE	630 U
131-11-3	DIMETHYL PHTHALATE	630 U	53-70-3	DIBENZ(a,h)ANTHRACENE	630 U
208-96-8	ACENAPHTHYLENE	630 U	191-24-2	BENZO(g,h,i)PERYLENE	630 U
99-09-2	3-NITROANILINE	3100 U			

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 304

ORGANICS ANALYSIS DATA
(Page 3)

MB

Pesticide/PCBs

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup __Yes ✓ NO
Separatory Funnel Extraction __Yes
Continuous Liquid-Liquid Extraction __Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	10 u
319-85-7	BETA-BHC	10 u
319-86-8	DELTA-BHC	10 u
58-89-9	GAMMA-BHC (LINDANE)	10 u
76-44-8	HEPTACHLOR	10 u
309-00-2	ALDRIN	10 u
1024-57-3	HEPTACHLOR EPOXIDE	10 u
959-98-8	ENDOSULFAN I	10 u
60-57-1	DIELDRIN	20 u
72-55-9	4,4'-DDE	20 u
72-20-8	ENDRIN	20 u
33213-65-9	ENDOSULFAN II	20 u
72-54-8	4,4'-DDD	20 u
7421-93-4	ENDRIN ALDEHYDE	20 u
1031-07-8	ENDOSULFAN SULFATE	20 u
50-29-3	4,4'-DDT	20 u
72-43-5	METHOXYCHLOR	100 u
53494-70-5	ENDRIN KETONE	20 u
57-74-9	CHLORDANE	100 u
8001-35-2	TOXAPHENE	200 u
12674-11-2	AROCLOR-1016	100 u
11104-28-2	AROCLOR-1221	100 u
11141-16-5	AROCLOR-1232	100 u
53469-21-9	AROCLOR-1242	100 u
12672-29-6	AROCLOR-1248	100 u
11097-69-1	AROCLOR-1254	200 u
11096-82-5	AROCLOR-1260	200 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CURED

Case No 8689

Sample Number ES304

D11V1031 (VOA)
DC18081 (APPN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. NA	UNKNOWN	APPN	68	1800JB
4. 100-52-7	benzaldehyde		268	270JB
5. NA	UNKNOWN		920	380JB
6.	UNKNOWN		1471	360JB
7.	UNKNOWN HYDROCARBON		1553	240J
8.	UNKNOWN HYDROCARBON		1660	580J
9.	UNKNOWN HYDROCARBON		1759	1700J
10.	UNKNOWN		1839	440J
11.	UNKNOWN HYDROCARBON		1853	1700J
12.	UNKNOWN		1913	280J
13.	UNKNOWN		1921	240J
14.	UNKNOWN		1930	440J
15.	UNKNOWN HYDROCARBON		1947	420J
16. NA	UNKNOWN		1961	1000J
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88JQ01588

Sample Number:
ES305

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: G-CUBED
Lab Sample ID No: D11V1111 (VOA) ; DC21071 (ABN)
Sample Matrix: SOIL
Data Release Authorized By: _____

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-12-87
Date Analyzed: 12-12-87
Conc/Dil Factor: 0.99 pH: 7.7
Percent Moisture (Not Decanted): 33.6

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	15 U	78-87-5	1,2-DICHLOROPROPANE	7 U
74-83-9	BROMOMETHANE	15 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	7 U
75-01-4	VINYL CHLORIDE	15 U	79-01-6	TRICHLOROETHENE	7 U
75-00-3	CHLOROETHANE	15 U	124-48-1	DIBROMOCHLOROMETHANE	7 U
75-09-2	METHYLENE CHLORIDE	9 B -	79-00-5	1,1,2-TRICHLOROETHANE	7 U
67-64-1	ACETONE	15 U B gw	71-43-2	BENZENE	7 U
75-15-0	CARBON DISULFIDE	7 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	7 U
75-35-4	1,1-DICHLOROETHENE	7 U	110-75-8	2-CHLOROETHYLVINYLETHER	15 U
75-34-3	1,1-DICHLOROETHANE	7 U	75-25-2	BROMOFORM	7 U
156-60-5	TRANS-1,2-DICHLOROETHENE	7 U	591-78-6	2-HEXANONE	15 U
67-66-3	CHLOROFORM	7 U	108-10-1	4-METHYL-2-PENTANONE	15 U
107-06-2	1,2-DICHLOROETHANE	7 U	127-18-4	TETRACHLOROETHENE	7 U
78-93-3	2-BUTANONE	15 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	7 U
71-55-6	1,1,1-TRICHLOROETHANE	~~gw 4.3~~ 7U	108-88-3	TOLUENE	11
56-23-5	CARBON TETRACHLORIDE	7 U	108-90-7	CHLOROBENZENE	7 U
108-05-4	VINYL ACETATE	15 U	100-41-4	ETHYLBENZENE	7 U
75-27-4	BROMODICHLOROMETHANE	7 U	100-42-5	STYRENE	7 U
				TOTAL XYLENES	7 U

Data Reporting Qualifiers

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C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

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S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
EX305

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-15-87
Date Analyzed: 12-21-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid - Liquid Extraction ____ Yes

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	30000 U	83-32-9	ACENAPHTHENE	30000 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	30000 U	51-28-5	2,4-DINITROPHENOL	140000 U
95-57-8	2-CHLOROPHENOL	30000 U	100-02-7	4-NITROPHENOL	140000 U
541-73-1	1-3,DICHLOROBENZENE	30000 U	132-64-9	DIBENZOFURAN	30000 U
106-46-7	1,4-DICHLOROBENZENE	30000 U	121-14-2	2,4-DINITROTOLUENE	30000 U
100-51-6	BENZYL ALCOHOL	30000 U	606-20-2	2,6-DINITROTOLUENE	30000 U
95-50-1	1,2-DICHLOROBENZENE	30000 U	84-66-2	DIETHYLPHTHALATE	4700 J
95-48-7	2-METHYLPHENOL	30000 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	30000 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	30000 U	86-73-7	FLUORENE	30000 U
106-44-5	4-METHYLPHENOL	30000 U	100-01-6	4-NITROANILINE	140000 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	30000 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	140000 U
67-72-1	HEXACHLOROETHANE	30000 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	30000 U
98-95-3	NITROBENZENE	30000 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	30000 U
78-59-1	ISOPHORONE	30000 U	118-74-1	HEXACHLOROBENZENE	30000 U
88-75-5	2-NITROPHENOL	30000 U	87-86-5	PENTACHLOROPHENOL	140000 U
105-67-9	2,4-DIMETHYLPHENOL	30000 U	85-01-8	PHENANTHRENE	30000 U
65-85-0	BENZOIC ACID	140000 U	120-12-7	ANTHRACENE	30000 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	30000 U	84-74-2	DI-N-BUTYLPHTHALATE	30000 U
120-83-2	2,4-DICHLOROPHENOL	30000 U	206-44-0	FLUORANTHENE	30000 U
120-82-1	1,2,4-TRICHLOROBENZENE	30000 U	129-00-0	PYRENE	30000 U
91-20-3	NAPHTHALENE	30000 U	85-68-7	BUTYLBENZYLPHTHALATE	30000 U
106-47-8	4-CHLOROANILINE	30000 U	91-94-1	3,3'-DICHLOROBENZIDINE	60000 U
87-68-3	HEXACHLOROBUTADIENE	30000 U	56-55-3	BENZO(a)ANTHRACENE	30000 U
59-50-7	4-CHLORO-3-METHYLPHENOL	30000 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	30000 U
91-57-6	2-METHYLNAPHTHALENE	30000 U	218-01-9	CHRYSENE	30000 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	30000 U	117-84-0	DI-N-OCTYL PHTHALATE	30000 U
88-06-2	2,4,6-TRICHLOROPHENOL	30000 U	205-99-2	BENZO(b)FLUORANTHENE	30000 U
95-95-4	2,4,5-TRICHLOROPHENOL	140000 U	207-08-9	BENZO(k)FLUORANTHENE	30000 U
91-58-7	2-CHLORONAPHTHALENE	30000 U	50-32-8	BENZO(a)PYRENE	30000 U
88-74-4	2-NITROANILINE	140000 U	193-39-5	INDENO(1,2,3-CD)PYRENE	30000 U
131-11-3	DIMETHYL PHTHALATE	30000 U	53-70-3	DIBENZ(a,h)ANTHRACENE	30000 U
208-96-8	ACENAPHTHYLENE	30000 U	191-24-2	BENZO(g,h,i)PERYLENE	30000 U
99-09-2	3-NITROANILINE	140000 U			

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 305

ORGANICS ANALYSIS DATA
(Page 3)

MB

Pesticide/PCBs

Concentration: MEDIUM
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup __Yes ✓NO
Separatory Funnel Extraction __Yes
Continuous Liquid-Liquid Extraction __Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	180 u
319-85-7	BETA-BHC	180 u
319-86-8	DELTA-BHC	180 u
58-89-9	GAMMA-BHC (LINDANE)	180 u
76-44-8	HEPTACHLOR	180 u
309-00-2	ALDRIN	180 u
1024-57-3	HEPTACHLOR EPOXIDE	180 u
959-98-8	ENDOSULFAN I	180 u
60-57-1	DIELDRIN	360 u
72-55-9	4,4'-DDE	360 u
72-20-8	ENDRIN	360 u
33213-65-9	ENDOSULFAN II	360 u
72-54-8	4,4'-DDD	360 u
7421-93-4	ENDRIN ALDEHYDE	360 u
1031-07-8	ENDOSULFAN SULFATE	360 u
50-29-3	4,4'-DDT	360 u
72-43-5	METHOXYCHLOR	1800 u
53494-70-5	ENDRIN KETONE	360 u
57-74-9	CHLORDANE	1800 u
8001-35-2	TOXAPHENE	3600 u
12674-11-2	AROCLOR-1016	1800 u
11104-28-2	AROCLOR-1221	1800 u
11141-16-5	AROCLOR-1232	1800 u
53469-21-9	AROCLOR-1242	1800 u
12672-29-6	AROCLOR-1248	1800 u
11097-69-1	AROCLOR-1254	3600 u
11096-82-5	AROCLOR-1260	3600 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 1.00
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES305

D11V1111 (VOA)
DC21071 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration ug/l or ug/kg
1. NA	UNKNOWN	VOA	403	7J
2.				
3. 100-52-7	benzaldehyde	ABN	264	15000J
4. NA	UNKNOWN		917	15000J
5. 10544-50-0	sulfur		1255	26000J
6. NA	UNKNOWN hexanedioic acid ester		1492	99000J
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
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26.				
27.				
28.				
29.				
30.				

88JG01589

: Sample Number:
ES30e :
:..... :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 16DV1031 (USA) ; 16DV1031 (MBN)
Sample Matrix: SOIL
Data Release Authorized By: [signature]

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-16-87
Date Analyzed: 12-16-87
Conc/Dil Factor: 2.4 pH: 9.5
Percent Moisture (Not Decanted): 58.1

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	58	U	78-87-5	1,2-DICHLOROPROPANE	29	U
74-83-9	BROMOMETHANE	58	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	29	U
75-01-4	VINYL CHLORIDE	58	U	79-01-6	TRICHLOROETHENE	29	U
75-00-3	CHLOROETHANE	58	U	124-48-1	DIBROMOCHLOROMETHANE	29	U
75-09-2	METHYLENE CHLORIDE	37	B	79-00-5	1,1,2-TRICHLOROETHANE	29	U
67-64-1	ACETONE	1200	B	71-43-2	BENZENE	29	U
75-15-0	CARBON DISULFIDE	29	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	29	U
75-35-4	1,1-DICHLOROETHENE	29	U	110-75-8	2-CHLOROETHYLVINYLETHER	58	U
75-34-3	1,1-DICHLOROETHANE	29	U	75-25-2	BROMOFORM	29	U
156-60-5	TRANS-1,2-DICHLOROETHENE	29	U	591-78-6	2-HEXANONE	58	U
67-66-3	CHLOROFORM	29	U	108-10-1	4-METHYL-2-PENTANONE	58	U
107-06-2	1,2-DICHLOROETHANE	29	U	127-18-4	TETRACHLOROETHENE	29	U
78-93-3	2-BUTANONE	58	U	79-34-5	1,1,2,2-TETRACHLOROETHANE	29	U
71-55-6	1,1,1-TRICHLOROETHANE	29	U	108-88-3	TOLUENE	29	U
56-23-5	CARBON TETRACHLORIDE	29	U	108-90-7	CHLOROBENZENE	29	U
108-05-4	VINYL ACETATE	58	U	100-41-4	ETHYLBENZENE	29	U
75-27-4	BROMODICHLOROMETHANE	29	U	100-42-5	STYRENE	29	U
					TOTAL XYLENES	29	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

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U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

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C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number: E5306

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-18-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid - Liquid Extraction ____ Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	220 J
111-44-4	BIS(2-CHLOROETHYL)ETHER	1200 U
95-57-8	2-CHLOROPHENOL	1200 U
541-73-1	1-3,DICHLOROBENZENE	1200 U
106-46-7	1,4-DICHLOROBENZENE	1200 U
100-51-6	BENZYL ALCOHOL	1200 U
95-50-1	1,2-DICHLOROBENZENE	1200 U
95-48-7	2-METHYLPHENOL	1200 U
39638-32-9	BIS(2-CHLORDISOPROPYL)ETHER	1200 U
106-44-5	4-METHYLPHENOL	1200 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	1200 U
67-72-1	HEXACHLOROETHANE	1200 U
98-95-3	NITROBENZENE	1200 U
78-59-1	ISOPHORONE	1200 U
88-75-5	2-NITROPHENOL	1200 U
105-67-9	2,4-DIMETHYLPHENOL	1200 U
65-85-0	BENZOIC ACID	5700 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	1200 U
120-83-2	2,4-DICHLOROPHENOL	1200 U
120-82-1	1,2,4-TRICHLOROBENZENE	1200 U
91-20-3	NAPHTHALENE	1200 U
106-47-8	4-CHLOROANILINE	1200 U
87-68-3	HEXACHLOROBUTADIENE	1200 U
59-50-7	4-CHLORO-3-METHYLPHENOL	1200 U
91-57-6	2-METHYLNAPHTHALENE	1200 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	1200 U
88-06-2	2,4,6-TRICHLOROPHENOL	1200 U
95-95-4	2,4,5-TRICHLOROPHENOL	5700 U
91-58-7	2-CHLORONAPHTHALENE	1200 U
88-74-4	2-NITROANILINE	5700 U
131-11-3	DIMETHYL PHTHALATE	1200 U
208-96-8	ACENAPHTHYLENE	1200 U
99-09-2	3-NITROANILINE	5700 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	1200 U
51-28-5	2,4-DINITROPHENOL	5700 U
100-02-7	4-NITROPHENOL	5700 U
132-64-9	DIBENZOFURAN	1200 U
121-14-2	2,4-DINITROTOLUENE	1200 U
606-20-2	2,6-DINITROTOLUENE	1200 U
84-66-2	DIETHYLPHTHALATE	1200 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	1200 U
86-73-7	FLUORENE	1200 U
100-01-6	4-NITROANILINE	5700 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	5700 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	1200 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	1200 U
118-74-1	HEXACHLOROBENZENE	1200 U
87-86-5	PENTACHLOROPHENOL	5700 U
85-01-8	PHENANTHRENE	1200 U
120-12-7	ANTHRACENE	1200 U
84-74-2	DI-N-BUTYLPHTHALATE	1200 U
206-44-0	FLUORANTHENE	1200 U
129-00-0	PYRENE	1200 U
85-68-7	BUTYLBENZYLPHTHALATE	1200 U
91-94-1	3,3'-DICHLOROBENZIDINE	2400 U
56-55-3	BENZO(a)ANTHRACENE	1200 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	1200 U
218-01-9	CHRYSENE	1200 U
117-84-0	DI-N-OCTYL PHTHALATE	1200 U
205-99-2	BENZO(b)FLUORANTHENE	1200 U
207-08-9	BENZO(k)FLUORANTHENE	1200 U
50-32-8	BENZO(a)PYRENE	1200 U
193-39-5	INDENO(1,2,3-CD)PYRENE	1200 U
53-70-3	DIBENZ(a,h)ANTHRACENE	1200 U
191-24-2	BENZO(g,h,i)PERYLENE	1200 U

(1)-Cannot be separated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 306

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

mB

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)	
319-84-6	ALPHA-BHC	19	u
319-85-7	BETA-BHC	19	u
319-86-8	DELTA-BHC	19	u
58-89-9	GAMMA-BHC (LINDANE)	19	u
76-44-8	HEPTACHLOR	19	u
309-00-2	ALDRIN	19	u
1024-57-3	HEPTACHLOR EPOXIDE	19	u
959-98-8	ENDOSULFAN I	19	u
60-57-1	DIELDRIN	38	u
72-55-9	4,4'-DDE	38	u
72-20-8	ENDRIN	38	u
33213-65-9	ENDOSULFAN II	38	u
72-54-8	4,4'-DDD	38	u
7421-93-4	ENDRIN ALDEHYDE	38	u
1031-07-8	ENDOSULFAN SULFATE	38	u
50-29-3	4,4'-DDT	38	u
72-43-5	METHOXYCHLOR	190	u
53494-70-5	ENDRIN KETONE	38	u
57-74-9	CHLORDANE	190	u
8001-35-2	TOXAPHENE	380	u
12674-11-2	AROCLOR-1016	190	u
11104-28-2	AROCLOR-1221	190	u
11141-16-5	AROCLOR-1232	190	u
53469-21-9	AROCLOR-1242	190	u
12672-29-6	AROCLOR-1248	190	u
11097-69-1	AROCLOR-1254	380	u
11096-82-5	AROCLOR-1260	380	u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES306

16DV1031 (VOA)
DC18091 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. NA	UNKNOWN	VOA	141	34 J
2.				
3. NA	UNKNOWN	ABN	72	5400 J B
4. 100-52-7	benzaldehyde		268	1100 J B
5. NA	UNKNOWN HYDROCARBON		1030	2100 J
6. 10544-50-0	sulfur		1262	2700 J
7. NA	UNKNOWN		1322	5000 J
8.	UNKNOWN		1723	2000 J
9.	UNKNOWN		1727	2000 J
10.	UNKNOWN HYDROCARBON		1762	2500 J
11.	UNKNOWN HYDROCARBON		1772	2000 J
12.	UNKNOWN		1794	1800 J
13.	UNKNOWN		1815	1600 J
14.	UNKNOWN		1838	2100 J
15.	UNKNOWN		1848	2800 J
16.	UNKNOWN		1857	1600 J
17.	UNKNOWN		1866	3000 J
18.	UNKNOWN		1878	1900 J
19.	UNKNOWN		1887	2500 J
20.	UNKNOWN		1918	3000 J
21.	UNKNOWN		1925	3400 J
22. NA	UNKNOWN		1966	3400 J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88JG01592

: Sample Number:
ES307 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 14DV1061 (VOA); DC21151 (ABN)
Sample Matrix: SOIL
Data Release Authorized By: N

Case No: 8685
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-14-87
Date Analyzed: 12-14-87
Conc/Dil Factor: 4.6 pH: 7.8
Percent Moisture (Not Decanted): 31.5

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	68 U	78-87-5	1,2-DICHLOROPROPANE	34 U
74-83-9	BROMOMETHANE	68 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	34 U
75-01-4	VINYL CHLORIDE	68 U	79-01-6	TRICHLOROETHENE	34 U
75-00-3	CHLOROETHANE	68 U	124-48-1	DIBROMOCHLOROMETHANE	34 U
75-09-2	METHYLENE CHLORIDE	110 B	79-00-5	1,1,2-TRICHLOROETHANE	34 U
67-64-1	ACETONE	880 B	71-43-2	BENZENE	34 U
75-15-0	CARBON DISULFIDE	34 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	34 U
75-35-4	1,1-DICHLORDETHENE	34 U	110-75-8	2-CHLOROETHYLVINYLETHER	68 U
75-34-3	1,1-DICHLOROETHANE	34 U	75-25-2	BROMOFORM	34 U
156-60-5	TRANS-1,2-DICHLOROETHENE	34 U	591-78-6	2-HEXANONE	68 U
67-66-3	CHLOROFORM	34 U	108-10-1	4-METHYL-2-PENTANONE	68 U
107-06-2	1,2-DICHLOROETHANE	34 U	127-18-4	TETRACHLOROETHENE	34 U
78-93-3	2-BUTANONE	68 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	34 U
71-55-6	1,1,1-TRICHLOROETHANE	34 U	108-88-3	TOLUENE	25 J
56-23-5	CARBON TETRACHLORIDE	34 U	108-90-7	CHLOROBENZENE	34 U
108-05-4	VINYL ACETATE	68 U	100-41-4	ETHYLBENZENE	78
75-27-4	BROMODICHLOROMETHANE	34 U	100-42-5	STYRENE	34 U
				TOTAL XYLENES	250

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
E5307

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-15-87
Date Analyzed: 12-21-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __ No
Separatory Funnel Extraction __ Yes
Continuous Liquid - Liquid Extraction_____ Yes

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	29000 U	83-32-9	ACENAPHTHENE	29000 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	29000 U	51-28-5	2,4-DINITROPHENOL	140000 U
95-57-8	2-CHLOROPHENOL	29000 U	100-02-7	4-NITROPHENOL	140000 U
541-73-1	1-3,DICHLOROBENZENE	29000 U	132-64-9	DIBENZOFURAN	29000 U
106-46-7	1,4-DICHLOROBENZENE	29000 U	121-14-2	2,4-DINITROTOLUENE	29000 U
100-51-6	BENZYL ALCOHOL	29000 U	606-20-2	2,6-DINITROTOLUENE	29000 U
95-50-1	1,2-DICHLOROBENZENE	29000 U	84-66-2	DIETHYLPHTHALATE	4400 J
95-48-7	2-METHYLPHENOL	29000 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	29000 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	29000 U	86-73-7	FLUORENE	3400 J
106-44-5	4-METHYLPHENOL	29000 U	100-01-6	4-NITROANILINE	140000 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	29000 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	140000 U
67-72-1	HEXACHLOROETHANE	29000 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	29000 U
98-95-3	NITROBENZENE	29000 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	29000 U
78-59-1	ISOPHORONE	29000 U	118-74-1	HEXACHLOROBENZENE	29000 U
88-75-5	2-NITROPHENOL	29000 U	87-86-5	PENTACHLOROPHENOL	140000 U
105-67-9	2,4-DIMETHYLPHENOL	29000 U	85-01-8	PHENANTHRENE	6700 J
65-85-0	BENZOIC ACID	140000 U	120-12-7	ANTHRACENE	29000 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	29000 U	84-74-2	DI-N-BUTYLPHTHALATE	29000 U
120-83-2	2,4-DICHLOROPHENOL	29000 U	206-44-0	FLUORANTHENE	29000 U
120-82-1	1,2,4-TRICHLOROBENZENE	29000 U	129-00-0	PYRENE	3600 J
91-20-3	NAPHTHALENE	4900 J	85-68-7	BUTYLBENZYLPHTHALATE	29000 U
106-47-8	4-CHLOROANILINE	29000 U	91-94-1	3,3'-DICHLOROBENZIDINE	58000 U
87-68-3	HEXACHLOROBUTADIENE	29000 U	56-55-3	BENZO(a)ANTHRACENE	29000 U
59-50-7	4-CHLORO-3-METHYLPHENOL	29000 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	4600 J
91-57-6	2-METHYLNAPHTHALENE	30000	218-01-9	CHRYSENE	29000 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	29000 U	117-84-0	DI-N-OCTYL PHTHALATE	29000 U
88-06-2	2,4,6-TRICHLOROPHENOL	29000 U	205-99-2	BENZO(b)FLUORANTHENE	29000 U
95-95-4	2,4,5-TRICHLOROPHENOL	140000 U	207-08-9	BENZO(k)FLUORANTHENE	29000 U
91-58-7	2-CHLORONAPHTHALENE	29000 U	50-32-8	BENZO(a)PYRENE	29000 U
88-74-4	2-NITROANILINE	140000 U	193-39-5	INDENO(1,2,3-CD)PYRENE	29000 U
131-11-3	DIMETHYL PHTHALATE	29000 U	53-70-3	DIBENZ(a,h)ANTHRACENE	29000 U
208-96-8	ACENAPHTHYLENE	29000 U	191-24-2	BENZO(g,h,i)PERYLENE	29000 U
99-09-2	3-NITROANILINE	140000 U			

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 307

ORGANICS ANALYSIS DATA
(Page 3)

MB

Pesticide/PCBs

Concentration: MEDIUM
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 10.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	1800 u
319-85-7	BETA-BHC	1800 u
319-86-8	DELTA-BHC	1800 u
58-89-9	GAMMA-BHC (LINDANE)	1800 u
76-44-8	HEPTACHLOR	1800 u
309-00-2	ALDRIN	1800 u
1024-57-3	HEPTACHLOR EPOXIDE	1800 u
959-98-8	ENDOSULFAN I	1800 u
60-57-1	DIELDRIN	3500 u
72-55-9	4,4'-DDE	3500 u
72-20-8	ENDRIN	3500 u
33213-65-9	ENDOSULFAN II	3500 u
72-54-8	4,4'-DDD	3500 u
7421-93-4	ENDRIN ALDEHYDE	3500 u
1031-07-8	ENDOSULFAN SULFATE	3500 u
50-29-3	4,4'-DDT	3500 u
72-43-5	METHOXYCHLOR	18000 u
53494-70-5	ENDRIN KETONE	3500 u
57-74-9	CHLORDANE	18000 u
8001-35-2	TOXAPHENE	35000 u
12674-11-2	AROCLOR-1016	18000 u
11104-28-2	AROCLOR-1221	18000 u
11141-16-5	AROCLOR-1232	18000 u
53469-21-9	AROCLOR-1242	18000 u
12672-29-6	AROCLOR-1248	18000 u
11097-69-1	AROCLOR-1254	35000 u
11096-82-5	AROCLOR-1260	35000 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 1.00
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES307

14DV1061 (VOA)
DC21151 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NA	UNKNOWN	VOA	466	49J
2.		UNKNOWN chloromethyl benzene		610	110 J
3.		UNKNOWN methyl propyl benzene		636	41J
4.		UNKNOWN C_9H_{12}		688	120J
5.		UNKNOWN C_9H_{12}		717	110 J
6.	NA	UNKNOWN $C_{10}H_{14}$		759	44J
7.					
8.	NA	UNKNOWN HYDROCARBON	ABN	465	43×10^3 J
9.		UNKNOWN HYDROCARBON		577	55×10^3 J
10.		UNKNOWN		679	49×10^3 J
11.		UNKNOWN HYDROCARBON		830	57×10^3 J
12.		UNKNOWN HYDROCARBON		863	47×10^3 J
13.		UNKNOWN HYDROCARBON		947	62×10^3 J
14.		UNKNOWN HYDROCARBON		988	170×10^3 J
15.		UNKNOWN HYDROCARBON		1034	260×10^3 J
16.		UNKNOWN HYDROCARBON		1069	60×10^3 J
17.		UNKNOWN HYDROCARBON		1105	180×10^3 J
18.		UNKNOWN HYDROCARBON		1113	250×10^3 J
19.		UNKNOWN HYDROCARBON		1131	60×10^3 J
20.		UNKNOWN		1150	52×10^3 J
21.		UNKNOWN HYDROCARBON		1177	180×10^3 J
22.		UNKNOWN HYDROCARBON		1246	200×10^3 J
23.		UNKNOWN HYDROCARBON		1297	49×10^3 J
24.		UNKNOWN HYDROCARBON		1322	160×10^3 J
25.		UNKNOWN HYDROCARBON		1375	140×10^3 J
26.		UNKNOWN HYDROCARBON		1436	84×10^3 J
27.	NA	UNKNOWN HYDROCARBON		1494	64×10^3 J
28.					
29.					
30.					

88JG01593

: Sample Number:
ES308 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 14DV1081 (CLP); DC22061 (CLP)
Sample Matrix: SOIL
Data Release Authorized By: N

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-14-87
Date Analyzed: 12-14-87
Conc/Dil Factor: 4.9 pH: 9.8
Percent Moisture (Not Decanted): 39.0

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	80 U	78-87-5	1,2-DICHLOROPROPANE	40 U
74-83-9	BROMOMETHANE	80 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	40 U
75-01-4	VINYL CHLORIDE	80 U	79-01-6	TRICHLOROETHENE	40 U
75-00-3	CHLOROETHANE	80 U	124-48-1	DIBROMOCHLOROMETHANE	40 U
75-09-2	METHYLENE CHLORIDE	330 B	79-00-5	1,1,2-TRICHLOROETHANE	40 U
67-64-1	ACETONE	310 B	71-43-2	BENZENE	40 U
75-15-0	CARBON DISULFIDE	40 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	40 U
75-35-4	1,1-DICHLOROETHENE	40 U	110-75-8	2-CHLOROETHYLVINYLETHER	80 U
75-34-3	1,1-DICHLOROETHANE	40 U	75-25-2	BROMOFORM	40 U
156-60-5	TRANS-1,2-DICHLOROETHENE	40 U	591-78-6	2-HEXANONE	80 U
67-66-3	CHLOROFORM	40 U	108-10-1	4-METHYL-2-PENTANONE	80 U
107-06-2	1,2-DICHLOROETHANE	40 U	127-18-4	TETRACHLOROETHENE	40 U
78-93-3	2-BUTANONE	80 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	40 U
71-55-6	1,1,1-TRICHLOROETHANE	40 U	108-88-3	TOLUENE	40 U
56-23-5	CARBON TETRACHLORIDE	40 U	108-90-7	CHLOROBENZENE	40 U
108-05-4	VINYL ACETATE	80 U	100-41-4	ETHYLBENZENE	40 U
75-27-4	BROMODICHLOROMETHANE	40 U	100-42-5	STYRENE	40 U
				TOTAL XYLENES	40 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
E8308

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-15-87
Date Analyzed: 12-22-87
Conc/Dil Factor: 2.0
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	65000 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	65000 U
95-57-8	2-CHLOROPHENOL	65000 U
541-73-1	1-3,DICHLOROBENZENE	65000 U
106-46-7	1,4-DICHLOROBENZENE	65000 U
100-51-6	BENZYL ALCOHOL	65000 U
95-50-1	1,2-DICHLOROBENZENE	65000 U
95-48-7	2-METHYLPHENOL	65000 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	65000 U
106-44-5	4-METHYLPHENOL	65000 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	65000 U
67-72-1	HEXACHLOROETHANE	65000 U
98-95-3	NITROBENZENE	65000 U
78-59-1	ISOPHORONE	65000 U
88-75-5	2-NITROPHENOL	65000 U
105-67-9	2,4-DIMETHYLPHENOL	65000 U
65-85-0	BENZOIC ACID	310000 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	65000 U
120-83-2	2,4-DICHLOROPHENOL	65000 U
120-82-1	1,2,4-TRICHLOROBENZENE	65000 U
91-20-3	NAPHTHALENE	65000 U
106-47-8	4-CHLOROANILINE	65000 U
87-68-3	HEXACHLOROBUTADIENE	65000 U
59-50-7	4-CHLORO-3-METHYLPHENOL	65000 U
91-57-6	2-METHYLNAPHTHALENE	65000 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	65000 U
88-06-2	2,4,6-TRICHLOROPHENOL	65000 U
95-95-4	2,4,5-TRICHLOROPHENOL	310000 U
91-58-7	2-CHLORONAPHTHALENE	65000 U
88-74-4	2-NITROANILINE	310000 U
131-11-3	DIMETHYL PHTHALATE	65000 U
208-96-8	ACENAPHTHYLENE	65000 U
99-09-2	3-NITROANILINE	310000 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	65000 U
51-28-5	2,4-DINITROPHENOL	310000 U
100-02-7	4-NITROPHENOL	310000 U
132-64-9	DIBENZOFURAN	65000 U
121-14-2	2,4-DINITROTOLUENE	65000 U
606-20-2	2,6-DINITROTOLUENE	65000 U
84-66-2	DIETHYLPHTHALATE	65000 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	65000 U
86-73-7	FLUORENE	65000 U
100-01-6	4-NITROANILINE	310000 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	310000 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	65000 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	65000 U
118-74-1	HEXACHLOROBENZENE	65000 U
87-86-5	PENTACHLOROPHENOL	310000 U
85-01-8	PHENANTHRENE	65000 U
120-12-7	ANTHRACENE	65000 U
84-74-2	DI-N-BUTYLPHTHALATE	65000 U
206-44-0	FLUORANTHENE	65000 U
129-00-0	PYRENE	20000 J
85-68-7	BUTYLBENZYLPHTHALATE	65000 U
91-94-1	3,3'-DICHLOROBENZIDINE	130000 U
56-55-3	BENZO(a)ANTHRACENE	65000 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	65000 U
218-01-9	CHRYSENE	8500 J
117-84-0	DI-N-OCTYL PHTHALATE	65000 U
205-99-2	BENZO(b)FLUORANTHENE	65000 U
207-08-9	BENZO(k)FLUORANTHENE	65000 U
50-32-8	BENZO(a)PYRENE	18000 J
193-39-5	INDENO(1,2,3-CD)PYRENE	65000 U
53-70-3	DIBENZ(a,h)ANTHRACENE	65000 U
191-24-2	BENZO(g,h,i)PERYLENE	13000 J

(1)-Cannot be separated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 308

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

mB

Concentration: MEDIUM
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓ NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	200 u
319-85-7	BETA-BHC	200 u
319-86-8	DELTA-BHC	200 u
58-89-9	GAMMA-BHC (LINDANE)	200 u
76-44-8	HEPTACHLOR	200 u
309-00-2	ALDRIN	200 u
1024-57-3	HEPTACHLOR EPOXIDE	200 u
959-98-8	ENDOSULFAN I	200 u
60-57-1	DIELDRIN	390 u
72-55-9	4,4'-DDE	390 u
72-20-8	ENDRIN	390 u
33213-65-9	ENDOSULFAN II	390 u
72-54-8	4,4'-DDD	390 u
7421-93-4	ENDRIN ALDEHYDE	390 u
1031-07-8	ENDOSULFAN SULFATE	390 u
50-29-3	4,4'-DDT	390 u
72-43-5	METHOXYCHLOR	2000 u
53494-70-5	ENDRIN KETONE	390 u
57-74-9	CHLORDANE	2000 u
8001-35-2	TOXAPHENE	3900 u
12674-11-2	AROCLOR-1016	2000 u
11104-28-2	AROCLOR-1221	2000 u
11141-16-5	AROCLOR-1232	2000 u
53469-21-9	AROCLOR-1242	2000 u
12672-29-6	AROCLOR-1248	2000 u
11097-69-1	AROCLOR-1254	3900 u
11096-82-5	AROCLOR-1260	3900 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 1.00
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES308

14DV1081 (VOA)
DC22061 (APPN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. NA	UNKNOWN	VOA	600	130 J
2.				
3. NA	UNKNOWN	APPN	49	28×10^3 J
4.	UNKNOWN HYDROCARBON		751	32×10^3 J
5.	UNKNOWN HYDROCARBON		829	49×10^3 J
6.	UNKNOWN HYDROCARBON		862	39×10^3 J
7.	UNKNOWN HYDROCARBON		946	43×10^3 J
8.	UNKNOWN HYDROCARBON		986	87×10^3 J
9.	UNKNOWN HYDROCARBON		1027	81×10^3 J
10.	UNKNOWN HYDROCARBON		1032	180×10^3 J
11.	UNKNOWN HYDROCARBON		1103	73×10^3 J
12.	UNKNOWN HYDROCARBON		1110	190×10^3 J
13.	UNKNOWN HYDROCARBON		1170	61×10^3 J
14.	UNKNOWN HYDROCARBON		1175	110×10^3 J
15.	UNKNOWN HYDROCARBON		1244	87×10^3 J
16.	UNKNOWN HYDROCARBON		1295	28×10^3 J
17.	UNKNOWN HYDROCARBON		1374	52×10^3 J
18.	UNKNOWN methyl pyrene		1405	39×10^3 J
19.	UNKNOWN HYDROCARBON		1484	36×10^3 J
20.	UNKNOWN hexanedioic acid ester		1492	300×10^3 J
21.	UNKNOWN		1831	33×10^3 J
22. NA	UNKNOWN		1870	44×10^3 J
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88JG01594

: Sample Number:
ES309 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 16DV1041 (UBA); DC21041 (ABN)
Sample Matrix: SOIL
Data Release Authorized By: [signature]

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-16-87
Date Analyzed: 12-16-87
Conc/Dil Factor: 1.0 pH: 7.5
Percent Moisture (Not Decanted): 44.5

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	18	U	78-87-5	1,2-DICHLOROPROPANE	9	U
74-83-9	BROMOMETHANE	18	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	9	U
75-01-4	VINYL CHLORIDE	18	U	79-01-6	TRICHLOROETHENE	9	U
75-00-3	CHLOROETHANE	18	U	124-48-1	DIBROMOCHLOROMETHANE	9	U
75-09-2	METHYLENE CHLORIDE	15	B	79-00-5	1,1,2-TRICHLOROETHANE	9	U
67-64-1	ACETONE	110	B	71-43-2	BENZENE	9	U
75-15-0	CARBON DISULFIDE	9	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	9	U
75-35-4	1,1-DICHLOROETHENE	9	U	110-75-8	2-CHLOROETHYLVINYLETHER	18	U
75-34-3	1,1-DICHLOROETHANE	9	U	75-25-2	BROMOFORM	9	U
156-60-5	TRANS-1,2-DICHLOROETHENE	9	U	591-78-6	2-HEXANONE	18	U
67-66-3	CHLOROFORM	9	U	108-10-1	4-METHYL-2-PENTANONE	18	U
107-06-2	1,2-DICHLOROETHANE	9	U	127-18-4	TETRACHLOROETHENE	9	U
78-93-3	2-BUTANONE	18	U	79-34-5	1,1,2,2-TETRACHLOROETHANE	9	U
71-55-6	1,1,1-TRICHLOROETHANE	9	U	108-88-3	TOLUENE	9	U
56-23-5	CARBON TETRACHLORIDE	9	U	108-90-7	CHLOROBENZENE	9	U
108-05-4	VINYL ACETATE	18	U	100-41-4	ETHYLBENZENE	9	U
75-27-4	BROMODICHLOROMETHANE	9	U	100-42-5	STYRENE	9	U
					TOTAL XYLENES	9	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: B689

Sample Number
E5309

ORGANIC ANALYSIS DATA SHEET
(Page 2)

BENIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-15-87
Date Analyzed: 12-21-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	36000 U	83-32-9	ACENAPHTHENE	36000 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	36000 U	51-28-5	2,4-DINITROPHENOL	170000 U
95-57-8	2-CHLOROPHENOL	36000 U	100-02-7	4-NITROPHENOL	170000 U
541-73-1	1-3,DICHLOROBENZENE	36000 U	132-64-9	DIBENZOFURAN	36000 U
106-46-7	1,4-DICHLOROBENZENE	36000 U	121-14-2	2,4-DINITROTOLUENE	36000 U
100-51-6	BENZYL ALCOHOL	36000 U	606-20-2	2,6-DINITROTOLUENE	36000 U
95-50-1	1,2-DICHLOROBENZENE	36000 U	84-66-2	DIETHYLPHTHALATE	10000 J
95-48-7	2-METHYLPHENOL	36000 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	36000 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	36000 U	86-73-7	FLUORENE	36000 U
106-44-5	4-METHYLPHENOL	36000 U	100-01-6	4-NITROANILINE	170000 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	36000 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	170000 U
67-72-1	HEXACHLOROETHANE	36000 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	36000 U
98-95-3	NITROBENZENE	36000 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	36000 U
78-59-1	ISOPHORONE	36000 U	118-74-1	HEXACHLOROBENZENE	36000 U
88-75-5	2-NITROPHENOL	36000 U	87-86-5	PENTACHLOROPHENOL	170000 U
105-67-9	2,4-DIMETHYLPHENOL	36000 U	85-01-8	PHENANTHRENE	36000 U
65-85-0	BENZOIC ACID	170000 U	120-12-7	ANTHRACENE	36000 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	36000 U	84-74-2	DI-N-BUTYLPHTHALATE	36000 U
120-83-2	2,4-DICHLOROPHENOL	36000 U	206-44-0	FLUORANTHENE	36000 U
120-82-1	1,2,4-TRICHLOROBENZENE	36000 U	129-00-0	PYRENE	36000 U
91-20-3	NAPHTHALENE	36000 U	85-68-7	BUTYLBENZYLPHTHALATE	36000 U
106-47-8	4-CHLOROANILINE	36000 U	91-94-1	3,3'-DICHLOROBENZIDINE	71000 U
87-68-3	HEXACHLOROBUTADIENE	36000 U	56-55-3	BENZO(a)ANTHRACENE	36000 U
59-50-7	4-CHLORO-3-METHYLPHENOL	36000 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	36000 U
91-57-6	2-METHYLNAPHTHALENE	36000 U	218-01-9	CHRYSENE	36000 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	36000 U	117-84-0	DI-N-OCTYL PHTHALATE	36000 U
88-06-2	2,4,6-TRICHLOROPHENOL	36000 U	205-99-2	BENZO(b)FLUORANTHENE	36000 U
95-95-4	2,4,5-TRICHLOROPHENOL	170000 U	207-08-9	BENZO(k)FLUORANTHENE	36000 U
91-58-7	2-CHLORONAPHTHALENE	36000 U	50-32-8	BENZO(a)PYRENE	36000 U
88-74-4	2-NITROANILINE	170000 U	193-39-5	INDENO(1,2,3-CD)PYRENE	36000 U
131-11-3	DIMETHYL PHTHALATE	36000 U	53-70-3	DIBENZ(a,h)ANTHRACENE	36000 U
208-96-8	ACENAPHTHYLENE	36000 U	191-24-2	BENZO(g,h,i)PERYLENE	36000 U
99-09-2	3-NITROANILINE	170000 U			

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 309

MB

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

Concentration: MEDIUM
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	220 u
319-85-7	BETA-BHC	220 u
319-86-8	DELTA-BHC	220 u
58-89-9	GAMMA-BHC (LINDANE)	220 u
76-44-8	HEPTACHLOR	220 u
309-00-2	ALDRIN	220 u
1024-57-3	HEPTACHLOR EPOXIDE	220 u
959-98-8	ENDOSULFAN I	220 u
60-57-1	DIELDRIN	430 u
72-55-9	4,4'-DDE	430 u
72-20-8	ENDRIN	430 u
33213-65-9	ENDOSULFAN II	430 u
72-54-8	4,4'-DDD	430 u
7421-93-4	ENDRIN ALDEHYDE	430 u
1031-07-8	ENDOSULFAN SULFATE	430 u
50-29-3	4,4'-DDT	430 u
72-43-5	METHOXYCHLOR	2200 u
53494-70-5	ENDRIN KETONE	430 u
57-74-9	CHLORDANE	2200 u
8001-35-2	TOXAPHENE	4300 u
12674-11-2	AROCLOR-1016	2200 u
11104-28-2	AROCLOR-1221	2200 u
11141-16-5	AROCLOR-1232	2200 u
53469-21-9	AROCLOR-1242	2200 u
12672-29-6	AROCLOR-1248	2200 u
11097-69-1	AROCLOR-1254	4300 u
11096-82-5	AROCLOR-1260	4300 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 1.00
Volume of total extract (ml): 10.00
Volume of extract injected (ml): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES309

16DV1041 (VOA)
DC21041 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. 100-52-7	benzaldehyde	ABN	263	1.9×10^3 J
4. NA	UNKNOWN		918	28×10^3 J
5. ↓	UNKNOWN phthalate		1149	17×10^3 J
6. NA	UNKNOWN hexanedioic acid ester	↓	1491	68×10^3 J
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
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29.				
30				

88JQ01595

Sample Number:
ES310

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 16BV1051 (WOA); DC18101 (ABW)
Sample Matrix: SOIL
Data Release Authorized By: _____

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-16-87
Date Analyzed: 12-16-87
Conc/Dil Factor: 0.99 pH: 7.2
Percent Moisture (Not Decanted): 23.1

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	13 U	78-87-5	1,2-DICHLOROPROPANE	6 U
74-83-9	BROMOMETHANE	13 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	6 U
75-01-4	VINYL CHLORIDE	13 U	79-01-6	TRICHLOROETHENE	15
75-00-3	CHLOROETHANE	13 U	124-48-1	DIBROMOCHLOROMETHANE	6 U
75-09-2	METHYLENE CHLORIDE	52 B	79-00-5	1,1,2-TRICHLOROETHANE	6 U
67-64-1	ACETONE	25 B	71-43-2	BENZENE	6 U
75-15-0	CARBON DISULFIDE	6 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	6 U
75-35-4	1,1-DICHLOROETHENE	6 U	110-75-8	2-CHLOROETHYLVINYLETHER	13 U
75-34-3	1,1-DICHLOROETHANE	6 U	75-25-2	BROMOFORM	6 U
156-60-5	TRANS-1,2-DICHLOROETHENE	6 U	591-78-6	2-HEXANONE	13 U
67-66-3	CHLOROFORM	6 U	108-10-1	4-METHYL-2-PENTANONE	13 U
107-06-2	1,2-DICHLOROETHANE	6 U	127-18-4	TETRACHLOROETHENE	7
78-93-3	2-BUTANONE	13 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	6 U
71-55-6	1,1,1-TRICHLOROETHANE	26	108-88-3	TOLUENE	12
56-23-5	CARBON TETRACHLORIDE	6 U	108-90-7	CHLOROBENZENE	6 U
108-05-4	VINYL ACETATE	13 U	100-41-4	ETHYLBENZENE	1 J
75-27-4	BROMODICHLOROMETHANE	6 U	100-42-5	STYRENE	6 U
				TOTAL XYLENES	7

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
ES310

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-18-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	640 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	640 U
95-57-8	2-CHLOROPHENOL	640 U
541-73-1	1-3,DICHLOROBENZENE	640 U
106-46-7	1,4-DICHLOROBENZENE	640 U
100-51-6	BENZYL ALCOHOL	640 U
95-50-1	1,2-DICHLOROBENZENE	640 U
95-48-7	2-METHYLPHENOL	640 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	640 U
106-44-5	4-METHYLPHENOL	640 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	640 U
67-72-1	HEXACHLOROETHANE	640 U
98-95-3	NITROBENZENE	640 U
78-59-1	ISOPHORONE	640 U
88-75-5	2-NITROPHENOL	640 U
105-67-9	2,4-DIMETHYLPHENOL	640 U
65-85-0	BENZOIC ACID	3100 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	640 U
120-83-2	2,4-DICHLOROPHENOL	640 U
120-82-1	1,2,4-TRICHLOROBENZENE	640 U
91-20-3	NAPHTHALENE	640 U
106-47-8	4-CHLOROANILINE	640 U
87-68-3	HEXACHLOROBUTADIENE	640 U
59-50-7	4-CHLORO-3-METHYLPHENOL	640 U
91-57-6	2-METHYLNAPHTHALENE	640 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	640 U
88-06-2	2,4,6-TRICHLOROPHENOL	640 U
95-95-4	2,4,5-TRICHLOROPHENOL	3100 U
91-58-7	2-CHLORONAPHTHALENE	640 U
88-74-4	2-NITROANILINE	3100 U
131-11-3	DIMETHYL PHTHALATE	640 U
208-96-8	ACENAPHTHYLENE	640 U
99-09-2	3-NITROANILINE	3100 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	640 U
51-28-5	2,4-DINITROPHENOL	3100 U
100-02-7	4-NITROPHENOL	3100 U
132-64-9	DIBENZOFURAN	640 U
121-14-2	2,4-DINITROTOLUENE	640 U
606-20-2	2,6-DINITROTOLUENE	640 U
84-66-2	DIETHYLPHTHALATE	640 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	640 U
86-73-7	FLUORENE	640 U
100-01-6	4-NITROANILINE	3100 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	3100 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	640 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	640 U
118-74-1	HEXACHLOROBENZENE	640 U
87-86-5	PENTACHLOROPHENOL	3100 U
85-01-8	PHENANTHRENE	86 J
120-12-7	ANTHRACENE	640 U
84-74-2	DI-N-BUTYLPHTHALATE	270 J
206-44-0	FLUORANTHENE	150 J
129-00-0	PYRENE	120 J
85-68-7	BUTYLBENZYLPHTHALATE	640 U
91-94-1	3,3'-DICHLOROBENZIDINE	1300 U
56-55-3	BENZO(a)ANTHRACENE	640 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	640 U
218-01-9	CHRYSENE	640 U
117-84-0	DI-N-OCTYL PHTHALATE	640 U
205-99-2	BENZO(b)FLUORANTHENE	76 J
207-08-9	BENZO(k)FLUORANTHENE	640 U
50-32-8	BENZO(a)PYRENE	640 U
193-39-5	INDENO(1,2,3-CD)PYRENE	640 U
53-70-3	DIBENZ(a,h)ANTHRACENE	640 U
191-24-2	BENZO(g,h,i)PERYLENE	640 U

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 310

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

MB

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	10 u
319-85-7	BETA-BHC	10 u
319-86-8	DELTA-BHC	10 u
58-89-9	GAMMA-BHC (LINDANE)	10 u
76-44-8	HEPTACHLOR	10 u
309-00-2	ALDRIN	10 u
1024-57-3	HEPTACHLOR EPOXIDE	10 u
959-98-8	ENDOSULFAN I	10 u
60-57-1	DIELDRIN	21 u
72-55-9	4,4'-DDE	21 u
72-20-8	ENDRIN	21 u
33213-65-9	ENDOSULFAN II	21 u
72-54-8	4,4'-DDD	21 u
7421-93-4	ENDRIN ALDEHYDE	21 u
1031-07-8	ENDOSULFAN SULFATE	21 u
50-29-3	4,4'-DDT	21 u
72-43-5	METHOXYCHLOR	100 u
53494-70-5	ENDRIN KETONE	21 u
57-74-9	CHLORDANE	100 u
8001-35-2	TOXAPHENE	210 u
12674-11-2	AROCLOR-1016	100 u
11104-28-2	AROCLOR-1221	100 u
11141-16-5	AROCLOR-1232	100 u
53469-21-9	AROCLOR-1242	100 u
12672-29-6	AROCLOR-1248	100 u
11097-69-1	AROCLOR-1254	210 u
11096-82-5	AROCLOR-1260	210 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ml): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES310

16DV1051 (VOA)
DC18101 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO TIC'S FOUND.	VOA		
2.					
3.	NA	UNKNOWN	ABN	68	2000 J B
4.	100-52-7	benzaldehyde		267	330 J B
5.	NA	UNKNOWN		923	1600 J B
6.		UNKNOWN phthalate		1153	280 J
7.		UNKNOWN		1285	410 J.
8.		UNKNOWN		1421	480 J B
9.		UNKNOWN		1659	300 J
10.		UNKNOWN HYDROCARBON		1759	1100 J
11.		UNKNOWN HYDROCARBON		1853	680 J
12.		UNKNOWN		1921	270 J
13.	NA	UNKNOWN		1960	590 J
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

88JG01596

: Sample Number:
ES311 :
:..... :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 16DV1061 (VOA); DC18111 (ABN)
Sample Matrix: SOIL
Data Release Authorized By: N

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-16-87
Date Analyzed: 12-16-87
Conc/Dil Factor: 0.99 pH: 7.2
Percent Moisture (Not Decanted): 28.1

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	14	U	78-87-5	1,2-DICHLOROPROPANE	7	U
74-83-9	BROMOMETHANE	14	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	7	U
75-01-4	VINYL CHLORIDE	14	U	79-01-6	TRICHLOROETHENE	5	J
75-00-3	CHLOROETHANE	14	U	124-48-1	DIBROMOCHLOROMETHANE	7	U
75-09-2	METHYLENE CHLORIDE	23	B	79-00-5	1,1,2-TRICHLOROETHANE	7	U
67-64-1	ACETONE	36	B	71-43-2	BENZENE	7	U
75-15-0	CARBON DISULFIDE	7	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	7	U
75-35-4	1,1-DICHLOROETHENE	7	U	110-75-8	2-CHLOROETHYLVINYLETHER	14	U
75-34-3	1,1-DICHLOROETHANE	7	U	75-25-2	BROMOFORM	7	U
156-60-5	TRANS-1,2-DICHLOROETHENE	7	U	591-78-6	2-HEXANONE	14	U
67-66-3	CHLOROFORM	7	U	108-10-1	4-METHYL-2-PENTANONE	14	U
107-06-2	1,2-DICHLOROETHANE	7	U	127-18-4	TETRACHLOROETHENE	2	J
78-93-3	2-BUTANONE	14 ~~19~~	~~J~~	79-34-5	1,1,2,2-TETRACHLOROETHANE	7	U
71-55-6	1,1,1-TRICHLOROETHANE	13		108-88-3	TOLUENE	3	J
56-23-5	CARBON TETRACHLORIDE	7	U	108-90-7	CHLOROBENZENE	7	U
108-05-4	VINYL ACETATE	14	U	100-41-4	ETHYLBENZENE	7	U
75-27-4	BROMODICHLOROMETHANE	7	U	100-42-5	STYRENE	7	U
					TOTAL XYLENES	3	J

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
ES311

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-18-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	690 U	83-32-9	ACENAPHTHENE	690 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	690 U	51-28-5	2,4-DINITROPHENOL	3300 U
95-57-8	2-CHLOROPHENOL	690 U	100-02-7	4-NITROPHENOL	3300 U
541-73-1	1-3,DICHLOROBENZENE	690 U	132-64-9	DIBENZOFURAN	690 U
106-46-7	1,4-DICHLOROBENZENE	690 U	121-14-2	2,4-DINITROTOLUENE	690 U
100-51-6	BENZYL ALCOHOL	690 U	606-20-2	2,6-DINITROTOLUENE	690 U
95-50-1	1,2-DICHLOROBENZENE	690 U	84-66-2	DIETHYLPHTHALATE	690 U
95-48-7	2-METHYLPHENOL	690 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	690 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	690 U	86-73-7	FLUORENE	690 U
106-44-5	4-METHYLPHENOL	690 U	100-01-6	4-NITROANILINE	3300 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	690 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	3300 U
67-72-1	HEXACHLOROETHANE	690 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	690 U
98-95-3	NITROBENZENE	690 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	690 U
78-59-1	ISOPHORONE	690 U	118-74-1	HEXACHLOROBENZENE	690 U
88-75-5	2-NITROPHENOL	690 U	87-86-5	PENTACHLOROPHENOL	3300 U
105-67-9	2,4-DIMETHYLPHENOL	690 U	85-01-8	PHENANTHRENE	690 U
65-85-0	BENZOIC ACID	3300 U	120-12-7	ANTHRACENE	690 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	690 U	84-74-2	DI-N-BUTYLPHTHALATE	690 U
120-83-2	2,4-DICHLOROPHENOL	690 U	206-44-0	FLUORANTHENE	88 J
120-82-1	1,2,4-TRICHLOROBENZENE	690 U	129-00-0	PYRENE	690 U
91-20-3	NAPHTHALENE	690 U	85-68-7	BUTYLBENZYLPHTHALATE	690 U
106-47-8	4-CHLOROANILINE	690 U	91-94-1	3,3'-DICHLOROBENZIDINE	1400 U
87-68-3	HEXACHLOROBUTADIENE	690 U	56-55-3	BENZO(a)ANTHRACENE	690 U
59-50-7	4-CHLORO-3-METHYLPHENOL	690 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	690 U
91-57-6	2-METHYLNAPHTHALENE	690 U	218-01-9	CHRYSENE	690 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	690 U	117-84-0	DI-N-OCTYL PHTHALATE	690 U
88-06-2	2,4,6-TRICHLOROPHENOL	690 U	205-99-2	BENZO(b)FLUORANTHENE	690 U
95-95-4	2,4,5-TRICHLOROPHENOL	3300 U	207-08-9	BENZO(k)FLUORANTHENE	690 U
91-58-7	2-CHLORONAPHTHALENE	690 U	50-32-8	BENZO(a)PYRENE	690 U
88-74-4	2-NITROANILINE	3300 U	193-39-5	INDENO(1,2,3-CD)PYRENE	690 U
131-11-3	DIMETHYL PHTHALATE	690 U	53-70-3	DIBENZ(a,h)ANTHRACENE	690 U
208-96-8	ACENAPHTHYLENE	690 U	191-24-2	BENZO(g,h,i)PERYLENE	690 U
99-09-2	3-NITROANILINE	3300 U			

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 311

ORGANICS ANALYSIS DATA
(Page 3)

MB

Pesticide/PCBs

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓ NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	11 u
319-85-7	BETA-BHC	11 u
319-86-8	DELTA-BHC	11 u
58-89-9	GAMMA-BHC (LINDANE)	11 u
76-44-8	HEPTACHLOR	11 u
309-00-2	ALDRIN	11 u
1024-57-3	HEPTACHLOR EPOXIDE	11 u
959-98-8	ENDOSULFAN I	11 u
60-57-1	DIELDRIN	22 u
72-55-9	4,4'-DDE	22 u
72-20-8	ENDRIN	22 u
33213-65-9	ENDOSULFAN II	22 u
72-54-8	4,4'-DDD	22 u
7421-93-4	ENDRIN ALDEHYDE	22 u
1031-07-8	ENDOSULFAN SULFATE	22 u
50-29-3	4,4'-DDT	22 u
72-43-5	METHOXYCHLOR	110 u
53494-70-5	ENDRIN KETONE	22 u
57-74-9	CHLORDANE	110 u
8001-35-2	TOXAPHENE	220 u
12674-11-2	AROCLOR-1016	110 u
11104-28-2	AROCLOR-1221	110 u
11141-16-5	AROCLOR-1232	110 u
53469-21-9	AROCLOR-1242	110 u
12672-29-6	AROCLOR-1248	110 u
11097-69-1	AROCLOR-1254	220 u
11096-82-5	AROCLOR-1260	220 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
EB 314

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

mB

Concentration: LOW
Date Extracted/Prepared: 12-11-87
Date Analyzed: 01-12-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ✓Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	0.050 u
319-85-7	BETA-BHC	0.050 u
319-86-8	DELTA-BHC	0.050 u
58-89-9	GAMMA-BHC (LINDANE)	0.050 u
76-44-8	HEPTACHLOR	0.050 u
309-00-2	ALDRIN	0.050 u
1024-57-3	HEPTACHLOR EPOXIDE	0.050 u
959-98-8	ENDOSULFAN I	0.050 u
60-57-1	DIELDRIN	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	ENDRIN	0.10 u
33213-65-9	ENDOSULFAN II	0.10 u
72-54-8	4,4'-DDD	0.10 u
7421-93-4	ENDRIN ALDEHYDE	0.10 u
1031-07-8	ENDOSULFAN SULFATE	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	METHOXYCHLOR	0.50 u
53494-70-5	ENDRIN KETONE	0.10 u
57-74-9	CHLORDANE	0.50 u
8001-35-2	TOXAPHENE	1.0 u
12674-11-2	AROCLOR-1016	0.50 u
11104-28-2	AROCLOR-1221	0.50 u
11141-16-5	AROCLOR-1232	0.50 u
53469-21-9	AROCLOR-1242	0.50 u
12672-29-6	AROCLOR-1248	0.50 u
11097-69-1	AROCLOR-1254	1.0 u
11096-82-5	AROCLOR-1260	1.0 u

Volume of water extracted (ml): 1000
Weight of sample extracted (g): N.A.
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES 311

16DV1061 (VOA)
DC/8 111 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
	NO TIC'S FOUND.	VOA		
NA	UNKNOWN	ABN	68	2000 JB
NA	UNKNOWN		245	460 J
100-52-7	benzaldehyde		267	1200 JB
NA	UNKNOWN		920	450 JB
	UNKNOWN		1220	430 J
	UNKNOWN		1471	560 JB
	UNKNOWN		1656	540 J
	UNKNOWN HYDROCARBON		1660	770 J
	UNKNOWN		1725	420 J
	UNKNOWN HYDROCARBON		1759	2800 J
	UNKNOWN HYDROCARBON		1853	4300 J
	UNKNOWN		1930	610 J
	UNKNOWN HYDROCARBON		1947	1200 J
NA	UNKNOWN		1961	2100 J

88J601598

: Sample Number:
ES312 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: 16DV1071 (MS4); DC19121 (RE3)
Sample Matrix: SOIL
Data Release Authorized By: ___

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-16-87
Date Analyzed: 12-16-87
Conc/Dil Factor: 0.98 pH: 6.7
Percent Moisture (Not Decanted): 30.7

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	14 U	78-87-5	1,2-DICHLOROPROPANE	7 U
74-83-9	BROMOMETHANE	14 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	7 U
75-01-4	VINYL CHLORIDE	14 U	79-01-6	TRICHLOROETHENE	2 J
75-00-3	CHLOROETHANE	14 U	124-48-1	DIBROMOCHLOROMETHANE	7 U
75-09-2	METHYLENE CHLORIDE	15 B	79-00-5	1,1,2-TRICHLOROETHANE	7 U
67-64-1	ACETONE	36 B	71-43-2	BENZENE	7 U
75-15-0	CARBON DISULFIDE	7 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	7 U
75-35-4	1,1-DICHLOROETHENE	7 U	110-75-8	2-CHLOROETHYLVINYLETHER	14 U
75-34-3	1,1-DICHLOROETHANE	7 U	75-25-2	BROMOFORM	7 U
156-60-5	TRANS-1,2-DICHLOROETHENE	7 U	591-78-6	2-HEXANONE	14 U
67-66-3	CHLOROFORM	7 U	108-10-1	4-METHYL-2-PENTANONE	~~8 J~~ Mu gu
107-06-2	1,2-DICHLOROETHANE	7 U	127-18-4	TETRACHLOROETHENE	7 U
78-93-3	2-BUTANONE	14 U	79-34-5	1,1,2,2-TETRACHLOROETHANE	7 U
71-55-6	1,1,1-TRICHLOROETHANE	5 J	108-88-3	TOLUENE	2 J
56-23-5	CARBON TETRACHLORIDE	7 U	108-90-7	CHLOROBENZENE	7 U
108-05-4	VINYL ACETATE	14 U	100-41-4	ETHYLBENZENE	7 U
75-27-4	BROMODICHLOROMETHANE	7 U	100-42-5	STYRENE	7 U
				TOTAL XYLENES	7 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
ES312

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-19-87
Conc/Dil Factor: 1.5
Percent Moisture (Decanted): N.R

GPC Clean up X Yes __No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	710 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	710 U
95-57-8	2-CHLOROPHENOL	710 U
541-73-1	1-3,DICHLOROBENZENE	710 U
106-46-7	1,4-DICHLOROBENZENE	710 U
100-51-6	BENZYL ALCOHOL	710 U
95-50-1	1,2-DICHLOROBENZENE	710 U
95-48-7	2-METHYLPHENOL	710 U
39638-32-9	BIS(2-CHLORDISOPROPYL)ETHER	710 U
106-44-5	4-METHYLPHENOL	710 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	710 U
67-72-1	HEXACHLOROETHANE	710 U
98-95-3	NITROBENZENE	710 U
78-59-1	ISOPHORONE	710 U
88-75-5	2-NITROPHENOL	710 U
105-67-9	2,4-DIMETHYLPHENOL	710 U
65-85-0	BENZOIC ACID	3500 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	710 U
120-83-2	2,4-DICHLOROPHENOL	710 U
120-82-1	1,2,4-TRICHLOROBENZENE	710 U
91-20-3	NAPHTHALENE	710 U
106-47-8	4-CHLOROANILINE	710 U
87-68-3	HEXACHLOROBUTADIENE	710 U
59-50-7	4-CHLORO-3-METHYLPHENOL	710 U
91-57-6	2-METHYLNAPHTHALENE	710 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	710 U
88-06-2	2,4,6-TRICHLOROPHENOL	710 U
95-95-4	2,4,5-TRICHLOROPHENOL	3500 U
91-58-7	2-CHLORONAPHTHALENE	710 U
88-74-4	2-NITROANILINE	3500 U
131-11-3	DIMETHYL PHTHALATE	710 U
208-96-8	ACENAPHTHYLENE	710 U
99-09-2	3-NITROANILINE	3500 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	710 U
51-28-5	2,4-DINITROPHENOL	3500 U
100-02-7	4-NITROPHENOL	3500 U
132-64-9	DIBENZOFURAN	710 U
121-14-2	2,4-DINITROTOLUENE	710 U
606-20-2	2,6-DINITROTOLUENE	710 U
84-66-2	DIETHYLPHTHALATE	710 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	710 U
86-73-7	FLUORENE	710 U
100-01-6	4-NITROANILINE	3500 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	3500 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	710 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	710 U
118-74-1	HEXACHLOROBENZENE	710 U
87-86-5	PENTACHLOROPHENOL	3500 U
85-01-8	PHENANTHRENE	710 U
120-12-7	ANTHRACENE	710 U
84-74-2	DI-N-BUTYLPHTHALATE	710 U
206-44-0	FLUORANTHENE	120 J
129-00-0	PYRENE	100 J
85-68-7	BUTYLBENZYLPHTHALATE	710 U
91-94-1	3,3'-DICHLOROBENZIDINE	1400 U
56-55-3	BENZO(a)ANTHRACENE	710 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	710 U
218-01-9	CHRYSENE	95 J
117-84-0	DI-N-OCTYL PHTHALATE	710 U
205-99-2	BENZO(b)FLUORANTHENE	120 J
207-08-9	BENZO(k)FLUORANTHENE	86 J
50-32-8	BENZO(a)PYRENE	80 J
193-39-5	INDENO(1,2,3-CD)PYRENE	710 U
53-70-3	DIBENZ(a,h)ANTHRACENE	710 U
191-24-2	BENZO(g,h,i)PERYLENE	710 U

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 312

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

MB

Concentration: LOW
Date Extracted/Prepared: 12-16-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ___Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	12 u
319-85-7	BETA-BHC	12 u
319-86-8	DELTA-BHC	12 u
58-89-9	GAMMA-BHC (LINDANE)	12 u
76-44-8	HEPTACHLOR	12 u
309-00-2	ALDRIN	12 u
1024-57-3	HEPTACHLOR EPOXIDE	12 u
959-98-8	ENDOSULFAN I	12 u
60-57-1	DIELDRIN	23 u
72-55-9	4,4'-DDE	23 u
72-20-8	ENDRIN	23 u
33213-65-9	ENDOSULFAN II	23 u
72-54-8	4,4'-DDD	23 u
7421-93-4	ENDRIN ALDEHYDE	23 u
1031-07-8	ENDOSULFAN SULFATE	23 u
50-29-3	4,4'-DDT	23 u
72-43-5	METHOXYCHLOR	120 u
53494-70-5	ENDRIN KETONE	23 u
57-74-9	CHLORDANE	120 u
8001-35-2	TOXAPHENE	230 u
12674-11-2	AROCLOR-1016	120 u
11104-28-2	AROCLOR-1221	120 u
11141-16-5	AROCLOR-1232	120 u
53469-21-9	AROCLOR-1242	120 u
12672-29-6	AROCLOR-1248	120 u
11097-69-1	AROCLOR-1254	230 **
11096-82-5	AROCLOR-1260	230 u

Volume of water extracted (ml): N.A.
Weight of sample extracted (g): 30.0
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES 312

16DV1071 (VOA)
DC18121 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. NA	UNKNOWN	ABN	69	2200 JB
4. 100-52-7	benzaldehyde		268	1200 JB
5. 10544-50-0	sulfur		1263	490 J
6. NA	UNKNOWN		1293	580 J
7.	UNKNOWN		1304	1400 J
8.	UNKNOWN		1472	550 JB
9.	UNKNOWN		1576	670 J
10.	UNKNOWN		1661	1700 J
11.	UNKNOWN HYDROCARBON		1760	2700 J
12.	UNKNOWN HYDROCARBON		1854	2400 J
13.	UNKNOWN		1864	1100 J
14.	UNKNOWN		1868	990 J
15.	UNKNOWN		1886	710 J
16.	UNKNOWN		1915	840 J
17.	UNKNOWN		1932	1400 J
18	UNKNOWN		1944	680 J
19.	UNKNOWN HYDROCARBON		1949	680 J
20.	UNKNOWN		1964	3100 J
21.	UNKNOWN		1969	2300 J
22. NA	UNKNOWN		1983	740 J
23				
24				
25.				
26				
27.				
28				
29.				
30				

88J601587

: Sample Number:
ES314 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D10V1031 (dup); DE17071 (ABN)
Sample Matrix: WATER
Data Release Authorized By: N

Case No: 8689
GC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-10-87
Date Analyzed: 12-10-87
Conc/Dil Factor: 1.0 pH: N.R
Percent Moisture (Not Decanted): N.R

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	5 U
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	4 J B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	18 B	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	110-75-8	2-CHLOROETHYLVINYLETHER	10 U
75-34-3	1,1-DICHLOROETHANE	5 U	75-25-2	BROMOFORM	5 U
156-60-5	TRANS-1,2-DICHLOROETHENE	5 U	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
107-06-2	1,2-DICHLOROETHANE	5 U	127-18-4	TETRACHLOROETHENE	5 U
78-93-3	2-BUTANONE	12 B	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	3 J	108-88-3	TOLUENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	108-90-7	CHLOROBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-41-4	ETHYLBENZENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	100-42-5	STYRENE	5 U
				TOTAL XYLENES	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
ES314

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-17-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up __Yes X No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____X____Yes

CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	10 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10 U
95-57-8	2-CHLOROPHENOL	10 U
541-73-1	1-3,DICHLOROBENZENE	10 U
106-46-7	1,4-DICHLOROBENZENE	10 U
100-51-6	BENZYL ALCOHOL	10 U
95-50-1	1,2-DICHLOROBENZENE	10 U
95-48-7	2-METHYLPHENOL	10 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10 U
106-44-5	4-METHYLPHENOL	10 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10 U
67-72-1	HEXACHLOROETHANE	10 U
98-95-3	NITROBENZENE	10 U
78-59-1	ISOPHORONE	10 U
88-75-5	2-NITROPHENOL	10 U
105-67-9	2,4-DIMETHYLPHENOL	10 U
65-85-0	BENZOIC ACID	50 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10 U
120-83-2	2,4-DICHLOROPHENOL	10 U
120-82-1	1,2,4-TRICHLOROBENZENE	10 U
91-20-3	NAPHTHALENE	10 U
106-47-8	4-CHLOROANILINE	10 U
87-68-3	HEXACHLOROBUTADIENE	10 U
59-50-7	4-CHLORO-3-METHYLPHENOL	10 U
91-57-6	2-METHYLNAPHTHALENE	10 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10 U
88-06-2	2,4,6-TRICHLOROPHENOL	10 U
95-95-4	2,4,5-TRICHLOROPHENOL	50 U
91-58-7	2-CHLORONAPHTHALENE	10 U
88-74-4	2-NITROANILINE	50 U
131-11-3	DIMETHYL PHTHALATE	10 U
208-96-8	ACENAPHTHYLENE	10 U
99-09-2	3-NITROANILINE	50 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	10 U
51-28-5	2,4-DINITROPHENOL	50 U
100-02-7	4-NITROPHENOL	50 U
132-64-9	DIBENZOFURAN	10 U
121-14-2	2,4-DINITROTOLUENE	10 U
606-20-2	2,6-DINITROTOLUENE	10 U
84-66-2	DIETHYLPHTHALATE	10 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10 U
86-73-7	FLUORENE	10 U
100-01-6	4-NITROANILINE	50 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	10 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	10 U
118-74-1	HEXACHLOROBENZENE	10 U
87-86-5	PENTACHLOROPHENOL	50 U
85-01-8	PHENANTHRENE	10 U
120-12-7	ANTHRACENE	10 U
84-74-2	DI-N-BUTYLPHTHALATE	10 U
206-44-0	FLUORANTHENE	10 U
129-00-0	PYRENE	10 U
85-68-7	BUTYLBENZYLPHTHALATE	10 U
91-94-1	3,3'-DICHLOROBENZIDINE	20 U
56-55-3	BENZO(a)ANTHRACENE	10 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10 U
218-01-9	CHRYSENE	10 U
117-84-0	DI-N-OCTYL PHTHALATE	10 U
205-99-2	BENZO(b)FLUORANTHENE	10 U
207-08-9	BENZO(k)FLUORANTHENE	10 U
50-32-8	BENZO(a)PYRENE	10 U
193-39-5	INDENO(1,2,3-CD)PYRENE	10 U
53-70-3	DIBENZ(a,h)ANTHRACENE	10 U
191-24-2	BENZO(g,h,i)PERYLENE	10 U

(1)-Cannot be separated from diphenylamine.

Laboratory Name S-CUBED

Case No 8689

Sample Number ES314

D10V1031 (VOA)
DE17071 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. NA	UNKNOWN	ABN	70	9JB
4. NA	UNKNOWN		196	24JB
5. 111-15-9	2 ethoxyethyl acetate		211	51JB
6. NA	UNKNOWN		248	8J
7. NA	UNKNOWN		303	8JB
8. 2034-02-7	2 propanol, 1-(2 methoxy-1 methyl ethoxy)		350	24J
9. NA	UNKNOWN		362	14J
10. NA	UNKNOWN		596	26JB
11. 10544-50-0	sulfur		1263	18J
12. NA	UNKNOWN		1288	9J
13. NA	UNKNOWN		1357	54J
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88JG01583

: Sample Number:
ES315 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D10V1041(CBM); DE17081(ABN)
Sample Matrix: WATER
Data Release Authorized By: [signature]

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-10-87
Date Analyzed: 12-10-87
Conc/Dil Factor: 1.0 pH: N.R
Percent Moisture (Not Decanted): N.R

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	1 J	79-01-6	TRICHLOROETHENE	38
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	3 J B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	21 B	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	110-75-8	2-CHLOROETHYLVINYLETHER	10 U
75-34-3	1,1-DICHLOROETHANE	5	75-25-2	BROMOFORM	5 U
156-60-5	TRANS-1,2-DICHLOROETHENE	8	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
107-06-2	1,2-DICHLOROETHANE	5 U	127-18-4	TETRACHLOROETHENE	5 U
78-93-3	2-BUTANONE	12 B	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	2 J	108-88-3	TOLUENE	2 J
56-23-5	CARBON TETRACHLORIDE	5 U	108-90-7	CHLOROBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-41-4	ETHYLBENZENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	100-42-5	STYRENE	5 U
				TOTAL XYLENES	5

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

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U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number :
E8315 :

ORGANIC ANALYSIS DATA SHEET
(Page 2)

BENIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-17-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.A

GPC Clean up __Yes K No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction____X____Yes

CAS Number		ug/l or ug/kg (Circle one)	CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	10 U	83-32-9	ACENAPHTHENE	10 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10 U	51-28-5	2,4-DINITROPHENOL	50 U
95-57-8	2-CHLOROPHENOL	10 U	100-02-7	4-NITROPHENOL	50 U
541-73-1	1-3,DICHLOROBENZENE	10 U	132-64-9	DIBENZOFURAN	10 U
106-46-7	1,4-DICHLOROBENZENE	10 U	121-14-2	2,4-DINITROTOLUENE	10 U
100-51-6	BENZYL ALCOHOL	10 U	606-20-2	2,6-DINITROTOLUENE	10 U
95-50-1	1,2-DICHLOROBENZENE	10 U	84-66-2	DIETHYLPHTHALATE	10 U
95-48-7	2-METHYLPHENOL	10 U	7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10 U	86-73-7	FLUORENE	10 U
106-44-5	4-METHYLPHENOL	10 U	100-01-6	4-NITROANILINE	50 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10 U	534-52-1	4,6-DINITRO-2-METHYLPHENOL	50 U
67-72-1	HEXACHLOROETHANE	10 U	86-30-6	N-NITROSODIPHENYLAMINE (1)	10 U
98-95-3	NITROBENZENE	10 U	101-55-3	4-BROMOPHENYL-PHENYLETHER	10 U
78-59-1	ISOPHORONE	10 U	118-74-1	HEXACHLOROBENZENE	10 U
88-75-5	2-NITROPHENOL	10 U	87-86-5	PENTACHLOROPHENOL	50 U
105-67-9	2,4-DIMETHYLPHENOL	10 U	85-01-8	PHENANTHRENE	10 U
65-85-0	BENZOIC ACID	50 U	120-12-7	ANTHRACENE	10 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10 U	84-74-2	DI-N-BUTYLPHTHALATE	10 U
120-83-2	2,4-DICHLOROPHENOL	10 U	206-44-0	FLUORANTHENE	10 U
120-82-1	1,2,4-TRICHLOROBENZENE	10 U	129-00-0	PYRENE	10 U
91-20-3	NAPHTHALENE	10 U	85-68-7	BUTYLBENZYLPHTHALATE	10 U
106-47-8	4-CHLOROANILINE	10 U	91-94-1	3,3'-DICHLOROBENZIDINE	20 U
87-68-3	HEXACHLOROBUTADIENE	10 U	56-55-3	BENZO(a)ANTHRACENE	10 U
59-50-7	4-CHLORO-3-METHYLPHENOL	10 U	117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10 U
91-57-6	2-METHYLNAPHTHALENE	10 U	218-01-9	CHRYSENE	10 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10 U	117-84-0	DI-N-OCTYL PHTHALATE	2 J
88-06-2	2,4,6-TRICHLOROPHENOL	10 U	205-99-2	BENZO(b)FLUORANTHENE	10 U
95-95-4	2,4,5-TRICHLOROPHENOL	50 U	207-08-9	BENZO(k)FLUORANTHENE	10 U
91-58-7	2-CHLORONAPHTHALENE	10 U	50-32-8	BENZO(a)PYRENE	10 U
88-74-4	2-NITROANILINE	50 U	193-39-5	INDENO(1,2,3-CD)PYRENE	10 U
131-11-3	DIMETHYL PHTHALATE	10 U	53-70-3	DIBENZ(a,h)ANTHRACENE	10 U
208-96-8	ACENAPHTHYLENE	10 U	191-24-2	BENZO(g,h,i)PERYLENE	10 U
99-09-2	3-NITROANILINE	50 U			

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 315

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

mB

Concentration: LOW
Date Extracted/Prepared: 12-11-87
Date Analyzed: 01-12-87
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓ NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ✓ Yes

CAS # Number		ug/l or ug/Kg (Circle One)	
319-84-6	ALPHA-BHC	0.020	J**
319-85-7	BETA-BHC	0.050	u
319-86-8	DELTA-BHC	0.050	u
58-89-9	GAMMA-BHC (LINDANE)	0.050	u
76-44-8	HEPTACHLOR	0.050	u
309-00-2	ALDRIN	0.050	u
1024-57-3	HEPTACHLOR EPOXIDE	0.050	u
959-98-8	ENDOSULFAN I	0.050	u
60-57-1	DIELDRIN	0.10	u
72-55-9	4,4'-DDE	0.10	u
72-20-8	ENDRIN	0.10	u
33213-65-9	ENDOSULFAN II	0.10	u
72-54-8	4,4'-DDD	0.10	u
7421-93-4	ENDRIN ALDEHYDE	0.10	u
1031-07-8	ENDOSULFAN SULFATE	0.10	u
50-29-3	4,4'-DDT	0.10	u
72-43-5	METHOXYCHLOR	0.50	u
53494-70-5	ENDRIN KETONE	0.10	u
57-74-9	CHLORDANE	0.50	u
8001-35-2	TOXAPHENE	1.0	u
12674-11-2	AROCLOR-1016	0.50	u
11104-28-2	AROCLOR-1221	0.50	u
11141-16-5	AROCLOR-1232	0.50	u
53469-21-9	AROCLOR-1242	0.50	u
12672-29-6	AROCLOR-1248	0.50	u
11097-69-1	AROCLOR-1254	1.0	u
11096-82-5	AROCLOR-1260	1.0	u

Volume of water extracted (ml): 1000
Weight of sample extracted (g): N.A.
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

Form I 7/85 REV.

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample No ES315

D10V1041 (VOA)
DE17081 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO TIC'S FOUND.	VOA		
2.					
3.	NA	UNKNOWN	ABN	70	15JB
4.		UNKNOWN Xylene		120	12J
5.		UNKNOWN		195	19JB
6.		UNKNOWN ethyl methyl benzene		278	11J
7.		UNKNOWN C_9H_{12}		288	8J
8.		UNKNOWN C_9H_{12}		361	11J
9.		UNKNOWN		410	8J
10.		UNKNOWN HYDROCARBON		470	9J
11.	NA	UNKNOWN		596	15JB
12.				~~1527~~	~~10J~~
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

88JG01S84

: Sample Number:
ES316 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D10V1051 (CB94); DE17091 (ABN)
Sample Matrix: WATER
Data Release Authorized By: [signature]

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-10-87
Date Analyzed: 12-10-87
Conc/Dil Factor: 1.0 pH: N.R
Percent Moisture (Not Decanted): N.R

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	2 J	79-01-6	TRICHLOROETHENE	7
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	3 J B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	23 B	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	110-75-8	2-CHLOROETHYLVINYLETHER	10 U
75-34-3	1,1-DICHLOROETHANE	5 U	75-25-2	BROMOFORM	5 U
156-60-5	TRANS-1,2-DICHLOROETHENE	3 J	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
107-06-2	1,2-DICHLOROETHANE	5 U	127-18-4	TETRACHLOROETHENE	5 U
78-93-3	2-BUTANONE	15 B	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	1 J	108-88-3	TOLUENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	108-90-7	CHLOROBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-41-4	ETHYLBENZENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	100-42-5	STYRENE	5 U
				TOTAL XYLENES	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
ES316

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-17-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up __Yes X No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____X____Yes

CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	10 U
111-44-4	BIS(2-CHLORDETHYL)ETHER	10 U
95-57-8	2-CHLOROPHENOL	10 U
541-73-1	1-3,DICHLOROBENZENE	10 U
106-46-7	1,4-DICHLOROBENZENE	10 U
100-51-6	BENZYL ALCOHOL	10 U
95-50-1	1,2-DICHLOROBENZENE	10 U
95-48-7	2-METHYLPHENOL	10 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10 U
106-44-5	4-METHYLPHENOL	10 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10 U
67-72-1	HEXACHLOROETHANE	10 U
98-95-3	NITROBENZENE	10 U
78-59-1	ISOPHORONE	10 U
88-75-5	2-NITROPHENOL	10 U
105-67-9	2,4-DIMETHYLPHENOL	10 U
65-85-0	BENZOIC ACID	50 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10 U
120-83-2	2,4-DICHLOROPHENOL	10 U
120-82-1	1,2,4-TRICHLOROBENZENE	10 U
91-20-3	NAPHTHALENE	10 U
106-47-8	4-CHLOROANILINE	10 U
87-68-3	HEXACHLOROBUTADIENE	10 U
59-50-7	4-CHLORO-3-METHYLPHENOL	10 U
91-57-6	2-METHYLNAPHTHALENE	10 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10 U
88-06-2	2,4,6-TRICHLOROPHENOL	10 U
95-95-4	2,4,5-TRICHLOROPHENOL	50 U
91-58-7	2-CHLORONAPHTHALENE	10 U
88-74-4	2-NITROANILINE	50 U
131-11-3	DIMETHYL PHTHALATE	10 U
208-96-8	ACENAPHTHYLENE	10 U
99-09-2	3-NITROANILINE	50 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	10 U
51-28-5	2,4-DINITROPHENOL	50 U
100-02-7	4-NITROPHENOL	50 U
132-64-9	DIBENZOFURAN	10 U
121-14-2	2,4-DINITROTOLUENE	10 U
606-20-2	2,6-DINITROTOLUENE	10 U
84-66-2	DIETHYLPHTHALATE	10 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10 U
86-73-7	FLUORENE	10 U
100-01-6	4-NITROANILINE	50 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	10 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	10 U
118-74-1	HEXACHLOROBENZENE	10 U
87-86-5	PENTACHLOROPHENOL	50 U
85-01-8	PHENANTHRENE	10 U
120-12-7	ANTHRACENE	10 U
84-74-2	DI-N-BUTYLPHTHALATE	10 U
206-44-0	FLUORANTHENE	10 U
129-00-0	PYRENE	10 U
85-68-7	BUTYLBENZYLPHTHALATE	10 U
91-94-1	3,3'-DICHLOROBENZIDINE	20 U
56-55-3	BENZO(a)ANTHRACENE	10 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10 U
218-01-9	CHRYSENE	10 U
117-84-0	DI-N-OCTYL PHTHALATE	2 J
205-99-2	BENZO(b)FLUORANTHENE	10 U
207-08-9	BENZO(k)FLUORANTHENE	10 U
50-32-8	BENZO(a)PYRENE	10 U
193-39-5	INDENO(1,2,3-CD)PYRENE	10 U
53-70-3	DIBENZ(a,h)ANTHRACENE	10 U
191-24-2	BENZO(g,h,i)PERYLENE	10 U

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 316

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

m8

Concentration: LOW
Date Extracted/Prepared: 12-11-87
Date Analyzed: 01-12-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓ NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ✓ Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	0.050 u
319-85-7	BETA-BHC	0.050 u
319-86-8	DELTA-BHC	0.050 u
58-89-9	GAMMA-BHC (LINDANE)	0.050 u
76-44-8	HEPTACHLOR	0.050 u
309-00-2	ALDRIN	0.050 u
1024-57-3	HEPTACHLOR EPOXIDE	0.050 u
959-98-8	ENDOSULFAN I	0.050 u
60-57-1	DIELDRIN	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	ENDRIN	0.10 u
33213-65-9	ENDOSULFAN II	0.10 u
72-54-8	4,4'-DDD	0.10 u
7421-93-4	ENDRIN ALDEHYDE	0.10 u
1031-07-8	ENDOSULFAN SULFATE	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	METHOXYCHLOR	0.50 u
53494-70-5	ENDRIN KETONE	0.10 u
57-74-9	CHLORDANE	0.50 u
8001-35-2	TOXAPHENE	1.0 u
12674-11-2	AROCLOR-1016	0.50 u
11104-28-2	AROCLOR-1221	0.50 u
11141-16-5	AROCLOR-1232	0.50 u
53469-21-9	AROCLOR-1242	0.50 u
12672-29-6	AROCLOR-1248	0.50 u
11097-69-1	AROCLOR-1254	1.0 u
11096-82-5	AROCLOR-1260	1.0 u

Volume of water extracted (ml):	1000
Weight of sample extracted (g):	N.A.
Volume of total extract (ml):	10.00
Volume of extract injected (ul):	1.00

Form I 7/85 REV.

++ CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES316

D10V1051 (VOA)
DE17091 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. NA	UNKNOWN	VOA	151	5J
2.				
3. NA	UNKNOWN	ABN	71	12JB
4. NA	UNKNOWN		195	12JB
5. 111-159	2 ethoxyethyl acetate		212	36JB
6. NA	UNKNOWN		249	9J
7.	UNKNOWN		308	10JB
8.	UNKNOWN		590	8JB
9.	UNKNOWN		596	14J
10. NA	UNKNOWN		660	12J
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Sample Number: ES317

Laboratory Name: S-CUBED
Lab Sample ID No: D10V1061 (UPA); OE17101 (ABN)
Sample Matrix: WATER
Data Release Authorized By: [signature]

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-10-87
Date Analyzed: 12-10-87
Conc/Dil Factor: 1.0 pH: N.R
Percent Moisture (Not Decanted): N.R

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	10	U	78-87-5	1,2-DICHLOROPROPANE	5	U
74-83-9	BROMOMETHANE	10	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5	U
75-01-4	VINYL CHLORIDE	10	U	79-01-6	TRICHLOROETHENE	5	U
75-00-3	CHLOROETHANE	10	U	124-48-1	DIBROMOCHLOROMETHANE	5	U
75-09-2	METHYLENE CHLORIDE	7	B	79-00-5	1,1,2-TRICHLOROETHANE	5	U
67-64-1	ACETONE	23	B	71-43-2	BENZENE	5	U
75-15-0	CARBON DISULFIDE	5	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5	U
75-35-4	1,1-DICHLOROETHENE	5	U	110-75-8	2-CHLOROETHYLVINYLETHER	10	U
75-34-3	1,1-DICHLOROETHANE	5	U	75-25-2	BROMOFORM	5	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	U	591-78-6	2-HEXANONE	10	U
67-66-3	CHLOROFORM	5	U	108-10-1	4-METHYL-2-PENTANONE	10	U
107-06-2	1,2-DICHLOROETHANE	5	U	127-18-4	TETRACHLOROETHENE	5	U
78-93-3	2-BUTANONE	15	B	79-34-5	1,1,2,2-TETRACHLOROETHANE	5	U
71-55-6	1,1,1-TRICHLOROETHANE	5	U	108-88-3	TOLUENE	1	J
56-23-5	CARBON TETRACHLORIDE	5	U	108-90-7	CHLOROBENZENE	5	U
108-05-4	VINYL ACETATE	10	U	100-41-4	ETHYLBENZENE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U	100-42-5	STYRENE	5	U
					TOTAL XYLENES	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

88JG01590

Sample Number
ES317

Laboratory Name: S-CUBED
Case No: 8689

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-17-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up __Yes X No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____X____Yes

CAS Number		ug/l or ug/kg (circle one)
108-95-2	PHENOL	10 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10 U
95-57-8	2-CHLOROPHENOL	10 U
541-73-1	1-3,DICHLOROBENZENE	10 U
106-46-7	1,4-DICHLOROBENZENE	10 U
100-51-6	BENZYL ALCOHOL	10 U
95-50-1	1,2-DICHLOROBENZENE	10 U
95-48-7	2-METHYLPHENOL	10 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10 U
106-44-5	4-METHYLPHENOL	10 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10 U
67-72-1	HEXACHLOROETHANE	10 U
98-95-3	NITROBENZENE	10 U
78-59-1	ISOPHORONE	10 U
88-75-5	2-NITROPHENOL	10 U
105-67-9	2,4-DIMETHYLPHENOL	10 U
65-85-0	BENZOIC ACID	50 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10 U
120-83-2	2,4-DICHLOROPHENOL	10 U
120-82-1	1,2,4-TRICHLOROBENZENE	10 U
91-20-3	NAPHTHALENE	10 U
106-47-8	4-CHLOROANILINE	10 U
87-68-3	HEXACHLOROBUTADIENE	10 U
59-50-7	4-CHLORO-3-METHYLPHENOL	10 U
91-57-6	2-METHYLNAPHTHALENE	10 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10 U
88-06-2	2,4,6-TRICHLOROPHENOL	10 U
95-95-4	2,4,5-TRICHLOROPHENOL	50 U
91-58-7	2-CHLORONAPHTHALENE	10 U
88-74-4	2-NITROANILINE	50 U
131-11-3	DIMETHYL PHTHALATE	10 U
208-96-8	ACENAPHTHYLENE	10 U
99-09-2	3-NITROANILINE	50 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	10 U
51-28-5	2,4-DINITROPHENOL	50 U
100-02-7	4-NITROPHENOL	50 U
132-64-9	DIBENZOFURAN	10 U
121-14-2	2,4-DINITROTOLUENE	10 U
606-20-2	2,6-DINITROTOLUENE	10 U
84-66-2	DIETHYLPHTHALATE	10 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10 U
86-73-7	FLUORENE	10 U
100-01-6	4-NITROANILINE	50 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	10 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	10 U
118-74-1	HEXACHLOROBENZENE	10 U
87-86-5	PENTACHLOROPHENOL	50 U
85-01-8	PHENANTHRENE	10 U
120-12-7	ANTHRACENE	10 U
84-74-2	DI-N-BUTYLPHTHALATE	10 U
206-44-0	FLUORANTHENE	10 U
129-00-0	PYRENE	10 U
85-68-7	BUTYLBENZYLPHTHALATE	10 U
91-94-1	3,3'-DICHLOROBENZIDINE	20 U
56-55-3	BENZO(a)ANTHRACENE	10 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10 U
218-01-9	CHRYSENE	10 U
117-84-0	DI-N-OCTYL PHTHALATE	2 J
205-99-2	BENZO(b)FLUORANTHENE	10 U
207-08-9	BENZO(k)FLUORANTHENE	10 U
50-32-8	BENZO(a)PYRENE	10 U
193-39-5	INDENO(1,2,3-CD)PYRENE	10 U
53-70-3	DIBENZ(a,h)ANTHRACENE	10 U
191-24-2	BENZO(g,h,i)PERYLENE	10 U

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 317

mB

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

Concentration: LOW
Date Extracted/Prepared: 12-11-87
Date Analyzed: 01-12-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓ NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ✓ Yes

CAS # Number		ug/L or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	0.050 u
319-85-7	BETA-BHC	0.050 u
319-86-8	DELTA-BHC	0.050 u
58-89-9	GAMMA-BHC (LINDANE)	0.050 u
76-44-8	HEPTACHLOR	0.050 u
309-00-2	ALDRIN	0.050 u
1024-57-3	HEPTACHLOR EPOXIDE	0.050 u
959-98-8	ENDOSULFAN I	0.050 u
60-57-1	DIELDRIN	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	ENDRIN	0.10 u
33213-65-9	ENDOSULFAN II	0.10 u
72-54-8	4,4'-DDD	0.10 u
7421-93-4	ENDRIN ALDEHYDE	0.10 u
1031-07-8	ENDOSULFAN SULFATE	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	METHOXYCHLOR	0.50 u
53494-70-5	ENDRIN KETONE	0.10 u
57-74-9	CHLORDANE	0.50 u
8001-35-2	TOXAPHENE	1.0 u
12674-11-2	AROCLOR-1016	0.50 u
11104-28-2	AROCLOR-1221	0.50 u
11141-16-5	AROCLOR-1232	0.50 u
53469-21-9	AROCLOR-1242	0.50 u
12672-29-6	AROCLOR-1248	0.50 u
11097-69-1	AROCLOR-1254	1.0 u
11096-82-5	AROCLOR-1260	1.0 u

Volume of water extracted (ml): 1000
Weight of sample extracted (g): N.A.
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory No. : E-CUBED

Case No 8689

Sample No. ES317

D10V1061 (VOA)
DE17101 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

	CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.		NO TIC'S FOUND.	VOA		
2.					
3.	NA	UNKNOWN	ABN	72	27J
4.	↓	UNKNOWN Xylene		121	15J
5.	NA	UNKNOWN		196	34J
6.	111-15-9	2ethoxyethyl acetate		212	83JB
7.	NA	UNKNOWN C_9H_{12}		278	13J
8.		UNKNOWN C_9H_{12}		288	10J
9.		UNKNOWN		308	14JB
10.		UNKNOWN		596	31JB
11.		UNKNOWN dimethylethyl phenol		674	9J
12.		UNKNOWN		1148	8J
13.	NA	UNKNOWN	↓	1288	11J
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

88JG01S91

: Sample Number:
ES318 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D10V1071 (CGA); DE17111 (CGW)
Sample Matrix: WATER
Data Release Authorized By: [signature]

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-10-87
Date Analyzed: 12-10-87
Conc/Dil Factor: 1.0 pH: N.R
Percent Moisture (Not Decanted): N.R

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	10	U	78-87-5	1,2-DICHLOROPROPANE	5	U
74-83-9	BROMOMETHANE	10	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5	U
75-01-4	VINYL CHLORIDE	10	U	79-01-6	TRICHLOROETHENE	5	U
75-00-3	CHLOROETHANE	10	U	124-48-1	DIBROMOCHLOROMETHANE	5	U
75-09-2	METHYLENE CHLORIDE	6	B	79-00-5	1,1,2-TRICHLOROETHANE	5	U
67-64-1	ACETONE	21	B	71-43-2	BENZENE	5	U
75-15-0	CARBON DISULFIDE	5	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5	U
75-35-4	1,1-DICHLOROETHENE	5	U	110-75-8	2-CHLOROETHYLVINYLETHER	10	U
75-34-3	1,1-DICHLOROETHANE	5	U	75-25-2	BROMOFORM	5	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	U	591-78-6	2-HEXANONE	10	U
67-66-3	CHLOROFORM	5	U	108-10-1	4-METHYL-2-PENTANONE	10	U
107-06-2	1,2-DICHLOROETHANE	5	U	127-18-4	TETRACHLOROETHENE	5	U
78-93-3	2-BUTANONE	13	B	79-34-5	1,1,2,2-TETRACHLOROETHANE	5	U
71-55-6	1,1,1-TRICHLOROETHANE	5	U	108-88-3	TOLUENE	5	U
56-23-5	CARBON TETRACHLORIDE	5	U	108-90-7	CHLOROBENZENE	5	U
108-05-4	VINYL ACETATE	10	U	100-41-4	ETHYLBENZENE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U	100-42-5	STYRENE	5	U
					TOTAL XYLENES	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
E8318

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-17-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up __Yes X No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____X____Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	10 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10 U
95-57-8	2-CHLOROPHENOL	10 U
541-73-1	1-3,DICHLOROBENZENE	10 U
106-46-7	1,4-DICHLOROBENZENE	10 U
100-51-6	BENZYL ALCOHOL	10 U
95-50-1	1,2-DICHLOROBENZENE	10 U
95-48-7	2-METHYLPHENOL	10 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10 U
106-44-5	4-METHYLPHENOL	10 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10 U
67-72-1	HEXACHLOROETHANE	10 U
98-95-3	NITROBENZENE	10 U
78-59-1	ISOPHORONE	10 U
88-75-5	2-NITROPHENOL	10 U
105-67-9	2,4-DIMETHYLPHENOL	10 U
65-85-0	BENZOIC ACID	50 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10 U
120-83-2	2,4-DICHLOROPHENOL	10 U
120-82-1	1,2,4-TRICHLOROBENZENE	10 U
91-20-3	NAPHTHALENE	10 U
106-47-8	4-CHLOROANILINE	10 U
87-68-3	HEXACHLOROBUTADIENE	10 U
59-50-7	4-CHLORO-3-METHYLPHENOL	10 U
91-57-6	2-METHYLNAPHTHALENE	10 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10 U
88-06-2	2,4,6-TRICHLOROPHENOL	10 U
95-95-4	2,4,5-TRICHLOROPHENOL	50 U
91-58-7	2-CHLORONAPHTHALENE	10 U
88-74-4	2-NITROANILINE	50 U
131-11-3	DIMETHYL PHTHALATE	10 U
208-96-8	ACENAPHTHYLENE	10 U
99-09-2	3-NITROANILINE	50 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	10 U
51-28-5	2,4-DINITROPHENOL	50 U
100-02-7	4-NITROPHENOL	50 U
132-64-9	DIBENZOFURAN	10 U
121-14-2	2,4-DINITROTOLUENE	10 U
606-20-2	2,6-DINITROTOLUENE	10 U
84-66-2	DIETHYLPHTHALATE	10 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10 U
86-73-7	FLUORENE	10 U
100-01-6	4-NITROANILINE	50 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	10 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	10 U
118-74-1	HEXACHLOROBENZENE	10 U
87-86-5	PENTACHLOROPHENOL	50 U
85-01-8	PHENANTHRENE	10 U
120-12-7	ANTHRACENE	10 U
84-74-2	DI-N-BUTYLPHTHALATE	10 U
206-44-0	FLUORANTHENE	10 U
129-00-0	PYRENE	10 U
85-68-7	BUTYLBENZYLPHTHALATE	10 U
91-94-1	3,3'-DICHLOROBENZIDINE	20 U
56-55-3	BENZO(a)ANTHRACENE	10 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10 U
218-01-9	CHRYSENE	10 U
117-84-0	DI-N-OCTYL PHTHALATE	10 U
205-99-2	BENZO(b)FLUORANTHENE	10 U
207-08-9	BENZO(k)FLUORANTHENE	10 U
50-32-8	BENZO(a)PYRENE	10 U
193-39-5	INDENO(1,2,3-CD)PYRENE	10 U
53-70-3	DIBENZ(a,h)ANTHRACENE	10 U
191-24-2	BENZO(g,h,i)PERYLENE	10 U

(1)-Cannot be separated from diphenylamine.

Laboratory Name: G-Cubed
Case No.: 8689

Sample Number
ES 318

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

MB

Concentration: LOW
Date Extracted/Prepared: 12-11-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup ___Yes ✓ NO
Separatory Funnel Extraction ___Yes
Continuous Liquid-Liquid Extraction ✓ Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	0.050 u
319-85-7	BETA-BHC	0.050 u
319-86-8	DELTA-BHC	0.050 u
58-89-9	GAMMA-BHC (LINDANE)	0.050 u
76-44-8	HEPTACHLOR	0.050 u
309-00-2	ALDRIN	0.050 u
1024-57-3	HEPTACHLOR EPOXIDE	0.050 u
959-98-8	ENDOSULFAN I	0.050 u
60-57-1	DIELDRIN	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	ENDRIN	0.10 u
33213-65-9	ENDOSULFAN II	0.10 u
72-54-8	4,4'-DDD	0.10 u
7421-93-4	ENDRIN ALDEHYDE	0.10 u
1031-07-8	ENDOSULFAN SULFATE	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	METHOXYCHLOR	0.50 u
53494-70-5	ENDRIN KETONE	0.10 u
57-74-9	CHLORDANE	0.50 u
8001-35-2	TOXAPHENE	1.0 u
12674-11-2	AROCLOR-1016	0.50 u
11104-28-2	AROCLOR-1221	0.50 u
11141-16-5	AROCLOR-1232	0.50 u
53469-21-9	AROCLOR-1242	0.50 u
12672-29-6	AROCLOR-1248	0.50 u
11097-69-1	AROCLOR-1254	1.0 u
11096-82-5	AROCLOR-1260	1.0 u

Volume of water extracted (ml): 1000
Weight of sample extracted (g): N.A.
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

Form I 7/85 REV.

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory No. S-CUBED

Case No 8689

Sample Number ES318

D10V1071 (VOA)
DE17111 (ABN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. NA	UNKNOWN	ABN	301	16JB
4.	UNKNOWN		596	10JB
5.	UNKNOWN		1152	9J
6.	UNKNOWN		1201	10J
7.	UNKNOWN		1211	15J
8.	UNKNOWN		1224	22J
9.	UNKNOWN		1288	14J
10.	UNKNOWN		1341	17J
11. NA	UNKNOWN		1964	8J
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

88JG01597

: Sample Number:
E5319 :

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D10V10B1 (CLOAL, DE17121 (MBW))
Sample Matrix: WATER
Data Release Authorized By: MW

Case No: 8689
GC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS
Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-11-87
Conc/Dil Factor: 1.0 pH: N.R
Percent Moisture (Not Decanted): N.R

CAS Number		ug/l or ug/kg (Circle One)	CAS Number		ug/l or ug/kg (Circle One)
74-87-3	CHLOROMETHANE	10 U	78-87-5	1,2-DICHLOROPROPANE	5 U
74-83-9	BROMOMETHANE	10 U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5 U
75-01-4	VINYL CHLORIDE	10 U	79-01-6	TRICHLOROETHENE	16
75-00-3	CHLOROETHANE	10 U	124-48-1	DIBROMOCHLOROMETHANE	5 U
75-09-2	METHYLENE CHLORIDE	5 B	79-00-5	1,1,2-TRICHLOROETHANE	5 U
67-64-1	ACETONE	15 B	71-43-2	BENZENE	5 U
75-15-0	CARBON DISULFIDE	5 U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5 U
75-35-4	1,1-DICHLOROETHENE	5 U	110-75-8	2-CHLOROETHYLVINYLETHER	10 U
75-34-3	1,1-DICHLOROETHANE	5 U	75-25-2	BROMOFORM	5 U
156-60-5	TRANS-1,2-DICHLOROETHENE	4 J	591-78-6	2-HEXANONE	10 U
67-66-3	CHLOROFORM	5 U	108-10-1	4-METHYL-2-PENTANONE	10 U
107-06-2	1,2-DICHLOROETHANE	5 U	127-18-4	TETRACHLOROETHENE	5 U
78-93-3	2-BUTANONE	14 B	79-34-5	1,1,2,2-TETRACHLOROETHANE	5 U
71-55-6	1,1,1-TRICHLOROETHANE	1 J	108-88-3	TOLUENE	5 U
56-23-5	CARBON TETRACHLORIDE	5 U	108-90-7	CHLOROBENZENE	5 U
108-05-4	VINYL ACETATE	10 U	100-41-4	ETHYLBENZENE	5 U
75-27-4	BROMODICHLOROMETHANE	5 U	100-42-5	STYRENE	5 U
				TOTAL XYLENES	5 U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number : ES319

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-17-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up __Yes X No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____X____Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	10 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10 U
95-57-8	2-CHLOROPHENOL	10 U
541-73-1	1-3,DICHLOROBENZIENE	10 U
106-46-7	1,4-DICHLOROBENZIENE	10 U
100-51-6	BENZYL ALCOHOL	10 U
95-50-1	1,2-DICHLOROBENZIENE	10 U
95-48-7	2-METHYLPHENOL	10 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10 U
106-44-5	4-METHYLPHENOL	10 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10 U
67-72-1	HEXACHLOROETHANE	10 U
98-95-3	NITROBENZENE	10 U
78-59-1	ISOPHORONE	10 U
88-75-5	2-NITROPHENOL	10 U
105-67-9	2,4-DIMETHYLPHENOL	10 U
65-85-0	BENZOIC ACID	50 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10 U
120-83-2	2,4-DICHLOROPHENOL	10 U
120-82-1	1,2,4-TRICHLOROBENZIENE	10 U
91-20-3	NAPHTHALENE	10 U
106-47-8	4-CHLOROANILINE	10 U
87-68-3	HEXACHLOROBUTADIENE	10 U
59-50-7	4-CHLORO-3-METHYLPHENOL	10 U
91-57-6	2-METHYLNAPHTHALENE	10 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10 U
88-06-2	2,4,6-TRICHLOROPHENOL	10 U
95-95-4	2,4,5-TRICHLOROPHENOL	50 U
91-58-7	2-CHLORONAPHTHALENE	10 U
88-74-4	2-NITROANILINE	50 U
131-11-3	DIMETHYL PHTHALATE	10 U
208-96-8	ACENAPHTHYLENE	10 U
99-09-2	3-NITROANILINE	50 U

CAS Number		ug/l or ug/kg (circle one)
83-32-9	ACENAPHTHENE	10 U
51-28-5	2,4-DINITROPHENOL	50 U
100-02-7	4-NITROPHENOL	50 U
132-64-9	DIBENZOFURAN	10 U
121-14-2	2,4-DINITROTOLUENE	10 U
606-20-2	2,6-DINITROTOLUENE	10 U
84-66-2	DIETHYLPHTHALATE	10 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10 U
86-73-7	FLUORENE	10 U
100-01-6	4-NITROANILINE	50 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	10 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	10 U
118-74-1	HEXACHLOROBENZIENE	10 U
87-86-5	PENTACHLOROPHENOL	50 U
85-01-8	PHENANTHRENE	10 U
120-12-7	ANTHRACENE	10 U
84-74-2	DI-N-BUTYLPHTHALATE	10 U
206-44-0	FLUORANTHENE	10 U
129-00-0	PYRENE	10 U
85-68-7	BUTYLBENZYLPHTHALATE	10 U
91-94-1	3,3'-DICHLOROBENZIDINE	20 U
56-55-3	BENZO(a)ANTHRACENE	10 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10 U
218-01-9	CHRYSENE	10 U
117-84-0	DI-N-OCTYL PHTHALATE	10 U
205-99-2	BENZO(b)FLUORANTHENE	10 U
207-08-9	BENZO(k)FLUORANTHENE	10 U
50-32-8	BENZO(a)PYRENE	10 U
193-39-5	INDENO(1,2,3-CD)PYRENE	10 U
53-70-3	DIBENZ(a,h)ANTHRACENE	10 U
191-24-2	BENZO(g,h,i)PERYLENE	10 U

(1)-Cannot be seperated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 319

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

mB

Concentration: LOW
Date Extracted/Prepared: 12-11-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup __Yes ✓NO
Separatory Funnel Extraction __Yes
Continuous Liquid-Liquid Extraction ✓Yes

CAS # Number		ug/l or ug/Kg (Circle One)
319-84-6	ALPHA-BHC	0.050 u
319-85-7	BETA-BHC	0.050 u
319-86-8	DELTA-BHC	0.050 u
58-89-9	GAMMA-BHC (LINDANE)	0.050 u
76-44-8	HEPTACHLOR	0.050 u
309-00-2	ALDRIN	0.050 u
1024-57-3	HEPTACHLOR EPOXIDE	0.050 u
959-98-8	ENDOSULFAN I	0.050 u
60-57-1	DIELDRIN	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	ENDRIN	0.10 u
33213-65-9	ENDOSULFAN II	0.10 u
72-54-8	4,4'-DDD	0.10 u
7421-93-4	ENDRIN ALDEHYDE	0.10 u
1031-07-8	ENDOSULFAN SULFATE	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	METHOXYCHLOR	0.50 u
53494-70-5	ENDRIN KETONE	0.10 u
57-74-9	CHLORDANE	0.50 u
8001-35-2	TOXAPHENE	1.0 u
12674-11-2	AROCLOR-1016	0.50 u
11104-28-2	AROCLOR-1221	0.50 u
11141-16-5	AROCLOR-1232	0.50 u
53469-21-9	AROCLOR-1242	0.50 u
12672-29-6	AROCLOR-1248	0.50 u
11097-69-1	AROCLOR-1254	1.0 u
11096-82-5	AROCLOR-1260	1.0 u

Volume of water extracted (ml): 1000
Weight of sample extracted (g): N.A.
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

Form 1 7/85 REV.

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES319

D10V1081 (VOA)
DE17121 (APN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1.	NO TIC'S FOUND.	VOA		
2.				
3. 111-76-2	2 butoxy ethanol	APN	195	10 JB
4. 111-15-9	2 ethoxyl ethyl acetate		211	39 JB
5. NA	UNKNOWN		309	16 JB
6.	UNKNOWN HYDROCARBON		382	7J
7.	UNKNOWN		596	8JB
8. NA	UNKNOWN		1223	8J
9.				
10.				
11.				
12.				
13.				
14.				
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26.				
27.				
28.				
29.				
30.				

88JG01599

Sample Number:
ES320

ORGANICS ANALYSIS DATA SHEET
(Page 1)

Laboratory Name: S-CUBED
Lab Sample ID No: D10V1091 (CUBA) ; DE17131 (ABN)
Sample Matrix: WATER
Data Release Authorized By: JW

Case No: 8689
QC Report No: N.R
Contract No: 68-01-7261
Date Sample Received: 12-10-87

VOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-11-87
Conc/Dil Factor: 1.0 pH: N.R
Percent Moisture (Not Decanted): N.R

CAS Number		ug/l or ug/kg (Circle One)		CAS Number		ug/l or ug/kg (Circle One)	
74-87-3	CHLOROMETHANE	10	U	78-87-5	1,2-DICHLOROPROPANE	5	U
74-83-9	BROMOMETHANE	10	U	10061-02-6	TRANS-1,3-DICHLOROPROPENE	5	U
75-01-4	VINYL CHLORIDE	10	U	79-01-6	TRICHLOROETHENE	5	U
75-00-3	CHLOROETHANE	10	U	124-48-1	DIBROMOCHLOROMETHANE	5	U
75-09-2	METHYLENE CHLORIDE	8	B	79-00-5	1,1,2-TRICHLOROETHANE	5	U
67-64-1	ACETONE	11	B	71-43-2	BENZENE	5	U
75-15-0	CARBON DISULFIDE	5	U	10061-01-5	CIS-1,3-DICHLOROPROPENE	5	U
75-35-4	1,1-DICHLOROETHENE	5	U	110-75-8	2-CHLOROETHYLVINYLETHER	10	U
75-34-3	1,1-DICHLOROETHANE	5	U	75-25-2	BROMOFORM	5	U
156-60-5	TRANS-1,2-DICHLOROETHENE	5	U	591-78-6	2-HEXANONE	10	U
67-66-3	CHLOROFORM	5	U	108-10-1	4-METHYL-2-PENTANONE	10	U
107-06-2	1,2-DICHLOROETHANE	5	U	127-18-4	TETRACHLOROETHENE	5	U
78-93-3	2-BUTANONE	12	B	79-34-5	1,1,2,2-TETRACHLOROETHANE	5	U
71-55-6	1,1,1-TRICHLOROETHANE	5	U	108-88-3	TOLUENE	2	J
56-23-5	CARBON TETRACHLORIDE	5	U	108-90-7	CHLOROBENZENE	5	U
108-05-4	VINYL ACETATE	10	U	100-41-4	ETHYLBENZENE	5	U
75-27-4	BROMODICHLOROMETHANE	5	U	100-42-5	STYRENE	5	U
					TOTAL XYLENES	5	U

Data Reporting Qualifiers

For reporting results to EPA, the following results qualifier are used. Additional flags or footnotes explaning results are encouraged.However,the definition of each flag must be explicit.

Value: If the result is a value greater than or equal to the detection limit,report the value.

U Indicates compound was analyzed for but not detected.Report the minimum detection limit for the sample with the U (eg.10U) based on necessary concentration/dilution action.(this is not necessarily the instrument detection limit.)The footnotes should read:U-Compound was analyzed for but not detected.The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value:This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (eg 10J) .If limit of detection is 10 ug/L and a concentration of 3ug/L is calculated,report as 3J.

C This flag applies to pesticide parameters where the identification has been confirmed by GC/MS.Single component pesticides > or = 10 ng/ul in the final extract should be confirmed by GC/MS.

B This flag is used when analyte is found in the blank as well as sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

S Matrix spiked compound.

Laboratory Name: S-CUBED
Case No: 8689

Sample Number
EB320

ORGANIC ANALYSIS DATA SHEET
(Page 2)

SEMIVOLATILE COMPOUNDS

Concentration: Low Medium (Circle One)
Date Extracted/Prepared: 12-11-87
Date Analyzed: 12-17-87
Conc/Dil Factor: 1.0
Percent Moisture (Decanted): N.R

GPC Clean up __Yes X No
Separatory Funnel Extraction __Yes
Continuous Liquid - Liquid Extraction_____X____Yes

CAS Number		ug/l or ug/kg (Circle one)
108-95-2	PHENOL	10 U
111-44-4	BIS(2-CHLOROETHYL)ETHER	10 U
95-57-8	2-CHLOROPHENOL	10 U
541-73-1	1-3,DICHLOROBENZENE	10 U
106-46-7	1,4-DICHLOROBENZENE	10 U
100-51-6	BENZYL ALCOHOL	10 U
95-50-1	1,2-DICHLOROBENZENE	10 U
95-48-7	2-METHYLPHENOL	10 U
39638-32-9	BIS(2-CHLOROISOPROPYL)ETHER	10 U
106-44-5	4-METHYLPHENOL	10 U
621-64-7	N-NITROSO-DI-N-PROPYLAMINE	10 U
67-72-1	HEXACHLOROETHANE	10 U
98-95-3	NITROBENZENE	10 U
78-59-1	ISOPHORONE	10 U
88-75-5	2-NITROPHENOL	10 U
105-67-9	2,4-DIMETHYLPHENOL	10 U
65-85-0	BENZOIC ACID	50 U
111-91-1	BIS(2-CHLOROETHOXY)METHANE	10 U
120-83-2	2,4-DICHLOROPHENOL	10 U
120-82-1	1,2,4-TRICHLOROBENZENE	10 U
91-20-3	NAPHTHALENE	10 U
106-47-8	4-CHLOROANILINE	10 U
87-68-3	HEXACHLOROBUTADIENE	10 U
59-50-7	4-CHLORO-3-METHYLPHENOL	10 U
91-57-6	2-METHYLNAPHTHALENE	10 U
77-47-4	HEXACHLOROCYCLOPENTADIENE	10 U
88-06-2	2,4,6-TRICHLOROPHENOL	10 U
95-95-4	2,4,5-TRICHLOROPHENOL	50 U
91-58-7	2-CHLORONAPHTHALENE	10 U
88-74-4	2-NITROANILINE	50 U
131-11-3	DIMETHYL PHTHALATE	10 U
208-96-8	ACENAPHTHYLENE	10 U
99-09-2	3-NITROANILINE	50 U

CAS Number		ug/l or ug/kg (Circle one)
83-32-9	ACENAPHTHENE	10 U
51-28-5	2,4-DINITROPHENOL	50 U
100-02-7	4-NITROPHENOL	50 U
132-64-9	DIBENZOFURAN	10 U
121-14-2	2,4-DINITROTOLUENE	10 U
606-20-2	2,6-DINITROTOLUENE	10 U
84-66-2	DIETHYLPHTHALATE	10 U
7005-72-3	4-CHLOROPHENYL-PHENYLETHER	10 U
86-73-7	FLUORENE	10 U
100-01-6	4-NITROANILINE	50 U
534-52-1	4,6-DINITRO-2-METHYLPHENOL	50 U
86-30-6	N-NITROSODIPHENYLAMINE (1)	10 U
101-55-3	4-BROMOPHENYL-PHENYLETHER	10 U
118-74-1	HEXACHLOROBENZENE	10 U
87-86-5	PENTACHLOROPHENOL	50 U
85-01-8	PHENANTHRENE	10 U
120-12-7	ANTHRACENE	10 U
84-74-2	DI-N-BUTYLPHTHALATE	10 U
206-44-0	FLUORANTHENE	10 U
129-00-0	PYRENE	10 U
85-68-7	BUTYLBENZYLPHTHALATE	10 U
91-94-1	3,3'-DICHLOROBENZIDINE	20 U
56-55-3	BENZO(a)ANTHRACENE	10 U
117-81-7	BIS(2-ETHYLHEXYL)PHTHALATE	10 U
218-01-9	CHRYSENE	10 U
117-84-0	DI-N-OCTYL PHTHALATE	10 U
205-99-2	BENZO(b)FLUORANTHENE	10 U
207-08-9	BENZO(k)FLUORANTHENE	10 U
50-32-8	BENZO(a)PYRENE	10 U
193-39-5	INDENO(1,2,3-CD)PYRENE	10 U
53-70-3	DIBENZ(a,h)ANTHRACENE	10 U
191-24-2	BENZO(g,h,i)PERYLENE	10 U

(1)-Cannot be separated from diphenylamine.

Laboratory Name: S-Cubed
Case No.: 8689

Sample Number
ES 320

ORGANICS ANALYSIS DATA
(Page 3)

Pesticide/PCBs

MB

Concentration: LOW
Date Extracted/Prepared: 12-11-87
Date Analyzed: 01-13-88
Conc/Dil Factor: 1.00

GPC Cleanup __Yes ✓NO
Separatory Funnel Extraction __Yes
Continuous Liquid-Liquid Extraction ✓Yes

CAS # Number		ug/l or mg/Kg (Circle One)
319-84-6	ALPHA-BHC	0.050 u
319-85-7	BETA-BHC	0.050 u
319-86-8	DELTA-BHC	0.050 u
58-89-9	GAMMA-BHC (LINDANE)	0.050 u
76-44-8	HEPTACHLOR	0.050 u
309-00-2	ALDRIN	0.050 u
1024-57-3	HEPTACHLOR EPOXIDE	0.050 u
959-98-8	ENDOSULFAN I	0.050 u
60-57-1	DIELDRIN	0.10 u
72-55-9	4,4'-DDE	0.10 u
72-20-8	ENDRIN	0.10 u
33213-65-9	ENDOSULFAN II	0.10 u
72-54-8	4,4'-DDD	0.10 u
7421-93-4	ENDRIN ALDEHYDE	0.10 u
1031-07-8	ENDOSULFAN SULFATE	0.10 u
50-29-3	4,4'-DDT	0.10 u
72-43-5	METHOXYCHLOR	0.50 u
53494-70-5	ENDRIN KETONE	0.10 u
57-74-9	CHLORDANE	0.50 u
8001-35-2	TOXAPHENE	1.0 u
12674-11-2	AROCLOR-1016	0.50 u
11104-28-2	AROCLOR-1221	0.50 u
11141-16-5	AROCLOR-1232	0.50 u
53469-21-9	AROCLOR-1242	0.50 u
12672-29-6	AROCLOR-1248	0.50 u
11097-69-1	AROCLOR-1254	1.0 u
11096-82-5	AROCLOR-1260	1.0 u

Volume of water extracted (ml): 1000
Weight of sample extracted (g): N.A.
Volume of total extract (ml): 10.00
Volume of extract injected (ul): 1.00

Form 1 7/85 REV.

** CONFIRMED BY GC DUAL COLUMN CONFIRMATION

Laboratory Name S-CUBED

Case No 8689

Sample Number ES320

D10V1091 (VOA)
DE17131 (AAN)

Organics Analysis Data Sheet
(Page 4)

Tentatively Identified Compounds

CAS Number	Compound Name	Fraction	RT or Scan Number	Estimated Concentration (ug/l or ug/kg)
1. NA	UNKNOWN	VOA	111	9J
2.				
3. NA	UNKNOWN	AAN	70	8JB
4. NA	UNKNOWN		195	18JB
5. 111-15-9	2-ethoxyethyl acetate		212	59JB
6. NA	UNKNOWN		596	12JB
7. NA	UNKNOWN		661	10J
8.				
9.				
10.				
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UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

DATE: 07 APR 1988

SUBJECT: Review of Region 5 data for KEYSTONE STEEL & WIRE

FROM: Curtis Ross, Director
Region 5 Central Regional Laboratory

TO: Data User: RCRA

TRANSMITTED BY
Griffin
APR 20 1988
U.S. EPA CENTRAL REGIONAL LAB

Attached are the results for

CRL Data Set Numbers: RCRA 4737 SAS 3155I SET 18
Sample Numbers: 88JG01S7B - SB1 (4 SAMPLES)
Parameter(s): ORGANICS (VOA, ABN, PCBs)
Laboratory: NANCO

Results Status

( ) DATA ACCEPTABLE FOR USE*
(X) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced.

Comments by the Quality Control Coordinator:

Acceptable based on the attached comments

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE: .....

Comments:

cc: Contractor's Representative

Filed by date

EXTRACTABLES ANALYSIS DATA SHEET
(PAGE 1)
Target Compounds
00238

SAMPLE NUMBER
1-Set18 - 165

Laboratory Name: NANCO
Case No: EPA 3155I
Lab Sample ID No: 7E 2183
QC Report No: 165
Case Type: C
Contract No: 68-01-7472
Data Release Authorized By:
Date Received: 12/11/87

Date Phase Separated: 12/14/87
Date Extracted: 12/14/87
Date Analyzed: 01/17/88
Conc/Dilu Factor: 2 pH: 8.0

CAS Number		mg/kg
108-95-2	Phenol	40 U
111-44-4	bis(2-Chloroethyl)ether	40 U
95-57-8	2-Chlorophenol	40 U
541-73-1	1,3-Dichlorobenzene	40 U
106-46-7	1,4-Dichlorobenzene	40 U
100-51-6	Benzyl alcohol	40 U
95-50-1	1,2-Dichlorobenzene	40 U
95-48-7	2-Methylphenol	40 U
39638-32-9	bis-(2-Chloroisopropyl ether	40 U
106-44-5	4-Methylphenol	40 U
621-64-7	N-Nitroso-di-n-propylamine	40 U
67-72-1	Hexachloroethane	40 U
98-95-3	Nitrobenzene	40 U
78-59-1	Isophorone	40 U
88-75-5	2-Nitrophenol	40 U
105-67-9	2,4-Dimethylphenol	40 U
65-85-0	Benzoic acid	200 U
111-91-1	bis(2-Chloroethoxy)methane	40 U
120-83-2	2,4-Dichlorophenol	40 U
120-82-1	1,2,4-Trichlorobenzene	40 U
91-20-3	Naphthalene	40 U
106-47-8	4-Chloroaniline	40 U
87-68-3	Hexachlorobutadiene	40 U
59-50-7	4-Chloro-3-methylphenol	40 U
91-57-6	2-Methylnaphthalene	40 U
77-47-4	Hexachlorocyclopentadiene	40 U
88-06-2	2,4,6-Trichlorophenol	40 U
95-95-4	2,4,5-Trichlorophenol	200 U
91-58-7	2-Chloronaphthalene	40 U
88-74-4	2-Nitroaniline	200 U
131-11-3	Dimethylphthalate	40 U
208-96-8	Acenaphthylene	40 U
99-09-2	3-Nitroaniline	200 U

CAS Number		mg/kg
83-32-9	Acenaphthene	40 U
51-28-5	2,4-Dinitrophenol	200 U
100-02-7	4-Nitrophenol	200 U
132-64-9	Dibenzofuran	40 U
121-14-2	2,4-Dinitrotoluene	40 U
606-20-2	2,6-dinitrotoluene	40 U
84-66-2	Diethylphthalate	40 U
7005-72-3	4-Chlorophenyl-phenylether	40 U
86-73-7	Fluorene	40 U
100-01-6	4-Nitroaniline	200 U
534-52-1	4,6-Dinitro-2-methylphenol	200 U
86-30-6	N-Nitrosodiphenylamine(1)	40 U
101-55-3	4-Bromophenyl-phenylether	40 U
118-74-1	Hexachlorobenzene	40 U
87-86-5	Pentachlorophenol	200 U
85-01-8	Phenanthrene	40 U
120-12-7	Anthracene	40 U
84-74-2	Di-n-butylphthalate	40 U
206-44-0	Fluoranthene	40 U
129-00-0	Pyrene	40 U
85-68-7	Butylbenzylphthalate	40 U
91-94-1	3,3'-Dichlorobenzidine	80 U
56-55-3	Benzo(a)anthracene	40 U
117-81-7	bis(2-Ethylhexyl)phthalate	40 U
218-01-9	Chrysene	40 U
117-84-0	Di-n-octylphthalate	40 U
205-99-2	Benzo(b)fluoranthene	40 U
207-08-9	Benzo(k)fluoranthene	40 U
50-32-8	Benzo(a)pyrene	40 U
193-39-5	Indeno(1,2,3-cd)pyrene	40 U
53-70-3	Dibenz(a,h)anthracene	40 U
191-24-2	Benzo(g,h,i)perylene	40 U

(1)-cannot be separated from diphenylamine

FORM HC-1

Delete

EXTRACTABLES ANALYSIS DATA SHEET
(PAGE 1)
Target Compounds 00242

SAMPLE NUMBER
2-Set-18-166B

Laboratory Name: NANCO

Case No: EPA 3155I

QC Report No: 166

Lab Sample ID No: 2E 2154

Contract No: 68-01-74

Case Type: B

Data Release Authorized By:

Date Received: 12/14/87

Date Phase Separated: 12/14/87
Date Extracted: 12/14/87
Date Analyzed: 1/16/88
Conc/Dilu Factor: 2 pH: 6.0

CAS Number		mg/kg
108-95-2	Phenol	40 U
111-44-4	bis(2-Chloroethyl)ether	40 U
95-57-8	2-Chlorophenol	40 U
541-73-1	1,3-Dichlorobenzene	40 U
106-46-7	1,4-Dichlorobenzene	40 U
100-51-6	Benzyl alcohol	40 U
95-50-1	1,2-Dichlorobenzene	40 U
95-48-7	2-Methylphenol	40 U
39638-32-9	bis-(2-Chloroisopropyl)ether	40 U
106-44-5	4-Methylphenol	40 U
621-64-7	N-Nitroso-di-n-propylamine	40 U
67-72-1	Hexachloroethane	40 U
98-95-3	Nitrobenzene	40 U
78-59-1	Isophorone	40 U
88-75-5	2-Nitrophenol	40 U
105-67-9	2,4-Dimethylphenol	40 U
65-85-0	Benzoic acid	200 U
111-91-1	bis(2-Chloroethoxy)methane	40 U
120-83-2	2,4-Dichlorophenol	40 U
120-82-1	1,2,4-Trichlorobenzene	40 U
91-20-3	Naphthalene	40 U
106-47-8	4-Chloroaniline	40 U
87-68-3	Hexachlorobutadiene	40 U
59-50-7	4-Chloro-3-methylphenol	40 U
91-57-6	2-Methylnaphthalene	8.0 J
77-47-4	Hexachlorocyclopentadiene	40 U
88-06-2	2,4,6-Trichlorophenol	40 U
95-95-4	2,4,5-Trichlorophenol	200 U
91-58-7	2-Chloronaphthalene	40 U
88-74-4	2-Nitroaniline	200 U
131-11-3	Dimethylphthalate	40 U
208-96-8	Acenaphthylene	40 U
99-09-2	3-Nitroaniline	200 U

CAS Number		
83-32-9	Acenaphthene	40 U
51-28-5	2,4-Dinitrophenol	200 U
100-02-7	4-Nitrophenol	200 U
132-64-9	Dibenzofuran	40 U
121-14-2	2,4-Dinitrotoluene	40 U
606-20-2	2,6-dinitrotoluene	40 U
84-66-2	Diethylphthalate	40 U
7005-72-3	4-Chlorophenyl-phenylether	40 U
86-73-7	Fluorene	40 U
100-01-6	4-Nitroaniline	200 U
534-52-1	4,6-Dinitro-2-methylphenol	200 U
86-30-6	N-Nitrosodiphenylamine(1)	40 U
101-55-3	4-Bromophenyl-phenylether	40 U
118-74-1	Hexachlorobenzene	40 U
87-86-5	Pentachlorophenol	200 U
85-01-8	Phenanthrene	40 U
120-12-7	Anthracene	40 U
84-74-2	Di-n-butylphthalate	40 U
206-44-0	Fluoranthene	40 U
129-00-0	Pyrene	40 U
85-68-7	Butylbenzylphthalate	40 U
91-94-1	3,3'-Dichlorobenzidine	80 U
56-55-3	Benzo(a)anthracene	40 U
117-81-7	bis(2-Ethylhexyl)phthalate	40 U
218-01-9	Chrysene	40 U
117-84-0	Di-n-octylphthalate	40 U
205-99-2	Benzo(b)fluoranthene	40 U
207-08-9	Benzo(k)fluoranthene	40 U
50-32-8	Benzo(a)pyrene	40 U
193-39-5	Indeno(1,2,3-cd)pyrene	40 U
53-70-3	Dibenz(a,h)anthracene	40 U
191-24-2	Benzo(g,h,i)perylene	40 U

(1)-cannot be separated from diphenyl...

Form HC-1

Extractables ANALYSIS DATA SHEET
(PAGE 1)
Target Compounds

00246

Sample Number
3-Set18-166A

Laboratory Name: NYTEX

Case No: EPA 3155L

Lab Sample ID No: >E2130

QC Report No: 166

Case Type: A

Contract No: 68-01-7472

Data Release Authorized By:

Date Received: 12/11/87

Date Phase Separated: 12/14/87
Date Extracted: 12/14/87
Date Analyzed: 12/22/87
Conc/Dilu factor: 2
pH: 7.0

CAS Number		ug/kg
108-95-2	Phenol	40 U
111-44-4	bis(2-Chloroethyl)ether	40 U
95-57-8	2-Chlorophenol	40 U
541-73-1	1,3-Dichlorobenzene	40 U
106-46-7	1,4-Dichlorobenzene	40 U
100-51-6	Benzyl alcohol	40 U
95-50-1	1,2-Dichlorobenzene	40 U
95-48-7	2-Methylphenol	40 U
39638-32-9	bis-(2-Chloroisopropyl) ether	40 U
106-44-5	4-Methylphenol	40 U
621-64-7	N-Nitroso-di-n-propylamine	40 U
67-72-1	Hexachloroethane	40 U
98-95-3	Nitrobenzene	40 U
78-59-1	Isophorone	40 U
88-75-5	2-Nitrophenol	40 U
105-67-9	2,4-Dimethylphenol	40 U
65-85-0	Benzoic acid	200 U
111-91-1	bis(2-Chloroethoxy)methane	40 U
120-83-2	2,4-Dichlorophenol	40 U
120-82-1	1,2,4-Trichlorobenzene	40 U
91-20-3	Naphthalene	40 U
106-47-8	4-Chloroaniline	40 U
87-68-3	Hexachlorobutadiene	40 U
59-50-7	4-Chloro-3-methylphenol	40 U
91-57-6	2-Methylnaphthalene	40 U
77-47-4	Hexachlorocyclopentadiene	40 U
88-06-2	2,4,6-Trichlorophenol	40 U
95-95-4	2,4,5-Trichlorophenol	200 U
91-58-7	2-Chloronaphthalene	40 U
88-74-4	2-Nitroaniline	40 U
131-11-3	Dimethylphthalate	40 U
208-96-8	Acenaphthylene	40 U
99-09-2	3-Nitroaniline	200 U

CAS Number		ug/kg
83-32-9	Acenaphthene	40 U
51-28-5	2,4-Dinitrophenol	200 U
100-02-7	4-Nitrophenol	200 U
132-64-9	Dibenzofuran	40 U
121-14-2	2,4-Dinitrotoluene	40 U
606-20-2	2,6-Dinitrotoluene	40 U
84-66-2	Diethylphthalate	40 U
7005-72-3	4-Chlorophenyl-phenylether	40 U
86-73-7	Fluorene	40 U
100-01-6	4-Nitroaniline	200 U
534-52-1	4,6-Dinitro-2-methylphenol	200 U
86-30-6	N-Nitrosodiphenylamine(1)	40 U
101-55-3	4-Bromophenyl-phenylether	40 U
118-74-1	Hexachlorobenzene	40 U
87-86-5	Pentachlorophenol	200 U
85-01-8	Phenanthrene	40 U
120-12-7	Anthracene	40 U
84-74-2	Di-n-butylphthalate	40 U
206-44-0	Fluoranthene	40 U
129-00-0	Pyrene	40 U
85-68-7	Butylbenzylphthalate	40 U
91-94-1	3,3'-Dichlorobenzidine	80 U
56-55-3	Benzo(a)anthracene	40
117-81-7	bis(2-Ethylhexyl)phthalate	40
218-01-9	Chrysene	40
117-84-0	Di-n-octylphthalate	40
205-99-2	Benzo(b)fluoranthene	40
207-08-9	Benzo(k)fluoranthene	40
50-32-8	Benzo(a)pyrene	40
193-39-5	Indeno(1,2,3-cd)pyrene	40
53-70-3	Dibenz(a,h)anthracene	40
191-24-2	Benzo(g,h,i)perylene	40

(1)-cannot be separated from diphenylamine

Form HT-1

Delete C...

EXTRACTABLES Analysis Data Sheet
(PAGE 1)
Target Compounds

Sample Number
4-Set-18-166A

00250

...ratory Name: Nanco

Case No: EPA 3155I

...Sample ID No: [illegible]

QC Report No: 166

...e Type: A

Contract No: 68-01-7472

...ta Release
...horized By: [illegible]

Date Received: 12/11/87

Date Phase Separated: 12/11/87
Date Extracted: 12/11/87
Date Analyzed: 12/12/87
Conc/Dilu Factor: 2 pH: 6.0

CAS Number		mg/Kg
108-95-2	Phenol	40 U
[illegible]-44-4	bis(2-Chloroethyl)ether	40 U
[illegible]-57-8	2-Chlorophenol	40 U
541-73-1	1,3-Dichlorobenzene	40 U
106-46-7	1,4-Dichlorobenzene	40 U
[illegible]-51-6	Benzyl alcohol	40 U
95-50-1	1,2-Dichlorobenzene	40 U
95-48-7	2-Methylphenol	40 U
9638-32-9	bis-(2-Chloroisopropyl)ether	40 U
106-44-5	4-Methylphenol	40 U
621-64-7	N-Nitroso-di-n-propylamine	40 U
[illegible]7-72-1	Hexachloroethane	40 U
[illegible]8-95-3	Nitrobenzene	40 U
78-59-1	Isophorone	40 U
[illegible]-75-5	2-Nitrophenol	40 U
[illegible]-67-9	2,4-Dimethylphenol	40 U
65-85-0	Benzoic acid	200 U
111-91-1	bis(2-Chloroethoxy)methane	40 U
[illegible]0-83-2	2,4-Dichlorophenol	40 U
[illegible]0-82-1	1,2,4-Trichlorobenzene	40 U
91-20-3	Naphthalene	40 U
106-47-8	4-Chloroaniline	40 U
87-68-3	Hexachlorobutadiene	40 U
59-50-7	4-Chloro-3-methylphenol	40 U
91-57-6	2-Methylnaphthalene	40 U
77-47-4	Hexachlorocyclopentadiene	40 U
88-06-2	2,4,6-Trichlorophenol	40 U
95-95-4	2,4,5-Trichlorophenol	200 U
91-58-7	2-Chloronaphthalene	40 U
88-74-4	2-Nitroaniline	200 U
131-11-3	Dimethylphthalate	40 U
[illegible]-96-8	Acenaphthylene	40 U
[illegible]-2	3-Nitroaniline	200 U

CAS Number		mg/Kg
83-32-9	Acenaphthene	40 U
51-28-5	2,4-Dinitrophenol	200 U
100-02-7	4-Nitrophenol	200 U
132-64-9	Dibenzofuran	40 U
121-14-2	2,4-Dinitrotoluene	40 U
606-20-2	2,6-dinitrotoluene	40 U
84-66-2	Diethylphthalate	40 U
7005-72-3	4-Chlorophenyl-phenylether	40 U
86-73-7	Fluorene	40 U
100-01-6	4-Nitroaniline	200 U
534-52-1	4,6-Dinitro-2-methylphenol	200 U
86-30-6	N-Nitrosodiphenylamine(1)	40 U
101-55-3	4-Bromophenyl-phenylether	40 U
118-74-1	Hexachlorobenzene	40 U
87-86-5	Pentachlorophenol	200 U
85-01-8	Phenanthrene	40 U
120-12-7	Anthracene	40 U
84-74-2	Di-n-butylphthalate	40 U
206-44-0	Fluoranthene	40 U
129-00-0	Pyrene	40 U
85-68-7	Butylbenzylphthalate	40 U
91-94-1	3,3'-Dichlorobenzidine	80 U
56-55-3	Benzo(a)anthracene	40 U
117-81-7	bis(2-Ethylhexyl)phthalate	40 U
218-01-9	Chrysene	40 U
117-84-0	Di-n-octylphthalate	40 U
205-99-2	Benzo(b)fluoranthene	40 U
207-08-9	Benzo(k)fluoranthene	40 U
50-32-8	Benzo(a)pyrene	40 U
193-39-5	Indeno(1,2,3-cd)pyrene	40 U
53-70-3	Dibenz(a,h)anthracene	40 U
191-24-2	Benzo(g,h,i)perylene	40 U

(1)-cannot be separated from diphenylamine

Form HC-1

Delete [illegible]

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

DATE: 07 APR 1988

SUBJECT: Review of Region 5 data for KEYSTONE STEEL & WIRE

FROM: Curtis Ross, Director
Region 5 Central Regional Laboratory

TO: Data User: RCRA

Attached are the results for

CRL Data Set Numbers: RCRA 4737 SAS 3155I SET 18
Sample Numbers: 88JG01S78 - SB1 (4 SAMPLES)
Parameter(s): ORGANICS (VOA, ABN, PCBs)
Laboratory: NANCO

Results Status

( ) DATA ACCEPTABLE FOR USE*
(X) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced

Comments by the Quality Control Coordinator:

Acceptable based on the attached comments

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE:
Comments:

cc: Contractor's Representative

Synoptic Review on RCRA Data
Case # SAS-3155 I

This data review contains 3 liquid and 1 sludge. The 4 samples are identified as (Set 18)-1, -2, -3, -4. The first 3 samples are used for QC spikes in all the fractions

The following is the finding:

In VOA Fraction — The recoveries of 5 matrix spikes and 3 surrogate spikes are all within their QC specifications.

The volatile analytes in Blank contains 2-5 mg/kg. In initial Calibration there are 6 out of 36 components lie outside of %RSD specification for response factors. The % D between RF and $\overline{RF}$ has 12 outliers in 36 components in one case and 22 out of 36 in other Calibration

Due to high concentration, the detection limits are in 2.5-5.0 mg/kg range. Almost all VOA components in samples are of negative results

In Semivolatile Fraction — The % recoveries of matrix spike and matrix spike duplicate (7 BN 5 acids and 2 pesticide) are within specifications in the spiked samples of Set 18-1 and Set 18-2.. The pentachlorophenol and heptachlor in MSD are out of specification in the spiked sample Set 18-3.

Initial Calibration of BNA has 4 outlier out of 64 in %RSD of response factors and 16 out of 64 in %D. The Pesticide/PCB has 1 outlier in 26 in initial and 11 in 26 in continuous Calibration

No positive results are obtained from BNA, Pesticide/PCB in the sample analyzed. The detection limits are around 40 ug/kg for BNA except the benzoic acid and 2,4,6, Trichlorophenol are 200 mg/kg. All PCB's have 200 mg/kg. GC/MS tuning & Mass Calibration data are within ion abundance criteria

— The Contractor has no data of RPD between MS and MSD calculated for volatile spikes. The following is calculated from the spiked sample set 18-1:

	Conc. mg/kg MS	MSD	RPD = $\frac{\lvert MS-MSD \rvert}{\frac{MS+MSD}{2}} \times 100$	QC specification
1,1-Dichloroethene	92	64	35*	22
Trichloroethene	72	88	20	24
Chlorobenzene	104	104	0	21
Toluene	64	96	40*	21
Benzene	80	96	18	21

* 1,1-Dichloroethene and Toluene are out of QC specification

Comments. (1) The Hewlett Packard GC/MS system apparently didn't give reproducible data though the tuning and Mass Calibration of MS performance is normal.

(2) The GPC for Sample Clean-up may need performance improvement to lower the detection limits for high concentration analytes if possible.

(3) Several Xerox copies in this package are not readable (for instance, the second column in Sample Report of Set 18-[P235] Set 18-2 [P242] and Set 18-3 [P246] are unable to see.

"The data qualified as to use" left lack of some quantitation information in almost all the Samples analyzed.

K.C. Hsieh
3-31-88

00001

RECEIVED

FEB 09 1988

U.S. EPA, CENTRAL REGIONAL LAB.
536 S. CLARK STREET
CHICAGO, ILLINOIS 60605

RCRA 4737

VOLATILES

SAMPLE DATA SUMMARY PACKAGE

CASE # EPA 3155I

Date Rec'd 12/11/87

February 5, 1988

RECEIVED

CASE NARRATIVE Prepared for: U.S.E.P.A. Region V

FEB 09 1988

U.S. EPA, CENTRAL REGIONAL LAB.
536 S. CLARK STREET
CHICAGO, ILLINOIS 60605

CASE NUMBER: SAS-3155I

CONTRACT NUMBER: 68-01-7472

ORGANIC ANALYSIS

This case was received at Nanco Labs, Inc. on December 11, 1987. It consisted of three (3) liquid samples and one (1) sludge sample for full analysis. The sample ID's in this case were as follows:

(SET 18)-1 (SET 18)-2 (SET 18)-3
(SET 18)-4

I would just like to note that there were no Traffic Reports received with this group of samples.

Samples (SET 18)-1, (SET 18)-2, and (SET 18)-3 were chosen as the QC for all fractions. (i.e.matrix spike and matrix spike duplicate.)

Due to occasional problems with integration in our Hewlett Packard GC/MS system you may find some areas and concentrations in our data corrected and handwritten by our analysts.

Some difficulties have been encountered with this case. Both of the standard biphenyl solutions received from EPA were either incorrect concentrations or incorrect biphenyl compounds. This problem was discussed with Leslie Braun per a telephone conversation with Sohail Jahani on December 3, 1987 & January 26, 1988 (see attached logs). A letter to Emile Boulos was dispatched on January 5, 1988 which also demonstrates the problems associated with this case that were beyond laboratory control (see attached letter).

NANCO PROCEDURES

All files beginning with >B were on GC/MS B, all files beginning with beginning >C were run on GC/MS C, all files beginning with >D were run on GC/MS D, and all files beginning with >E were run on GC/MS E.

February 5, 1988

Case Narrative Prepared for: U.S.E.P.A. Region V

Page 2

Some Tentatively Identified Compounds may show less than three "hits" or possibly zero "hits" for the results of the library search. This is due to the algorithm of the Hewlett Packard system we are using. Only data base entries of a probability of greater than one percent (1%) will be reported.

SURROGATE RECOVERIES

Most surrogate recoveries are within specification, but some were diluted out. These are noted on Form HC-II.

MATRIX SPIKE RECOVERIES

Most spikes and RPD's are within specification, the exceptions are noted on Form HC-III.

"Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Sohail Johani
Manager of Organics

SAMPLE CONDITION

All samples arrived in good condition.

This case ran without problems.

Sincerely,

Sohail Johani
Manager of Organics

nanco labs, inc.

January 5, 1988

Emile Boulos
WH 548A
401 M Street South West
Washington, D.C. 20460 WH548A

Re: High Level Hazard Protocol: Case #3155I

Dear Emile:

This letter is to inform you of the status of case # 3155I (high level hazard).

Some difficulties have been encountered with this case. Due to the nature of the samples, a new calibration seems to be required for each set that has gone through GPC cleanup. Many times phthalatephenol calibration solution does not meet the recovery of $\geq$85%.

As per my telephone conversation with Leslie Brown about the problem with three biphenyls which do not go into the solution at high concentration, I have ordered a new biphenyl solution from the EPA which is at 200 PPM.

The average response factors for the pesticide and biphenyl compounds are low. On many occasions several compounds have no response at 20 PPM unless the source is perfectly cleaned and a new column is being used.

Also, due to the solubility problem there should be three different solutions; one for BN/A, one for pesticide and a third for biphenyl compounds. Therefore, there are three different initial calibration curves and three different continuous calibration injections daily.

For better utilization of instruments and efficiency of laboratories, I would like to suggest that the limit of 12 hours DFTPP and BFB time be changed to 24 hours. Also, Since detection at less than 50 nanograms per injection is difficult, all pesticide and biphenyl compounds should require a four-point initial calibration at 50, 80, 120, and 160 total nanograms.

nanco labs, inc.

Due to the problems we have encountered with this case, I would like to request a 65 day turn around time rather than the original 40 days.

Due to the importance of this case we will assume that the above proposals have been accepted by the EPA, if no contact regarding these matters is made within two weeks.

I would like to keep the communication channels open between Nanco Labs and the EPA for the development of new ideas and suggestions for solving problems.

I hope Nanco Labs can be helpful to the EPA in finalizing the High Level Hazard IFB.

Very truly yours,

Sohail Jahani

Sohail Jahani
Organics Manager

SJ/kdp

cc.Leslie Brown, Joan Fisk

ROBINSON LANE, RD 6 WAPPINGERS FALLS, N.Y. 12590 PHONE: 914-221-2485

00009 88J607S78-

SAMPLE NUMBER
(SBT15)-1

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page 1)
Target Compounds

Laboratory Name: Nanco LABORATORY

Case No: EPA 3155T

Lab Sample ID No: XB3101A

QC Report No: ~~[illegible]~~ 1005

Phase Type: C

Contract No: 68-01-7472

Data Release Authorized By: Sohal Jah

Date Received: 12/11/87

Date Phase Separated: 12/17/87

Date Extracted: 12/17/87

Date Analyzed: 12/17/87

Dilu Factor: 1.0 pH: 8.0

CAS Number		mg/Kg
74-87-3	Chloromethane	5.0U
74-83-9	Bromomethane	5.0U
75-01-4	Vinyl chloride	5.0U
75-00-3	Chloroethane	5.0U
5-09-2	Methylene chloride	2.5U
67-64-1	Acetone	5.0U
75-15-0	Carbon disulfide	2.5U
75-35-4	1,1-Dichloroethene	2.5U
75-34-3	1,1-Dichloroethane	2.5U
156-60-5	trans-1,2-Dichloroethene	2.5U
67-66-3	Chloroform	2.5U
107-06-2	1,2-Dichloroethane	2.5U
78-93-3	2-Butanone	5.0U
71-55-6	1,1,1-Trichloroethane	2.5U
56-23-5	Carbon tetrachloride	2.5U
108-05-4	Vinyl acetate	5.0U
75-27-4	Bromodichloromethane	2.5U

CAS Number		mg
78-87-5	1,2-Dichloropropane	2.5
10061-02-6	trans-1,3-Dichloropropene	2.5
79-01-6	Trichloroethene	2.5
124-48-1	Dibromochloromethane	2.5
79-00-5	1,1,2-Trichloroethane	2.5
71-43-2	Benzene	2.5
10061-01-5	cis-1,3-Dichloropropene	2.5
110-75-8	2-Chloroethylvinylether	5.0
75-25-2	Bromoform	2.5
591-78-6	2-Hexanone	5.0
108-10-1	4-Methyl-2-pentanone	5.0
127-18-4	Tetrachloroethene	2.5
79-34-5	1,1,2,2-Tetrachloroethane	2.5
108-88-3	Toluene	2.5
108-90-7	Chlorobenzene	2.5
100-41-4	Ethylbenzene	2.5
100-42-5	Styrene	2.5
	Total Xylenes	2.5

FORM HC-I

Delete CAS #'s

Laboratory Name: [illegible]

Case No: EPA 3155T

88J60 578

SAMPLE NUMBER (SET 15)-1

HIGH CONCENTRATION 00010
VOLATILE ANALYSIS DATA SHEET
(Page ~~3~~ 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1. —	UNKNOWN	5.55	940.0 J
2. —	UNKNOWN	8.03	61.0 J
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			

Form [illegible], Part B

88JG01579

00012

SAMPLE NUMBER
(SETS)-2

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page 1)
Target Compounds

Laboratory Name: Nanco LABORATORY

Case No: EPA 3155T

Lab Sample ID No: >B3C13

QC Report No: 1100

Phase Type: B

Contract No: 68-01-7472

Data Release Authorized By:

Date Received: 10/11/87

Date Phase Separated: 10/17/87

Date Extracted: 10/17/87

Date Analyzed: 10/17/87

Dilu Factor: 1.0 pH: 6.0

CAS Number		mg/Kg
74-87-3	Chloromethane	5.0U
74-83-9	Bromomethane	5.0U
75-01-4	Vinyl chloride	5.0U
75-00-3	Chloroethane	5.0U
-09-2	Methylene chloride	2.5U
67-64-1	Acetone	5.0U
75-15-0	Carbon disulfide	2.5U
75-35-4	1,1-Dichloroethene	2.5U
75-34-3	1,1-Dichloroethane	2.5U
156-60-5	trans-1,2-Dichloroethene	2.5U
67-66-3	Chloroform	2.5U
107-06-2	1,2-Dichloroethane	2.5U
78-93-3	2-Butanone	5.0U
71-55-6	1,1,1-Trichloroethane	2.5U
56-23-5	Carbon tetrachloride	2.5U
108-05-4	Vinyl acetate	5.0U
75-27-4	Bromodichloromethane	2.5U

CAS Number		mg/
78-87-5	1,2-Dichloropropane	2.5
10061-02-6	trans-1,3-Dichloropropene	2.5
79-01-6	Trichloroethene	2.5
124-48-1	Dibromochloromethane	2.5
79-00-5	1,1,2-Trichloroethane	2.5
71-43-2	Benzene	2.5
10061-01-5	cis-1,3-Dichloropropene	2.5
110-75-8	2-Chloroethylvinylether	5.0
75-25-2	Bromoform	2.5
591-78-6	2-Hexanone	5.0
108-10-1	4-Methyl-2-pentanone	5.0
127-18-4	Tetrachloroethene	2.5
79-34-5	1,1,2,2-Tetrachloroethane	2.5
108-88-3	Toluene	2.5
108-90-7	Chlorobenzene	2.5
100-41-4	Ethylbenzene	2.5
100-42-5	Styrene	2.5
	Total Xylenes	2.5

FORM HC_A-1

Delete CAS #'s

88J601S79

Laboratory Name: [illegible] 35, INC

Case No: EPA 3105T

SAMPLE NO.: (SET 18)-[illegible]

HIGH CONCENTRATION 00013
VOLATILE ANALYSIS DATA SHEET
(Page ~~3~~ 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1. —	UNKNOWN	5.59	130.0 J
2. 502998	1,3,7-OCTATRIENE,3,7-DIMETHYL	27.68	39.0 J
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88JG01S80

00015

SAMPLE NUMBER
(88913)-3

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page 1)
Target Compounds

Laboratory Name: Nanco LABORATORY

Case No: EPA 3155T

Lab Sample ID No: >B31014

QC Report No: 11010

Phase Type: A

Contract No: 68-01-7472

Data Release Authorized By: Sohail Jahani

Date Received: 10/11/87

Date Phase Separated: 10/17/87

Date Extracted: 10/17/87

Date Analyzed: 10/17/87

Dilu Factor: 1.0 pH: 7.0

CAS Number		mg/Kg
74-87-3	Chloromethane	5.0U
74-83-9	Bromomethane	5.0U
75-01-4	Vinyl chloride	5.0U
75-00-3	Chloroethane	5.0U
[illegible]-09-2	Methylene chloride	2.5U
[illegible]-64-1	Acetone	5.0U
75-15-0	Carbon disulfide	2.5U
75-35-4	1,1-Dichloroethene	2.5U
75-34-3	1,1-Dichloroethane	2.5U
156-60-5	trans-1,2-Dichloroethene	2.5U
67-66-3	Chloroform	2.5U
107-06-2	1,2-Dichloroethane	2.5U
78-93-3	2-Butanone	5.0U
71-55-6	1,1,1-Trichloroethane	2.5U
56-23-5	Carbon tetrachloride	2.5U
108-05-4	Vinyl acetate	5.0U
75-27-4	Bromodichloromethane	2.5U

CAS Number		mg
78-87-5	1,2-Dichloropropane	2.5
10061-02-6	trans-1,3-Dichloropropene	2.5
79-01-6	Trichloroethene	2.5
124-48-1	Dibromochloromethane	2.5
79-00-5	1,1,2-Trichloroethane	2.5
71-43-2	Benzene	2.5
10061-01-5	cis-1,3-Dichloropropene	2.5
110-75-8	2-Chloroethylvinylether	5.0
75-25-2	Bromoform	2.5
591-78-6	2-Hexanone	5.0
108-10-1	4-Methyl-2-pentanone	5.0
127-18-4	Tetrachloroethene	2.5
79-34-5	1,1,2,2-Tetrachloroethane	2.5
108-88-3	Toluene	2.5
108-90-7	Chlorobenzene	2.5
100-41-4	Ethylbenzene	2.5
100-42-5	Styrene	2.5
	Total Xylenes	2.5

FORM HC-I

Delete CAS #'s

88JG01580

Laboratory Name: [illegible]

Case No: EPA 3150T

SAMPLE NUMBER: [illegible]

HIGH CONCENTRATION 00016
VOLATILE ANALYSIS DATA SHEET
(Page ~~3~~ 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1. —	NONE FOUND	—	—
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88J601581

00018

SAMPLE NUMBE

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page 1)
Target Compounds

Laboratory Name: NANCO LABS, INC.

Case No: EPA 3155T

Lab Sample ID No: >B3603

QC Report No: N/A 100

Phase Type: A

Contract No: 68-01-7472

Data Release Authorized By: [signature]

Date Received: 12/11/87

Date Phase Separated: 12/17/87

Date Extracted: 12/17/87

Date Analyzed: 12/17/87

Dilu Factor: 2 pH: 6.0

CAS Number		mg/Kg	
74-87-3	Chloromethane	10.0	U
74-83-9	Bromomethane	10.0	U
75-01-4	Vinyl chloride	10.0	U
75-00-3	Chloroethane	10.0	U
75-09-2	Methylene chloride 2.4 JB	~~5.0~~	~~U~~
67-64-1	Acetone 7.2 JB	~~10.0~~	~~U~~
75-15-0	Carbon disulfide	5.0	U
75-35-4	1,1-Dichloroethene	5.0	U
75-34-3	1,1-Dichloroethane	5.0	U
156-60-5	trans-1,2-Dichloroethene	5.0	U
67-66-3	Chloroform	5.0	U
107-06-2	1,2-Dichloroethane	5.0	U
78-93-3	2-Butanone	10.0	U
71-55-6	1,1,1-Trichloroethane	5.0	U
56-23-5	Carbon tetrachloride	5.0	U
108-05-4	Vinyl acetate	10.0	U
75-27-4	Bromodichloromethane	5.0	U

CAS Number		
78-87-5	1,2-Dichloropropane	5.0
10061-02-6	trans-1,3-Dichloropropene	5.0
79-01-6	Trichloroethene	5.0
124-48-1	Dibromochloromethane	5.0
79-00-5	1,1,2-Trichloroethane	5.0
71-43-2	Benzene	5.0
10061-01-5	cis-1,3-Dichloropropene	5.0
110-75-8	2-Chloroethylvinylether	10.0
75-25-2	Bromoform	5.0
591-78-6	2-Hexanone	10.0
108-10-1	4-Methyl-2-pentanone	10.0
127-18-4	Tetrachloroethene	5.0
79-34-5	1,1,2,2-Tetrachloroethane	5.0
108-88-3	Toluene	5.0
108-90-7	Chlorobenzene	5.0
100-41-4	Ethylbenzene	5.0
100-42-5	Styrene	5.0
	Total Xylenes	5.0

FORM HC-1

Delete CAS #'s

88JG01581

Laboratory Name: [illegible] INC

Case No: [illegible]

SAMPLE NO. [illegible]

00019

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page ~~3~~ 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1. —	UNKNOWN	2.37	120.0 J
2. —	UNKNOWN	3.38	140.0 J
3. —	UNKNOWN CYCLIC COMPOUND	2.37	22.0 J
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HIGH CONCENTRATION
VOLATILE SURROGATE PERCENT RECOVERY SUMMARY

Case No: EPA3155T Laboratory Name: NANCO LABS, INC Contract No: 65-01-743

SMO Sample Number	Toluene-D8 (50-160*)	Bromofluorobenzene (50-160*)	1,2-Dichloroethane-D4 (50-160*)
BLANK #1	110	107	100
BLANK #2	105	77	101
(SET 18)-1	71	78	105
(SET 18)-2	79	84	109
(SET 18)-3	77	91	106
(SET 18)-4	117	127	113
(SET 18)-1 MS	109	79	98
(SET 18)-1 MSD	108	110	101
(SET 18)-2 MS	102	105	97
(SET 18)-2 MSD	100	105	96
(SET 18)-3 MS	97	103	96
(SET 18)-3 MSD	96	120	105

* MANDATORY CONTRACT REQUIRED LIMITS FOR METHOD BLANKS; ADVISORY for SAMPLES and CONTROL MATRIX SPIKE

Volatiles: 0 out of 36 ; outside of QC limits

COMMENTS:

(SET [illegible])-1 MS

HIGH CONCENTRATION
VOLATILE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA3155T Laboratory Name: [illegible] Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration Control Matrix	Percent(*) Recovery	QC Limits
1,1-Dichloroethene	25	23	92	60-150
Trichloroethene	25	18	72	60-150
Chlorobenzene	25	26	104	60-150
Toluene	25	26	104	60-150
Benzene	25	20	80	60-150

* ASTERISKED VALUES ARE OUTSIDE OF ADVISORY QC LIMITS

Volatiles: 0 out of 5 ; outside of recovery QC limits

COMMENTS:

00021

(SET 1 - 1 of 6)

HIGH CONCENTRATION
VOLATILE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA3150T Laboratory Name: DAYTON LABS, INC Contract No: 68-01-7102

Compound	Concentration Spike Added (mg/Kg)	Concentration Control Matrix	Percent(*) Recovery	QC Limits
1,1-Dichloroethene	25	16	64	60-150
Trichloroethene	25	22	88	60-150
Chlorobenzene	25	26	104	60-150
Toluene	25	24	96	60-150
Benzene	25	24	96	60-150

* ASTERISKED VALUES ARE OUTSIDE OF ADVISORY QC LIMITS

Volatiles: 0 out of 5 ; outside of recovery QC limits

COMMENTS:

00022

(SET 5) 2 of 2

HIGH CONCENTRATION
VOLATILE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA355T Laboratory Name: LANCO LABS INC Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration Control Matrix	Percent(*) Recovery	QC Limits
1,1-Dichloroethene	25	17	68	60-150
Trichloroethene	25	20	80	60-150
Chlorobenzene	25	24	96	60-150
Toluene	25	22	88	60-150
Benzene	25	23	92	60-150

* ASTERISKED VALUES ARE OUTSIDE OF ADVISORY QC LIMITS

Volatiles: 0 out of 5 ; outside of recovery QC limits

COMMENTS:

00023

HIGH CONCENTRATION
VOLATILE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA 3155I Laboratory Name: DANMO LABS, INC Contract No: 68-01-7170

Compound	Concentration Spike Added (mg/Kg)	Concentration Control Matrix	Percent(*) Recovery	QC Limits
1,1-Dichloroethene	25	15	60	60-150
Trichloroethene	25	20	80	60-150
Chlorobenzene	25	24	96	60-150
Toluene	25	22	88	60-150
Benzene	25	24	96	60-150

* ASTERISKED VALUES ARE OUTSIDE OF ADVISORY QC LIMITS

Volatiles: 0 out of 5 ; outside of recovery QC limits

COMMENTS:

Form HC-III 7/86

00024

(SET 18-3 MS

HIGH CONCENTRATION
VOLATILE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA3155I Laboratory Name: NALCO LABS, INC Contract No: 68-01-7170

Compound	Concentration Spike Added (mg/Kg)	Concentration Control Matrix	Percent(*) Recovery	QC Limits
1,1-Dichloroethene	25	110	114	60-150
Trichloroethene	25	21	84	60-150
Chlorobenzene	25	25	100	60-150
Toluene	25	23	93	60-150
Benzene	25	24	96	60-150

* ASTERISKED VALUES ARE OUTSIDE OF ADVISORY QC LIMITS

Volatiles: 0 out of 5 ; outside of recovery QC limits

COMMENTS:

00025

Form HC-III 7/86

(SET 3) 3 of

HIGH CONCENTRATION
VOLATILE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA 3155I Laboratory Name: NANCO LABS, INC Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration Control Matrix	Percent(*) Recovery	QC Limits
1,1-Dichloroethene	25	15	60	60-150
Trichloroethene	25	21	84	60-150
Chlorobenzene	25	24	96	60-150
Toluene	25	22	88	60-150
Benzene	25	23	92	60-150

* ASTERISKED VALUES ARE OUTSIDE OF ADVISORY QC LIMITS

Volatiles: 0 out of 5 ; outside of recovery QC limits

COMMENTS:

00026

HIGH CONCENTRATION
VOLATILE MET. BLANK SUMMARY

Case No: EPA 3155T Region 5 Laboratory Name: NANCO LABS, INC

Contract No: 68-01-7472

Lab File ID	Date of Analysis	Inst. ID	CAS Number	Compound Name	CONC. (mg/Kg)	CRDL
>B3599	12/17/87	GC/MSB	75-09-2	METHYLENE CHLORIDE (HSL)	3.5 J	2.5
>B3599	12/17/87	GC/MSB	67-64-1	ACETONE (HSL)	6.0	5.0
>B3599	12/17/87	GC/MSB	—	UNKNOWN	20.0 J	—
>B3599	12/17/87	GC/MSB	—	UNKNOWN	80.0 J	—
>B3599	12/17/87	GC/MSB	—	UNKNOWN	500.0 J	—
>B3599	12/17/87	GC/MSB	—	UNKNOWN	5.3 J	—
>B3599	12/17/87	GC/MSB	—	UNKNOWN ALKENE	17.0 J	—

COMMENTS:

00027

HIGH CONCENTRATION
VOLATILE MET. BLANK SUMMARY

Case No: EPA 3150T Region 5 Laboratory Name: [illegible]

Contract No: 68 01-7172

Lab File ID	Date of Analysis	Inst. ID	CAS Number	Compound Name	CONC. (mg/Kg)	CRDL
[illegible]	10/17/87	[illegible]	—	UNKNOWN	2.5 J	—

COMMENTS:

00028

RCRA #737

00230

Semi-Volatile

SAMPLE DATA SUMMARY

PACKAGE

CASE # EPA 3155I

12/11/87

RECEIVED
FEB 09 1988
U.S. EPA, CLEVELAND REGIONAL LAB.
536 S. CLARK STREET
CHICAGO, ILLINOIS 60605

RECEIVED
00231
FEB 09 1988
EPA CENTRAL REGIONAL LAB.
536 S. CLARK STREET
CHICAGO, ILLINOIS 60605

February 5, 1988

CASE NARRATIVE Prepared for: U.S.E.P.A. Region

CASE NUMBER: SAS-3155I

CONTRACT NUMBER: 68-01-7472

ORGANIC ANALYSIS

This case was received at Nanco Labs, Inc. on December 11, 1987. It consisted of three (3) liquid samples and one (1) sludge sample for full analysis. The sample ID's in this case were as follows:
(SET 18)-1 (SET 18)-2 (SET 18)-3
(SET 18)-4

I would just like to note that there were no Traffic Reports received with this group of samples.

Samples (SET 18)-1, (SET 18)-2, and (SET 18)-3 were chosen as the QC for all fractions. (i.e.matrix spike and matrix spike duplicate.)

Due to occasional problems with integration in our Hewlett Packard GC/MS system you may find some areas and concentrations in our data corrected and handwritten by our analysts.

Some difficulties have been encountered with this case. Both of the standard biphenyl solutions received from EPA were either incorrect concentrations or incorrect biphenyl compounds. This problem was discussed with Leslie Braun per a telephone conversation with Sohail Jahani on December 3, 1987 & January 26, 1988 (see attached logs). A letter to Emile Boulos was dispatched on January 5, 1988 which also demonstrates the problems associated with this case that were beyond laboratory control (see attached letter).

NANCO PROCEDURES

All files beginning with >B were on GC/MS B, all files beginning with beginning >C were run on GC/MS C, all files beginning with >D were run on GC/MS D, and all files beginning with >E were run on GC/MS E.

February 5, 1988

Case Narrative Prepared for: U.S.E.P.A. Region V

Some Tentatively Identified Compounds may show less than three "hits" or possibly zero "hits" for the results of the library search. This is due to the algorithm of the Hewlett Packard system we are using. Only data base entries of a probability of greater than one percent (1%) will be reported.

SURROGATE RECOVERIES

Most surrogate recoveries are within specification, but some were diluted out. These are noted on Form HC-II.

MATRIX SPIKE RECOVERIES

Most spikes and RPD's are within specification, the exceptions are noted on Form HC-III.

"Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature."

Sohail Johani
Manager of Organics

SAMPLE CONDITION

All samples arrived in good condition.

This case ran without problems.

Sincerely,

Sohail Johani
Manager of Organics

nanco labs, inc. 00233

January 5, 1988

Emile Boulos
WH 548A
401 M Street South West
Washington, D.C. 20460 WH548A

Re: High Level Hazard Protocol: Case #3155I

Dear Emile:

This letter is to inform you of the status of case # 3155I (high level hazard).

Some difficulties have been encountered with this case. Due to the nature of the samples, a new calibration seems to be required for each set that has gone through GPC cleanup. Many times phthalatephenol calibration solution does not meet the recovery of $\geq$85%.

As per my telephone conversation with Leslie Brown about the problem with three biphenyls which do not go into the solution at high concentration, I have ordered a new biphenyl solution from the EPA which is at 200 PPM.

The average response factors for the pesticide and biphenyl compounds are low. On many occasions several compounds have no response at 20 PPM unless the source is perfectly cleaned and a new column is being used.

Also, due to the solubility problem there should be three different solutions; one for BN/A, one for pesticide and a third for biphenyl compounds. Therefore, there are three different initial calibration curves and three different continuous calibration injections daily.

For better utilization of instruments and efficiency of laboratories, I would like to suggest that the limit of 12 hours DFTPP and BFB time be changed to 24 hours. Also, Since detection at less than 50 nanograms per injection is difficult, all pesticide and biphenyl compounds should require a four-point initial calibration at 50, 80, 120, and 160 total nanograms.

ROBINSON LANE, RD 6 WAPPINGERS FALLS N.Y. 12590 PHONE: 914-221-2185

Due to the problems we have encountered with this case, I would like to request a 65 day turn around time rather than the original 40 days.

Due to the importance of this case we will assume that the above proposals have been accepted by the EPA, if no contact regarding these matters is made within two weeks.

I would like to keep the communication channels open between Nanco Labs and the EPA for the development of new ideas and suggestions for solving problems.

I hope Nanco Labs can be helpful to the EPA in finalizing the High Level Hazard IFB.

Very truly yours,

Sohail Jahani

Sohail Jahani
Organics Manager

SJ/kdp

cc.Leslie Brown, Joan Fisk

ROBINSON LANE, RD 6 WAPPINGERS FALLS, N.Y. 12590 PHONE: 914-221-2485

00235

In Reference to Case No(s): 3155 I

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone Record Log

Date of Call: 12/3/87

Laboratory Name: Nanco
Lab Contact: Sohail Jahan
Region: SMO
Regional Contact: Leslie Brown

Call Initiated By: ✓ Laboratory ___ Region

In reference to data for the following sample number(s):

High level samples set 1, 10, 11

Summary of Questions/Issues Discussed:

Hexachlorobiphenyl, Decachlorobiphenyl do not go into the solution. We can't obtain octachlorobiphenyl.

Summary of Resolution:

for above sets do not quantitate for these three biphenyls
Try to obtain solution from EPA for further sets

Sohail Jahan
Signature

12/3/87
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

00236

In Reference to Case No(s): 3155 I

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM
Telephone Record Log

Date of Call: 1/26/88

Laboratory Name: Nancy

Lab Contact: Sohal Johani

Region: SMO

Regional Contact: Leslie Braun

Call Initiated By: ___ Laboratory ___ Region / SMO

In reference to data for the following sample number(s):

3155 I
response to the letter of 1/5/88

Summary of Questions/Issues Discussed

~~phth~~ a letter will follow from Leslie

Summary of Resolution:

phthalate/phenol Calib for SBO of GPC w waved
use 2 soln on for BNA one for PCB
one soln mono-hepta @ 10/20, 30, 50
or
" 5 oct-nonan-deca @ 20, 60, 100 PPM
use 12 Hr DFTPP & BFB Time
Extention → 45 days + 7 more days

Sohal Johani
Signature

1/26/88
Date

Distribution: (1) Lab Copy, (2) Region Copy, (3) SMO Copy

SAMPLE DATA

SET 18-1

1-Set 17-1650

00239

Laboratory Name: Nanco Case No.: EPA 3155I

CAS Number		ug/kg
319-84-6	alpha-BHC	40 U
319-85-7	beta-BHC	40 U
319-86-8	delta-BHC	40 U
58-89-9	gamma-BHC (Lindane)	40 U
76-44-8	Heptachlor	40 U
309-00-2	Aldrin	40 U
1024-57-3	Heptachlor epoxide	40 U
	gamma-Chlordane	40 U
959-98-8	Endosulfan I	40 U
	alpha-Chlordane	40 U
60-57-1	Dieldrin	40 U
72-55-9	4,4'-DDE	40 U
72-20-8	Endrin	40 U

CAS Number		ug/kg
33213-65-9	Endosulfan II	40 U
72-54-8	4,4'-DDD	40 U
1031-07-8	Endosulfan sulfate	40 U
50-29-3	4,4'-DDT	40 U
72-43-5	Methoxychlor	40 U
53494-70-5	Endrin ketone	40 U
12674-11-2	Aroclor 1016	200 U
25512-42-9	Dichlorobiphenyl	200 U
25323-68-6	Trichlorobiphenyl	200 U
26914-33-0	Tetrachlorobiphenyl	200 U
35429-26-2	Pentachlorobiphenyl	200 U
26601-64-9	Hexachlorobiphenyl	200 U
28655-71-2	Heptachlorobiphenyl	200 U
31472-83-0	Octachlorobiphenyl	200 U
53742-07-7	Nonachlorobiphenyl	200 U
2051-24-3	Decachlorobiphenyl	200 U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are incouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with a U (e.g. 10U) based on necessary dilution(s). (This is not necessarily the instrument detection limit) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a target compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J) If limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, report as 3J.

B This flag is used when a target compound is found in the method blank as well as a single phase unit extract. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags or footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

FORM HC-I

Delete CAS #'s

Laboratory Name: NANCO LABS, INC

Case No: EPA 3155T

00240

SAMPLE NUMBER: 1-SCT18-165

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page ~~3~~ 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1. —	Unknown	34.49	23.0 J
2. —	Unknown	35.77	26.0 J
3. —	Unknown	36.97	18.0 J
4.			
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Form IC-1, Part B

SAMPLE DATA

SET18-2

2-Set 18-166B

Laboratory Name: Nanco D0243 Case No: EPA 3155 I

CAS Number		mg/kg
319-84-6	alpha-BHC	40 U
319-85-7	beta-BHC	40 U
319-86-8	delta-BHC	40 U
58-89-9	gamma-BHC (Lindane)	40 U
76-44-8	Heptachlor	40 U
309-00-2	Aldrin	40 U
1024-57-3	Heptachlor epoxide	40 U
	gamma-Chlordane	40 U
959-98-8	Endosulfan I	40 U
	alpha-Chlordane	40 U
60-57-1	Dieldrin	40 U
72-55-9	4,4'-DDE	40 U
72-20-8	Endrin	40 U

CAS Number		mg/kg
33213-65-9	Endosulfan II	40 U
72-54-8	4,4'-DDD	40 U
1031-07-8	Endosulfan sulfate	40 U
50-29-3	4,4'-DDT	40 U
72-43-5	Methoxychlor	40 U
53494-70-5	Endrin ketone	40 U
27323-18-8	Monochlorobiphenyl	200 U
25512-42-9	Dichlorobiphenyl	200 U
25323-68-6	Trichlorobiphenyl	200 U
26914-33-0	Tetrachlorobiphenyl	200 U
25429-29-2	Pentachlorobiphenyl	200 U
26601-64-9	Hexachlorobiphenyl	200 U
28655-71-2	Heptachlorobiphenyl	200 U
31472-83-0	Octachlorobiphenyl	200 U
53742-07-7	Nonachlorobiphenyl	200 U
2051-24-3	Decachlorobiphenyl	200 U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are incouraged. However, the definition of each flag must be explicit.

Value — If the result is a value greater than or equal to the detection limit, report the value.

U — Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with a U (e.g. 10U) based on necessary dilution(s). (This is not necessarily the instrument detection limit) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

Indicates an estimated value. This flag is used either when estimating a concentratic for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicated the presence of a target compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J) If limit of detection is 10 ug/L and a concentration of 3 ug/L calculated, report as 3J.

B — This flag is used when a target compound is found in the method blank as well as a single phase unit extract. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other — Other specific flags or footnotes may be required to properly define the results. If used, they must be fully described and such description attached to the data summary report.

Delete CAS #'s

Laboratory Name: NALCO

Case No: EPA 31551

00244

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1. —	Unknown alkane	16.61	49.0 J
2. —	Unknown alkane	18.38	99.0 J
3. —	Unknown alkane	20.05	220.0 J
4. —	Unknown alkane	21.63	340.0 J
5. —	Unknown alkane	23.14	970.0 J
6. —	Unknown alkane	24.57	860.0 J
7. —	Unknown alkane	24.70	550.0 J
8. —	Unknown alkane	25.15	190.0 J
9. —	Unknown alkane	25.92	1100.0 J
10. —	Unknown alkane	27.19	600.0 J
11. —	Unknown alkane	28.16	480.0 J
12. —	Unknown alkane	28.45	420.0 J
13. —	Unknown alkane	29.64	220.0 J
14. —	Unknown alkane	30.07	450.0 J
15. —	Unknown alkane	31.22	320.0 J
16. —	Unknown alkane	32.90	290.0 J
17. —	Unknown alkane	34.23	240.0 J
18. —	Unknown alkane	34.48	240.0 J
19. —	Unknown alkane	35.18	220.0 J
20. —	Unknown alkane	37.80	170.0 J
21.			
22.			
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30.			

SAMPLE DATA

SET 18-3

3-Set15-166A

00247

Laboratory Name: Nanco Case No: EPA 3155I

CAS Number		mg/Kg
319-84-6	alpha-BHC	40 U
19-85-7	beta-BHC	40 U
19-86-8	delta-BHC	40 U
58-89-9	gamma-BHC (Lindane)	40 U
-44-8	Heptachlor	40 U
09-00-2	Aldrin	40 U
1024-57-3	Heptachlor epoxide	40 U
	gamma-Chlordane	40 U
59-95-5	Endosulfan I	40 U
	alpha-Chlordane	40 U
-57-1	Dieldrin	40 U
-55-9	4,4'-DDE	40 U
20-8	Endrin	40 U

CAS Number		mg/Kg
33213-65-9	Endosulfan II	40 U
72-54-8	4,4'-DDD	40 U
1031-07-8	Endosulfan sulfate	40 U
50-29-3	4,4'-DDT	40 U
72-43-5	Methoxychlor	40 U
53494-70-5	Endrin ketone	40 U
27323-18-8	Monochlorobiphenyl	200 U
25512-42-9	Dichlorobiphenyl	200 U
25323-68-6	Trichlorobiphenyl	200 U
26914-33-0	Tetrachlorobiphenyl	200 U
25429-29-2	Pentachlorobiphenyl	200 U
26601-64-9	Hexachlorobiphenyl	200 U
28655-71-2	Heptachlorobiphenyl	200 U
31472-83-0	Octachlorobiphenyl	200 U
53742-07-7	Nonochlorobiphenyl	200 U
2051-24-3	Decachlorobiphenyl	200 U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are incouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with a U (e.g. 10U) based on necessary dilution(s). (This is not necessarily the instrument detection limit) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentrat for tentatively identified compounds where a 1:1 response is assumed or when the ma spectral data indicated the presence of a target compound that meets the identifica tion criteria but the result is less than the specified detection limit but greater than zero (e.g. 10J) If limit of detection is 10 ug/L and a concentration of 3 ug/L calculated, report as 3J.

B This flag is used when a target compound is found in the method blank as well as a single phase unit extract. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags or footnotes may be required to properly define the results. I used, they must be fully described and such description attached to the data summa report.

Delete CAS #;

Laboratory Name: NANCO LABS, INC

Case No: EPA-31557

SAMPLE NUMBER: B-[illegible]

00248

HIGH CONCENTRATION
VOLATILE ANALYSIS DATA SHEET
(Page ~~3~~ 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1. —	Unknown	6[illegible]	59.[illegible] J
2. —	Unknown	32.58	120.0 J
3.			
4.			
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00249

SAMPLE DATA

SET 18-4

4-Set 15 - 66A

D0251

Laboratory Name: Nanco Case No: EPA 31551

CAS Number		mg/kg
319-84-6	alpha-BHC	40 U
319-85-7	beta-BHC	40 U
319-86-8	delta-BHC	40 U
58-89-9	gamma-BHC (Lindane)	40 U
76-44-8	Heptachlor	40 U
309-00-2	Aldrin	40 U
1024-57-3	Heptachlor epoxide	40 U
	gamma-Chlordane	40 U
959-98-8	Endosulfan I	40 U
	alpha-Chlordane	40 U
60-57-1	Dieldrin	40 U
72-55-9	4,4'-DDE	40 U
72-20-8	Endrin	40 U

CAS Number		mg/kg
33213-65-9	Endosulfan II	40 U
72-54-8	4,4'-DDD	40 U
1031-07-8	Endosulfan sulfate	40 U
50-29-3	4,4'-DDT	40 U
72-43-5	Methoxychlor	40 U
53494-70-5	Endrin ketone	40 U
27323-18-8	Monochlorobiphenyl	200 U
25512-42-9	Dichlorobiphenyl	200 U
25323-68-6	Trichlorobiphenyl	200 U
26914-33-0	Tetrachlorobiphenyl	200 U
25429-29-2	Pentachlorobiphenyl	200 U
26601-64-9	Hexachlorobiphenyl	200 U
28655-71-2	Heptachlorobiphenyl	200 U
31472-83-0	Octachlorobiphenyl	200 U
53742-07-7	Nonachlorobiphenyl	200 U
2051-24-3	Decachlorobiphenyl	200 U

Data Reporting Qualifiers

For reporting results to EPA the following results qualifiers are used. Additional flags or footnotes explaining results are incouraged. However, the definition of each flag must be explicit.

Value If the result is a value greater than or equal to the detection limit, report the value.

U Indicates compound was analyzed for but not detected. Report the minimum detection limit for the sample with a U (e.g. 10U) based on necessary dilution(s). (This is n necessarily the instrument detection limit) The footnote should read U-Compound was analyzed for but not detected. The number is the minimum attainable detection limit for the sample.

J Indicates an estimated value. This flag is used either when estimating a concentrat for tentatively identified compounds where a 1:1 response is assumed or when the m spectral data indicated the presence of a target compound that meets the identifica tion criteria but the result is less than the specified detection limit but greate than zero (e.g. 10J) If limit of detection is 10 ug/L and a concentration of 3 ug/ calculated, report as 3J.

B This flag is used when a target compound is found in the method blank as well as a single phase unit extract. It indicates possible/probable blank contamination and warns the data user to take appropriate action.

Other Other specific flags or footnotes may be required to properly define the results. used, they must be fully described and such description attached to the data summa report.

FORM HC-I

Delete CAS #;

Laboratory Name: [illegible] DBS, INC

Case No: EPA 3155T

SAMPLE NUMBER: [illegible]

HIGH CONCENTRATION 00252
VOLATILE ANALYSIS DATA SHEET
(Page ~~3~~ 2)

Tentatively Identified Compounds

CAS Number	Compound Name	RT or SCAN Number	Estimated Concentration
1.	[illegible]	32.59	120 [illegible]
2.			
3.			
4.			
5.			
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HIGH CONCENTRATION
EXTRACTABLE SURROGATE PERCENT RECOVERY SUMMARY

Case No: EPA 3155 I Laboratory Name: NANCO LABS, INC Contract No: 68-01-7472

SMO Sample No.	Nitro-benzene-D5 (20-140*)	2-Fluoro-biphenyl (20-140*)	Terphenyl-D14 (20-150*)	Phenol-D5 (20-140*)	2-Fluoro-phenol (20-140*)	2,4,6-tribromo-phenol (10-140*)		
BLANK #1	28	33	32	30	27	18		
BLANK #2	25	44	31	32	26	19		
BLANK #3	28	33	32	37	28	~~MS-18~~ 18		
(Set 18)-1	33	47	33	37	33	11		
(Set 18)-2	62	70	67	76	70	11		
(Set 18)-3	22	33	29	22	20	12		
(Set 18)-4	47	55	54	42	37	15		
(Set 18)-2MS	41	65	44	40	36	21		
(Set 18)-2MSD	39	61	44	46	35	21		
(Set 18)-3MS	51	78	46	66	40	37		
(Set 18)-3MSD	52	74	51	64	41	29		
(Set 18)-1MS	59	68	67	74	56	48		
(Set 18)-1MSD	61	69	69	75	59	45		

* MANDATORY CONTRACT REQUIRED LIMITS FOR METHOD BLANKS; ADVISORY for SAMPLES and CONTROL MATRIX SPIKE

Extractables: 0 out of 78 ; outside of QC limits

COMMENTS:

(Set 18) - MS C

HIGH CONCENTRATION
EXTRACTABLE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA 3155I Laboratory Name: NANCO LABS, INC Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration (mg/Kg) Control Matrix	Percent* Recovery	QC Limits
1,2,4-Trichlorobenzene	100	51	51	30-140
Acenaphthene	100	66	66	30-140
2,4-Dinitrotoluene	100	110	110	30-140
Pyrene	100	92	92	30-140
N-Nitroso-di-n-propylamine	100	57	57	30-140
1,4-Dichlorobenzene	100	62	62	30-140
Pentachlorophenol	200	81	41	10-120
Phenol	200	170	85	10-120
2-Chlorophenol	200	110	55	10-120
4-Chloro-3-methylphenol	200	88	44	10-120
4-Nitrophenol	200	89	45	10-120
Heptachlor	100	50	50	30-140
Dieldrin	200	140	70	30-140

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

Extractables: 0 out of 13 : outside of recovery QC limits

COMMENTS:

00254

(Set 18)-1 D C

HIGH CONCENTRATION
EXTRACTABLE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA-3155I Laboratory Name: LANCOLABS INC Contract No: 68-01-2472

Compound	Concentration Spike Added (mg/Kg)	Concentration (mg/Kg) Control Matrix	Percent* Recovery	QC Limits
1,2,4-Trichlorobenzene	100	52	52	30-140
Acenaphthene	100	64	64	30-140
2,4-Dinitrotoluene	100	100	100	30-140
Pyrene	100	87	87	30-140
N-Nitroso-di-n-propylamine	100	54	54	30-140
1,4-Dichlorobenzene	100	60	60	30-140
Pentachlorophenol	200	82	41	10-120
Phenol	200	180	90	10-120
2-Chlorophenol	200	110	55	10-120
4-Chloro-3-methylphenol	200	86	43	10-120
4-Nitrophenol	200	40	20	10-120
Heptachlor	100	44	44	30-140
Dieldrin	200	150	75	30-140

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

Extractables: 0 out of 13 outside of recovery QC limits

COMMENTS:

00255

(Set 18)-2[illegible]s B

HIGH CONCENTRATION
EXTRACTABLE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA 3155I Laboratory Name: NANOLABS, INC Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration (mg/Kg) Control Matrix	Percent* Recovery	QC Limits
1,2,4-Trichlorobenzene	100	57	57	30-140
Acenaphthene	100	76	76	30-140
2,4-Dinitrotoluene	100	100	100	30-140
Pyrene	100	90	90	30-140
N-Nitroso-di-n-propylamine	100	65	65	30-140
1,4-Dichlorobenzene	100	74	74	30-140
Pentachlorophenol	200	100	50	10-120
Phenol	200	130	65	10-120
2-Chlorophenol	200	110	55	10-120
4-Chloro-3-methylphenol	200	85	43	10-120
4-Nitrophenol	200	120	60	10-120
Heptachlor	100	59	59	30-140
Dieldrin	200	130	65	30-140

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

Extractables: 0 out of 13 : outside of recovery QC limits

COMMENTS:

00256

Form HC-III 7/86

(Set 18) 2 MSD B

HIGH CONCENTRATION
EXTRACTABLE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA 3155T Laboratory Name: INCO LABS, INC Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration (mg/Kg) Control Matrix	Percent* Recovery	QC Limits
1,2,4-Trichlorobenzene	100	56	56	30-140
Acenaphthene	100	71	71	30-140
2,4-Dinitrotoluene	100	96	96	30-140
Pyrene	100	95	95	30-140
N-Nitroso-di-n-propylamine	100	64	64	30-140
1,4-Dichlorobenzene	100	75	75	30-140
Pentachlorophenol	200	98	49	10-120
Phenol	200	120	60	10-120
2-Chlorophenol	200	120	60	10-120
4-Chloro-3-methylphenol	200	81	41	10-120
4-Nitrophenol	200	100	50	10-120
Heptachlor	100	53	53	30-140
Dieldrin	200	130	65	30-140

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

Extractables: 0 out of 13 outside of recovery QC limits

COMMENTS:

00257

(Set 18) 3 ms A

HIGH CONCENTRATION
EXTRACTABLE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA 3155I Laboratory Name: NANCO LABS, INC Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration (mg/Kg) Control Matrix	Percent* Recovery	QC Limits
1,2,4-Trichlorobenzene	100	40	40	30-140
Acenaphthene	100	54	54	30-140
2,4-Dinitrotoluene	100	46	46	30-140
Pyrene	100	46	46	30-140
N-Nitroso-di-n-propylamine	100	43	43	30-140
1,4-Dichlorobenzene	100	56	56	30-140
Pentachlorophenol	200	24	12	10-120
Phenol	200	120	60	10-120
2-Chlorophenol	200	88	44	10-120
4-Chloro-3-methylphenol	200	86	43	10-120
4-Nitrophenol	200	38	19	10-120
Heptachlor	100	46	46	30-140
Dieldrin	200	93	47	30-140

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

Extractables: 0 out of 13 : outside of recovery QC limits

COMMENTS:

00258

(Set [illegible]) -3 MSD A

HIGH CONCENTRATION
EXTRACTABLE CONTROL MATRIX SPIKE RECOVERY

Case No: EPA 3155I Laboratory Name: NANCO LABS, INC. Contract No: 68-01-7472

Compound	Concentration Spike Added (mg/Kg)	Concentration (mg/Kg) Control Matrix	Percent* Recovery	QC Limits
1,2,4-Trichlorobenzene	100	42	42	30-140
Acenaphthene	100	54	54	30-140
2,4-Dinitrotoluene	100	41	41	30-140
Pyrene	100	52	52	30-140
N-Nitroso-di-n-propylamine	100	45	45	30-140
1,4-Dichlorobenzene	100	55	55	30-140
Pentachlorophenol	200	9.8	4.9*	10-120
Phenol	200	110	55	10-120
2-Chlorophenol	200	97	49	10-120
4-Chloro-3-methylphenol	200	85	43	10-120
4-Nitrophenol	200	26	13	10-120
Heptachlor	100	47	24*	30-140
Dieldrin	200	110	55	30-140

* ASTERISKED VALUES ARE OUTSIDE QC LIMITS

Extractables: 2 out of 13 : outside of recovery QC limits

COMMENTS: * Advisory limits only.

00259

Form HC-III 7/86

HIGH CONCENTRATION
EXTRACTABLE METHOD BLANK SUMMARY

Case No: EPA 3155I Region V Laboratory Name: NALCOLAB, INC

Contract No: 68-01-7472

Lab File ID	Date of Analysis	Inst. ID	CAS Number	Compound Name	CONC. (mg/Kg)	CRDL
2E2201	01/18/88	GC/MSE	—	None found (HSL)	~~100.0J~~	—
2E2201	01/18/88	GC/MSE	—	Unknown (TIC)	136.0J	—
2E2201	01/18/88	GC/MSE	—	Unknown Cyclic compound (TIC)	56.0J	—
2E2201	01/18/88	GC/MSE	—	Unknown (TIC)	24.0J	—

COMMENTS:

HIGH CONCENTRATION
EXTRACTABLE METHOD BLANK SUMMARY
Blank #2

Case No: EPA 3155I Region V Laboratory Name: Nanco Labs, Inc

Contract No: 68-01-7472

Lab File ID	Date of Analysis	Inst. ID	CAS Number	Compound Name	CONC. (mg/Kg)	CRDL
>E2191	01/18/88	GCIMSE	—	None Found (HSL)	—	—
>E2191	01/18/88	GCIMSE	—	Unknown (TIC)	99.0 J	—
>E2191	01/18/88	GCIMSE	—	Unknown (TIC)	40.0 J	—
>2191	01/18/88	GCIMSE	930687	2-Cyclohexen-1-one	82.0 J	—
>2191	01/18/88	GCIMSE	—	Unknown	21.0 J	—

00261

COMMENTS:

HIGH CONCENTRATION
EXTRACTABLE METHOD BLANK SUMMARY
BLANK #3

Case No: EPA 3155I Region V Laboratory Name: NANCO LABS, INC

Contract No: 68-01-7472

Lab File ID	Date of Analysis	Inst. ID	CAS Number	Compound Name	CONC. (mg/Kg)	CRDL
> E2186	1-18-88	GC/MSE	—	NONE FOUND (HSL)	—	—
> E2186	1-18-88	GC/MSE	—	UNKNOWN (TIC)	100 J	—
> E2186	1-18-88	GC/MSE	930687	2-Cyclohexen-1-one (TIC)	88 J	—

00262

COMMENTS:

APPENDIX E

CLP Inorganic Analytical Results

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO ILLINOIS

S Griffin

DATE 12 MAY 1988

U.S. EPA REGION 5

SUBJECT Review of Region 5 data for KEYSTONE STEEL & WIRE

FROM Curtis Ross, Director
Region 5 Central Regional Laboratory

Checked data: Complete: except see below

To Data User: Karl Bremer
RCRA

Attached are the results for

CRL Data Set Numbers: RCRA4736 CASE 8689
Sample Numbers: 88JG01S77 to S99 19 Samples
Parameter(s): TOTAL METALS
Laboratory NORTHERN LABS & ENGINEERING

Results Status

( ) DATA ACCEPTABLE FOR USE*
(X) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced

Comments by the Quality Control Coord

5/23/88

Kevin,
This should have a page of comments from the reviewer explaining the problems with the data. I think we should call the CRL on this.
Judy

If there are any questions re the Quality Control Coordinat

Please sign and date this form below and

Sylvia Griffin
Data Management Coordinato
Region 5 Central Regional Lat
(5SCRL)

RECEIVED BY/DATE:

Comments

cc: Contractor's Reprentative

Filed by/date

LOG-IN DATE: 1-11-88
DUE DATE: 1-19-88

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS

THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER 8689 SITE NAME KEYSTONE STEEL & WIRE LABORATORY ORG. - S-CURCP INORG. - NORTHERN LABS DATE SHIPPED 12-9-87

SUPERFUND DU NUMBER D807 EPA RPM (S.M.S.)/(CES) KEVIN MOSS PAGE 1 OF 1

ACTIVITY NUMBER C2715D

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER	INORGANIC TRAFFIC REPORT NUMBER	WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN UG/L TOX17874	VOLATILE ORGANIC ANALYSIS UG/L TOX17964	WATER POLYCHLORINATED BIPHENYLS UG/L PES17164	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET111	WATER CYANIDE UG/L MIN74919	NITRATE/NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7302	RESIDUE, NON-FILT TSS MG/L MIN7372			SEDIMENTS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS SCAN MG/KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	NITRATE/NITRITE MG/KG	AMMONIA MG/KG				
88JG01	PES301	MEQ401													X	X	X		X							
88JG01	PES302	MEQ402													X	X	X		X							
88JG01	PES303	MEQ403													X	X	X		X							
88JG01	PES304	MEQ404													X	X	X		X							
88JG01	PES305	MEQ405													X	X	X		X							
88JG01	PES306	MEQ406													X	X	X		X							
88JG01	PES307	MEQ407													X	X	X		X							
88JG01	PES308	MEQ408													X	X	X		X							
88JG01	PES309	MEQ409													X	X	X		X							
88JG01	PES310	MEQ410													X	X	X		X							
88JG01	PES311	MEQ411													X	X	X		X							
88JG01	PES312	MEQ412													X	X	X		X							
[redacted]	[redacted]	[redacted]																								
88JG01	PES316	MEQ415	X	X	X		X																			
88JG01	PES316	MEQ416	X	X	X		X																			
88JG01	PES314	MEQ414	X	X	X		X																			
88JG01	PES317	MEQ417	X	X	X		X																			
88JG01	PES318	MEQ418	X	X	X		X																			
88JG01	PES319	MEQ419	X	X	X		X																			
8[redacted]	[redacted]2	[redacted]RO	[redacted]	X	[redacted]		[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

Date 1/13/88

RCRA 4736

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Northern Labs & Engineering Inc. Case No. 8689

SOW No. 785 Q.C. Report No. 65

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MEQ 401	Same	MEQ 409	Same
MEQ 402	Same	MEQ 410	Same
MEQ 403	Same	MEQ 411	Same
MEQ 404	Same	MEQ 412	Same
MEQ 405	Same	MEQ 414	Same
MEQ 406	Same	MEQ 415	Same
MEQ 407	Same	MEQ 416	Same
MEQ 408	Same	MEQ 417	Same

Comments:

RECEIVED
JAN 14 1988
U.S. EPA, CENTRAL REGIONAL LAB.
536 S. CLARK STREET
CHICAGO, ILLINOIS 60605

ICP interelement and background corrections applied? Yes ✓ No ___.

If yes, corrections applied before ✓ or after ___ generation of raw data.

Footnotes:

NR - Not required by contract at this time

Form I:

Value - If the result is a value greater than or equal to the instrument detecion limit but less than the contract-required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP), A (for Flame AA) or F (for Furnace AA).

U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.

s - Indicates value determined by Method of Standard Addition.

N - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

+ - Indicates the correlation coefficient for method of standard addition is less than 0.995

H - Indicates duplicate injection results exceeded control limits.

Indicate method used: P for ICP; A for Flame AA and F for Furnace.

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

Date 1/13/88

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name Northern Labs & Engineering Inc. Case No. 8689

SOW No. 785 Q.C. Report No. 65

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
MEQ 418	Same		
MEQ 419	Same		
MEQ 420	Same		

Comments:

ICP interelement and background corrections applied? Yes ✓ No ___.

If yes, corrections applied before ✓ or after ___ generation of raw data.

Footnotes:

NR - Not required by contract at this time

Form I:

Value - If the result is a value greater than or equal to the instrument detecion limit but less than the contract-required detection limit, report the value in brackets (i.e., [10]). Indicate the analytical method used with P (for ICP), A (for Flame AA) or F (for Furnace AA).

U - Indicates element was analyzed for but not detected. Report with the instrument detection limit value (e.g., 10U).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.

s - Indicates value determined by Method of Standard Addition.

N - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

+ - Indicates the correlation coefficient for method of standard addition is less than 0.995

M - Indicates duplicate injection results exceeded control limits.

Indicate method used: P for ICP; A for Flame AA and F for Furnace.

Form I

88JG01577

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 401

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 401 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	9700 P	13.	Magnesium	6760 P *
2.	Antimony	[6.6] P N	14.	Manganese	1010 P *
3.	Arsenic	17 F	15.	Mercury	0.15 U
4.	Barium	90 P	16.	Nickel	25 P
5.	Beryllium	0.3 U P	17.	Potassium	1530 P E -
6.	Cadmium	13 P *	18.	Selenium	1.6 U F
7.	Calcium	32500 P *	19.	Silver	0.9 U P
8.	Chromium	54 P *	20.	Sodium	[245] P
9.	Cobalt	[11] P	21.	Thallium	3.3 U F
10.	Copper	56 P * -	22.	Vanadium	25 P
11.	Iron	26400 P	23.	Zinc	1490 P *
12.	Lead	232 P * N -		Percent Solids (%)	58.3
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, coarse texture.

Lab Manager

Form I

88J61582

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 402

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 402 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	16100	P	13.	Magnesium	11700	P *
2.	Antimony	5.9 U	P N	14.	Manganese	958	P *
3.	Arsenic	5.6	F	15.	Mercury	0.93	
4.	Barium	371	P	16.	Nickel	17	P
5.	Beryllium	0.4 U	P	17.	Potassium	3530	P E
6.	Cadmium	14	P *	18.	Selenium	1.8 U	F
7.	Calcium	170000	P *	19.	Silver	[1.1]	P
8.	Chromium	59	P *	20.	Sodium	[721]	P
9.	Cobalt	[8.1]	P	21.	Thallium	3.6 U	F
10.	Copper	64	P *	22.	Vanadium	25	P
11.	Iron	22100	P	23.	Zinc	1930	P *
12.	Lead	12700	P * N		Percent Solids (%)	51.9	
	Cyanide	NR					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, fine texture.

Lab Manager

Form I

88J601585

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 403

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 403 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	9050	P	13.	Magnesium	5140	P *
2.	Antimony	[8.7]	P N	14.	Manganese	745	P *
3.	Arsenic	4.5	F	15.	Mercury	0.12	U
4.	Barium	99	P	16.	Nickel	21	P
5.	Beryllium	0.2	U P	17.	Potassium	1480	P E
6.	Cadmium	6.8	P *	18.	Selenium	1.2	U F
7.	Calcium	8230	P *	19.	Silver	0.7	U P
8.	Chromium	20	P *	20.	Sodium	[132]	P
9.	Cobalt	[11]	P	21.	Thallium	2.5	U F
10.	Copper	20	P *	22.	Vanadium	22	P
11.	Iron	21100	P	23.	Zinc	213	P *
12.	Lead	40	P * N		Percent Solids (%)	79.1	
	Cyanide	NR					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, medium texture.

Lab Manager John P. Pinenger

Form I

88JG01586

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 404

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 404 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	14100 P		13.	Magnesium	6840 P	*
2.	Antimony	[8.8] P	N	14.	Manganese	804 P	*
3.	Arsenic	5.5 F		15.	Mercury	0.11 U	
4.	Barium	140 P		16.	Nickel	23 P	
5.	Beryllium	0.2 U P		17.	Potassium	2050 P	E
6.	Cadmium	8.2 P	*	18.	Selenium	1.2 U F	
7.	Calcium	10700 P	*	19.	Silver	0.8 U P	
8.	Chromium	26 P	*	20.	Sodium	[148] P	
9.	Cobalt	[12] P		21.	Thallium	2.4 U F	
10.	Copper	23 P	*	22.	Vanadium	31 P	
11.	Iron	25100 P		23.	Zinc	159 P	*
12.	Lead	36 P	* N		Percent Solids (%)	77.1	
	Cyanide	NR					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, coarse texture.

Lab Manager John P. Pwenger

Form I

88JQ01588

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 405

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SDW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 405 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	992	P		13. Magnesium	8590	P *
2.	Antimony	100	P	N	14. Manganese	2140	P *
3.	Arsenic	5.5	F		15. Mercury	0.11	U
4.	Barium	[56]	P		16. Nickel	204	P
5.	Beryllium	0.3	U P		17. Potassium	[135]	P E Okay
6.	Cadmium	96	P	*	18. Selenium	1.4	U F
7.	Calcium	118000	P	*	19. Silver	0.9	U P
8.	Chromium	230	P	*	20. Sodium	[311]	P
9.	Cobalt	31	P		21. Thallium	2.8	U F
10.	Copper	82	P	*	22. Vanadium	31	P
11.	Iron	399000	P		23. Zinc	28600	P *
12.	Lead	4000	P	* N	Percent Solids (%)	67.5	
	Cyanide	NR					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Black, fine texture with rust particles.

Lab Manager John P. Pavenger

Form I

88JG01589

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEQ 406

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 406 QC. REPORT NO.: 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	8920	P	13.	Magnesium	22400	P *
2.	Antimony	[16]	P N	14.	Manganese	5870	P *
3.	Arsenic	10	F	15.	Mercury	0.18	U
4.	Barium	279	P	16.	Nickel	29	P
5.	Beryllium	0.4	U P	17.	Potassium	[1290]	P E
6.	Cadmium	48	P *	18.	Selenium	1.7	U F
7.	Calcium	288000	P *	19.	Silver	[2.4]	P
8.	Chromium	529	P *	20.	Sodium	[540]	P
9.	Cobalt	[5.9]	P	21.	Thallium	3.4	U F
10.	Copper	174	P *	22.	Vanadium	96	P
11.	Iron	40400	P	23.	Zinc	10100	P *
12.	Lead	1810	P * N		Percent Solids (%)	49.7	
	Cyanide	NR					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, fine texture.

Lab Manager

Form I

88JG01592

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 407

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 407 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	11800 P		13.	Magnesium	5520 P	*
2.	Antimony	[8.9] P	N	14.	Manganese	1110 P	*
3.	Arsenic	14 F		15.	Mercury	0.15	
4.	Barium	141 P		16.	Nickel	26 P	
5.	Beryllium	0.3 U P		17.	Potassium	1600 P	E
6.	Cadmium	10 P	*	18.	Selenium	1.1 U F	
7.	Calcium	16100 P	*	19.	Silver	0.8 U P	
8.	Chromium	78 P	*	20.	Sodium	[183] P	
9.	Cobalt	13 P		21.	Thallium	2.2 U F	
10.	Copper	46 P	*	22.	Vanadium	35 P	
11.	Iron	31500 P		23.	Zinc	474 P	*
12.	Lead	142 P	* N		Percent Solids (%)	68.9	
	Cyanide	NR					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Gray/brown, fine texture.

Lab Manager John P. Pwanger

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

885G01593

EPA Sample No.

MEQ 408

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 408 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	9070	P		13. Magnesium	2510	P *
2.	Antimony	[12]	P N		14. Manganese	882	P *
3.	Arsenic	12	F		15. Mercury	0.15	U
4.	Barium	136	P		16. Nickel	26	P
5.	Beryllium	[0.5]	P		17. Potassium	[1310]	P E
6.	Cadmium	26	P *		18. Selenium	1.5	U F
7.	Calcium	29900	P *		19. Silver	0.9	U P
8.	Chromium	115	P *		20. Sodium	[396]	P
9.	Cobalt	[6.7]	P		21. Thallium	3.0	U F
10.	Copper	111	P *		22. Vanadium	30	P
11.	Iron	33400	P		23. Zinc	2080	P *
12.	Lead	847	P * N		Percent Solids (%)	62.7	
	Cyanide	NR					

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Black, fine texture.

Lab Manager John P. Rwenger

Form I

88JG01594

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEQ 409

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 409 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	14800 P	13.	Magnesium	9190 P *
2.	Antimony	[5.9] P N	14.	Manganese	756 P *
3.	Arsenic	5.2 F	15.	Mercury	0.13 U
4.	Barium	116 P	16.	Nickel	19 P
5.	Beryllium	0.3 U P	17.	Potassium	2470 P E
6.	Cadmium	10 P *	18.	Selenium	1.7 U F
7.	Calcium	164000 P *	19.	Silver	1.0 U P
8.	Chromium	56 P *	20.	Sodium	[513] P
9.	Cobalt	[8.7] P	21.	Thallium	3.4 U F
10.	Copper	42 P *	22.	Vanadium	25 P
11.	Iron	21100 P	23.	Zinc	1140 P *
12.	Lead	569 P * N		Percent Solids (%)	55.1
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Gray/brown, fine texture.

Lab Manager John P. Pavenger

Form I

88JG01595

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEQ 410

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 410 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	9400 P	13.	Magnesium	8930 P *
2.	Antimony	[6.0] P N	14.	Manganese	611 P *
3.	Arsenic	6.2 F	15.	Mercury	0.23
4.	Barium	106 P	16.	Nickel	18 P
5.	Beryllium	0.2 U P	17.	Potassium	1410 P E
6.	Cadmium	5.7 P *	18.	Selenium	1.3 U F
7.	Calcium	15700 P *	19.	Silver	0.8 U P
8.	Chromium	16 P *	20.	Sodium	[135] P
9.	Cobalt	[9.3] P	21.	Thallium	2.5 U F
10.	Copper	19 P *	22.	Vanadium	24 P
11.	Iron	19400 P	23.	Zinc	119 P *
12.	Lead	37 P * N		Percent Solids (%)	77.8
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, coarse texture.

Lab Manager John P. Pennington

Form I

88JG01596

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
MEQ 411

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 411 QC. REPORT NO. 65

Concentration: Low Matrix: Solid Units: mg/kg, dry weight

1.	Aluminum	13600 P	13.	Magnesium	5250 P *
2.	Antimony	[5.5] P N	14.	Manganese	726 P *
3.	Arsenic	6.2 F	15.	Mercury	0.11
4.	Barium	132 P	16.	Nickel	22 P
5.	Beryllium	0.3 U P	17.	Potassium	2920 P E
6.	Cadmium	8.6 P *	18.	Selenium	1.1 U F
7.	Calcium	8730 P *	19.	Silver	0.8 U P
8.	Chromium	26 P *	20.	Sodium	[136] P
9.	Cobalt	[11] P	21.	Thallium	2.1 U F
10.	Copper	29 P *	22.	Vanadium	31 P
11.	Iron	24200 P	23.	Zinc	296 P *
12.	Lead	90 P * N		Percent Solids (%)	72.8
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Dark gray, fine texture.

Lab Manager [signature]

Form I

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

88JG01598
EPA Sample No.
MEQ 412

Date 2/8/88

INORGANIC ANALYSIS DATA SHEET

LAB NAME Northern Labs & Engineering Inc.
CASE NO. 8689
SOW NO. 785
Lab Receipt Date 12/10/87
LAB SAMPLE ID. NO. MEQ 412
QC REPORT NO. 65

Elements Identified and Measured

Concentration: Low ✓ Medium ____

Matrix: Water ____ Soil ✓ Sludge ____ Other ____

ug/L or mg/kg dry weight (Circle One)

1.	Aluminum	9160 P		13.	Magnesium	12800 P	*
2.	Antimony	[5.4] P	N	14.	Manganese	463 P	*
3.	Arsenic	13 F		15.	Mercury	0.16 U	
4.	Barium	[59] P		16.	Nickel	21 P	
5.	Beryllium	0.3 U P		17.	Potassium	[1420] P	E
6.	Cadmium	7.0 P	*	18.	Selenium	1.5 U F	
7.	Calcium	27400 P	*	19.	Silver	0.9 U P	
8.	Chromium	29 P	*	20.	Sodium	[215] P	
9.	Cobalt	[10] P		21.	Thallium	3.0 U F	
10.	Copper	29 P	*	22.	Vanadium	22 P	
11.	Iron	18300 P		23.	Zinc	488 P	*
12.	Lead	102 P	* N		Precent Solids (%)	59.5	

Cyanide NR

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, fine texture.

Lab Manager [signature]

IFB Amend. One

Form I

88JG01587

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 414

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 414 QC. REPORT NO. 65

Concentration: Low Matrix: Water Units: ug/L

1.	Aluminum	17 U P	13.	Magnesium	33100 P
2.	Antimony	17 U P	14.	Manganese	182 P
3.	Arsenic	10 U F	15.	Mercury	0.20 U
4.	Barium	[13] P	16.	Nickel	[16] P
5.	Beryllium	1.0 U P	17.	Potassium	5160 P
6.	Cadmium	[3.3] P	18.	Selenium	5.0 U F N
7.	Calcium	336000 P	19.	Silver	3.0 U P
8.	Chromium	5.0 U P	20.	Sodium	148000 P
9.	Cobalt	3.0 U P	21.	Thallium	10 U F N
10.	Copper	[15] P	22.	Vanadium	3.0 U P
11.	Iron	2170 P	23.	Zinc	168 P
12.	Lead	10 F		Percent Solids (%)	
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Clear, colorless liquid.

Lab Manager [signature]

Form I

88JG01S83

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 415

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 415 QC. REPORT NO. 65

Concentration: Low Matrix: Water Units: ug/L

1. Aluminum	[27] P		13. Magnesium	34800 P	
2. Antimony	17 U P		14. Manganese	168 P	
3. Arsenic	10 U F		15. Mercury	0.26	
4. Barium	[28] P		16. Nickel	[5.1] P	
5. Beryllium	1.0 U P		17. Potassium	22600 P	
6. Cadmium	2.0 U P		18. Selenium	5.0 U F	N
7. Calcium	192000 P		19. Silver	3.0 U P	
8. Chromium	5.0 U P		20. Sodium	99600 P	
9. Cobalt	3.0 U P		21. Thallium	10 U F	N
10. Copper	[8.7] P		22. Vanadium	3.0 U P	
11. Iron	113 P		23. Zinc	22 P	
12. Lead	286 F		Percent Solids (%)		
Cyanide	NR				

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Yellow, clear liquid.

Lab Manager John P. Pwenger

Form I

88JG01584

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 416

Date: 08-Feb-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 416 QC. REPORT NO. 65

Concentration: Low Matrix: Water Units: ug/L

1.	Aluminum	10300 P	13.	Magnesium	50700 P
2.	Antimony	17 U P	14.	Manganese	1120 P
3.	Arsenic	10 U F	15.	Mercury	0.20 U
4.	Barium	[91] P	16.	Nickel	[14] P
5.	Beryllium	1.0 U P	17.	Potassium	16900 P
6.	Cadmium	5.3 P	18.	Selenium	50 U F N
7.	Calcium	277000 P	19.	Silver	3.0 U P
8.	Chromium	31 P	20.	Sodium	85300 P
9.	Cobalt	[3.9] P	21.	Thallium	10 U F N
10.	Copper	[16] P	22.	Vanadium	[5.9] P
11.	Iron	12900 P	23.	Zinc	380 P
12.	Lead	1890 F		Percent Solids (%)	
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Yellow, clear liqiud.
Selenium diluted 10X.

Lab Manager John P. Pavenger

Form I

88JG01590

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 417

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 417 QC. REPORT NO. 65

Concentration: Low Matrix: Water Units: ug/L

1.	Aluminum	[38] P	13.	Magnesium	6540 P
2.	Antimony	17 U P	14.	Manganese	[3.2] P
3.	Arsenic	10 U F	15.	Mercury	0.20 U
4.	Barium	[56] P	16.	Nickel	[6.3] P
5.	Beryllium	1.0 U P	17.	Potassium	17300 P
6.	Cadmium	2.0 U P	18.	Selenium	5.0 U F N
7.	Calcium	58600 P	19.	Silver	3.0 U P
8.	Chromium	78 P	20.	Sodium	46500 P
9.	Cobalt	3.0 U P	21.	Thallium	10 U F N
10.	Copper	5.0 U P	22.	Vanadium	[12] P
11.	Iron	[22] P	23.	Zinc	[7.1] P
12.	Lead	5.0 U F		Percent Solids (%)	
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Clear, colorless liquid.

Lab Manager [signature]

Form I

88JG61591

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 418

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 418 QC. REPORT NO. 65

Concentration: Low Matrix: Water Units: ug/L

1.	Aluminum	267 P	13.	Magnesium	21900 P
2.	Antimony	17 U P	14.	Manganese	306 P
3.	Arsenic	10 U F	15.	Mercury	0.20 U
4.	Barium	[25] P	16.	Nickel	[5.9] P
5.	Beryllium	1.0 U P	17.	Potassium	9630 P
6.	Cadmium	[2.4] P	18.	Selenium	5.0 U F N
7.	Calcium	133000 P	19.	Silver	3.0 U P
8.	Chromium	5.0 U P	20.	Sodium	57400 P
9.	Cobalt	3.0 U P	21.	Thallium	10 U F N
10.	Copper	5.0 U P	22.	Vanadium	3.0 U P
11.	Iron	1900 P	23.	Zinc	[14] P
12.	Lead	5.0 U F		Percent Solids (%)	
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, clear liquid.

Lab Manager [signature]

Form I

88JG01597

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 419

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 419 QC. REPORT NO. 65

Concentration: Low Matrix: Water Units: ug/L

1.	Aluminum	17 U P	13.	Magnesium	33700 P
2.	Antimony	17 U P	14.	Manganese	160 P
3.	Arsenic	10 U F	15.	Mercury	0.22
4.	Barium	[28] P	16.	Nickel	[4.7] P
5.	Beryllium	1.0 U P	17.	Potassium	24200 P
6.	Cadmium	2.0 U P	18.	Selenium	5.0 U F N
7.	Calcium	185000 P	19.	Silver	3.0 U P
8.	Chromium	5.0 U P	20.	Sodium	98400 P
9.	Cobalt	3.0 U P	21.	Thallium	10 U F N
10.	Copper	[6.7] P	22.	Vanadium	3.0 U P
11.	Iron	101 P	23.	Zinc	22 P
12.	Lead	255 F		Percent Solids (%)	
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Brown, clear liquid.

Lab Manager

Form I

88J601599

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

MEQ 420

Date: 13-Jan-88

INORGANIC ANALYSIS DATA SHEET

LAB NAME: Northern Labs & Eng., Inc. CASE NO.: 8689

SOW NO. 785 Lab Receipt Date: 12-10-87

LAB SAMPLE ID. NO.: MEQ 420 QC. REPORT NO. 65

Concentration: Low Matrix: Water Units: ug/L

1.	Aluminum	17 U P	13.	Magnesium	21 U P
2.	Antimony	17 U P	14.	Manganese	1.0 U P
3.	Arsenic	10 U F	15.	Mercury	0.20 U
4.	Barium	1.0 U P	16.	Nickel	[18] P
5.	Beryllium	1.0 U P	17.	Potassium	[296] P
6.	Cadmium	[2.4] P	18.	Selenium	5.0 U F N
7.	Calcium	6.0 U P	19.	Silver	3.0 U P
8.	Chromium	5.0 U P	20.	Sodium	[209] P
9.	Cobalt	3.0 U P	21.	Thallium	10 U F N
10.	Copper	353 P	22.	Vanadium	3.0 U P
11.	Iron	3.0 U P	23.	Zinc	[8.6] P
12.	Lead	5.0 U F		Percent Solids (%)	
	Cyanide	NR			

Footnotes: For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaining results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments: Clear, colorless liquid.

Lab Manager

Form III A

Q.C. Report No. 65

BLANKS

LAB NAME: Northern Labs & Eng., Inc. CASE NO. 8689

DATE: 12-Jan-88 UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank[1] Matrix water 1	Matrix soil 2
Metals:							
1. Aluminum	17 U	17 U	17 U	17 U	17 U	17 U	3.4 U
2. Antimony	17 U	17 U	17 U	17 U	17 U	17 U	3.4 U
3. Arsenic							
4. Barium	1 U	1 U	[1.0]	1 U	1 U	1 U	0.2 U
5. Beryllium	1 U	1 U	1 U	1 U	1 U	1 U	0.2 U
6. Cadmium	2 U	[2.1]	2 U	2 U	2 U	2 U	0.4 U
7. Calcium	[41.9]	[82.7]	[50.7]	[73.4]	[6.8]	6 U	1.2 U
8. Chromium	5 U	[5.4]	5 U	5 U	5 U	5 U	1 U
9. Cobalt	3 U	3 U	3 U	3 U	3 U	3 U	0.6 U
10. Copper	5 U	[6.0]	5 U	5 U	5 U	5 U	1 U
11. Iron	3 U	[5.9]	[5.1]	[15.2]	[7.4]	[16.5]	0.6 U
12. Lead	20 U	20 U	20 U	20 U	20 U	20 U	4 U
13. Magnesium	21 U	[21.6]	21 U	21 U	21 U	21 U	4.2 U
14. Manganese	1 U	[1.1]	1 U	1 U	1 U	1 U	0.2 U
15. Mercury							
16. Nickel	4 U	[4.7]	4 U	[5.1]	4 U	4 U	[1.02]
17. Potassium	[193.2]	[365.0]	[242.6]	[283.4]	77 U	[397.2]	[48.52]
17. Selenium							
19. Silver	3 U	3 U	3 U	3 U	3 U	3 U	0.6 U
20. Sodium	11 U	[53.9]	[17.5]	[22.6]	11 U	[292.7]	2.2 U
21. Thallium							
22. Vanadium	3 U	3 U	3 U	3 U	3 U	3 U	0.6 U
23. Zinc	1 U	[1.2]	1 U	[2.5]	1 U	1 U	0.2 U
Other							
Cyanide							

1 Reporting Units: aqueous, ug/L; solid mg/kg

Form III B

Q.C. Report No. 65

BLANKS

LAB NAME: Northern Labs & Eng., Inc. CASE NO. 8689

DATE: 12-Jan-88 UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank[1] Matrix water 1	Matrix soil 2
Metals:							
1. Aluminum		17 U					
2. Antimony		17 U					
3. Arsenic							
4. Barium		1 U					
5. Beryllium		1 U					
6. Cadmium		2 U					
7. Calcium		[28.8]					
8. Chromium		5 U					
9. Cobalt		3 U					
10. Copper		5 U					
11. Iron		[11.3]					
12. Lead		20 U					
13. Magnesium		21 U					
14. Manganese		1 U					
15. Mercury							
16. Nickel		4 U					
17. Potassium		77 U					
17. Selenium							
19. Silver		3 U					
20. Sodium		11 U					
21. Thallium							
22. Vanadium		3 U					
23. Zinc		1 U					
Other							
Cyanide							

1 Reporting Units: aqueous, ug/L; solid mg/kg

Q. C. Report No. 65

BLANKS

LAB NAME Northern Labs

DATE 1/13/88

CASE NO. 81089

UNITS µg/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: Solid 1	Matrix: Water 2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic	1.8 u	1.8 u	1.8 u				1.8 u
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead	1.7 u	1.7 u	1.7 u	1.7 u			1.7 u
13. Magnesium							
14. Manganese							
15. Mercury	0.2 u	0.2 u	0.2 u	0.2 u	0.2 u	0.1 u	0.2 u
16. Nickel							
17. Potassium							
18. Selenium	3.8 u	3.8 u	3.8 u	3.8 u	3.8 u		3.8 u
19. Silver							
20. Sodium							
21. Thallium	4.1 u	4.1 u	4.1 u	4.1 u	4.1 u		4.1 u
22. Vanadium							
23. Zinc							
Other:							
Cyanide							

[1] Reporting Units: aqueous, ug/L; solid mg/kg

Form III B

Q. C. Report No. 65

BLANKS

LAB NAME Northern Labs

CASE NO. 8689

DATE 1/13/88

UNITS µg/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: solid 1	Matrix: water 2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic	1.8 u	1.8 u	1.8 u	1.8 u	1.8 u	0.36 u	
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium		3.8 u	3.8 u	3.8 u	3.8 u		
19. Silver							
20. Sodium							
21. Thallium		4.1 u					
22. Vanadium							
23. Zinc							
Other:							
Cyanide							

[1] Reporting Units: aqueous, ug/L; solid mg/kg

Q. C. Report No. 65

BLANKS

LAB NAME Northern Labs

CASE NO. 8689

DATE 1/13/88

UNITS µg/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: solid 1	Matrix: water 2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic		1.8 u					
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium	3.8 u	3.8 u	3.8 u	3.8 u		0.76 u	
19. Silver							
20. Sodium							
21. Thallium	4.1 u	4.1 u	4.1 u			0.82 u	
22. Vanadium							
23. Zinc							
Other:							
Cyanide							

[1] Reporting Units: aqueous, ug/L; solid mg/kg

Form III F

Q. C. Report No. 65

BLANKS

LAB NAME Northern Labs

DATE 1/13/88

CASE NO. 8689

UNITS µg/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: solid 1	Matrix: water 2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic	1.8 u	1.8u	1.8u				
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium	3.8u	3.8u					
19. Silver							
20. Sodium							
21. Thallium	4.1 u	4.1u	4.1u				
22. Vanadium							
23. Zinc							
Other:							
Cyanide							

[1] Reporting Units: aqueous, ug/L; solid mg/kg

Form IIIB

Q. C. Report No. 65

BLANKS

LAB NAME Northern Labs

DATE 1/13/88

CASE NO. 8689

UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: 1	Matrix: 2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium	3.8u	3.8u					
19. Silver							
20. Sodium							
21. Thallium							
22. Vanadium							
23. Zinc							
Other:							
Cyanide							

[1] Reporting Units: aqueous, ug/L; solid mg/kg

Q. C. Report No. 65

BLANKS

LAB NAME Northern Labs

CASE NO. 8689

DATE 2/8/88

UNITS ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: Solid 1	Matrix: water 2
Metals:							
1. Aluminum							
2. Antimony							
3. Arsenic							
4. Barium							
5. Beryllium							
6. Cadmium							
7. Calcium							
8. Chromium							
9. Cobalt							
10. Copper							
11. Iron							
12. Lead							
13. Magnesium							
14. Manganese							
15. Mercury							
16. Nickel							
17. Potassium							
18. Selenium	3.8 u	3.8 u					
19. Silver							
20. Sodium							
21. Thallium							
22. Vanadium							
23. Zinc							
Other:							
Cyanide							

[1] Reporting Units: aqueous, ug/L; solid mg/kg

Form V A

Q. C. Report No. 65

SPIKE SAMPLE RECOVERY

LAB NAME Northern Labs

DATE 1/13/88

CASE NO. 8689
EPA Sample No. MGQ 415
Lab Sample ID No. same
Units µg/L

Matrix Water

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]	
Metals:						
1. Aluminum	75-125	1946	[26.9]	2000	96	
2. Antimony	-	523.7	17 u	500	105	
3. Arsenic	-	17.1	1.8 u	20	86	
4. Barium	-	1901	[28]	2000	94	
5. Beryllium	-	51.4	1 u	50	103	
6. Cadmium	-	52.1	2 u	50	104	
7. Calcium	-	189500	192500	NR	NR	
8. Chromium	-	213.3	5 u	200	107	
9. Cobalt	-	506.8	3 u	500	101	
10. Copper	-	267	[8.7]	250	103	
11. Iron	-	1110	113.3	1000	100	
12. Lead	-	25.67 F	10.47 F	20	76	
13. Magnesium	-	34490	34750	NR	NR	
14. Manganese	-	364	168	200	98	
15. Mercury	-	1.159	0.2 u	1	116	
16. Nickel	-	392.2	[5.1]	400	97	
17. Potassium	-	22520	22620	NR	NR	
18. Selenium	-	[3.8]	3.8 u	10	38	N
19. Silver	-	43.6	3 u	50	87	
20. Sodium	-	98230	99630	NR	NR	
21. Thallium	-	41.33	[4.888]	50	73	N
22. Vanadium	-	496.9	3 u	500	99	
23. Zinc	-	240.3	21.9	200	109	
Other:						
Cyanide	-					

[1] %R = [(SSR - SR)/SA] x 100

"N" - out of control

"NR" - Not required

Comments:

Form V B

Q. C. Report No. 65

SPIKE SAMPLE RECOVERY

LAB NAME Northern Labs

DATE 1/13/88

CASE NO. 8689

EPA Sample No. MEQ 415

Lab Sample ID No. same

Units µg/L

Matrix water

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125				
2. Antimony	"				
3. Arsenic	"				
4. Barium	"				
5. Beryllium	"				
6. Cadmium	"				
7. Calcium	"				
8. Chromium	"				
9. Cobalt	"				
10. Copper	"				
11. Iron	"				
12. Lead	"	751.3	285.6 P	500	93
13. Magnesium	"				
14. Manganese	"				
15. Mercury	"				
16. Nickel	"				
17. Potassium	"				
18. Selenium	"				
19. Silver	"				
20. Sodium	"				
21. Thallium	"				
22. Vanadium	"				
23. Zinc	"				
Other:					
Cyanide	"				

[1] %R = [(SSR - SR)/SA] x 100

"N" - out of control

"NR" - Not required

Comments:

Form VC

Q. C. Report No. 65

SPIKE SAMPLE RECOVERY

LAB NAME Northern Labs

DATE 1/13/88

CASE NO. 8689

EPA Sample No. MEQ401

Lab Sample ID No. Same

Units mg/kg dry weight

Matrix Solid

Compound	Control Limit %R	Spiked Sample Result (SSR)	Sample Result (SR)	Spiked Added (SA)	%R[1]
Metals:					
1. Aluminum	75-125	10 348.75	9 704.63	N/R	NR
2. Antimony	"	54.22	[6.63]	167.13	28.5 N
3. Arsenic	"	31.48	16.73	13.16	112.1
4. Barium	"	722.67	89.96	668.52	94.6
5. Beryllium	"	17.35	0.30 u	16.71	103.8
6. Cadmium	"	27.54	12.62	16.71	89.3
7. Calcium	"	25908.65	32 480.6	NR	NR
8. Chromium	"	115.12	54.29	66.85	91.0
9. Cobalt	"	187.42	[11.13]	167.13	105.5
10. Copper	"	129.39	55.50	83.57	88.4
11. Iron	"	24 807.54	26407.19	NR	NR
12. Lead	"	319.39	231.62	167.13	52.5 N
13. Magnesium	"	8079.11	6760.70	NR	NR
14. Manganese	"	864.07	1010.91	167.13	-87.9
15. Mercury	"	0.88	0.15	0.78	112.8
16. Nickel	"	188.26	24.54	167.13	98.0
17. Potassium	"	[1556.66]	1529.14	NR	NR
18. Selenium	"	4.05	1.65 u	3.29	123.0
19. Silver	"	14.87	0.91 u	16.71	89.0
20. Sodium	"	[273.36]	[244.61]	NR	NR
21. Thallium	"	18.62	3.30 u	16.45	113.2
22. Vanadium	"	196.41	25.00	167.13	102.6
23. Zinc	"	1049.92	1491.13	167.13	-264.0
Other:					
Cyanide	"				

[1] %R = [(SSR - SR)/SA] x 100

"N" - out of control

"NR" - Not required

Comments:

Form VI A

Q. C. Report No. 65

DUPLICATES -

LAB NAME Northern Labs & Engineering, Inc.

DATE 1/13/88

CASE NO. 8689

EPA Sample No. ~~MEQ~~ 415

Lab Sample ID No. Same

Units µg/L

Matrix water

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum		[26.9]	[31.8]	NC
2. Antimony		17 u	17 u	NC
3. Arsenic		1.8 u	1.8 u	NC
4. Barium		[28]	[28.3]	NC
5. Beryllium		1 u	1 u	NC
6. Cadmium		2 u	2 u	NC
7. Calcium		192500	194900	1.2
8. Chromium		5 u	5 u	NC
9. Cobalt		3 u	3 u	NC
10. Copper		[8.7]	[8.7]	NC
11. Iron	100	113.3	119.6	5.4
12. Lead	5	10.47 F	11.09 F	5.8 F
13. Magnesium		34750	35460	2.0
14. Manganese		168	169.9	1.1
15. Mercury		0.2 u	0.2 u	NC
16. Nickel		[5.1]	[8.7]	NC
17. Potassium	5000	22620	23060	1.9
18. Selenium		3.8 u	3.8 u	NC
19. Silver		3 u	3 u	NC
20. Sodium		99630	100900	1.3
21. Thallium		[4.888]	[5.333]	NC
22. Vanadium		3 u	3 u	NC
23. Zinc	20	21.9	21.3	2.8
Other:				
Cyanide				

* Out of Control

[1] To be added at a later date.

[2] RPD = {|S - D|/((S + D)/2)} x 100

NC - Non calculable RPD due to value(s) less than CRDL

Form VI B

Q. C. Report No. 65

DUPLICATES -

LAB NAME Northern Labs & Engineering, Inc.

DATE 1/13/88

CASE NO. 8689

EPA Sample No. MEQ 415

Lab Sample ID No. Same

Units µg/L

Matrix water

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
Metals:				
1. Aluminum				
2. Antimony				
3. Arsenic				
4. Barium				
5. Beryllium				
6. Cadmium				
7. Calcium				
8. Chromium				
9. Cobalt				
10. Copper				
11. Iron				
12. Lead		285.6 P	308.3 P	7.6
13. Magnesium				
14. Manganese				
15. Mercury				
16. Nickel				
17. Potassium				
18. Selenium				
19. Silver				
20. Sodium				
21. Thallium				
22. Vanadium				
23. Zinc				
Other:				
Cyanide				

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

Form VI C

Q. C. Report No. 65

DUPLICATES -

LAB NAME Northern Labs & Engineering, Inc.

DATE 1/13/88

CASE NO. 8689

EPA Sample No. MEQ 401

Lab Sample ID No. Same

Units mg/kg, dry weight

Matrix solid

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]	
Metals:					
1. Aluminum		9704.63	10540.57	8.3	
2. Antimony		[6.63]	[8.97]	NC	
3. Arsenic		16.73	19.66	16.1	
4. Barium	60.83	89.96	88.52	1.6	
5. Beryllium		0.30 u	0.33 u	NC	
6. Cadmium		12.62	10.12	22.0	*
7. Calcium		32480.6	24096.5	29.6	*
8. Chromium		54.29	35.97	40.6	*
9. Cobalt		[11.13]	[12.38]	NC	
10. Copper		55.50	38.79	35.4	*
11. Iron		26407.19	22693.93	15.1	
12. Lead		231.62	143.34	47.1	*
13. Magnesium	1520.63	6760.70	9085.5	29.3	*
14. Manganese		1010.91	586.32	53.2	*
15. Mercury		0.15 u	0.16 u	NC	
16. Nickel	12.17	24.54	26.90	9.2	
17. Potassium		1529.14	[1627.56]	NC	
18. Selenium	—	1.65 u	1.68 u	NC	
19. Silver		0.91 u	0.99 u	NC	
20. Sodium		[244.61]	[290.01]	NC	
21. Thallium		3.30 u	3.36 u	NC	
22. Vanadium	15.21	25.00	27.00	7.7	
23. Zinc		1491.13	793.91	61.0	*
Other:					
Cyanide					

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

Form VII A

Q.C. Report No. 65

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME: Northern Labs CASE NO. 8689 DATE: 13-Jan-88

LCS NO. WP-0107-1
WF-1230-1
WH-0107-1

Compound	Required Detection Limits (CRDL)-ug/L	Instrum. Detection Limits (IDL)-ug/L ICP ID# J/A 9000	Furnace AA-975 PE 5100	Lab Control Sample ug/L True	Found	%R
Metals:						
1. Aluminum	200	17		1980	2029	102.5%
2. Antimony	60	17		1010	1039	102.9%
3. Arsenic	10	52	1.8	24.7	22.52	91.2%
4. Barium	200	1		1980	1872	94.5%
5. Beryllium	5	1		481	496.2	103.2%
6. Cadmium	5	2		489	508.1	103.9%
7. Calcium	5000	6		49800	54130	108.7%
8. Chromium	10	5		506	541.7	107.1%
9. Cobalt	50	3		474	499.9	105.5%
10. Copper	25	5		542	560.9	103.5%
11. Iron	100	3		1990	2073	104.2%
12. Lead	5	20	1.7	48.95	50.34	102.8%
13. Magnesium	5000	21		25000	26360	105.4%
14. Manganese	15	1		513	512	99.8%
15. Mercury	0.2		0.2	5.2	5.862	112.7%
16. Nickel	40	4		496	481.3	97.0%
17. Potassium	5000	77		50200	53960	107.5%
17. Selenium	5	88	3.8	49.1	50.9	103.7%
19. Silver	10	3		509	478.2	93.9%
20. Sodium	5000	11		50700	49730	98.1%
21. Thallium	10	260	4.1	48.65	57.9	119.0%
22. Vanadium	50	3		511	510.8	100.0%
23. Zinc	20	1		3100	3124	100.8%
Other						
Cyanide	10	NR	NR			

NR - Not required

Form VII B

Q.C. Report No. 65

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME: Northern Labs CASE NO. 8689 DATE: 13-Jan-88

LCS NO. SP-0107-1
SF-1230-1
SH-0107-1

Compound	Required Detection Limits (CRDL)-ug/L	Instrum. Detection Limits (IDL)-ug/L ICP ID# J/A 9000	Furnace AA-975 PE 5100	Lab Control Sample ug/L True	Found	%R
Metals:						
1. Aluminum	200	17		1980	2016	101.8%
2. Antimony	60	17		1010	1055	104.5%
3. Arsenic	10	52	1.8	24.7	22.8	92.3%
4. Barium	200	1		1980	1891	95.5%
5. Beryllium	5	1		481	473.4	98.4%
6. Cadmium	5	2		489	498.6	102.0%
7. Calcium	5000	6		49800	53600	107.6%
8. Chromium	10	5		506	537.9	106.3%
9. Cobalt	50	3		474	494.9	104.4%
10. Copper	25	5		542	554.2	102.3%
11. Iron	100	3		1990	1980	99.5%
12. Lead	5	20	1.7	4510	4135	91.7%
13. Magnesium	5000	21		25000	26260	105.0%
14. Manganese	15	1		513	507.8	99.0%
15. Mercury	0.2		0.2	5.2	5.378	103.4%
16. Nickel	40	4		496	465.1	93.8%
17. Potassium	5000	77		50200	54010	107.6%
17. Selenium	5	88	3.8	49.1	60.81	123.8%
19. Silver	10	3		509	267.4	52.5%
20. Sodium	5000	11		50700	49920	98.5%
21. Thallium	10	260	4.1	48.65	49.9	102.6%
22. Vanadium	50	3		511	510	99.8%
23. Zinc	20	1		3100	3038	98.0%
Other						
Cyanide	10	NR	NR			

NR - Not required

Form VII C

Q.C. Report No. 65

INSTRUMENT DETECTION LIMITS AND

LABORATORY CONTROL SAMPLE

LAB NAME Northern Labs CASE NO. 8689 DATE 1/13/88

LCS NO. SP-0107-1

Compound	Required Detection Limits (CRDL)-ug/l	Instrument Detection Limits (IDL)-ug/l ICP/AA ID# JA 9000	Instrument Detection Limits (IDL)-ug/l Furnace ID#	Lab Control Sample (ug/L) mg/kg (circle one) True	Found	%R
Metals:						
1. Aluminum	200					
2. Antimony	60					
3. Arsenic	10					
4. Barium	200					
5. Beryllium	5					
6. Cadmium	5					
7. Calcium	5000					
8. Chromium	10					
9. Cobalt	50					
10. Copper	25					
11. Iron	100					
12. Lead	5	20		4510	4181	92.7
13. Magnesium	5000					
14. Manganese	15					
15. Mercury	0.2					
16. Nickel	40					
17. Potassium	5000					
18. Selenium	5					
19. Silver	10					
20. Sodium	5000					
21. Thallium	10					
22. Vanadium	50					
23. Zinc	20					
Other:						
Cyanide	10	NR	NR			

NR - Not required

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO ILLINOIS

TRANSMITTED BY
Griffin
FEB 10 1988
U.S. EPA CENTRAL REGIONAL LAB

1 8 FEB 1988

DATE

SUBJECT Review of Region 5 data for KEYSTONE STEEL & WIRE

FROM Curtis Ross, Director
Region 5 Central Regional Laboratory

To Data User RCRA

Attached are the results for

CRL Data Set Numbers RCRA 4737 SAS 3249-SET 16
Sample Numbers 88JG01578-581 4 SAMPLES
Parameter(s) TOTAL METALS
Laboratory JTC

Results Status

(✓) DATA ACCEPTABLE FOR USE*
( ) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements refer to the method capability statement for the methods referenced

Comments by the Quality Control Coordinator

If there are any questions regarding the data refer them to Steve Parker, the Quality Control Coordinator, at 353-3805

Please sign and date this form below and return it with any comments to

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE: .....

Comments

ANALYTICAL RESULTS

Contract No. SAS 3249I set 16

Region V

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

Date 12-28-87

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

Lab Name JTC Environmental Consultants, Inc Case No SAS 3249 I set 16

SOW No. 285 Q.C. Report No. 117

Sample Numbers

EPA No.	Lab ID No.	EPA No.	Lab ID No.
3249Iset16-01-11	18-1802-11		
-02-13	-1803-13		
-03-12	-1804-12		
-04-12	-1805-12		

RECEIVED
JAN 07 1988
U.S. EPA CENTRAL REGIONAL LAB

Comments:

-11 denotes solid phase
-12 water-miscible phase
-13 non-water miscible phase

ICP Interelement and background corrections applied? Yes ✓ No ____.

If yes, corrections applied before ✓ or after _____ generation of raw data.

Footnotes:

NR - not required by contract at this time

Form I:

Value - If the result is greater than the CRDL report the value as described in Section C-3, Exhibit B.

U - Indicates element was analyzed for but not detected. Report with the detection limit value (e.g., 10U).

E - Indicates a value estimated or not reported due to the presence of interference. Explanatory note included on cover page.

s - Indicates value determined by Method of Standard Addition.

M - Indicates spike sample recovery is not within control limits.

* - Indicates duplicate analysis is not within control limits.

+ - Indicates the correlation coefficient for method of standard addition is less than 0.995

Form I-a

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.

01 88J60/578

Date 12/20/87

INORGANIC ANALYSIS DATA SHEET

Lab Name: JTC ENVIRONMENTAL CNSLTS. Case No. 88249st16

RCRA 4737

SOW No. 205
Lab Sample ID. No. 031802-11 RC Report No. 117

Elements Identified and Measured

Matrix: Water_____% Solid 97 % Non-Water_____%
Miscible Miscible

Units: ug/Kg

1	Aluminum	34900.0	P	14	Manganese	321.0 m	P
2	Antimony	19.7U m	H	15	Mercury	0.3u m	C
3	Arsenic	19.7U	H	16	Molybdenum	39.0 U	P
4	Barium	365.0	P	17	Nickel	63.0	P
5	Beryllium	39.0 U	P	18	Selenium	19.7U	H
6	Cadmium	9.8 U m	P	19	Silicon	169000.0	P
7	Calcium	10400.0	P	20	Silver	39.0 U	P
8	Chromium	76.0	P	21	Sodium	3940.0 U	P
9	Cobalt	197.0 U	P	22	Thallium	394.0 U	P
10	Copper	39.0 U	P	23	Titanium	2650.0	P
11	Iron	18000.0 m	P	24	Vanadium	197.0 U	P
12	Lead 129	~~295.0 U~~ 114 AGD	P	25	Zinc	411.0 m	P
13	Magnesium	5730.0	P	26			

Sulfide NR Oxidants NR

pH NR Conductivity NR (uhmos/cm)

Cyanide NR Sample Weight .2540 (g)

Footnotes:
For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaning results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager AGD

FORM I-b

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
02 88JG01579
Date 12/28/87

INORGANIC ANALYSIS DATA SHEET

Lab Name: JTC ENVIRONMENTAL CNSLTS.
SOW No. 285
Lab Sample ID. No. 031803-13

Case No. s3249st I set 16
QC Report No. 117

Elements Identified and Measured

Matrix: Water_____% Solid_____% Non-Water 91.6 %
Miscible Miscible

Units: mg/Kg

1	Aluminum	395.0 U	P	14	Manganese	40.0 U	P
2	Antimony	-19.8 U m	H	15	Mercury	0.3 u m	C
3	Arsenic	19.8 U	H	16	Molybdenum	40.0 U	P
4	Barium	119.0 U	P	17	Nickel	56.0	P
5	Beryllium	40.0 U	P	18	Selenium	19.8 U	H
6	Cadmium	9.9 U	P	19	Silicon	791.0 U	P
7	Calcium	1310.0	P	20	Silver	40.0 U	P
8	Chromium	28.0 U	P	21	Sodium	3950.0 U	P
9	Cobalt	198.0 U	P	22	Thallium	395.0 U	P
10	Copper	40.0 U	P	23	Titanium	395.0 U	P
11	Iron	277.0	P	24	Vanadium	198.0 U	P
12	Lead	59 u ~~296.0 U~~ AGO	P	25	Zinc	99.0	P
13	Magnesium	791.0 U	P	26			

Sulfide	NR	Oxidants	NR
pH	NR	Conductivity	NR (uhmos/cm)
Cyanide	NR	Sample Weight	.2530 (g)

Footnotes:
For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaning results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager AGO

FORM I-C

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
03 88JG01S80

Date 12/28/87

INORGANIC ANALYSIS DATA SHEET

Lab Name: JTC ENVIRONMENTAL CNSLTS. Case No. s9249st16
SOW No. 285 I
Lab Sample ID. No. 031804-12 QC Report No. 117

Elements Identified and Measured

Matrix: Water 100 % Solid _____ % Non-Water _____ %
Miscible Miscible

Units: ug/Kg

1	Aluminum	394.0 U	P	14	Manganese	39.0 U	P
2	Antimony	-19.7 U m	H	15	Mercury	0.3 u	C
3	Arsenic	19.7 U	H	16	Molybdenum	39.0 U	P
4	Barium	118.0 U	P	17	Nickel	39.0 U	P
5	Beryllium	39.0 U	P	18	Selenium	19.7 U	H
6	Cadmium	9.8 U m	P	19	Silicon	787.0 U	P
7	Calcium	787.0 U	P	20	Silver	39.0 U	P
8	Chromium	28.0 U	P	21	Sodium	3940.0 U	P
9	Cobalt	197.0 U	P	22	Thallium	394.0 U	P
10	Copper	39.0 U	P	23	Titanium	394.0 U	P
11	Iron	197.0 U	P	24	Vanadium	197.0 U	P
12	Lead 59 u	~~295.0 U~~ BGO	P	25	Zinc	39.0 U	P
13	Magnesium	787.0 U	P	26			

Sulfide	NR	Oxidants	NR
pH	NR	Conductivity	NR (uhmos/cm)
Cyanide	NR	Sample Weight	.2540 (g)

Footnotes:
For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaning results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager BGO

FORM I-8

U.S. EPA Contract Laboratory Program
Sample Management Office
P.O. Box 818 - Alexandria, VA 22313
703/557-2490 FTS: 8-557-2490

EPA Sample No.
04 88JG01581

Date 12/20/87

INORGANIC ANALYSIS DATA SHEET

Lab Name: JTC ENVIRONMENTAL CNSLTS. Case No. s3249st16
SDW No. 285
Lab Sample ID. No. 031805-12 QC Report No. 117

Elements Identified and Measured

Matrix: Water 100 % Solid ____ % Non-Water ____ %
Miscible Miscible

Units: ug/Kg

1	Aluminum	398.0 U	P	14	Manganese	40.0 U	P
2	Antimony	~~19.9~~ U m	H	15	Mercury	0.3 u	C
3	Arsenic	19.9 U	H	16	Molybdenum	40.0 U	P
4	Barium	120.0 U	P	17	Nickel	40.0 U	P
5	Beryllium	40.0 U	P	18	Selenium	19.9 U	H
6	Cadmium	10.0 U m	P	19	Silicon	797.0 U	P
7	Calcium	797.0 U	P	20	Silver	40.0 U	P
8	Chromium	20.0 U	P	21	Sodium	3980.0 U	P
9	Cobalt	199.0 U	P	22	Thallium	398.0 U	P
10	Copper	40.0 U	P	23	Titanium	398.0 U	P
11	Iron	199.0 U	P	24	Vanadium	199.0 U	P
12	Lead	60 u ~~299.0 U~~ AGD	P	25	Zinc	40.0 U	P
13	Magnesium	797.0 U	P	26			

Sulfide NR Oxidants NR
pH NR Conductivity NR (uhmos/cm)
Cyanide NR Sample Weight .2510 (g)

Footnotes:
For reporting results to EPA, standard result qualifiers are used as defined on Cover Page. Additional flags or footnotes explaning results are encouraged. Definition of such flags must be explicit and contained on Cover Page, however.

Comments:

Lab Manager AGD

FORM III-OL-1
Q.C. REPORT No. 117
BLANKS

Lab Name: JTC

CASE No. s3249sI set 16

DATE 12/28/87 UNITS: ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: solid 1	Matrix: 2
Metals:							
1. Aluminum	200.0U	200.0U	200.0U	200.0U	200.0U	200.0U	
2. Antimony	25.0U	25.0U	25.0U	25.0U	25.0U		
3. Arsenic	25.0U	25.0U	25.0U	25.0U	25.0U		
4. Barium	60.0U	60.0U	60.0U	60.0U	60.0U	60.0U	
5. Beryllium	20.0U	20.0U	20.0U	20.0U	20.0U	20.0U	
6. Cadmium	5.0U	5.0U	5.0U	5.0U	5.0U	5.0U	
7. Calcium	400.0U	400.0U	400.0U	400.0U	400.0U	400.0U	
8. Chromium	14.0U	14.0U	14.0U	14.0U	14.0U	14.0U	
9. Cobalt	100.0U	100.0U	100.0U	100.0U	100.0U	100.0U	
10. Copper	20.0U	20.0U	20.0U	20.0U	20.0U	20.0U	
11. Iron	100.0U	100.0U	100.0U	100.0U	100.0U	100.0U	
12. Lead	150.0U	150.0U	150.0U	150.0U	150.0U	150.0U	
13. Magnesium	400.0U	400.0U	400.0U	400.0U	400.0U	400.0U	
14. Manganese	20.0U	20.0U	20.0U	20.0U	20.0U	20.0U	
15. Mercury	0.3U	0.3U	0.3U				
16. Molybdenum	20.0U	20.0U	20.0U	20.0U	20.0U	20.0U	
17. Nickel	20.0U	20.0U	20.0U	20.0U	20.0U	20.0U	
18. Selenium	25.0U	25.0U	25.0U	25.0U	25.0U		
19. Silicon	400.0U	400.0U	400.0U	400.0U	400.0U	400.0U	
20. Silver	20.0U	20.0U	20.0U	20.0U	20.0U	20.0U	
21. Sodium	2000.0U	2000.0U	2000.0U	2000.0U	2000.0U	2000.0U	
22. Thallium	200.0U	200.0U	200.0U	200.0U	200.0U	200.0U	
23. Titanium	200.0U	200.0U	200.0U	200.0U	200.0U	200.0U	
24. Vanadium	100.0U	100.0U	100.0U	100.0U	100.0U	100.0U	
25. Zinc	20.0U	20.0U	20.0U	20.0U	20.0U	20.0U	
Other:							
Cyanide	NR						

Reporting units: aqueous, ug/L; solid, ug/kg

FORM III-Q-Z
Q.C. REPORT No. 117
BLANKS

Lab Name: JTC

CASE No. 30249 I set 16

DATE 12/20/87 UNITS: ug/L

Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4	Preparation Blank Matrix: 1	Matrix: 2
Metals:							
1. Aluminum	200.0U	200.0U					
2. Antimony	25.0U	25.0U	25.0U	25.0U	25.0U		
3. Arsenic	25.0U	25.0U	25.0U	25.0U	25.0U		
4. Barium	60.0U	60.0U					
5. Beryllium	20.0U	20.0U					
6. Cadmium	5.0U	5.0U					
7. Calcium	400.0U	400.0U					
8. Chromium	14.0U	14.0U					
9. Cobalt	100.0U	100.0U					
10. Copper	20.0U	20.0U					
11. Iron	100.0U	100.0U					
12. Lead	150.0U	150.0U					
13. Magnesium	400.0U	400.0U					
14. Manganese	20.0U	20.0U					
15. Mercury							
16. Molybdenum	20.0U	20.0U					
17. Nickel	20.0U	20.0U					
18. Selenium	25.0U	25.0U	25.0U	25.0U	25.0U		
19. Silicon	400.0U	400.0U					
20. Silver	20.0U	20.0U					
21. Sodium	2000.0U	2000.0U					
22. Thallium	200.0U	200.0U					
23. Titanium	200.0U	200.0U					
24. Vanadium	100.0U	100.0U					
25. Zinc	20.0U	20.0U					
Other:							
Cyanide							

Reporting units: aqueous, ug/L; solid, ug/kg

Form III - A-3

Q. C. Report No. 117

CALIIBRATION BLANKS

LAB NAME JTC Environmental Consultants, Inc. CASE NO. 3249I Set 16

DATE 1-4-88 UNITS ug/L

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4
1. Aluminum					
2. Antimony	25.0U	25.0U	25.0U	25.0U	25.0U
3. Arsenic	25.0U	25.0U	25.0U	25.0U	25.0U
4. Barium					
5. Beryllium					
6. Cadmium					
7. Calcium					
8. Chromium					
9. Cobalt					
10. Copper					
11. Iron					
12. Lead	150U	150U	150U	150U	150U
13. Magnesium					
14. Manganese					
15. Mercury					
16. Molybednum					
17. Nickel					
18. Selenium	25.0U	25.0U	25.0U	25.0U	25.0U
19. Silicon					
20. Silver					
21. Sodium					
22. Thallium					
23. Titanium					
24. Vanadium					
25. Zinc					
Sulfide					
Cyanide					

Form V - A-3

Q. C. Report No. 117

METHOD SPIKE SAMPLE RECOVERY

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 3249 I

EPA Sample No. I-03

DATE 12-28-87 Lab Sample ID No. 03-1804-12

Matrix[2] 01

Compound	Control Limit %R	Spiked Sample Result (SSR) mg/L	Sample Result (SR) mg/L	Spiked Added (SA) mg/L	%R[1]	
1. Aluminum	75 -125	.570	0.2u	.640	89	
2. Antimony	75-125	1.188	0.05U	1.600	74	m
3. Arsenic	75-125	1.42 ~~.054~~ 1.67	.05u.	1.600	89	
4. Barium	75 - 125	.631	.06u	.640	98	
5. Beryllium	75 - 125	.582	.02u	.640	91	
6. Cadmium	75 - 125	.817	.005u	.640	128	m
7. Calcium	75 - 125	.840	.4u	.640	131	NR
8. Chromium	75 - 125	.640	.014u	.640	100	
9. Cobalt	75 - 125	.538	0.1u	.640	84	
10. Copper	75 - 125	.510	.02u	.640	80	
11. Iron	75 - 125	.570	0.1u	.640	89	
12. Lead	75 - 125	3.21	0.15u	3.200	100	
13. Magnesium	75 - 125	.630	.4u	.640	98	
14. Manganese	75 - 125	.633	.02u	.640	99	
15. Mercury	75-125	0.212 ug	~~0.02u~~ ug	~~.004~~ 0.25 ug	85	
16. Molybdenum	75-125	.634	.02u	.640	99	
17. Nickel	75-125	.166	.02u	.640	26	NR
18. Selenium	75-125	1458	0.05U	1.600	91	
19. Silicon	75-125	.560	.4u	.640	88	
20. Silver	75-125	.02u	.02u	—	NR	
21. Sodium	75-125	2.0u	2.0u	.640	NR	
22. Thallium	75-125	.780	0.2u	.640	122	
23. Titanium	75-125	.647	.2u	.640	101	
24. Vanadium	75-125	.566	0.1u	.640	88	
25. Zinc	75-125	.727	.02u	.640	114	
Cyanide	75-125					
Sulfide	75-125					

1 %R = [(SSR - SR)/SA] x 100

2 Matrices are: 01 - water miscible, 02 - solid, 03 - non-water miscible

"R"- out of control

NR - No recovery criteria (see individual method)

Comments:

Form III - A -4

Q. C. Report No. 117

CALIIBRATION BLANKS

LAB NAME JTC Environmental Consultants, Inc. CASE NO. 3249I Set 16

DATE 1-4-88 UNITS ug/L

Preparation Compound	Initial Calibration Blank Value	Continuing Calibration Blank Value 1	2	3	4
1. Aluminum					
2. Antimony	25.0U	25.0U	25.0U	25.0U	25.0U
3. Arsenic	25.0U	25.0U	25.0U	25.0U	25.0U
4. Barium					
5. Beryllium					
6. Cadmium					
7. Calcium					
8. Chromium					
9. Cobalt					
10. Copper					
11. Iron					
12. Lead		150U	150U	150U	
13. Magnesium					
14. Manganese					
15. Mercury					
16. Molybednum					
17. Nickel					
18. Selenium	25.0U	25.0U	25.0U	25.0U	25.0U
19. Silicon					
20. Silver					
21. Sodium					
22. Thallium					
23. Titanium					
24. Vanadium					
25. Zinc					
Sulfide					
Cyanide					

Form III - B

Q. C. Report No. 117

METHOD BLANKS AND CALIBRATION QCCS

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 3249 I

DATE 12-28-87 UNITS mg/Kg

Preparation Compound	CRDL (mg/Kg)	Method Blank Values (mg/Kg) 1	2	3	4	QCCS Results (mg/L) Found	True	% R
1. Aluminum	400	400u					125	
2. Antimony	20	20u					.04	
3. Arsenic	20	20u					.04	
4. Barium	120	120u					10	
5. Beryllium	40	40u					3	
6. Cadmium	10	10u					3	
7. Calcium	800	800u					250	
8. Chromium	28	28u					5	
9. Cobalt	200	200u					10	
10. Copper	40	40u					5	
11. Iron	200	200u					15	
12. Lead	~~100~~ 60	60u					5	
13. Magnesium	800	800u					250	
14. Manganese	40	40u					10	
15. Mercury	0.3	0.3u					.2 ug	
16. Molybednum	40	40u					5	
17. Nickel	40	40u					5	
18. Selenium	20	20u					.04	
19. Silicon	800	800u					125	
20. Silver	40	40u					5	
21. Sodium	4000	4000u					205	
22. Thallium	400	400u					5	
23. Titanium	400	400u					10	
24. Vanadium	200	200u					5	
25. Zinc	40	40u					10	
Sulfide	2.5	NR						
Cyanide	1.5	NR						

Changes made for Cd,Pb according to SOW modification of D-33 sec. 7.19 (dilution factor) under SAS 2388I. E. Dantsker 1/29/87

Form V - A-1

Q. C. Report No. 117

METHOD SPIKE SAMPLE RECOVORY

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 32497 Set 16

EPA Sample No. T-01

DATE 12-28-87 Lab Sample ID No. 03-1802-11

Matrix[2] 02

Compound	Control Limit %R	Spiked Sample Result (SSR) mg/L	Sample Result (SR) mg/L	Spiked Added (SA) mg/L	%R[1]	
1. Aluminum	75 -125	18.33	17.74	.640	92	
2. Antimony	75-125	682	0.050	1.600	42	m
3. Arsenic	75-125	1.665	0.050	1.600	104	
4. Barium	75 - 125	.854	.185	.640	104	
5. Beryllium	75 - 125	.678	.02u	.640	106	
6. Cadmium	75 - 125	.876	.005u	.640	137	m
7. Calcium	75 - 125	6.69	5.27	.640	221	NR
8. Chromium	75 - 125	.745	.038	.640	110	
9. Cobalt	75 - 125	.603	0.1u	.640	94	
10. Copper	75 - 125	.617	.02u	.640	96	
11. Iron	75 - 125	10.77	9.154	.640	252	m
12. Lead	75 - 125	3.75	.327	3.200	107	
13. Magnesium	75 - 125	3.66	2.90	.640	119	
14. Manganese	75 - 125	1.065	.163	.640	141	m
15. Mercury	75-125	0.158 ug	0.030 ug	~~.004~~ 0.25 ug	63	m
16. Molybdenum	75-125	.705	.02u	.640	128	
17. Nickel	75-125	.445	.031	.640	65	
18. Selenium	75-125	1.647	0.050	1.600	103	
19. Silicon	75-125	84.64	85.86	.640	278	NR *
20. Silver	75-125	.02u	.02u	—	—	
21. Sodium	75-125	2.0u	2.0u	.640	NR	
22. Thallium	75-125	.905	0.2u	.640	141	NR
23. Titanium	75-125	2.013	1.348	.640	104	
24. Vanadium	75-125	.646	0.1u	.640	101	
25. Zinc	75-125	1.226	.208	.640	159	m
Cyanide	75-125					
Sulfide	75-125					

1 %R = [(SSR - SR)/SA] x 100

2 Matrices are: 01 - water miscible, 02 - solid, 03 - non-water miscible

"R" - out of control

NR - No recovery criteria (see individual method)

Comments:

Form V - A-2

Q. C. Report No. 117

METHOD SPIKE SAMPLE RECOVORY

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SBS 3249 I

EPA Sample No. I-02

DATE 12-28-87 Lab Sample ID No. 03-1603-13

Matrix[2] 03

Compound	Control Limit %R	Spiked Sample Result (SSR) mg/L	Sample Result (SR) mg/L	Spiked Added (SA) mg/L	%R[1]	
1. Aluminum	75 -125	2.33	0.8u	.640	364	NR
2. Antimony	75-125	1.162	0.05U	1.600	73	NR
3. Arsenic	75-125	1.716	0.05U	1.600	107	
4. Barium	75 - 125	.623	.06u	.640	97	
5. Beryllium	75 - 125	.622	.02u	.640	97	
6. Cadmium	75 - 125	.795	.005u	.640	124	
7. Calcium	75 - 125	3.63	.660	.640	464	NR
8. Chromium	75 - 125	.659	.014u	.640	103	
9. Cobalt	75 - 125	.549	0.1u	.640	86	
10. Copper	75 - 125	.576	.02u	.640	90	
11. Iron	75 - 125	.783	.140	.640	100	
12. Lead	75 - 125	3.53	.15u	3.200	110	
13. Magnesium	75 - 125	2.69	0.4u	.640	420	NR
14. Manganese	75 - 125	.744	.02u	.640	116	
15. Mercury	75-125	0.090 ug	0.0030 ug	~~.004~~ 0.25 ug	36	NR
16. Molybdenum	75-125	.608	.02u	.640	95	
17. Nickel	75-125	.035	.028	.640	NR	
18. Selenium	75-125	1.834	0.05U	1.600	114	
19. Silicon	75-125	.620	0.4u	.640	97	
20. Silver	75-125	.03u	.02u	—	NR	
21. Sodium	75-125	2.0u	2.0u	.640	NR	
22. Thallium	75-125	.467	0.2u	.640	73	NR
23. Titanium	75-125	.850	0.2u	.640	133	NR
24. Vanadium	75-125	.651	.1u	.640	102	
25. Zinc	75-125	.837	.049	.640	123	
Cyanide	75-125					
Sulfide	75-125					

[1] %R = [(SSR - SR)/SA] x 100

[2] Matrices are: 01 - water miscible, 02 - solid, 03 - non-water miscible

"R" - out of control

NR - No recovery criteria (see individual method)

Comments:

FORM V-B-1
Q.C. REPORT No. 117
SPIKE SAMPLE RECOVERY

Lab Name: JTC Environmental Consts.

Case No. 63249aI

DATE 12/20/87

EPA Sample No. 01
Lab Sample ID No. 031802
UNITS ug/L

Matrix soil

COMPOUND	CONTROL LIMIT %R	SPIKED SAMPLE RESULT (SSR)	SAMPLE RESULT (SR)	SPIKE ADDED (SA)	%R !
METALS:					
Aluminum	85-115	63214.0	17747.0	50000.0	91.
Antimony	n/r			N/R	
Arsenic	n/r	~~1665.0~~	~~50.0U~~	~~N/R~~ ~~1600.0~~	~~164~~ N/R
Barium	85-115	11110.0	105.2	10000.0	109.
Beryllium	85-115	1864.6	20.0 U	2000.0	93.
Cadmium	85-115	2282.7	5.0 U	2000.0	114.
Calcium	85-115	107897.0	5278.4	100000.0	103.
Chromium	85-115	4930.3	30.4	5000.0	98.
Cobalt	85-115	10124.7	100.0 U	10000.0	101.
Copper	85-115	4471.0	20.0 U	5000.0	89.
Iron	85-115	~~32860.0~~ 31375.0	9154.4	20000.0	~~110~~ 90 / 111
Lead	85-115	5846.4 / 4.82	150.0 U / .327	5000.0	117.
Magnesium	85-115	45817.2	2908.6	50000.0	86.
Manganese	85-115	9563.0	163.2	10000.0	94.
Mercury	~~n/r~~	0.202 ug	0.034 ug	~~N/R~~ 0.25 ug	81
Molybdenum	85-115	2214.3	20.0 U	2000.0	111.
Nickel	85-115	5521.9	31.8	5000.0	110.
Selenium	n/r			N/R	
Silicon	85-115	182821.0	85860.8	50000.0	93.
Silver	85-115	2370.6	20.0 U	2500.0	95.
Sodium	85-115	94974.9	2000.0 U	100000.0	95.
Thallium	85-115	6520.9	200.0 U	5000.0	130. NR
Titanium	85-115	10358.5	1340.3	10000.0	90.
Vanadium	85-115	4642.2	100.0 U	5000.0	93.
Zinc	85-115	2514.8	200.7	2000.0	115.
Other:					
Cyanide					

%R = [(SSR - SR)/SA] x 100
"R" - out of control

FORM V B-2
R.C. REPORT No. 117
SPIKE SAMPLE RECOVERY

Lab Name: JTC Environmental

Case No. 33249sI Set 16

DATE 12/23/87

EPA Sample No. 02
Lab Sample ID No. 031803
UNITS ug/L

Matrix soil

COMPOUND	CONTROL LIMIT %R	SPIKED SAMPLE RESULT (SSR)	SAMPLE RESULT (SR)	SPIKE ADDED (SA)	%R !
METALS:					
Aluminum	85-115	47075.9	200.0 U	50000.0	94.
Antimony	n/r			N/R	
Arsenic	n/r			N/R	
Barium	85-115	9971.4	60.0 U	10000.0	100.
Beryllium	85-115	1871.4	20.0 U	2000.0	94.
Cadmium	85-115	2117.6	5.0 U	2000.0	106.
Calcium	85-115	106384.0	661.1	100000.0	106.
Chromium	85-115	4892.6	14.0 U	5000.0	98.
Cobalt	85-115	9796.0	100.0 U	10000.0	98.
Copper	85-115	4555.2	20.0 U	5000.0	91.
Iron	85-115	70556.4	140.0	20000.0	102.
Lead	85-115	5549.3 /4549	150.0 U	5000.0	111 / 91
Magnesium	85-115	44108.4	400.0 U	50000.0	88.
Manganese	85-115	9381.6	20.0 U	10000.0	94.
Mercury	~~n/r~~	0.217 mg	0.034 mg	~~N/R~~ 0.25 mg	87
Molybdenum	85-115	2062.6	20.0 U	2000.0	103.
Nickel	85-115	5438.9	28.1	5000.0	108.
Selenium	n/r			N/R	
Silicon	85-115	48413.6	400.0 U	50000.0	97.
Silver	85-115	2124.0	20.0 U	2500.0	85.
Sodium	85-115	94398.0	2000.0 U	100000.0	94.
Thallium	85-115	5701.0	200.0 U	5000.0	116. NR
Titanium	85-115	9491.4	200.0 U	10000.0	95.
Vanadium	85-115	4606.3	100.0 U	5000.0	94.
Zinc	85-115	2159.3	49.9	2000.0	105.
Other:					
Cyanide					

%R = [(SSR - SR)/SA] x 100
"R" - out of control

FORM VB-3
Q.C. REPORT No. 117
SPIKE SAMPLE RECOVERY

Lab Name:

Case No. 83249MI set 16

DATE 12/20/87

EPA Sample No. 03
Lab Sample ID No. 031804
UNITS ug/L

Matrix soil

COMPOUND	CONTROL LIMIT %R	SPIKED SAMPLE RESULT (SSR)	SAMPLE RESULT (SR)	SPIKE ADDED (SA)	%R
METALS:					
Aluminum	85-115	47063.2	200.0 U	50000.0	94.
Antimony	n/r			N/R	
Arsenic	n/r			N/R	
Barium	85-115	10673.7	60.0 U	10000.0	107.
Beryllium	85-115	1887.8	20.0 U	2000.0	94.
Cadmium	85-115	2161.7	5.0 U	2000.0	108.
Calcium	85-115	105151.0	400.0 U	100000.0	105.
Chromium	85-115	5020.0	14.0 U	5000.0	100.
Cobalt	85-115	10161.0	100.0 U	10000.0	102.
Copper	85-115	4579.6	20.0 U	5000.0	92.
Iron	85-115	21088.0	100.0 U	20000.0	105.
Lead	85-115	5615.1 [4941]	150.0 U	5000.0	112/99
Magnesium	85-115	45151.6	400.0 U	50000.0	90.
Manganese	85-115	9587.7	20.0 U	10000.0	96.
Mercury	nr	0.246 ug	0.034 ug	~~N/R~~ 0.25 ug	98
Molybdenum	85-115	2102.6	20.0 U	2000.0	105.
Nickel	85-115	5241.0	20.0 U	5000.0	105.
Selenium	n/r			N/R	
Silicon	85-115	52302.0	400.0 U	50000.0	105.
Silver	85-115	2237.2	20.0 U	2500.0	89.
Sodium	85-115	96628.0	2000.0 U	100000.0	97.
Thallium	85-115	5563.4	200.0 U	5000.0	111.
Titanium	85-115	9396.3	200.0 U	10000.0	94.
Vanadium	85-115	4650.1	100.0 U	5000.0	93.
Zinc	85-115	2060.6	20.0 U	2000.0	103.
Other:					
Cyanide					

%R = [(SSR - SR)/SA] x 100
"R" - out of control

Form VI - A-1

Q. C. Report No. 117

METHOD DUPLICATES

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 32497 Set 16

EPA Sample No. I-01

DATE 12-28-87 Lab Sample ID No. 03-1802-11

Matrix [3] 02

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
1. Aluminum	NR	34935	35355	1.2
2. Antimony	-	19.7U	19.8U	NC
3. Arsenic	-	19.7U	19.8U	NC
4. Barium	-	364	345	5.4
5. Beryllium	-	39u	39u	NC
6. Cadmium	-	9.8u	9.8u	NC
7. Calcium	-	10390	11697	12
8. Chromium	-	75	87	15
9. Cobalt	-	197u	197u	NC
10. Copper	-	39u	39u	NC
11. Iron	-	18020	19401	7.4
12. Lead	-	129	148	14
13. Magnesium	-	5725	6501	13
14. Manganese	-	321	441	31
15. Mercury	-	0.3u	0.3u	NC
16. Molybdenum	-	39u	39u	NC
17. Nickel	-	63	47	29
18. Selenium	-	19.7U	19.8U	NC
19. Silicon	-	169000	177000	4.6
20. Silver	-	39u	39u	NC
21. Sodium	-	3937u	6561	NC
22. Thallium	-	394u	394u	NC
23. Titanium	-	2654	2737	3.1
24. Vanadium	-	197u	197u	NC
25. Zinc	-	411	561	31
pH	+/- 0.2 units			S-D =
Sulfide	NR			
Cyanide	-			

* Out of Control

1 To be added at a later date.

2 RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

3 01 - water miscible, 02 - solid, and 03 - non-water miscible

Form VI - A-2

Q. C. Report No. 117

METHOD DUPLICATES

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 32497 Set 16

EPA Sample No. T-02

DATE 12-28-87 Lab Sample ID No. 03-1803-13

Matrix [3] 03

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
1. Aluminum	NR	395 u	395u	NC
2. Antimony	-	19.8U	19.9U	NC
3. Arsenic	-	19.8U	19.9U	NC
4. Barium	-	119u	119u	NC
5. Beryllium	-	40u	40u	NC
6. Cadmium	-	9.9u	9.9u	NC
7. Calcium	-	1307	1614	21
8. Chromium	-	28u	28u	NC
9. Cobalt	-	198u	198u	NC
10. Copper	-	40u	40u	NC
11. Iron	-	277	257	7.5
12. Lead	-	59u	59u	NC
13. Magnesium	-	790u	790u	NC
14. Manganese	-	40u	40u	NC
15. Mercury	-	0.3u	0.3u	NC
16. Molybdenum	-	40u	40u	NC
17. Nickel	-	56	46	20
18. Selenium	-	19.8U	19.9U	NC
19. Silicon	-	790u	790u	NC
20. Silver	-	40u	40u	NC
21. Sodium	-	3952u	3952u	NC
22. Thallium	-	395u	395u	NC
23. Titanium	-	395u	395u	NC
24. Vanadium	-	198u	198u	NC
25. Zinc	-	99	98	1.0
pH	+/- 0.2 units			S-D -
Sulfide	NR			
Cyanide	-			

* Out of Control

1 To be added at a later date.

2 RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

3 01 - water miscible, 02 - solid, and 03 - non-water miscible

Form VI - A-3

Q. C. Report No. 117

METHOD DUPLICATES

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 32497 Set 16

EPA Sample No. I-03

DATE 12-28-87 Lab Sample ID No. 03-1804-12

Matrix [3] 01

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
1. Aluminum	NR	394U	394U	NC
2. Antimony	-	19.7U	19.8U	NC
3. Arsenic	-	19.7U	19.8U	NC
4. Barium	-	118U	118U	NC
5. Beryllium	-	39U	39U	NC
6. Cadmium	-	9.8U	9.8U	NC
7. Calcium	-	787U	787U	NC
8. Chromium	-	28U	28U	NC
9. Cobalt	-	197U	197U	NC
10. Copper	-	39U	39U	NC
11. Iron	-	197U	197U	NC
12. Lead	-	59U	59U	NC
13. Magnesium	-	787U	787U	NC
14. Manganese	-	39U	39U	NC
15. Mercury	-	0.3U	0.3U	NC
16. Molybdenum	-	39U	39U	NC
17. Nickel	-	39U	52	NC
18. Selenium	-	19.7U	19.8U	NC
19. Silicon	-	787U	787U	NC
20. Silver	-	39U	39U	NC
21. Sodium	-	3940U	3940U	NC
22. Thallium	-	394U	394U	NC
23. Titanium	-	394U	394U	NC
24. Vanadium	-	197U	197U	NC
25. Zinc	-	39U	39U	NC
pH	+/- 0.2 units			S-D =
Sulfide	NR			
Cyanide	-			

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

NC - Non calculable RPD due to value(s) less than CRDL

[3] 01 - water miscible, 02 - solid, and 03 - non-water miscible

Form VI - B - 1

Q. C. Report No. 117

ANALYSIS DUPLICATES

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 3249 I set 16

EPA Sample No. I-01

DATE 12-28-87 Lab Sample ID No. 03-1802-11

Matrix [3] 02

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
1. Aluminum	10	34935	34511	1.2
2. Antimony	15	19.7 U	19.7 U	NC
3. Arsenic	15	19.7 U	19.7 U	NC
4. Barium	10	364	354	2.8
5. Beryllium	"	39 U	39 U	NC
6. Cadmium	"	9.8 U	9.8 U	NC
7. Calcium	"	10390	9614	7.8
8. Chromium	"	75	66	13 NR
9. Cobalt	"	197 U	197 U	NC
10. Copper	"	39 U	39 U	NC
11. Iron	"	18020	18037	0.1
12. Lead	"	129	126	2.3
13. Magnesium	"	5725	6284	9.3
14. Manganese	"	321	326	1.6
15. Mercury	NA			
16. Molybdenum	10	39 U	39 U	NC
17. Nickel	"	63	50	23 NR
18. Selenium	15	19.7 U	19.7 U	NC
19. Silicon	10	169015	168937	0.1
20. Silver	"	39 U	136	NC
21. Sodium	"	3937 U	3937 U	NC
22. Thallium	"	394 U	394 U	NC
23. Titanium	"	2654	2618	1.4
24. Vanadium	"	197 U	197 U	NC
25. Zinc	"	411	423	3.0
pH	NA			
Sulfide	10			
Cyanide	10			

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

[3] Matrices are: 01 - water miscible, 02 - solid, and 03 - non-water miscible

NC - Non-calculable RPD due to value(s) less than

NA - Not applicable to this method.

Form VI - B - 2

Q. C. Report No. 117

ANALYSIS DUPLICATES

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 3249 I Set 16

EPA Sample No. I-02

DATE 12-28-87 Lab Sample ID No. 03-1803-13

Matrix [3] 03

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
1. Aluminum	10	395 u	395 u	NC
2. Antimony	15	19.8 u	19.8 u	NC
3. Arsenic	15	19.8 u	19.8 u	NC
4. Barium	10	119 u	119 u	NC
5. Beryllium	-	40 u	40 u	NC
6. Cadmium	-	9.9 u	9.9 u	NC
7. Calcium	-	1307	2185	50 NR
8. Chromium	-	28 u	28 u	NC
9. Cobalt	-	198 u	198 u	NC
10. Copper	-	40 u	40 u	NC
11. Iron	-	277	292	5.2
12. Lead	-	59 u	59 u	NC
13. Magnesium	-	790 u	790 u	NC
14. Manganese	-	40 u	40 u	NC
15. Mercury	NA			
16. Molybdenum	10	40 u	40 u	NC
17. Nickel	-	56	40 u	NC
18. Selenium	15	19.8 u	19.8 u	NC
19. Silicon	10	790 u	790 u	NC
20. Silver	-	40 u	40 u	NC
21. Sodium	-	3952 u	3952 u	NC
22. Thallium	-	395 u	395 u	NC
23. Titanium	-	395 u	395 u	NC
24. Vanadium	-	198 u	198 u	NC
25. Zinc	-	99	89	9.7
pH	NA			
Sulfide	10			
Cyanide	10			

* Out of Control

1 To be added at a later date.

2 RPD = [|S - D|/((S + D)/2)] x 100

3 Matrices are: 01 - water miscible, 02 - solid, and 03 - non-water miscible

NC - Non-calculable RPD due to value(s) less than

NA - Not applicable to this method.

Form VI - B-3

Q. C. Report No. 117

ANALYSIS DUPLICATES

LAB NAME JTC Environmental Consultants, Inc. CASE NO. SAS 3249 I Set 16

EPA Sample No. I-03

DATE 12-28-87 Lab Sample ID No. 03-1804-12

Matrix [3] 01

Compound	Control Limit[1]	Sample(S)	Duplicate(D)	RPD[2]
1. Aluminum	10	394 u	394 u	NC
2. Antimony	15	19.7 u	19.7 u	NC
3. Arsenic	15	19.7 u	19.7 u	NC
4. Barium	10	118 u	118 u	NC
5. Beryllium	-	39 u	39 u	NC
6. Cadmium	-	9.8 u	9.8 u	NC
7. Calcium	-	787 u	787 u	NC
8. Chromium	-	28 u	28 u	NC
9. Cobalt	-	197 u	197 u	NC
10. Copper	-	39 u	39 u	NC
11. Iron	-	197 u	197 u	NC
12. Lead	-	59 u	59 u	NC
13. Magnesium	-	787 u	787 u	NC
14. Manganese	-	39 u	39 u	NC
15. Mercury	NA			
16. Molybdenum	10	39 u	39 u	NC
17. Nickel	-	39 u	39 u	NC
18. Selenium	15	19.7 u	19.7 u	NC
19. Silicon	10	787 u	787 u	NC
20. Silver	-	39 u	39 u	NC
21. Sodium	-	3940 u	3940 u	NC
22. Thallium	-	394 u	394 u	NC
23. Titanium	-	394 u	394 u	NC
24. Vanadium	-	197 u	197 u	NC
25. Zinc	-	39 u	39 u	NC
pH	NA			
Sulfide	10			
Cyanide	10			

* Out of Control

[1] To be added at a later date.

[2] RPD = [|S - D|/((S + D)/2)] x 100

[3] Matrices are: 01 - water miscible, 02 - solid, and 03 - non-water miscible

NC - Non-calculable RPD due to value(s) less than

NA - Not applicable to this method.

Form VII A CONOSTAN OIL

Q.C. Report No. 117

METHOD DETECTION LIMITS AND METHOD REFERENCE SAMPLE

LAB NAME JTC Environmental Consultants, Inc CASE NO. SAS 3249 I

DATE 12-28-87 MRS UNITS = mg/kg

DATE MDL Determined

Compound	Required Detection Limits (CRDL)-mg/Kg	Method Detection Limits (MDL)-mg/Kg	Method Reference Sample[1] True	Found	%R
1. Aluminum	400	338	900	712	79
2. Antimony	20	7.4		19.8u	NR
3. Arsenic	20	4.3		19.8u	NR
4. Barium	120	62	900	827	92
5. Beryllium	40	9.2		40u	NR
6. Cadmium	10	9.4	900	859	95
7. Calcium	800	456	900	713	79
8. Chromium	28	19	900	922	102
9. Cobalt	20	16.8		200u	NC
10. Copper	40	32	900	857	95
11. Iron	200	42	900	794	88
12. Lead	~~100~~ 60	22.8	900	834	93
13. Magnesium	800	652	900	1129	125
14. Manganese	40	22	900	849	94
15. Mercury	0.3	0.2			NR
16. Molybdenum	40	34.8	900	855	95
17. Nickel	40	36	900	865	96
18. Selenium	20	5.2		19.8u	NR
19. Silicon	800	310	900	740	82
20. Silver	40	30.8		564	NR
21. Sodium	4000	3360	900	4000u	NR
22. Thallium	400	94		400u	NR
23. Titanium	400	35.8	900	875	97
24. Vanadium	200	23.8	900	861	96
25. Zinc	40	22.6	900	859	95
Cyanide	1.5	NR			NR
Sulfide	2.5	NR			NR
pH	NA	NA			NA
Conductivity	0.3 (SC)	NR			NA

1 Reference source: (ICP) (CN) (S) (pH)

NR - Not required to be determined (see individual methods for blank limits).

NA - Not applicable to this method.

SC - Specific conductance value

Form VII B NBS SRM 1645 RIVER SADIMENT

Q.C. Report No. 117

METHOD DETECTION LIMITS AND METHOD REFERENCE SAMPLE

LAB NAME JTC Environmental Consultants, Inc CASE NO. SAS 3249 I

DATE 12-28-87 MRS UNITS - mg/kg

DATE MDL Determined _____

Compound	Required Detection Limits (CRDL)-mg/Kg	Method Detection Limits (MDL)-mg/Kg	Method Reference Sample[1] True	Found	%R
1. Aluminum	400	338	22600	22960	102
2. Antimony	20	7.4		20.0u	NR
3. Arsenic	20	4.3	66	54	82
4. Barium	120	62		310	NR
5. Beryllium	40	9.2	1	40u	NC
6. Cadmium	10	9.4	10	10u	NC
7. Calcium	800	456	29000	29980	103
8. Chromium	28	19	29600	29644	100
9. Cobalt	200	16.8	10	200u	NC
10. Copper	40	32	109	94	86
11. Iron	200	42	113000	97120	86
12. Lead	~~100~~ 60	22.8	714	702	98
13. Magnesium	800	652	7400	7000	94
14. Manganese	40	22	785	700	89
15. Mercury	0.3	~~0.06~~ 0.2	~~18.8~~	~~17.4~~	~~92~~
16. Molybdenum	40	34.8		40u	NC
17. Nickel	40	36	46	64	139
18. Selenium	20	5.2		20.0u	NR
19. Silicon	800	310	238000	236300	99
20. Silver	40	30.8		40u	NC
21. Sodium	4000	3360	5400	4000u	NC
22. Thallium	400	94		400u	NC
23. Titanium	400	35.8		656	NR
24. Vanadium	200	23.8	24	200u	NC
25. Zinc	40	22.6	1720	1558	90
Cyanide	1.5	NR			
Sulfide	2.5	NR			
pH	NA	NA		-	NA
Conductivity	0.3 (SC)	NR			NA

1 Reference source: (ICP) (CN) (S) (pH)

NR - Not required to be determined (see individual methods for blank limits).

NA - Not applicable to this method.

SC - Specific conductance value

Form VII-C TKM for Hg

Q.C. Report No. 119

METHOD DETECTION LIMITS AND METHOD REFERENCE SAMPLE

LAB NAME JTC Environmental Consultants, Inc CASE NO. Sas 3249 I

DATE 12-28-87 MRS UNITS = mg/kg

DATE MDL Determined _____

Compound	Required Detection Limits (CRDL)-mg/Kg	Method Detection Limits (MDL)-mg/Kg	Method Reference Sample[1] True	Found	%R
1. Aluminum	400				
2. Antimony	20				
3. Arsenic	20				
4. Barium	120				
5. Beryllium	40				
6. Cadmium	10				
7. Calcium	800				
8. Chromium	28				
9. Cobalt	20				
10. Copper	40				
11. Iron	200				
12. Lead	100				
13. Magnesium	800				
14. Manganese	40				
15. Mercury	0.3	~~0.06~~ 0.2	18.8	17.4	93
16. Molybdenum	40				
17. Nickel	40				
18. Selenium	20				
19. Silicon	800				
20. Silver	40				
21. Sodium	4000				
22. Thallium	400				
23. Titanium	400				
24. Vanadium	200				
25. Zinc	40				
Cyanide	1.5	NR			
Sulfide	2.5	NR			
pH	NA	NA			NA
Conductivity	0.3 (SC)	NR			NA

1 Reference source: (ICP) (CN) (S) (pH)

NR - Not required to be determined (see individual methods for blank limits).

NA - Not applicable to this method.

SC - Specific conductance value

ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT
AT HAZARDOUS WASTE SITES

TES IV
CONTRACT NO. 68-01-7351
WORK ASSIGNMENT NO. 201

RCRA FACILITY ASSESSMENT SAMPLING REPORT KEYSTONE STEEL AND WIRE COMPANY PEORIA, ILLINOIS

EPA REGION V

JACOBS ENGINEERING GROUP, INC.
PROJECT NO. 05-A005-201

Report Prepared By:

METCALF & EDDY, INC.
85 WEST ALGONQUIN ROAD, SUITE 500
ARLINGTON HEIGHTS, ILLINOIS 60005

January 1988

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SECTION 1
INTRODUCTION

1.1 Scope of Work

Metcalf and Eddy, Incorporated (M&E) was issued a work assignment (WA #207) under the Technical Enforcement Support (TES) IV contract (EPA #68017351) to perform RCRA Facility Assessment sampling (RFA) at the Keystone Steel and Wire Company in Peoria, Illinois. Due to the nature of the material handled onsite, this work assignment was issued to identify if hazardous waste constituents were released into the environment. To accomplish this task, the Scope of Work consisted of sampling pre-RCRA and unregulated Solid Waste Management Units (SWMUs).

1.2 Site Background

Keystone Steel & Wire/Bartonville Plant is a manufacturer of iron and steel including semifinished and finished wire products. Keystone is located in Peoria, IL on approximately 1410 acres and has been in operation since around the turn of the century. The company produces 4 acknowledged hazardous waste streams, which include: electric arc furnace dust (K061), spent pickle liquor (K062), 1-1-1-trichloroethane still bottoms (F002), and solidified paint waste (D001). Keystone presently claims no regulated SWMUs. The facility can be divided into two main components, the main plant/production areas, and a large wetlands/grasslands region to the east and south of the plant. The majority of the sampling will take place in the wetlands/grasslands region and areas bordering the production facilities.

Questions still exist concerning Keystone's past disposal of K061, K062, and F002 wastes. There is also justification for concern over unacknowledged present and past disposal activities, from Keystone and leased properties on the Keystone site. Supplemental information suggests that volatile and semi-volatile compounds, metals, and possibly PCBs, may have been released to the environment. Therefore do to the age and size of the facility, RCRA enforcement action, and generally poor housekeeping, a sampling visit was needed to characterize the site and see whether or not there have been releases of hazardous constituents which would pose a threat to human health and the environment.

1.3 Project Approach

The RFA work assignment consisted of 3 tasks. Each of these tasks is briefly described below:

TASK 1: Field Sampling

Surface water samples, soil/sediment samples and sludge samples would be collected at onsite and offsite locations to help characterize the facility. All sampling locations would be identified by the U.S.EPA Primary Contact, Mr. Kevin Moss.

TASK 2: Sample Shipment

All samples collected were sent to a U.S.EPA Contract Laboratory identified by the sample management office. The organic samples went to S-Cubed and the inorganic samples were sent to Northern Labs. The high concentration samples were sent to NANCO for the organic analysis and JTC for the inorganic analysis. Standard U.S.EPA sample handling protocols were followed for sample preservation, packaging, and shipment.

TASK 3: Sampling Report

A written report would be submitted to the U.S.EPA upon completion of the sampling activities and data result tabulations.

SECTION 2
FIELD ACTIVITIES

2.1 Introduction

On December 8 and 9, 1987, M&E representative Ken Krueger, Gary Schafer, and Carol Meyer collected a total of 23 onsite and offsite surface water, sludge and soil/sediment samples at the Keystone Steel and Wire plant in Peoria, Illinois (see Table 1 and Figure 1). Access to this facility and to all sampling locations was obtained by the U.S.EPA Primary Contact, Mr. Kevin Moss. All sampling locations, sampling depth and parameter analyses requested were finalized onsite by Mr. Moss.

Keystone was represented by Mr. Dale Bennington. He accompanied the U.S.EPA and M&E personnal at all sample locations except for the background samples. He did not request split samples or a chain of custody receipt.

Of the 23 samples collected, four samples (Sample Number (S78, S79, S80 and S81) were classified as high hazard samples. S78 and S79 were preclassified while S80 and S81 were changed from low to high while in the field after experiencing an oily residue during collection.

2.2. Field Investigation

2.2.1. Surface Water Samples

Ten surface water samples were collected at the Keystone Facility on December 8 and 9, 1987. Three of these samples were classified as high concentration (S79, S80 and S81). The other seven samples (S83, S84, S87, S90, S91, S97, S99) were collected at onsite locations (S99 is a field blank). All samples other than the blank were obtained by immersing the sample bottles directly into the water. Samples collected for metal analyses were field preserved with nitric acid to a pH of 2. All samples were subsequently iced to $4^{o}C$. Decontamination of sampling equipment was not required since the sample bottles were filled directly from the water.

2.2.2. Soil/Sediment Samples

Twelve onsite composite soil samples and two offsite composite soil samples were collected at the Keystone facility on December 8 and 9, 1987. Offside samples S95 and S96 were collected from the 6-12 inch depth using a stainless steel trowel and spoon. Samples S92, S93, S85 and S86 were collected onsite at the same depth using the same utensials. Samples S77 and S98 were collected

onsite from the 6-12 inch depth using a stainless steel bucket auger and spoon, while samples S89, S82, S88, and S94 were collected by using a stainless steel ladle and spoon. The samples were obtained from the bottom of the pond. A stainless steel pan was not used for compositing these four samples. These samples were collected directly from the ladle. All samples collected were iced to $4^{o}C$. Equipment decontamination consisted of an Alconox soap wash, a distilled water rinse and an isopropanol rinse. Unused equipment was wrapped in aluminum foil to prevent cross contamination.

2.2.3. Sludge Sample

One high hazard sludge sample (S78) was obtained from the Keystone facility. This sample was collected from the Oil Pond located on the northeast portion of the site. The sample was collected with a stainless steel ladle and spoon.

TABLE 1

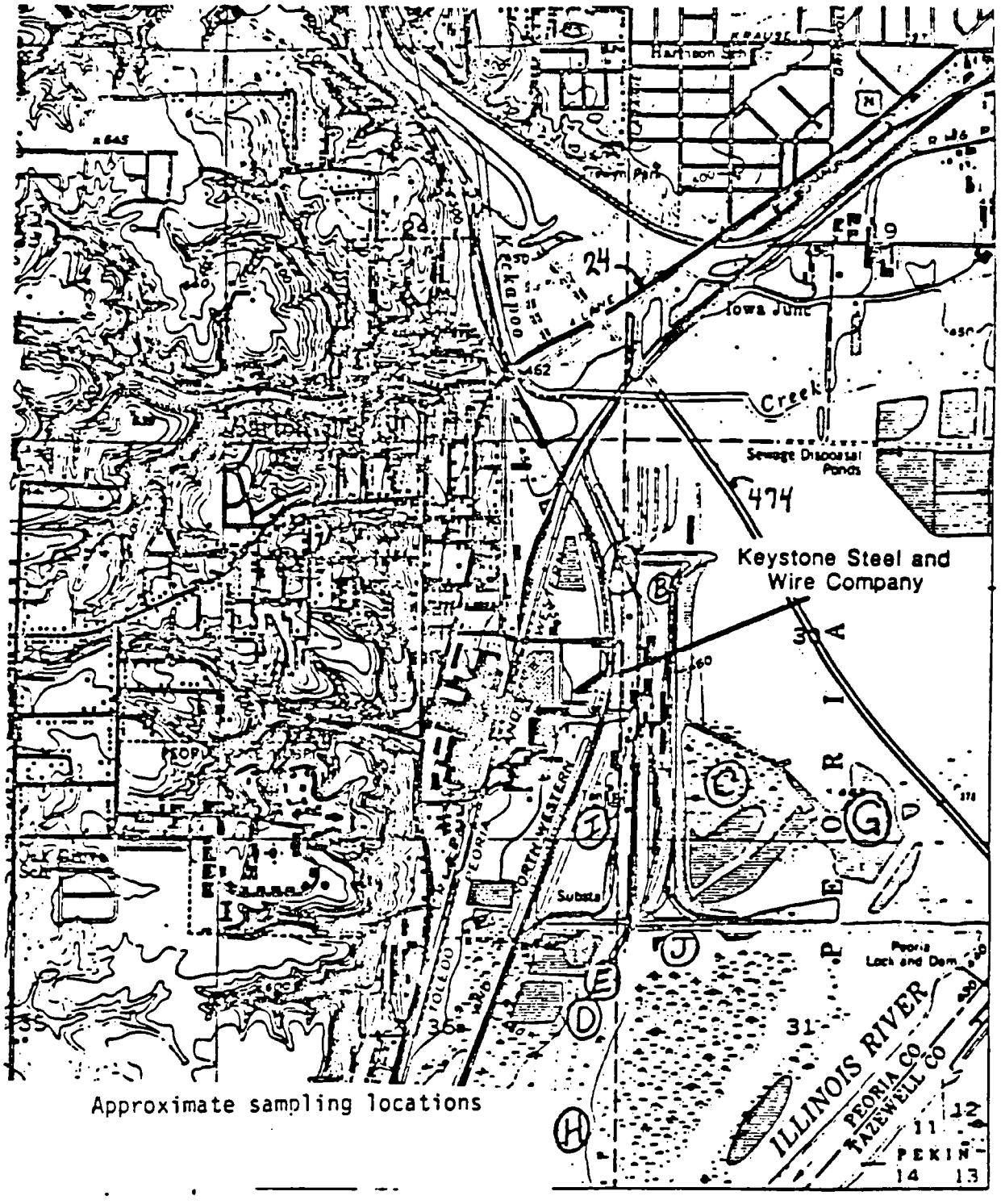
SAMPLE LOCATIONS

Station	Description
S77	Sheen Pond, sediment sample located at north central edge of pond.
S78	Oil Pond - A, high concentration sludge sample located at northwest corner of pond.
S79	Oil Pond - B, high concentration liquid sample located at northeast corner of pond.
S80	Cooling Pond - A, high concentration liquid sample located at the more northern pond of the two in question in this area.
S81	Cooling Pond - B, high concentration liquid sample located at the more southern pond of the two in question in this area.
S82	F Pond, sediment sample located near east central edge of pond.
S83	F Pond - A, liquid sample located near edge of pond and north of sample S82.
S84	F Pond - B, liquid sample located near southern edge of pond.
S85	Land Treatment (Old Landfill) - A, soil sample located in middle of west landfill.
S86	Land Treatment (Old Landfill) - B, soil sample located in middle of east landfill.
S87	North Sludge Pond, liquid sample located near wooden dock that extends into the pond. This was near the pond edge south of the outfall.
S88	South Sludge Pond, sediment sample located near north central edge of pond.
S89	East Sludge/Waste Ponds, sediment sample located at southwest corner of pond.
S90	East Sludge/Waste Ponds, liquid sample located at north side of pond.

TABLE 1

SAMPLE LOCATIONS

Station	Description
S91	Mud Lake, liquid sample located at southern end of pond in southern section of property.
S92	Vertical Tank A, soil sample located at southern side of bermed area.
S93	Vertical Tank B, soil sample located at northern side of bermed area.
S94	Pond - Green Bottom, sediment samples located at southwest end of pond.
S95	Background - A, soil sample located in wooded area, north section of site. Approximately 20 feet west of sample S96.
S96	Background - B, soil sample located in same area as sample S95. Approximately 20 feet east of sample S95.
S97	D Pond, this liquid sample is a duplicate of sample S83.
S98	Surface Impoundment, this sediment sample is a duplicate of sample S77.
S99	Field Blank



From: U.S.G.S. Peoria West, Ill. Quadrangle
Approximate Scale: 1 inch = 2,000 feet

FIGURE 1. KEYSTONE LOCATION MAP

Taken from: SEDIMENT SAMPLING AND ANALYSIS, April 20. 1987
Revised 6/11/87 (Contractors Report)

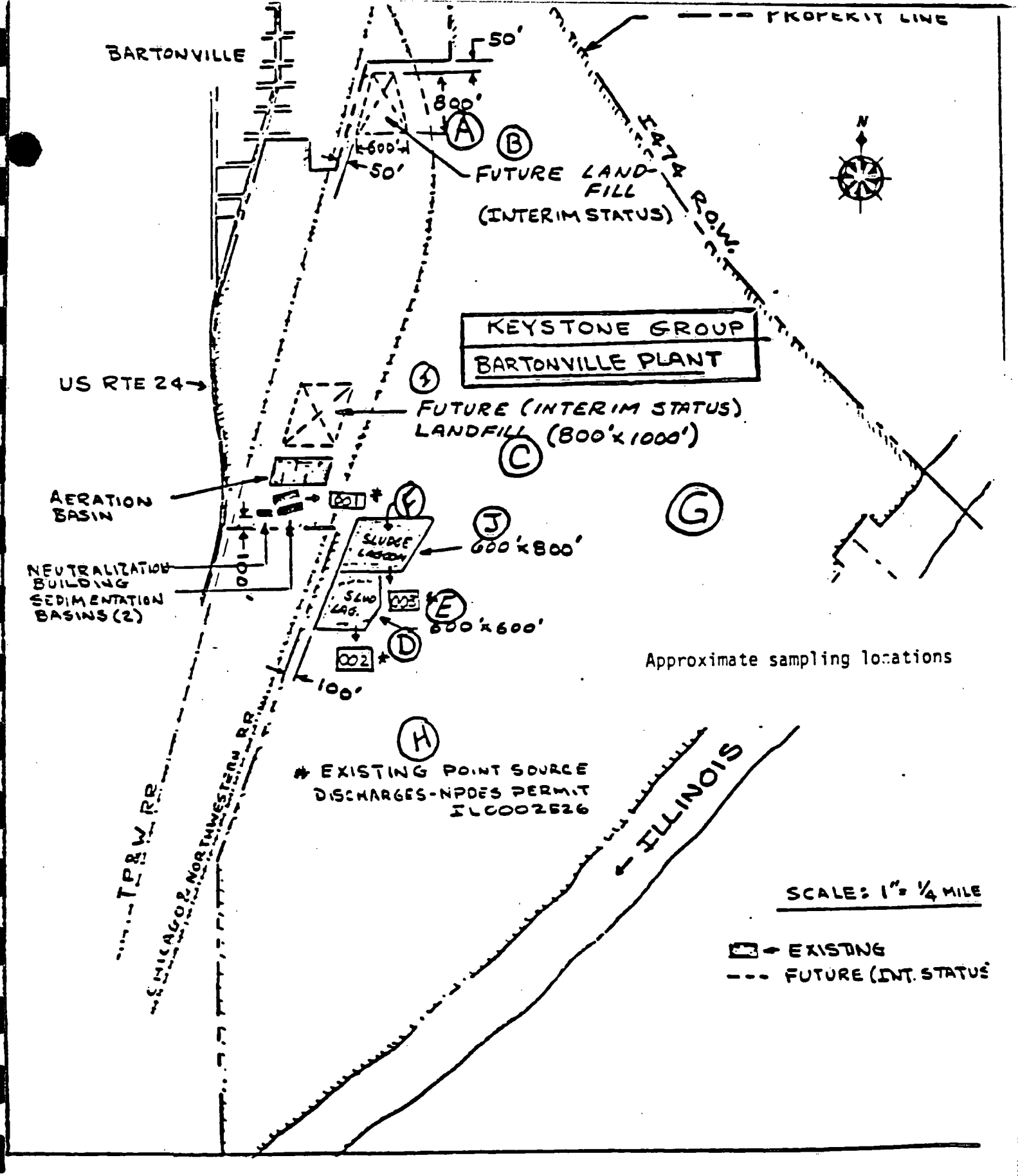
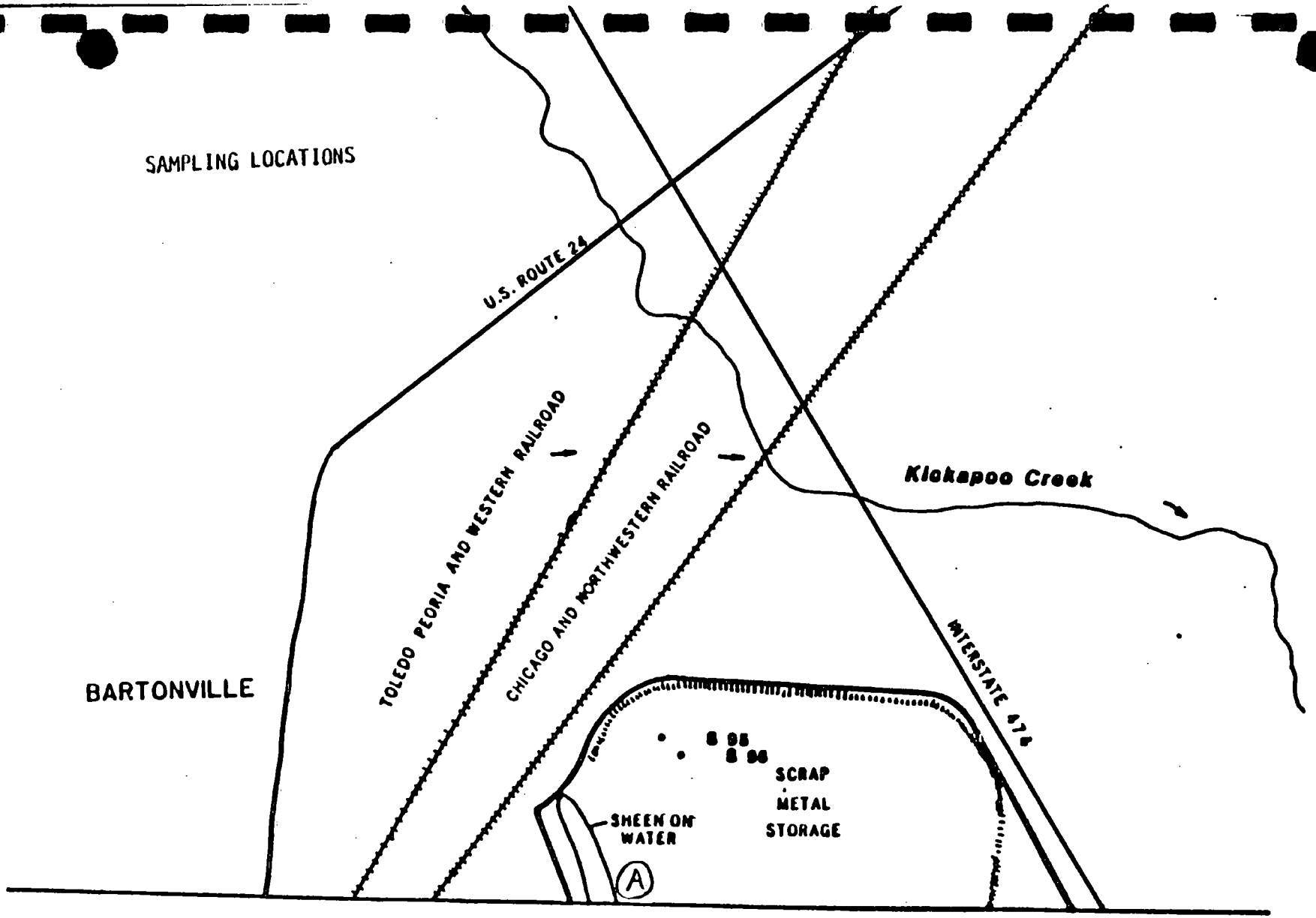

PROPERTY LINE
BARTONVILLE
50'
800'
A
B
600'
50'
FUTURE LAND-FILL (INTERIM STATUS)
I-474 R.O.W.
N
KEYSTONE GROUP
BARTONVILLE PLANT
US RTE 24
F
FUTURE (INTERIM STATUS) LANDFILL (800'x1000')
C
AERATION BASIN
001
F
J
SLUDGE LAGOON
600'x800'
G
NEUTRALIZATION BUILDING
SEDIMENTATION BASINS (2)
SLUDGE LAG.
003
E
600'x600'
D
002
100'
Approximate sampling locations
H
EXISTING POINT SOURCE DISCHARGES-NPDES PERMIT ILC002626
T P & W RR
CHICAGO & NORTHWESTERN RR
ILLINOIS
SCALE: 1" = 1/4 MILE
EXISTING
FUTURE (INT. STATUS)

FIGURE 2



Approximate Scale 1:6000

FIGURE 3

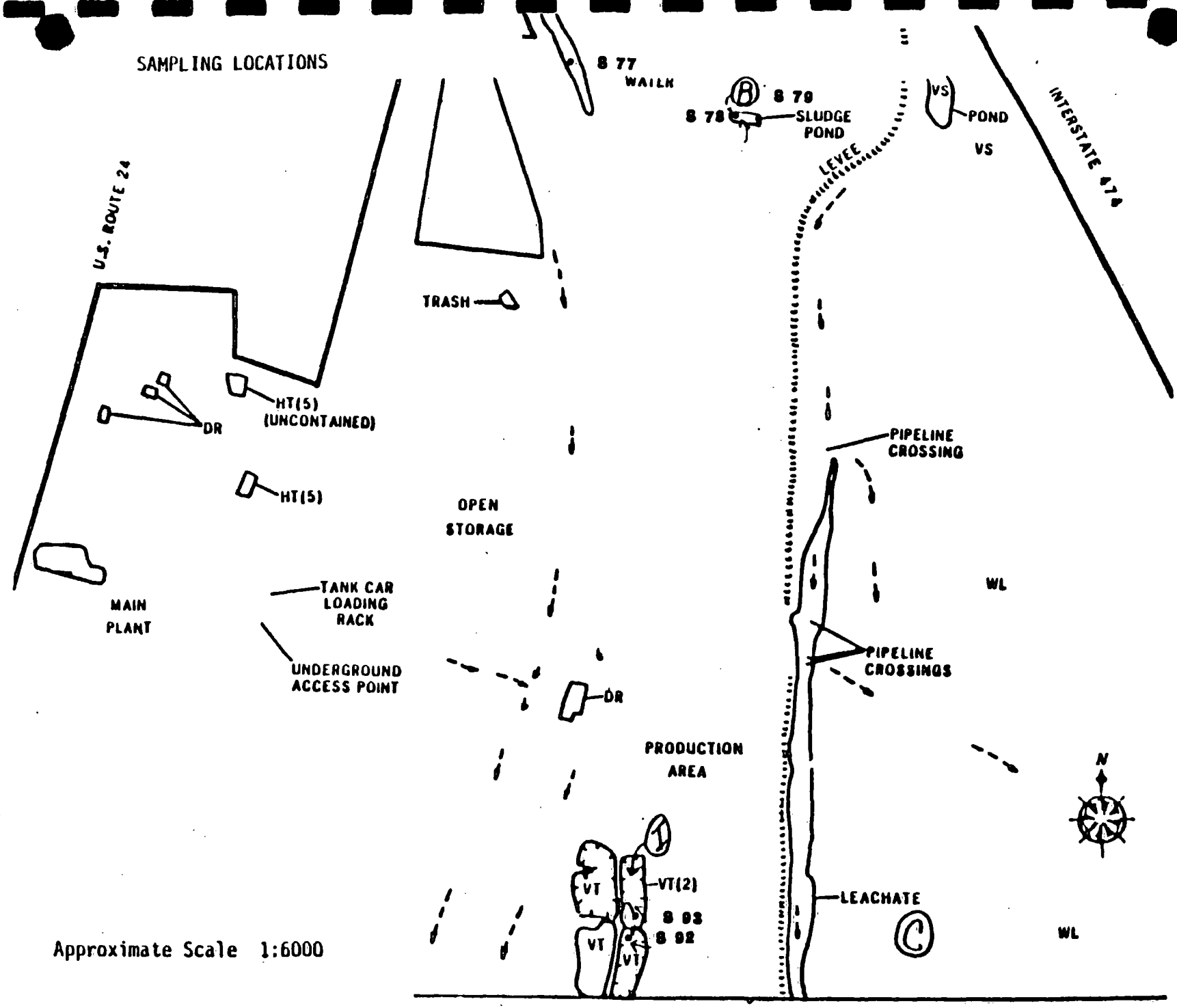

SAMPLING LOCATIONS
S 77
WALK
B
S 79
S 78
SLUDGE POND
VS
POND
VS
INTERSTATE 474
LEVEE
U.S. ROUTE 24
TRASH
HT(5) (UNCONTAINED)
DR
HT(5)
OPEN STORAGE
MAIN PLANT
TANK CAR LOADING RACK
UNDERGROUND ACCESS POINT
DR
PIPELINE CROSSING
WL
PIPELINE CROSSINGS
PRODUCTION AREA
N
A
VT
VT(2)
S 93
S 92
VT
VT
LEACHATE
C
WL
Approximate Scale 1:6000

FIGURE 4

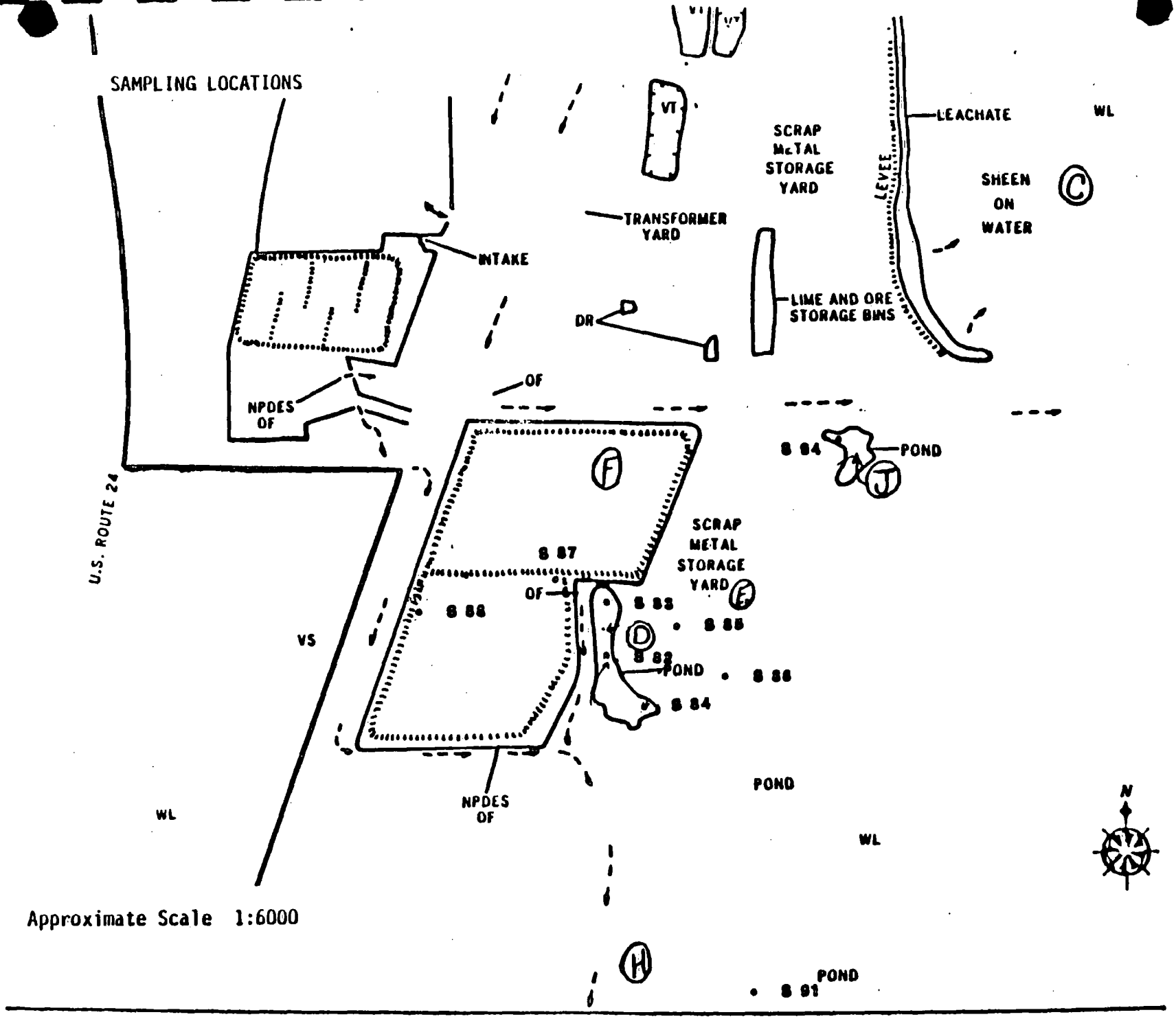

SAMPLING LOCATIONS
VT
SCRAP METAL STORAGE YARD
LEACHATE
WL
LEVEE
SHEEN ON WATER
C
TRANSFORMER YARD
INTAKE
LIME AND ORE STORAGE BINS
DR
OF
NPDES OF
S 94
POND
J
F
U.S. ROUTE 24
SCRAP METAL STORAGE YARD
S 87
OF
S 88
S 83
S 85
D
S 82
POND
S 86
S 84
VS
POND
NPDES OF
WL
WL
N
Approximate Scale 1:6000
H
POND
S 91

FIGURE 5

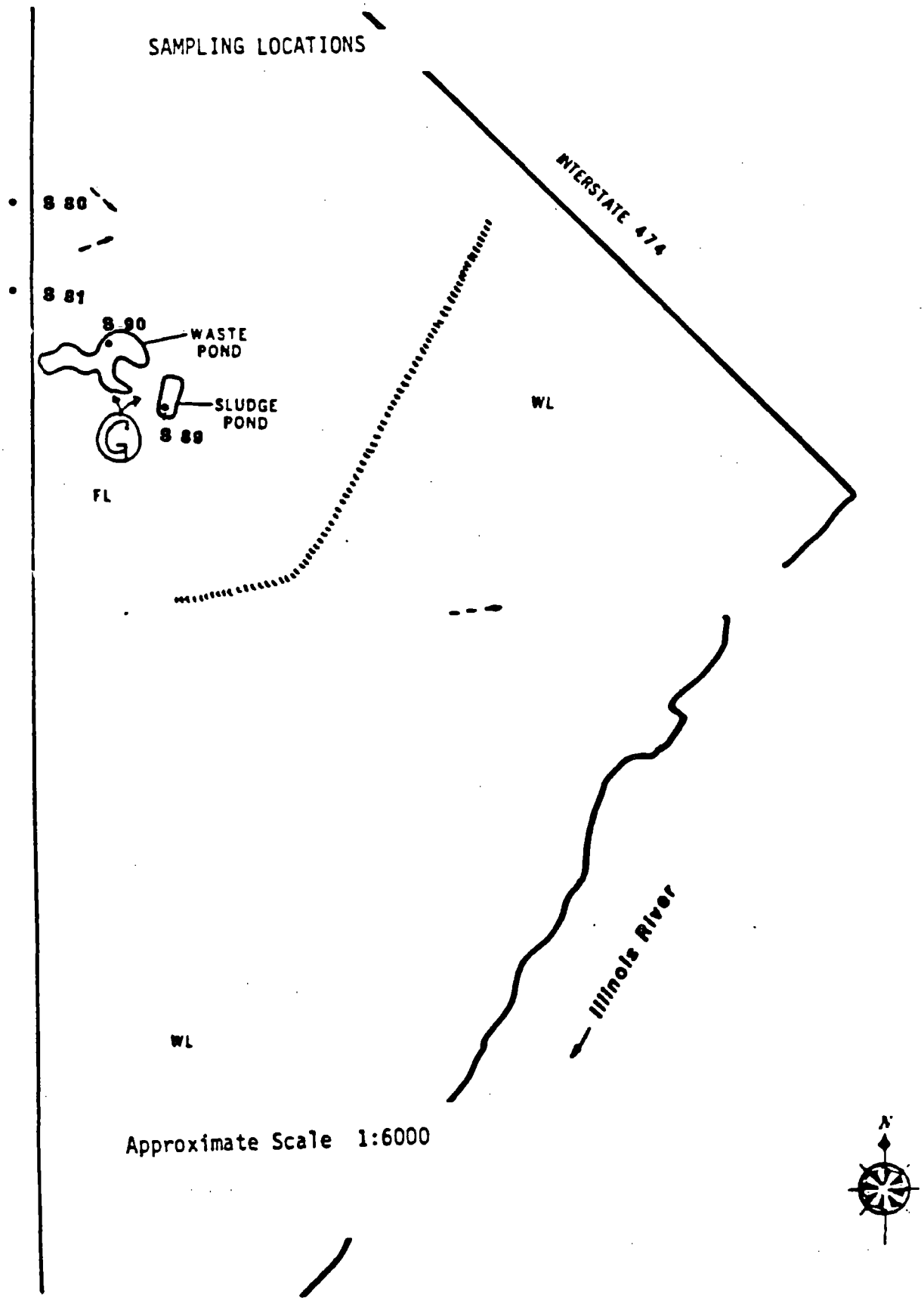

SAMPLING LOCATIONS
INTERSTATE 474
S 80
S 81
S 90
WASTE POND
SLUDGE POND
S 89
WL
FL
Illinois River
WL
Approximate Scale 1:6000
N

FIGURE 6

APPENDIX A

Field Log Sheets

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Sheen Pond, Center of Dry Pond.

Field Sample Number: S77

Purpose of Sampling: Check for soil contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): ____

Sampling Methodology: Collected composite sample from 6-12 inches using a stainless steel bucket auger. Sample was composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12/8/87, 1245

Results of any Field Measurements Made: None

Observations and Comments: U.S. EPA Sample shipped to CLP on 12/9/87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Oil Pond A, taken from northwest corner of pond.

Field Sample Number: S-78

Purpose of Sampling: Check for sediment contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Collected sludge/sediment sample from the bottom of "Oil Pond: using a stainless steel dipper-ladle.

Date and Time of Collection: 12/8/87, 1400

Results of any Field Measurements Made: HNU 0 PPM above background. "High-Hazard Sample."

Observations and Comments: U.S. EPA high hazard sample shipped to CLP (SAS) on 12-10-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Oil Pond B, taken from northeast corner of pond.

Field Sample Number: S-79

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample Bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 1145

Results of any Field Measurements Made: "High Hazard Sample" HNU (HEADSPACE) 0 PPM above background.

Observations and Comments: U.S.EPA high hazard sample shipped to CLP (SAS) on 12-10-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Cooling Pond A. Taken from northern pond.

Field Sample Number: S-80

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 1050

Results of any Field Measurements Made: "High Hazard Sample" HNU 0 PPM above background.

Observations and Comments: U.S.EPA high hazard sample shipped to CLP (SAS) on 12-10-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Cooling Pond B. Taken from southern pond.

Field Sample Number: S-81

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 1100

Results of any Field Measurements Made: "High Hazard Sample"

Observations and Comments: U.S.EPA high hazard sample shipped to CLP (SAS) on 12-10-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: F Pond. Collected near center of pond at eastern edge.

Field Sample Number: S-82

Purpose of Sampling: Check for sediment contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): _____

Sampling Methodology: Composite sediment sample collected with a stainless steel dipper (ladle) and a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1600

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB;s and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: F Pond A. Collected near edge of pond, north of S-82.

Field Sample Number: S-83

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 0900

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: F Pond B. Collected near edge at south end of pond.

Field Sample Number: S-84

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 0905

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Land Treatment (Old Landfill) A. Taken from west landfill (center).

Field Sample Number: S-85

Purpose of Sampling: Check for soil contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and Solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Collected composite sample from 6-12 inches using a stainless steel trowel. Sample was composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1530

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB;s and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Land Treatment Cold Landfill - B. Taken from east landfill.

Field Sample Number: S-86

Purpose of Sampling: Check for soil contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): _____

Sampling Methodology: Collected composite sample from 6-12 inches using a stainless steel trowel. Sample was composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1535

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: North Sludge Pond. Collected near dock, south of outfall at shore edge.

Field Sample Number: S-87

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 0930

Results of any Field Measurements Made: None

Observations and Comments: U.S. EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: South Sludge Pond. Collected from north edge, mid section of pond.

Field Sample Number: S-88

Purpose of Sampling: Check for sediment contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): _____

Sampling Methodology: Composite sediment sample taken with a stainless steel ladle and a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1620

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: East Sludge/Waste Ponds. Sample collected from southwest corner of pond.

Field Sample Number: S-89

Purpose of Sampling: Check for sediment contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Composite sediment sample collected with a stainless steel ladle and a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1500

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: East Sludge/Waste Ponds. Collected from north side of pond.

Field Sample Number: S-90 (Includes Matrix Spike)

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): _____

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 1045

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Mud Lake. Collected from pond at southern edge of property on eastern edge of pond.

Field Sample Number: S-91

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 0920

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Vertical Tank A. Collected from southern end of bermed area.

Field Sample Number: S-92

Purpose of Sampling: Check for soil/sediment contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): _____

Sampling Methodology: Collected sample from 6-7 inch depth with a stainless steel trowel. Sample was composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1420

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Vertical Tank B. Collected from northern end of bermed area.

Field Sample Number: S-93

Purpose of Sampling: Check for soil/sediment contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Collected sample from 2-5 inch. Depth with a stainless steel trowel. Sample was composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1425

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Pond (Green Bottom). Collected from southwest end of pond.

Field Sample Number: S-94

Purpose of Sampling: Check for sediment contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): _____

Sampling Methodology: Composite sediment sample taken with a stainless steel ladle and a stainless steel spoon.

Date and Time of Collection: 12-9-87, 0925

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Background A. Collected from wooded area, north section of site. Approximately 20 ft. west of S-96.

Field Sample Number: S-95

Purpose of Sampling: Check for soil contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known): _____

Sampling Methodology: Composite soil sample collected with a stainless steel trowel and composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1310

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed): _____

Signature: _____

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Background B. collected from wooded area, north section of site. Approximately 20 ft. east of S-95.

Field Sample Number: S-96

Purpose of Sampling: Check for soil contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Composite soil sample collected with a stainless steel trowel and composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1315

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: D-Pond. Duplicate of S83.

Field Sample Number: S-97

Purpose of Sampling: Check for surface water contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Grab sample collected by dipping sample bottle into pond. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 0910

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile or organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Sheen Pond. (Duplicate of S-77).

Field Sample Number: S-98

Purpose of Sampling: Check for soil contamination.

Type of Waste: Electric ARC furnace dust (K061), spent pickle liquor (K062), 1-1-1-Trichloroethane still bottoms (F002), and solidified paint waste (D001).

Process (if known) Producing Waste: Steel Industry

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Collected composite sample from 6-12 inches using a stainless steel bucket auger. Sample was composited in a stainless steel pan with a stainless steel spoon.

Date and Time of Collection: 12-8-87, 1245

Results of any Field Measurements Made: None

Observations and Comments: U.S. EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

FIELD LOG SHEET

Facility Name: Keystone Steel and Wire Company

Facility Address: 7000 S.W. Adams St., Peoria, Illinois

Location and Description of Sample Point: Field Blank

Field Sample Number: S-99

Purpose of Sampling: Field Blank

Type of Waste: Same as previous page.

Process (if known) Producing Waste: Same as previous page.

Suspected Composition, Including Concentrations (if known):

Sampling Methodology: Poured distilled water into sample bottles. All sample bottles were iced to 4 degrees centigrade.

Date and Time of Collection: 12-9-87, 1055

Results of any Field Measurements Made: None

Observations and Comments: U.S.EPA sample shipped to CLP on 12-9-87. Requested analyses for semi-volatile organics, volatile organics, PCB's and metals.

Name (Printed):

Signature:

APPENDIX B

Chain of Custody Forms

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS
THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER 8689 SITE NAME KEYSTONE STEEL & WIRE LABORATORY ORGANIC: NANCO INORGANIC: JTC DATE SHIPPED 12-10-82

SUPERFUND CU NUMBER _____ EPA RPM (S.M.S.)/(CES) KEVIN MOSS PAGE 1 OF 1

ACTIVITY NUMBER _____

CRL LOG NUMBER	SAS # 3155 I ORGANIC ~~TRAFFIC REPORT NUMBER~~ SET 18	SAS # 3249-I INORGANIC ~~TRAFFIC REPORT NUMBER~~ SET 16	WATER OR LIQUIDS: ACID-BASE NEUTRAL CPDY ORGANIC SCAN UG/L TOX17572	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET111	WATER CYNANIDE UG/L MIN74919	NITRATE/NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7352	RESIDUE, NON-FILT TSS MG/L MIN7372			SEDIMENTS: ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS SCAN MG/KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET412	CYANIDE MG/KG MIN44930	NITRATE/NITRITE MG/KG	AMMONIA MG/KG MIN42925				
88JG01578	3155-I-01	3249-I-01													X	X	X		X							
88JG01579	3155-I-02	3249-I-02	X	X	X		X																			
88JG01580	3155-I-03	3249-I-03	X	X	X		X																			
88JG01581	3155-I-04	3249-I-04	X	X	X		X																			

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: 88T601

PROJECT NAME:

SAMPLERS: (Signature) Ken Kruger

HIGH CONCENTRATION
SASH 3155-I
SET 18

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	ORGANICS 8 OZ. (HSL)						REMARKS SAS #	REMARKS TAG #
S78	12/4/87	1400	✓		OIL POND A (SLUDGE)	1	1						3155-I-01 SET 18	80580
S79	12/4/87	1345		✓	OIL POND B (LIQUID)	1	1						3155-I-02 SET 18	80582
S80	12/4/87	1050		✓	COOLING POND A (LIQ.)	1	1						3155-I-03 SET 18	80576
S81	12/4/87	1100		✓	COOLING POND B (LIQ)	1	1						3155-I-04 SET 18	80578

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Kruger	12/10/87				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

Remarks: SHIPPED: FEDERAL EXPRESS
TO: NANCO LAB
AIRBILL # 3366225516
CUSTODY SEAL # 11653 & 11654

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5. 15717

ENVIRONM[illegible]AL PROTECTION AGENCY
Office of Enforcement

RE[illegible]N 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: [illegible]-01
PROJECT NAME:
SAMPLERS: (Signature) Ken Kruegler

CAS # 3249-I
SET 16
HIGH CONCENTRATION

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	INORGANICS & OZ. METALS						REMARKS CAS #	TAG #
[illegible]	[illegible]	1400	✓		OIL POND A (SLUDGE)	1	1						3249-I-01 SET 16	80579
[illegible]79	[illegible]	1345	[illegible]	✓	OIL POND B (LIQUID)	1	1						3249-I-02 SET 16	80581
S80	12/9/87	1050		✓	COOLING POND A (LIQ.)	1	1						3249-I-03 SET 16	80575
S81	12/9/87	1100		✓	COOLING POND B (LIQ)	1	1						3249-I-04 SET 16	80577

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Kruegler	12/10/87 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks SHIPPED: FEDERAL EXPRESS TO: JTC AIRBILL # 3366225435 CUST DY DEAL # 11651 + 11652	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5-15718

APPENDIX C

Organic and Inorganic Traffic Reports

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 8689

SAS NO: (IF APPLICABLE)

ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER
NPLD O&M OTHER _____
NON-SUPERFUND— RCRA PROGRAM

SITE NAME: KEYSTONE STEEL

CITY, STATE: PEORIA IL

SITE SPILL ID:

REGION NO: V

SAMPLING COMPANY ② METCALF + EDDY

SAMPLER: (NAME) KEN KRUEGER

SHIP TO: ③
S-CUBED
3398 CARMEL MTN. RD.
SAN DIEGO, CA 92121

ATTN: PHIL RYAN

SAMPLING DATE: ④
BEGIN: 12/8/87 END: 12/8/87

DATE SHIPPED: 12/8/87 CARRIER: ~~FEDEX~~ ⑤

AIRBILL NO: 6507418212

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

TRIPLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
ES 301	4	L	✓	✓	✓		SHEEN POND	88JG01S77
ES 302	5	L	✓	✓	✓		F POND	88J01S82
ES 303	4	L	✓	✓	✓		LAND TRET. A	88JG01S85
ES 304	4	L	✓	✓	✓		LAND TRET. B	88JG01S86
ES 305	5	L	✓	✓	✓		SOUTH POND SLUDGE	88JG01S88
ES 306	5	L	✓	✓	✓		E. SLUDGE WASTE POND	88JG01S89
ES 307	4	L	✓	✓	✓		VERT. TANK A	88JG01S92
ES 308	4	L	✓	✓	✓		VERT TANK SOIL B	88JG01S93
ES 309	5	L	✓	✓	✓		POND (GREEN)	88J01S94
ES 310	4	L	✓	✓	✓		BACKGROUND A	88JG01S95
ES 311	4	L	✓	✓	✓		BACKGROUND B	88JG01S96
ES 312	5	L	✓	✓	✓		SURF. IMP.	88JG01S98

EPA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 9689

SAS NO: (IF APPLICABLE)

ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER NPLD O&M OTHER _____
NON-SUPERFUND— RCRA PROGRAM

SITE NAME: KEYSTONE STEEL

CITY, STATE: PEORIA IL

SITE SPILL ID:

REGION NO: V

SAMPLING COMPANY ② METCALF + EDDY

SAMPLER: (NAME) KEN KRUEGER

SHIP TO: ③
S-CUBED
3398 CARMEL MTN. RD.
SAN DIEGO, CA 92121

ATTN: PHIL RYAN

SAMPLING DATE: ④

BEGIN: 12/9/87 END: 12/9/87

DATE SHIPPED: 12/9/87 CARRIER: FED EX ⑤

AIRBILL NO: 6507418212

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

TRIPLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
~~ES 314~~	~~1~~	~~L~~	~~✓~~	~~✓~~	~~✓~~		~~[illegible]~~	~~[illegible]~~
~~ES 313~~	~~1~~	~~L~~	~~✓~~	~~✓~~	~~✓~~		~~INCLUDES [illegible]~~	~~[illegible]~~
ES 316	1	L	✓	✓	✓		E-POND B	88JG01524
ES 320	1	L	✓	✓	✓		FLOODPLAIN	88JG01519
ES 319	1	L	✓	✓	✓		D-POND	88JG01597

EPA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
88JS01	

SAMPLERS: (Signature) Kenneth L. Kruegler

CASE # 8689
LOW CONCENTRATION SOIL/SEDIMENT

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	INORGANICS 8 OZ. (METALS)						REMARKS ITR# (CLP#)	TAG #
S77	12/8/87	1245	✓		SHEEN POND (SOIL)	1	1						MEQ 401	124404
S82	12/8/87	1600	✓		F POND (SEDIMENT)	1	1						MEQ 402	124408
S85	12/8/87	1530	✓		LAND TREATMENT (OLD DEL) A	1	1						MEQ 403	124412
S86	12/8/87	1535	✓		LAND TREATMENT (OLD DEL) - B	1	1						MEQ 404	124416
S88	12/8/87	1620	✓		SOUTH SLUDGE POND (SED)	1	1						MEQ 405	124420
S89	12/8/87	1500	✓		EAST SLUDGE/WASTE PONDS (SED)	1	1						MEQ 406	124424
KK	12/8/87													
S92	12/8/87	1420	✓		VERTICAL TANK A (SED)	1	1						MEQ 407	124428
S93	12/8/87	1425	✓		VERTICAL TANK B (SED)	1	1						MEQ 408	124432
S94	12/8/87		✓		POND (GREEN BOTTOM) (SED)	1	1						MEQ 409	124436
S95	12/8/87	1310	✓		BACKGROUND A (SOIL)	1	1						MEQ 410	124440
S96	12/8/87	1315	✓		BACKGROUND B (SOIL)	1	1						MEQ 411	124444
S98	12/8/87	1245	✓		SURFACE IMPOUNDMENT	1	1						MEQ 412	124448
													END OF SHIPMENT"	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Kruegler	12/9/87 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time		

Remarks SHIPPED: FEDERAL EXPRESS
TO: NORTHERN LABS
AIRBILL: 6507418201
CUSTODY SEAL # 11684 + 11685

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 15711

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: 88J601
PROJECT NAME:
SAMPLERS: (Signature) Ken Krueger

CASE# 8689
LOW CONCENTRATION
SOIL/SEDIMENT

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	ORGANICS 8 oz. EXTRACTABLE	120 ml VOA					REMARKS: ATR# (CLP#)	TAG#
S77	12/8/87	1245	✓		SHEEN POND (SOIL)	3	1	2					ES301	124401, 02, 03
S82	12/8/87	1600	✓		E POND (SEDIMENT)	3	1	2					ES302	124405, 06, 07
S85	12/8/87	1530	✓		LAND TREATMENT (OLD LDFL)-A	3	1	2					ES303	124409, 10, 11
S86	12/8/87	1535	✓		LAND TREATMENT (OLD LDFL)-B	3	1	2					ES304	124413, 14, 15
S88	12/8/87	1620	✓		SOUTH SLUDGE POND	3	1	2					ES305	124417, 18, 19
S89	12/8/87	1500	✓		EAST SLUDGE / WASTE PONDS	3	1	2					ES306	124421, 22, 23
S92	12/8/87	1420	✓		VERTICAL TANK A	3	1	2					ES307	124425, 26, 27
S93	12/8/87	1425	✓		VERTICAL TANK B	3	1	2					ES308	124429, 30, 31
S94	12/8/87	0925	✓		POND (GREEN BOTTOM)	3	1	2					ES309	124433, 34, 35
S95	12/8/87	1310	✓		BACKGROUND A (SOIL)	3	1	2					ES310	124437, 38, 39
S96	12/8/87	1315	✓		BACKGROUND B (SOIL)	3	1	2					ES311	12441, 42, 43
S98	12/8/87	1245	✓		SURFACE IMPOUNDMENT	3	1	2					ES312	12445, 46, 47
													"END OF SHIPMENT"	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Krueger	12/9/87 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time		

Remarks: SHIPPED: FEDERAL EXPRESS
TO: S-CUBED
AIRBILL # 6507418212
CUSTODY SEALS # 11682 & 11683

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5 15728

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
88T001	8

SAMPLERS: (Signature) Kenneth S. Krueger

CASE # 8689
LOW CONCENTRATION
ALL WATER/LIQUID

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	ORGANICS	TOOZ (EXTRACTABLE)	[illegible] VOA				REMARKS DEC #	TAG #
S83	12/9/87	0900		✓	F-POND-A	2	2						ES 315	124461 + 60
S83	12/9/87	0900		✓	F POND-A	2		2					ES 315	124463 + 62
S90	12/9/87	1045		✓	EAST SLUDGE WASTE POND	2	2						ES 317	124471 + 70
"	"	"		✓	"	2		2					ES 317	124472 + 73
"	"	"		✓	" (INCLUDES SPIKE)	2	2						ES 317	124490 + 89
"	"	"		✓	" (INCLUDES SPIKE)	X4	X2	X2					ES 317	124491, 92, 93, 94
S91	12/9/87	0920		✓	MUD LAKE	2	2						ES 318	124475 + 124476
S91	12/9/87	0920		✓	MUD LAKE	2		2					ES 318	124477 + 78
S87	12/9/87	0930		✓	NORTH SLUDGE POND	2	2						ES 314	124454 + 55
S87	12/9/87	0930		✓	NORTH SLUDGE POND	2		2					ES 314	124456 + 57
													"END OF SHIPMENT"	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Krueger	12/9/87 1700				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time		

Remarks SHIPPED: FEDERAL EXPRESS
TO: S-CUBED
AIRBILL # 6507418212
CUSTODY SEAL # 11561 + 10076

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5 - 15720

CENTRAL REGIONAL LABORATORY SAMPLE DATA REPORT
ORGANICS/INORGANICS
THIS FORM IS TO BE USED FOR SAMPLES SENT TO CONTRACT ONLY

CASE NUMBER 8689 SITE NAME KEYSTONE STEEL & WIRE LABORATORY ORG. - S-CUBED INORG. - NORTHERN LABS DATE SHIPPED 12-9-87

SUPERFUND CU NUMBER _____ EPA RPM (S.M.S.)/(CES) KEVIN MOSS PAGE 1 OF 1

ACTIVITY NUMBER _____

CRL LOG NUMBER	ORGANIC TRAFFIC REPORT NUMBER	INORGANIC TRAFFIC REPORT NUMBER	WATER OR LIQUIDS												SEDIMENTS											
			ACID-BASE NEUTRAL CPDY ORGANIC SCAN UG/L TOX17574	VOLATILE ORGANIC ANALYSIS ORGANIC SCAN UG/L TOX17564	WATER POLYCHLORINATED BIPHENYLS UG/L PES 17144	WATER CHLORINATED PESTICIDES UG/L PES17134	TOTAL METALS IN WATER UG/L MET1111	WATER CYNANIDE UG/L MIN74919	NITRATE/NITRITE MG/L MIN7284	AMMONIA MG/L MIN7294	RESIDUE, FILTERABLE TDS MG/L MIN7362	RESIDUE, NON-FILT TSS MG/L MIN7372			ACID-BASE NEUTRAL CPDS ORGANIC SCAN MG/KG TOX215722	VOLATILE ORGANIC ANALYSIS SCAN MG/KG TOX215622	SEDIMENTS POLYCHLORINATED BIPHENYLS MG/KG PES211422	SEDIMENT CHLORINATED PESTICIDES MG/KG 211322	TOTAL METALS MG/KG MET413	CYANIDE MG/KG MIN44930	NITRATE/NITRITE MG/KG	AMMONIA MG/KG MIN42925				
88JG01577	ES 301	MEQ 401													X	X	X		X							
88JG01582	ES 302	MEQ 402													X	X	X		X							
88JG01585	ES 303	MEQ 403													X	X	X		X							
88JG01586	ES 304	MEQ 404													X	X	X		X							
88JG01588	ES 305	MEQ 405													X	X	X		X							
88JG01589	ES 306	MEQ 406													X	X	X		X							
88JG01592	ES 307	MEQ 407													X	X	X		X							
88JG01593	ES 308	MEQ 408													X	X	X		X							
88JG01594	ES 309	MEQ 409													X	X	X		X							
88JG01595	ES 310	MEQ 410													X	X	X		X							
88JG01596	ES 311	MEQ 411													X	X	X		X							
88JG01598	ES 312	MEQ 412													X	X	X		X							
88JG01583	ES 315	MEQ 415	X	X	X		X																			
88JG01584	ES 316	MEQ 416	X	X	X		X																			
88JG01587	ES 314	MEQ 414	X	X	X		X																			
88JG01590	ES 317	MEQ 417	X	X	X		X																			
88JG01591	ES 318	MEQ 418	X	X	X		X																			
88JG01597	ES 319	MEQ 419	X	X	X		X																			
88JG01599	ES 320	MEQ 420	X	X	X		X																			

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: 88J001

PROJECT NAME:

SAMPLERS: (Signature) Kenneth L. Krueger

CASE # 8689
LOW CONCENTRATION
"ALL WATER/LIQUID"

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	ORGANICS 80 OZ. EXTRACTABLE	40 ml VOA					REMARKS OTR# (CLP#)	TAG #
S84	12-9-87	0905		✓	F-POND B	2	2						ES316/ES316	124466/124465
S84	12-9-87	0905		✓	F-POND B	2		2					ES316	124468/124467
S99	12-9-87	1055		✓	FIELD BLANK	2	2						ES320	124485/124486
S99	12-9-87	1055		✓	FIELD BLANK	2		2					ES320	124487/124488
S97	12-9-87	0910		✓	D-POND	2	2						ES319	124481/124480
S97	12-9-87	0910		✓	D-POND	2		2					ES319	124482/124483

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Krueger	12-9-87 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time		

Remarks: SHIPPED: FEDERAL EXPRESS
TO: S-CUBE D
AIRBILL # 6507418212
CUSTODY SEAL # 11571 & 11681

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 15729

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO.: 88JG01

PROJECT NAME:

SAMPLERS: (Signature) Kenneth A. Krueger

CASE # 8859
LOW CONCENTRATION
"ALL WATER/LIQUID"

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	INORGANICS 1 LITER (METALS)						REMARKS: ITR# (CLP#)	REMARKS: TAG#
~~[illegible]~~	~~[illegible]~~			✓	~~COOLING POND A~~	~~1~~	~~1~~						~~MEQ 413~~	~~124449~~ KK
~~[illegible]~~	~~[illegible]~~			✓	~~COOLING POND B~~	~~1~~	~~1~~						~~MEQ 414~~	~~124458~~ KK
S83	12/4/87	0900		✓	F POND - A	1	1						MEQ 415	124459
S84	12/4/87	0905		✓	F POND - B	1	1						MEQ 416	124464
S90	12/4/87	1045		✓	EAST SLUDGE/WASTE POND	1	1						MEQ 417	124469
S91	12/4/87	0920		✓	MUD LAKE	1	1						MEQ 418	124474
S97	12/4/87	0910		✓	D - POND	1	1						MEQ 419	124479
S99	12/4/87	1055		✓	FIELD BLANK	1	1						MEQ 420	124484
S87	12/4/87	0930		✓	NORTH SLUDGE POND	1	1						MEQ 414	124458

"END OF SHIPMENT"

NOTE: METALS ~~FILTERED~~ PRESERVED WITH HNO3 (LIQUID)

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Ken Krueger	12/4/87 1500				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: SHIPPED: FEDERAL EXPRESS TO: NORTHERN LABS AIRBILL # 6507418201 CUSTODY SEAL # 11684 + 11685	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5-15712

USEPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 8689

SAS NO: (IF APPLICABLE)

ORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER NPLD O&M OTHER _____
NON-SUPERFUND— RCRA PROGRAM

SITE NAME: KEYSTONE STEEL

CITY, STATE: PEORIA, IL. SITE SPILL ID:

REGION NO: V SAMPLING COMPANY ② METCALF + EDDY
SAMPLER: (NAME) KEN KRUEGER

SHIP TO: ③
S-CUBED
3398 CARMEL MTN. RD.
SAN DIEGO, CA 92121

ATTN: PHIL RYAN

SAMPLING DATE: ④
BEGIN: 12/9/87 END: 12/9/87

DATE SHIPPED: 12/9/87 CARRIER: FEDEX ⑤
AIRBILL NO: 6507418212

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

TRIPLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW/MED. H = HIGH (SAS)	Ⓒ RAS ANALYSIS: VOLATILE	BASE/NEUT /ACID	PESTICIDE /PCB's		Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
ES 315	1	L	✓	✓	✓		F POND-A	88J601S88
ES 317	1	L	✓	✓	✓		EAST SLUDGE RETR.	88J601S90
ES 318	1	L	✓	✓	✓		MUDLAKE	88J601S91
~~ES 319~~	~~1~~	~~L~~	~~✓~~	~~✓~~	~~✓~~		~~D POND~~	~~[illegible]~~
(ES 317) NOTE: S90 INCLUDES MATRIX SPIKE DUPLICATE								
ES 314	1	L	✓	✓	✓		NORTH SLUDGE POND	88J601S87

EPA Form 2075-7 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 ALEXANDRIA, VA 22313
703/557-2490 FTS-557-2490

CASE NO: 4669

SAS NO: (IF APPLICABLE)

INORGANIC TRAFFIC REPORT

(FOR CLP USE ONLY)

TYPE OF ACTIVITY (CIRCLE ONE) ①
SUPERFUND—PA SI ESI RIFS RD RA ER NPLD O&M OTHER _____
NON-SUPERFUND— RCRA PROGRAM

SITE NAME: KEYSTONE STEEL

CITY, STATE: PEORIA, IL

SITE SPILL ID:

REGION NO: V

SAMPLING COMPANY ② METCALF + EDDY

SAMPLER: (NAME) KEN KRUEGER

SHIP TO: NORTHERN LABS ③
2400 CUMBERLAND DR.
SOUTH VALPARAISO, IN 46343

ATTN: S. NAGGAR

SAMPLING DATE: ④
BEGIN: 12/8/87 END: 12/8/87

DATE SHIPPED: 12/9/87 CARRIER: FED EX ⑤

AIRBILL NO: 6507418001

SAMPLE DESCRIPTION ⑥
(ENTER IN BOX A)
1. SURFACE WATER
2. GROUND WATER
3. LEACHATE
4. SOIL
5. SEDIMENT
6. OIL (SAS)
7. WASTE (SAS)

DOUBLE VOLUME REQUIRED FOR MATRIX SPIKE/DUPLICATE AQUEOUS SAMPLE

SHIP MEDIUM AND HIGH CONCENTRATION SAMPLES IN PAINT CANS

SEE REVERSE FOR ADDITIONAL INSTRUCTIONS

CLP SAMPLE NUMBER (FROM LABELS)	Ⓐ SAMPLE DESCRIPTION (FROM BOX 1) 1 2 3 4 5 6 7	Ⓑ CONCENTRATION L = LOW M = MED H = HIGH (SAS)	Ⓒ RAS ANALYSIS: TOTAL METALS	CYANIDE	DISSOLVED METALS	HIGH ONLY (SAS): SULFIDE	pH	CONDUCTIVITY	OXIDANTS	Ⓓ SPECIAL HANDLING	Ⓔ STATION LOCATION
MEQ 401	4	L	✓							SACCO POND	PPJG01S77
MEQ 402	5	L	✓							F POND	PPJG01S82
MEQ 403	4	L	✓							LANDFILL A	PPJG01S85
MEQ 404	4	L	✓							LANDFILL B	PPJG01S86
MEQ 405	5	L	✓							[illegible]	PPJG01S89
MEQ 406	5	L	✓							E-SLUDGE WEIR	PPJG01S91
MEQ 407	4	L	✓							VEET TANK A	PPJG01S92
MEQ 408	4	L	✓							VEET TANK B	PPJG01S93
MEQ 409	5	L	✓							[illegible]	PPJG01S94
MEQ 410	4	L	✓							BALLFIELD A	PPJG01S95
MEQ 411	4	L	✓							BALLFIELD B	PPJG01S96
MEQ 412	5	L	✓							[illegible]	PPJG01S98
MEQ 415	1	L	✓							F POND-A	PPJG01S83
MEQ 416	1	L	✓							F POND-B	PPJG01S84
MEQ 417	1	L	✓							E SLUDGE WASTE POND	PPJG01S90
MEQ 418	1	L	✓							MUD LAKE	PPJG01S91
MEQ 419	1	L	✓							D-POND	PPJG01S97
MEQ 420	1	L	✓							FIELD BLANK	PPJG01S99
MEQ 414	1	L	✓							NORTH SLUDGE POND	PPJG01S87

EPA Form 2075-6 (8-87)

WHITE — SMO COPY PINK — CLIENT COPY WHITE — LAB COPY FOR RETURN TO SMO YELLOW — LAB COPY

APPENDIX D

Special Analytical Service
List for Organic and Inorganic High Hazard Samples

U.S. ENVIRONMENTAL PROTECTION AGENCY
CLP Sample Management Office
P.O. Box 818 - Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

SAS Number
3155-I SETIA

SPECIAL ANALYTICAL SERVICE
PACKING LIST

Sampling Office:	Sampling Date(s):	Ship To:	For Lab Use Only
REG. V	12-8-87 - 87	NANCO LABORATORIES R.D. 6 ROBINSON LANE P.O. BOX 10 WAPPINGER FALLS, N.Y. 12590	Date Samples Rec'd:
Sampling Contact: KEN KRUEGER (name)	Date Shipped: 12/10/87	Attn: JOAN HETTINGER	Received By:
(212) 220-0900 (phone)	Site Name/Code:		

Sample Numbers	Sample Description i.e., Analysis, Matrix, Concentration	Sample Condition on Receipt at Lab
1. 3155-I-01	88JG01578 - OIL POND A (SLUDGE)	
2.		
3. 3155-I-02	88JG01579 - OIL POND B (~~SLUDGE~~ LIQUID) KK	
4.		
5. 3155-I-03	88JG01580 - ~~OIL~~ COOLING POND A (LIQ.) KK	
6.		
7. 3155-I-04	88JG01581 - COOLING POND B (LIQ.)	
8.		
9.	NOTE: ABOVE FOUR SAMPLES ARE	
10.	HIGH CONCENTRATION. (ONE	
11.	SLUDGE + THREE ARE LIQUID).	
12.	~~THERE~~ ARE TO BE ANALIZED	
13.	FOR EXTRACTABLE ORGANICS, VOA,	
14.	AND PCB'S.	
15.		
16.		
17.		
18.		
19.		
20.		

For Lab Use Only

White - SMO Copy, Yellow - Region Copy, Pink - Lab Copy for return to SMO, Gold - Lab Copy

U.S. ENVIRONMENTAL PROTECTION AGENCY
CLP Sample Management Office
P.O. Box 818 - Alexandria, Virginia 22313
Phone: 703/557-2490 - FTS/557-2490

SAS Number
3249-I SET 1C

SPECIAL ANALYTICAL SERVICE
PACKING LIST

Sampling Office:	Sampling Date(s):	Ship To:	For Lab Use Only
REGION V	12/8-9/87	JTC ENVIRONMENTAL CONSULTANTS FOUR RESEARCH PLACE, SUITE L-10 ROCKVILLE, MD. 20850	Date Samples Rec'd:
Sampling Contact: KEN KRUEGER (name)	Date Shipped: 12/10/87		Received By:
(312) 228-0900 (phone)	Site Name/Code:	Attn: NORMA COMEFORD	

Sample Numbers	Sample Description i.e., Analysis, Matrix, Concentration	Sample Condition on Receipt at Lab
1. 3249-I-01	88JG01S78 - OIL POND A (SLUDGE)	
2.		
3. 3249-I-02	88JG01S79 - OIL POND B (LIQUID)	
4.		
5. 3249-I-03	88JG01S80 - COOLING POND A (LIQ)	
6.		
7. 3249-I-04	88JG01S81 - COOLING POND B (LIQ)	
8.		
9.	NOTE: ABOVE FOUR SAMPLES ARE	
10.	HIGH CONCENTRATION. (ONE	
11.	SLUDGE & THREE ARE LIQUID)	
12.	THEY ARE TO BE ANALIZED FOR	
13.	INORGANICS (METALS)	
14.		
15.		
16.		
17.		
18.		
19.		
20.		

For Lab Use Only

White - SMO Copy, Yellow - Region Copy, Pink - Lab Copy for return to SMO, Gold - Lab Copy