SO THEY TAKE CONTINUOUS READINGS ALL SHIFT -- CAN WE DO PERIODIC ??

pH (2.0) buffer. The sampling event should be of sufficient duration to cover the facility's cleaning of their pH probe (once a shift).

SPECIFIC ELEMENTS OF TASK 6 REQUIRED:

(1) Take the appropriate number of pH measurements base on the approved sampling plan;

DO pH RDGS IN THE POND ??

(2) Determine which waste streams make up the influent to the Central Wastewater Treatment Plant which may affect the pH measurements. Evaluate whether the pH readings of the influent to the Central Wastewater Treatment Plant are representative of the effluent from Pond 6.

(3) Prepare and submit a report to U.S. EPA describing the sampling activities and any deviations from the approved sampling plan. This report should include field notes, photographs or videotape, raw data, analytical results and other pertinent documents.

(4) The report should include a comparative study between the Central Wastewater Treatment Plant pH logs and the actual pH measurements. Discuss whether these pH measurements are representative of Pond 6 effluent.

SPECIFIC ELEMENTS OF TASK 7 REQUIRED:

(1) Evaluate the accuracy of WCI's Central Wastewater Treatment Plants pH measurements of wastewater influent. This evaluation should include calibration and cleaning procedures.

(2) Prepare and submit a report showing the results of the analyses.

Please let me know if you have any questions on this TDM, please call me at 886-3901 or Mike at 886-4592.

DRE-8J:AKERBS:5/16/97 F:\USER\AKERBS\QASTUFF\WCI.TDM

DCN TD.143

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: May 16, 1997

SUBJECT: Technical Direction Regarding EPA Contract # 68-W4-0006, Work Assignment No. R05020

FROM: Michael Ribordy Technical Advisor

THRU: Brian Freeman, Sr. Chemist & WAM Brian P. Freeman

TO: Patricia Brown-Derocher, Regional Manager
A.T. Kearney, Inc.

This Technical Direction Memorandum (TDM) is to clarify the scope of work for Task 5 (Sampling Plan), Task 6 (Sampling Activities) and Task 7 (Laboratory Analysis) under Work Assignment (WA) R05020. This TDM will not alter the LOE/COST of the WA, nor change the period of performance.

BACKGROUND:

WCI Steel, Inc., (WCI) located on the banks of the Mahoning River in Warren, Ohio, is a steel mill which currently produces hot rolled, cold rolled, galvanized coated, terne coated, and silicon steel sheets and strips in finished and unfinished form. There are two ponds, No. 5 and No. 6, located near the center of the site which were constructed within the former channel of the Mahoning River and utilized to provide oil detention and skimming and storm water surge detention prior to treatment in WCI's wastewater treatment plant. Waste water is generally transferred to Pond No. 5 by a 36-inch diameter pipe and by vacuum truck. The water is gravity fed from Pond No. 5 to Pond No. 6 by a buried conduit. The ponds have been in use since approximately 1942.

Waste water entering Pond No. 5 prior to approximately 1994 is suspected to have had a pH below 2.0. pH data taken to verify this were inconclusive. Data reflecting pH of influent wastewater to the Central Wastewater Treatment Plant from the ponds is contained in manual and computer operating logs from the Central Wastewater Treatment Plant. These logs indicate the effluent from the ponds had a pH below 2.0. However, the facility states that this data is of questionable accuracy because the influent wastewater from the ponds contains residual amounts of oil and grease which quickly coats the pH probe and makes the readings quantitatively inaccurate.

(C) GREASE COATS THE INFLUENT WASTEWATER

SPECIFIC ELEMENTS OF TASK 5 REQUIRED:

(1) Discuss with Mike Ribordy potential sampling strategies to verify the accuracy of the wastewater pH readings.

(2) Prepare a sampling plan to collect pH measurements of the influent wastewater to the Central Wastewater Treatment Plant from the ponds. The plan must document appropriate calibration and cleaning procedures including use of a low

[redacted]ED STATES ENVIRONMENTAL PROTECTION AGENCY
UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION V
EASTERN DISTRICT OFFICE
25089 CENTER RIDGE ROAD
WESTLAKE, OHIO 44145

September 30, 1993

MEMORANDUM

SUBJECT: Toxics Sampling Inspection - WCI Steel, Inc., Warren, Ohio (OH010179, AFE108:IH)

FROM: Mark E. Conti, Environmental Engineer

THRU: A. R. Winklhofer, Chief
Eastern District Office (SE-W)

TO: Water Compliance Section (WC-15J)
ATTN: Michael Mikulka, Chief

On May 12, 1993, Larry Lins and I conducted a toxics sampling inspection at WCI Steel, Inc. (1040 Pine Avenue, S.E., Warren, Ohio 44483-6528). On June 15, 1993, I collected additional samples to support initial findings. The sampling inspection was requested by the Water Division and was done as part of a multimedia investigation at the facility.

The attached report summarizes inspection findings and sample results. If you have any questions regarding this report, please call me at 216/522-7260.

Attachments.

CONCURRENCES

SYMBOL		SE-W						
SURNAME	Conti	[signature]	[signature]					
DATE	9-30-93	9/30/93	9/30/93					

EPA Form 1320-1 (12-70) OFFICIAL FILE COPY

FINAL
REPORT ON SAMPLING AND ANALYSIS OF FORMER TAR DECANTER SLUDGE MIXING AREAS
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Submitted by
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Prepared by
BAKER & ASSOCIATES
CORAOPOLIS, PENNSYLVANIA

NOVEMBER 1991

LTV Steel Company

November 19, 1991

Ohio Environmental Protection Agency
P.O. Box 1049
1800 WaterMark Drive
Columbus, OH 43266-0149

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MAR 23 1992
OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V.

Attn: Mr. Paul Vandermeer
Division of Solid and Hazardous Waste

Re: LTV Steel Company, Inc.
Warren Consolidated Industries, Inc.
Report on Sampling and Analysis of
Former Tar Decanter Sludge Mixing Areas

Dear Mr. Vandermeer:

Enclosed please find a copy of both LTV Steel Company's and Warren Consolidated Industries, Inc.'s Reports on Sampling and Analysis of Former Tar Decanter Sludge Mixing Areas. The appendices are common to both the LTV Steel Company and Warren Consolidated Industries, Inc.'s reports. It is believed that all field sampling and analysis activity, as described in the subject reports, was conducted in conformance with sampling plan documents submitted for your review in correspondence dated May 28, 1991 and subsequently approved by Ohio EPA.

Results contained in the enclosed reports are being presented to Ohio EPA to further settlement discussions related to ongoing litigation regarding this matter before the Ohio Environmental Board of Review. The information offered herein does not constitute admission or acknowledgement that any of the information contained in the reports is required by law or within the authority of Ohio EPA to impose on LTV Steel Company or Warren Consolidated Industries, Inc. Additionally, the reports are being submitted subject to Rule 408 of Ohio Rules of Evidence.

LTV Steel and WCI look forward to discussing these results with you at your earliest convenience. Please contact me should you have any questions or comments.

Sincerely,

L. A. Szuhay
Manager, Solid & Hazardous Waste
Corporate Environmental Control
LTV Steel Company, Inc.

T. O. Shepker
Manager, Environmental Control
Warren Consolidated
Industries, Inc.

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LAS/dcr
cc: Mr. D. E. Papajcik, LTV Law Department (w/reports)
Ms. Patricia A. Delaney, Attorney General's Office (w/reports)
Mr. Greg Taylor/Ms. Sherry Sloan, Ohio EPA NEDO (w/reports)

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EXECUTIVE SUMMARY

Warren Consolidated Industries, Inc. (WCI) conducted a sampling and analysis program in accordance with a Sampling Plan approved by the Ohio Environmental Protection Agency (Ohio EPA) of two former tar decanter sludge (TDS) mixing areas to determine if the bulk concentrations of selected organic constituents are significantly higher statistically than in the agreed upon background area for similar strata. The former TDS mixing areas on WCI's property were located at the former "Knox Creek" and "Beatrice" coal storage piles.

A total of 18 test borings were installed on August 8-9, 1991, with four of these located in the background area common to investigations for both LTV Steel Company (LTV) and WCI, eight borings within LTV's property, and six borings within former TDS mixing areas on WCI's property. Three distinct subsurface layers were encountered: (1) primarily coal; (2) a mixture of coal, and slag/fill type material; and (3) primarily silty clay soil. Borings were advanced to at least two feet below the interface of the soil/coal mixture and the original soil using a truck-mounted drill rig. Split-spoon soil samples were collected continuously as the boring was advanced. Drilling and sampling equipment were decontaminated in accordance with the approved Sampling Plan and an experienced geologist observed the operations.

Subsurface soil samples were obtained from the coal/soil interval (when encountered by the borings) and the original soil interval for each of the six borings in the former TDS mixing areas. In addition, three soil samples were obtained from each background boring; one from the coal/soil interval and two from the original soil interval.

Soil samples from both the former TDS mixing areas and background area were analyzed using SW 846 Method 8270 for the following parameters:

Acenaphthene	Anthracene
Benzo (a) anthracene	Benzo (a) pyrene
Chrysene	2,4-Dimethylphenol
Fluoranthene	Fluorene
Indeno (1,2,3-cd) pyrene	Naphthalene
Phenanthrene	Phenol
Pyrene	

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In addition to the environmental samples, duplicates and field blanks were collected and analyzed for QA/QC. Sample custody was maintained by the geologist until the samples were forwarded to the analytical laboratory.

Sample results were compared with background values calculated for each parameter and interval (i.e., coal/soil and original soil) by sum of the mean concentration plus two standard deviations for a particular parameter and strata. A comparison of data from the mixing areas with the derived background revealed no statistically significant results.

Therefore, it is concluded that the former mixing areas are not contaminated with TDS nor present any risk or hazard to human health or the environment. No further action is necessary.

1.0 INTRODUCTION

1.1 Objective

The objective of the sampling and analysis program was to determine if the bulk concentrations of selected organic constituents are significantly higher statistically in the former tar decanter sludge (TDS) mixing areas than in the agreed upon background area for similar strata. If no statistically significant differences are detected, this would demonstrate that these facilities are not contaminated with TDS nor present any risk or hazard to human health or the environment.

1.2 Project Description

The program was conducted in general accordance with the approved Sampling Plan, originally submitted to the Ohio Environmental Protection Agency (Ohio EPA) in May 1991 and subsequently revised by letter dated July 25, 1991 in response to comments from OEPA dated July 11, 1991. A total of 18 test borings were installed at locations presented on Figure 1-1. Four borings were advanced through a coal storage area which will serve as the "background" sample location, common to investigations for both LTV Steel Company's (LTV) and Warren Consolidated Industries, Inc.'s as (WCI) former TDS mixing areas. Fourteen borings were drilled through former TDS mixing areas; eight within LTV's property and six within WCI's property.

Three distinct subsurface layers were encountered during drilling. The first layer consists primarily of coal material. The second layer includes a mixture of coal, and slag/fill type material. The third layer consists primarily of silty clay soil. In some borings the coal/soil mixture zone was not present.

1.3 Site Background

LTV mixed tar decanter sludge (TDS), a listed hazardous waste (K087), with metallurgical coal at its Warren Works during a two-year period from 1984 to 1986. The former mixing areas consisted of several coal piles which are identified in Figure 1-1. The former mixing areas located on property owned since mid-1988 by WCI consist of the former "Knox Creek" and "Beatrice" coal piles which are located northwest of the ore yard.

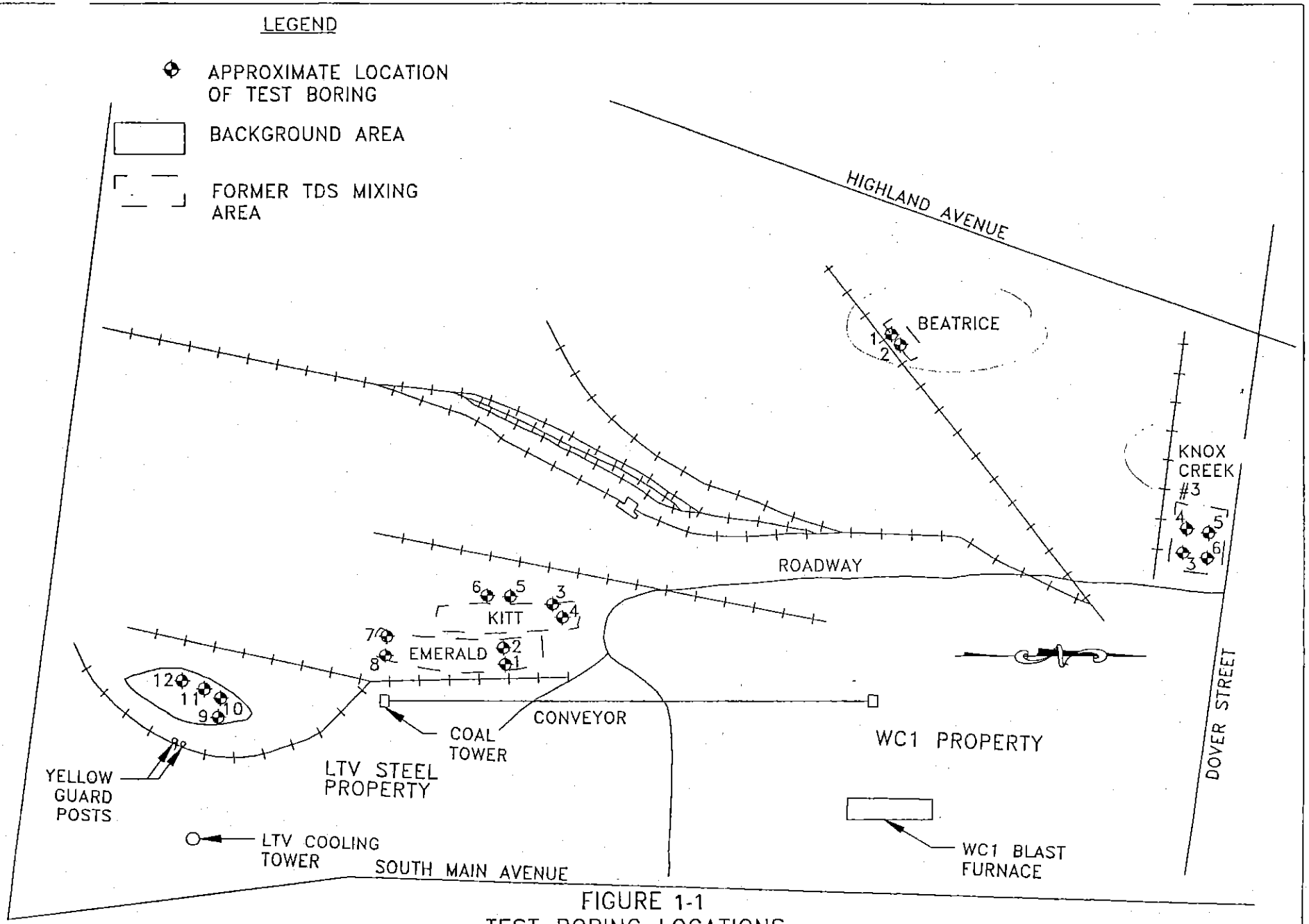


FIGURE 1-1
TEST BORING LOCATIONS
LTV/WCI SITE
WARREN, OHIO

The purpose of mixing TDS with coal was to effect recycling of TDS back to the coke ovens. Prior to 1984, TDS was transported to an off-site hazardous waste landfill; since 1986, TDS has been recycled to the coke batteries by A.K.J. Industries, Inc. by heating the TDS, mixing it with a diluent, and spraying it onto the coal conveyors that lead to the batteries. The former TDS mixing areas on LTV property have been returned to exclusive use as coal storage areas. All inventory of the tar decanter sludge/coal mixture has been removed and charged to the coke ovens.

2.0 FIELD ACTIVITIES

Specific procedures for sample collection and equipment decontamination, and a summary of the environmental and QC samples that were collected, are outlined in this section. All analytical sampling was performed by an experienced geologist according to USEPA standard operating procedures.

2.1 Drilling

LTV and WCI contracted Baker and Associates (Baker) to implement the OEPA approved Sampling Plan investigations. Prior to mobilization, R&R International, Inc. was selected by Baker to perform the drilling and sampling operations. As described in Section 1.2, a total of 18 test borings were advanced of which 14 were located in the former TDS mixing areas (eight on LTV property and six on WCI property). Boring locations in the former TDS mixing areas on WCI property are:

- Two (2) borings at the working face of the former Beatrice coal pile; and
- Four (4) borings at the working face of the former Knox Creek #3 coal pile.

In addition, four (4) test borings were advanced in the common background area identified on Figure 1-1.

Each boring was advanced to at least two feet below the interface of the soil/coal mixture and the original soil using a truck-mounted drill rig with 3.25-inch diameter hollow stem augers. Split-spoon soil samples were collected continuously from the surface to a minimum of two feet below the interface between the soil/coal mixture and the original soil. An experienced geologist observed the drilling and sampling operations. During the advancement of the

augers, soil cuttings, split-spoon samples, and ambient air were monitored using a photoionization detector (PID) to measure for the presence of volatile vapors. (However, the PID malfunctioned on the second field day most likely due to adverse weather conditions.) Stratigraphic horizon descriptions, discolorations, odors, available PID readings, and other visual observations are described and recorded on Field Test Boring Logs (see Appendix A).

2.1.1 Former Beatrice Coal Pile

Borings WCI-1 and WCI-2 were drilled to a depth of six feet below ground surface (bgs) along the southeastern face of the former Beatrice mixing area. Sampling in WCI-1 encountered 1.5-feet of coal, flue dust and crushed slag, which was underlain by 2.5-feet of coal over silty clay to depth. Four feet of coal and rock fragments were found overlying silty clay in WCI-2. Figure 2-1 presents cross-sections of the borings within the former Beatrice coal pile area.

2.1.2 Former Knox Creek #3 Coal Pile

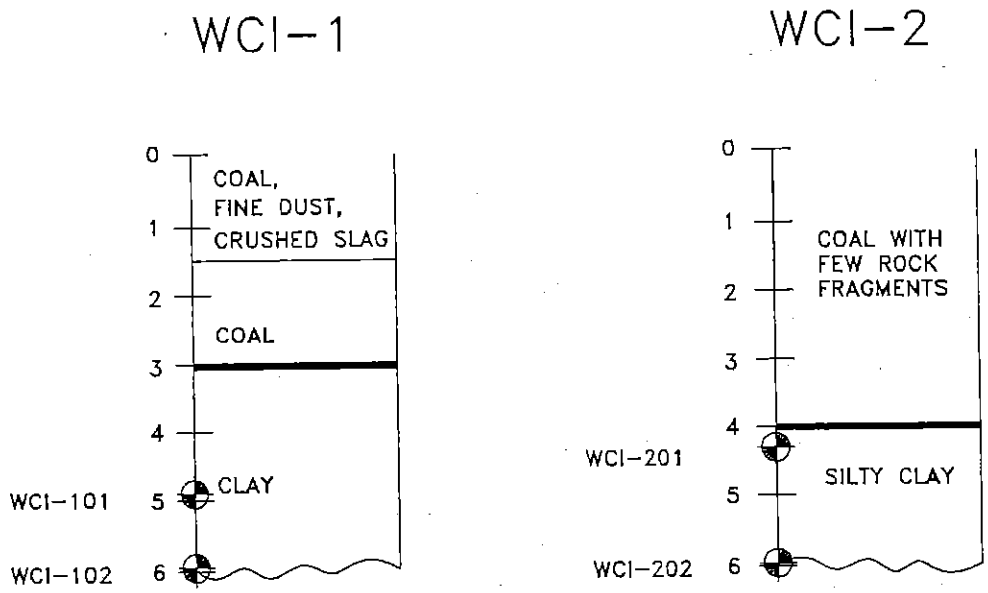
Borings WCI-3, WCI-4, WCI-5, and WCI-6 were drilled in the vicinity of the former Knox Creek #3 coal pile. A 0.5-foot layer of slag overlies 2-feet of coal at WCI-3. Clay was present below the coal from a depth of 2.5 feet.

In WCI-4, a 4-foot thick mixture of coal and slag overlies a thin layer of clay and coal. Silty clay underlies this thin clay/coal layer from a depth of 4.5 feet bgs.

Coal overlies a zone of sandy, silty clay (very likely fill material) in WCI-5. A gray medium grained sand was encountered below the fill and reportedly may be "runner" sand from the blast furnace. This gray sand is underlain at 2.5 feet bgs by apparently naturally occurring silty clay. Approximately 0.5 feet of coal overlies silty clay in WCI-6. Figure 2-2 presents cross-sections of borings located within the former Knox Creek #3 area.

2.1.3 Background Area

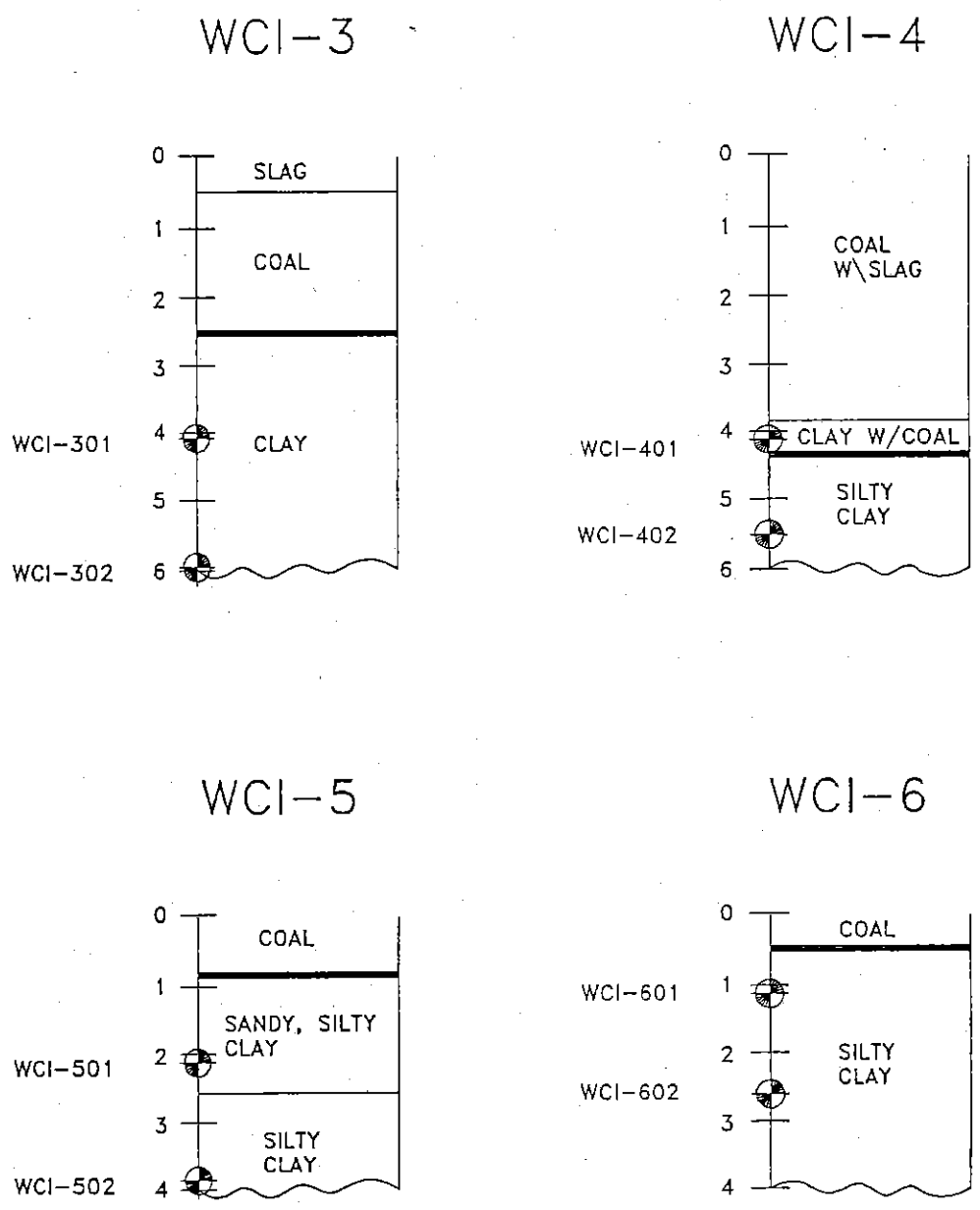
A total of four borings were advanced along the northern and western edge of the pre-determined background area. Figure 2-3 presents cross-sections of borings located in the designated background area. Boring LTV-9 encountered six distinct zones: a two foot thick coal layer; 0.5-feet mixture of silt and coal; 1.5-foot mixture of coal and slag; 1-foot zone of coal and gravel; 1-foot layer of silt and organic materials (i.e., remants of vegetation); and, finally,



INTERFACE BETWEEN COAL/SOIL MIXTURE AND ORIGINAL LAYER OR COAL AND ORIGINAL SOIL LAYER

WCI-101 SAMPLE LOCATION (DEPTH) & SAMPLE NUMBER

FIGURE 2-1
BORING CROSS-SECTIONS IN
FORMER BEATRICE COAL PILE AREA



INTERFACE BETWEEN COAL/SOIL MIXTURE AND ORIGINAL LAYER OR COAL AND ORIGINAL SOIL LAYER

WCI-101 SAMPLE LOCATION (DEPTH) & SAMPLE NUMBER

FIG 2-2
BORING CROSS-SECTIONS IN
FORMER KNOX CREEK COAL PILE AREA

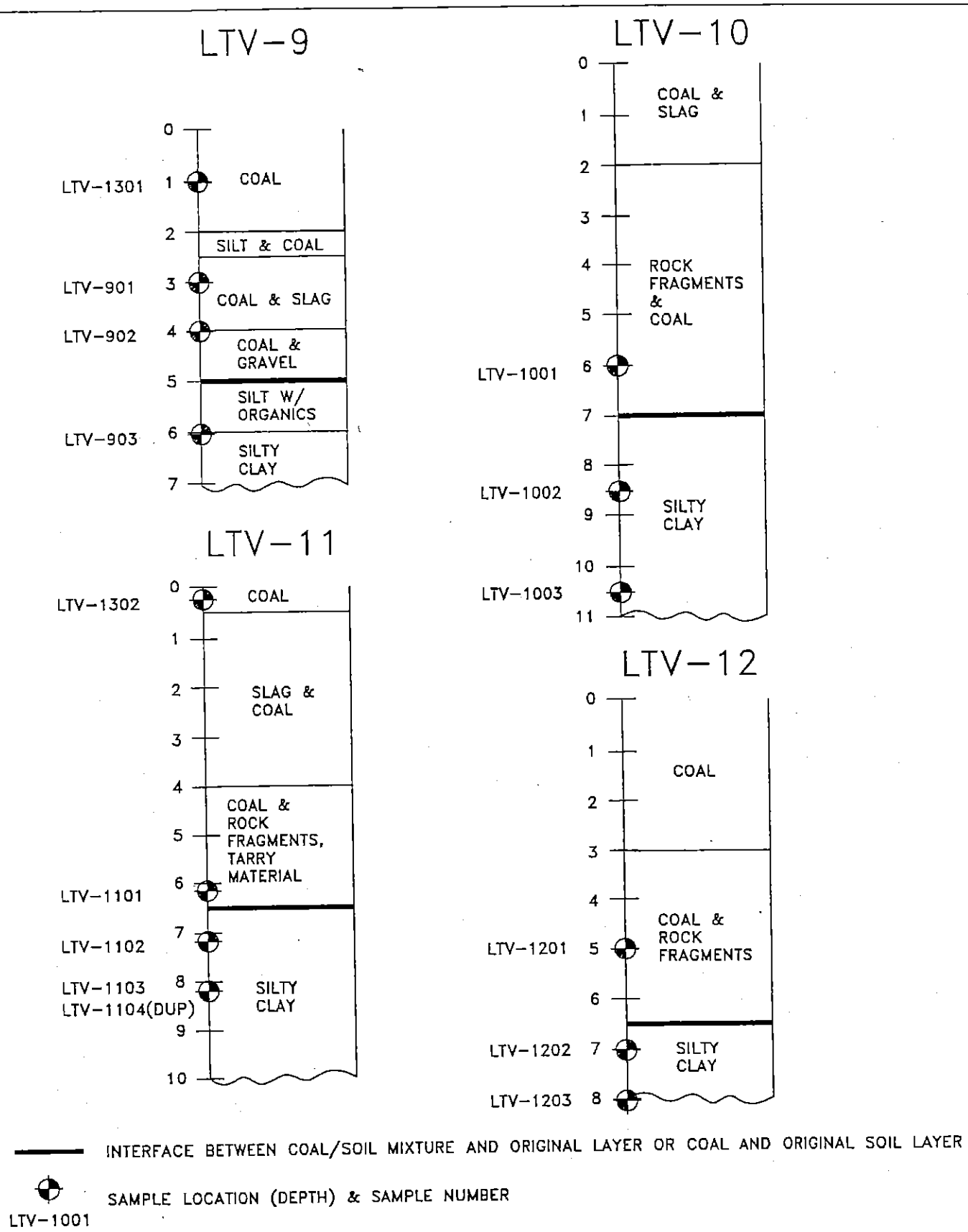


FIGURE 2-3
BORING CROSS-SECTIONS IN BACKGROUND AREA

a layer of silty clay material. A sample of coal also was obtained from this location for analysis.

A 5-foot zone of rock fragments and coal was encountered in LTV-10 below the initial 2-foot thick layer of coal and slag. Below the coal/soil interface, encountered at 7 feet bgs, a layer of silty clay was present to a total boring depth of 12 feet.

Boring LTV-11 was advanced to 10 feet bgs. Four distinct zones were encountered during drilling: 0.5 feet of coal, underlain by 3.5 feet of a mixture of slag and coal, underlain by 2.5 feet of coal and rock fragments; and, approximately 3.5 feet of silty clay to depth below the sludge. A sample of coal was obtained from this location, as well as a duplicate sample collected from within the silty clay zone. Tarry material was observed and sampled at the base of the zone containing coal and rock fragments (6 feet bgs).

Three feet of coal overlies a 3.5-foot layer of coal and rock fragments in LTV-12 which was advanced to a depth of 8-feet. Silty clay was encountered below the coal and rock fragment zone.

Subsequent to drilling and sampling, borings were grouted to grade with a mixture of cement and bentonite gel. Soil cuttings generated during drilling were spread on the ground surrounding the boring in accordance with the procedures described in the approved Sampling Plan. The locations of the borings were referenced to permanent landmarks and noted on field sketches. See Table 2-1.

The drill rig and associated drilling equipment was steam cleaned before drilling began, between each boring, and prior to demobilization. All decontamination fluids were discharged to the ground surface adjacent to the completed boring. Split-spoon sampling equipment was decontaminated prior to each sampling event by steamcleaning.

2.2 Subsurface Soil Sampling

Two subsurface soil samples were obtained from each of the six borings advanced within the former TDS mixing areas for a total of 16 samples as given below:

- One sample consisting of a mixture of soil and coal was collected at the approximate midpoint of the coal/soil mixture layer, if present. (Note: most

TABLE 2-1
BORING LOCATION DESCRIPTIONS
WARREN CONSOLIDATED INDUSTRIES

WCI-1: Located west of blast furnace along track adjacent to former Beatrice coal pile area, measured approximately 100 feet east from the middle of the existing haul road and 10 feet from the track towards the existing coal pile.

WCI-2: Located 44 feet east along track from WCI-1 and 10 feet towards the existing coal pile.

WCI-3: Located approximately 40 feet from the middle of the north access road and 35 feet north from the adjacent track.

WCI-4: Located 30 feet west of WCI-3 and 35 feet north from the adjacent track.

WCI-5: Located 40 feet north of WCI-4.

WCI-6: Located 30 feet east of WCI-5.

Boring Location Descriptions - Background Borings

LTV-9: Located 79 feet SW 40° from third bolted rail plate north of northernmost yellow guard post.

LTV-10: Located 30 feet west of LTV-9.

LTV-11: Located SW 20° and 29.2 feet from LTV-10.

LTV-12: Located SE 20° and 30 feet from LTV-11.

borings did not indicate a mixture zone of coal and original soil. However, samples from those borings were obtained from just below the coal/soil interface.)

- One sample of original soil was obtained from 1-foot below the interface into the original soil. However, the soil boring was advanced to at least 2-feet below the coal/soil interface.

Three samples were obtained from each background boring location as follows:

- One sample of coal/soil mixture collected at the approximate midpoint of the coal/soil layer;

- One sample of soil collected just beneath the interface between the coal/soil mixture and the original soil; and

- One sample of soil collected approximately one foot below the interface between the coal/soil mixture and the original soil (i.e., one foot beneath the first soil sample).

In addition to the 12 samples from the four background borings, two samples of coal were collected from the background area for a total of 14 samples. A sample summary is presented in Table 3-1. A summary of analytical results is presented in Appendix B. Laboratory data sheets are provided as Appendix C. Appendix D presents field notes and sketches.

3.0 SAMPLE ANALYSES

Tables 3-2 and 3-3 present data for the background and former mixing areas, respectively. All samples were analyzed using SW 846 Method 8270 for the following parameters:

- Acenaphthene
- Anthracene
- Benzo (a) anthracene
- Benzo(a)pyrene
- Chrysene
- 2,4-Dimethylphenol
- Fluoranthene

TABLE 3-1
- SAMPLE SUMMARY
WARREN CONSOLIDATED INDUSTRIES

Boring #	Sample #	Date Sampled	Time Sampled	Sample Location	Sample Depth (ft bgs)	Sample Description
1	WCI-101	8/9/91	1255	Beatrice	5.0	Clay
1	WCI-102	8/9/91	1256	Beatrice	6.0	Clay
2	WCI-201	8/9/91	1340	Beatrice	4.5	Silty Clay
2	WCI-202	8/9/91	1341	Beatrice	6.0	Silty Clay
3	WCI-301	8/9/91	1420	Knox Creek #3	4.5	Clay
3	WCI-302	8/9/91	1421	Knox Creek #3	6.0	Clay
4	WCI-401	8/9/91	1450	Knox Creek #3	4.0	Clay w/Coal
4	WCI-402	8/9/91	1451	Knox Creek #3	5.5	Silty Clay
4	WCI-403	8/9/91	1451	Duplicate of WCI-402	5.5	Silty Clay
5	WCI-501	8/9/91	1510	Knox Creek #3	2.0	Sand (medium)
5	WCI-502	8/9/91	1511	Knox Creek #3	4.0	Silty Clay
6	WCI-601	8/9/91	1530	Knox Creek #3	1.0	Silty Clay
6	WCI-602	8/9/91	1531	Knox Creek #3	2.5	Silty Clay
9	LTV-901	8/8/91	1045	Background	1.0	Coal & Slag
9	LTV-902	8/8/91	1050	Background	4.0	Coal & Gravel
9	LTV-903	8/8/91	1055	Background	6.0	Silt w/Organics
10	LTV-1001	8/8/91	1145	Background	6.0	Rock Fragments & Coal
10	LTV-1002	8/8/91	1150	Background	8.5	Silty Clay
10	LTV-1003	8/8/91	1155	Background	9.5	Silty Clay
11	LTV-1101	8/8/91	1245	Background	6.0	Coal & Rock Fragments & Tarry Material
11	LTV-1102	8/8/91	1250	Background	7.0	Silty Clay
11	LTV-1103	8/8/91	1255	Background	8.0	Silty Clay
11	LTV-1104	8/8/91	1255	(Duplicate of LTV 1103)	8.0	Silty Clay
12	LTV-1201	8/8/91	1350	Background	5.0	Coal & Rock Fragments
12	LTV-1202	8/8/91	1355	Background	7.0	Silty Clay
12	LTV-1203	8/8/91	1356	Background	8.0	Silty Clay
13	LTV-1301	8/8/91	1100	(Coal from LTV-9)	1.0	Coal
13	LTV-1302	8/8/91	1235	(Coal from LTV-11)	0.5	Coal
14	LTV-1401	8/8/91	1120	Field Blank	---	Aqueous
14	LTV-1402	8/9/91	1220	Field Blank	---	Aqueous

TABLE 3-2
ANALYTICAL DATA FOR BACKGROUND AREA

	Background Area Samples (µg/kg)													
	Coal		Coal and Original Soil Mix					Original Soil						
	LTV-1301	LTV-1302	LTV-901	LTV-902	LTV-1001	LTV-1101	LTV-1201	LTV-903	LTV-1002	LTV-1003	LTV-1102	LTV-1103	LTV-1202	LTV-1203
Acenaphthene	<1,300	<1,300	150J	<330	<1,300	<670	160J	<330	<330	<330	67J	150J	<330	<330
Anthracene	2,000	370J	1,200J	<330	1,800	1,200	250J	<330	<330	<330	300J	990J	<330	<330
Benzo [a] anthracene	4,400	1,100J	3,300	<330	2,700	1,600	670J	<330	<330	<330	330	1,200J	<330	<330
Benzo [a] pyrene	3,400	830J	2,600	<330	3,000	1,000	1,300	<330	<330	70J	290J	680J	<330	<330
Chrysene	5,500	1,400	2,900	<330	2,500	1,300	890J	<330	<330	70J	310J	1,100J	<330	<330
2,4-Dimethylphenol	<1,300	<1,300	<1,300	<330	<1,300	<670	<1,300	<330	<330	<330	<330	<1,300	<330	<330
Fluoranthene	6,500	1,700	4,400	<330	6,300	2,700	770J	<330	<330	<330	680	2,400	<330	<330
Fluorene	1,900	600J	520J	<330	870J	1,300	360J	<330	<330	<330	280J	800J	<330	<330
Indeno [1,2,3-cd] pyrene	1,600	<1,300	2,500	<330	2,500	850	1,900	<330	<330	<330	170J	<1,300	<330	<330
Naphthalene	9,100	7,400	1,300	590	510J	6,100	2,900	63J	<330	410	1,100	2,600	70J	370
Phenanthrene	8,800	5,700	4,500	<330	5,600	4,600	1,900	<330	<330	90J	950	3,000	<330	<330
Phenol	320J	<1,300	<1,300	<330	<1,300	<670	<1,300	<330	<330	<330	<330	<1,300	<330	<330
Pyrene	7,100	2,000	4,400	<330	4,800	3,100	810J	<330	<330	93J	600	1,900	<330	<330

J - Estimated value detected below laboratory reported PQL.
< - Value not detected at or below laboratory reported PQL.

TABLE 3-3
SUMMARY OF ANALYTICAL RESULTS FOR FORMER BEATRICE AND KNOX CREEK COAL PILES
WARREN CONSOLIDATED INDUSTRIES

	Beatrice (µg/kg)					Knox Creek #3 (µg/kg)								
	Coal and Original Soil Mix	Original Soil				Coal and Original Soil Mix	Original Soil							
	No Data*	WCI-101	WCI-102	WCI-201	WCI-202	WCI-401	WCI-301	WCI-302	WCI-402	WCI-403 (1)	WCI-501	WCI-502	WCI-601	WCI-602
Acenaphthene	No Data*	<670	<330	<670	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Anthracene	No Data*	<670	<330	<670	<330	<330	<330	<330	<330	<330	<330	<330	<330,	<330
Benzo [a] anthracene	No Data*	<670	<330	<670	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Benzo [a] pyrene	No Data*	<670	<330	240J	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Chrysene	No Data*	<670	<330	<670	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
2,4-Dimethylphenol	No Data*	<670	<330	<670	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Fluoranthene	No Data*	<670	<330	190J	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Fluorene	No Data*	<670	<330	<670	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Indeno [1,2,3-cd] pyrene	No Data*	<670	<330	190J	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Naphthalene	No Data*	550J	<330	280J	<330	<330	210J	<330	<330	<330	<330	40J	<330	<330
Phenanthrene	No Data*	140J	<330	230J	<330	<330	200J	<330	<330	<330	<330	<330	<330	<330
Phenol	No Data*	<670	<330	<670	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330
Pyrene	No Data*	<670	<330	130J	<330	<330	<330	<330	<330	<330	<330	<330	<330	<330

(1) - Duplicate of WCI-402.
* - No coal/original soil interval observed in any of the borings. Therefore, no data were available.
J - Estimated value detected below laboratory reported PQL.
< - Value not detected at or below laboratory reported PQL.

- Fluorene
- Indeno (1,2,3-cd) pyrene
- Naphthalene
- Phenanthrene
- Phenol
- Pyrene

Practical Quantitation Limits (PQLs) are given for Method 8270 in "Test Methods for Evaluating Solid Waste, "USEPA, SW-846, November 1986, 3rd Edition. PQL is defined as the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

3.1 QA/QC

In addition to the environmental samples, one duplicate and one field blank were collected for quality assurance. One duplicate sample was collected for every 20 environmental samples obtained for analysis. A field blank was collected for each day of drilling. The field blank, also known as equipment rinsate sample, consisted of the final analyte-free water rinse to evaluate the effectiveness of the decontamination procedures.

Solid-phase samples to be submitted for analysis were placed into four-ounce wide mouth glass jars, supplied by the laboratory. The aqueous-phase sample (field blank) was placed into two 4-liter amber glass bottles also provided by the laboratory. The samples were labeled, documented, packaged, iced and transported to Wadsworth/ALERT Laboratories, Inc., North Canton, Ohio via overnight courier.

Sample custody was maintained by the geologist from the time of sampling until the time the samples were forwarded to the analytical laboratory. The sample custody was documented using Chain-of-Custody (COC) records (Appendix E).

3.2 Laboratory Data Summary

3.2.1 Former Beatrice Coal Pile Area (WCI-1 and 2)

Six of 13 compounds were detected below laboratory reported PQLs for sample WCI-201 and two compounds were detected below laboratory reported PQLs for sample WCI-201. Each of

these samples were taken from the original soil interval. No compounds were detected above the PQL in any of the samples nor were any of the compounds detected in the other samples (WCI-102 and 202) from the original soil interval.

No analyses of the coal/soil interval were available because this interval was absent in the borings.

3.2.2 Former Knox Creek #3 Coal Pile Area (WCI-3. 4. 5, amd 6)

Only two of 13 compounds were detected (and these were detected below laboratory reported PQLs) for samples WCI-301 (naphthalene and phenanthrene) and WCI-501 (naphthalene) in the original soil interval. None were detected in the other samples or in the sample from the coal/soil interval.

3.2.3 Background Area (LTV-9, 10, 11, and 12)

All compounds, with the exception of 2,4-dimethylphenol and phenol, either were quantified above or presented as estimated concentrations (i.e., detected below the PQL) in at least one sample from the coal/original soil mixture. As expected, the same compounds were observed in the coal samples analyzed (i.e., LTV-1301 and LTV-1302).

Similarly, all compounds with the exception of 2,4-dimethylphenol and phenol, either were detected above or presented as estimated concentrations below the laboratory reported PQLs in the original soil interval. However, the concentrations reported were about an order of magnitude less than the corresponding values from coal or the coal/original soil interval and were found primarily in samples from boring LTV-11.

Referring back to Table 3-2, results for coal sample LTV-1301 show concentrations above the laboratory reported PQLs for all parameters except acenaphthene, 2,4-dimethylphenol and phenol. Phenol was detected below the laboratory reported PQL; acenaphthene and 2,4-dimethyphenol were not detected. Results for coal sample LTV-1302 indicate elevated concentrations for chrysene, fluoranthene, naphthalene, phenanthrene, and pyrene. Anthracene, benzo(a) anthracene, benzo(a) pyrene and fluorene were reported as estimated values (i.e., detected below the laboratory reported PQL).

4.0 DATA EVALUATION

4.1 Calculation of Background Concentrations

Background concentrations were calculated for each interval (e.g., coal/soil and original soil) as the sum of the mean of background values plus two standard deviations. For the statistical analysis, PQLs have been substituted for analytical results showing nondetectable concentrations. The concentrations for the corresponding intervals from the former TDS mixing areas then were compared to those derived background concentrations.

Tables 4-1 and 4-2 summarize the calculation of background concentrations for the coal/soil and soil intervals, respectively. The background concentrations are compared to the concentrations encountered in the environmental samples in the following section.

4.2 Comparison to Background

Tables 4-3 and 4-4 compare derived background values with those found in the former Beatrice and Knox Creek coal piles, respectively. As indicated on Tables 4-3 and 4-4, there were no significant results (i.e., quantified or estimated concentrations exceeding the derived background value). Either the results are below the derived background or the compounds were not detected (i.e., < PQLs).

5.0 CONCLUSIONS AND RECOMMENDATIONS

This sampling and analysis program was conducted to determine if the bulk concentrations of selected organic constituents are significantly higher statistically in the former TDS mixing areas than in the agreed upon background area for similar strata. As no statistically significant differences were detected, this demonstrates that the WCI's former mixing areas are not contaminated with TDS nor present any risk or hazard to human health or the environment. No further action is necessary.

TABLE 4-1
BACKGROUND CONCENTRATIONS AND DERIVED MEAN
PLUS TWO STANDARD DEVIATIONS FOR
COAL/SOIL INTERVAL
(µg/kg)

	910879 LTV-901	910880 LTV-902	910882 LTV-1001	910885 LTV-1101	910888 LTV-1201	Derived* Background Mean + 2SD
Acenaphthene	150	330	1300	670	160	1488
Anthracene	1200	330	1800	1200	250	2268
Benzo [a] anthracene	3300	330	2700	1600	670	4271
Benzo [a] pyrene	2600	330	3000	1000	1300	3885
Chrysene	2900	330	2500	1300	890	3753
2,4-Dimethylphenol	1300	330	1300	670	1300	1889
Fluoranthene	4400	330	6300	2700	770	7899
Fluorene	520	330	870	1300	360	1495
Indeno [1,2,3-cd] pyrene	2500	330	2500	850	1900	3587
Naphthalene	1300	590	510	6100	2900	6963
Phenanthrene	4500	330	5600	4600	1900	7764
Phenol	1300	330	1300	670	1300	1889
Pyrene	4400	330	4800	3100	810	6768

* SD - Standard Deviation.

TABLE 4-2
BACKGROUND CONCENTRATIONS AND DERIVED MEAN
PLUS TWO STANDARD DEVIATIONS FOR
SOIL INTERVAL
(µg/kg)

	910881 LTV-903	910883 LTV-1002	910884 LTV-1003	910886 LTV-1102	910887 LTV-1103	910889 LTV-1202	910890 LTV-1203	Derived* Background Mean + 2SD
Acenaphthene	330	330	330	67	150	330	330	488
Anthracene	330	330	330	300	990	330	330	923
Benzo [a] anthracene	330	330	330	330	1200	330	330	1112
Benzo [a] pyrene	330	330	70	290	680	330	330	694
Chrysene	330	330	70	310	1100	330	330	1046
2,4-Dimethylphenol	330	330	330	330	1300	330	330	1202
Fluoranthene	330	330	330	680	2400	330	330	2219
Fluorene	330	330	330	280	800	330	330	754
Indeno [1,2,3-cd] pyrene	330	330	330	170	1300	330	330	1209
Naphthalene	63	330	410	1100	2600	70	370	2514
Phenanthrene	330	330	90	950	3000	330	330	2806
Phenol	330	330	330	330	1300	330	330	1202
Pyrene	330	330	93	600	1900	330	330	1777

* SD - Standard Deviation

TABLE 4-3
COMPARISON OF DERIVED BACKGROUND MEAN PLUS TWO STANDARD DEVIATIONS
WITH DATA FROM
FORMER BEATRICE COAL PILE
WARREN CONSOLIDATED INDUSTRIES

	Coal/Soil Interval (µg/kg)		Original Soil Interval (µg/kg)				
	Derived Background	No Data*	Derived Background	WCI-101	WCI-102	WCI-201	WCI-202
Acenaphthene	1488	No Data*	488	<PQL	<PQL	<PQL	<PQL
Anthracene	2268	No Data*	923	<PQL	<PQL	<PQL	<PQL
Benzo [a] anthracene	4271	No Data*	1112	<PQL	<PQL	<PQL	<PQL
Benzo [a] pyrene	3885	No Data*	694	<PQL	<PQL	240J	<PQL
Chrysene	3753	No Data*	1046	<PQL	<PQL	<PQL	<PQL
2,4-Dimethylphenol	1889	No Data*	1202	<PQL	<PQL	<PQL	<PQL
Fluoranthene	7899	No Data*	2219	<PQL	<PQL	190J	<PQL
Fluorene	1495	No Data*	754	<PQL	<PQL	<PQL	<PQL
Indeno [1,2,3-cd] pyrene	3587	No Data*	1209	<PQL	<PQL	190J	<PQL
Naphthalene	6963	No Data*	2514	550J	<PQL	280J	<PQL
Phenanthrene	7764	No Data*	2806	140J	<PQL	230J	<PQL
Phenol	1889	No Data*	1202	<PQL	<PQL	<PQL	<PQL
Pyrene	6768	No Data*	1777	<PQL	<PQL	130J	<PQL

* = No coal/soil interval was observed in any of the borings. Therefore, no data were generated.
J = Estimated value detected below laboratory reported PQL.
<PQL = Value not detected.

TABLE 4-4
COMPARISON OF DERIVED BACKGROUND MEAN PLUS TWO STANDARD DEVIATIONS
WITH DATA FROM FORMER
KNOX CREEK COAL PILE
WARREN CONSOLIDATED INDUSTRIES

	Coal/Soil Interval (µg/kg)		Original Soil Interval (µg/kg)							
	Derived Background	WCI-401	Derived Background	WCI-301	WCI-302	WCI-402	WCI-501	WCI-502	WCI-601	WCI-602
Acenaphthene	1488	<PQL	488	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Anthracene	2268	<PQL	923	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Benzo [a] anthracene	4271	<PQL	1112	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Benzo [a] pyrene	3885	<PQL	694	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Chrysene	3753	<PQL	1046	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
2,4-Dimethylphenol	1889	<PQL	1202	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Fluoranthene	7899	<PQL	2219	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Fluorene	1495	<PQL	754	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Indeno [1,2,3-cd] pyrene	3587	<PQL	1209	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Naphthalene	6963	<PQL	2514	210J	<PQL	<PQL	<PQL	40J	<PQL	<PQL
Phenanthrene	7764	<PQL	2806	200J	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Phenol	1889	<PQL	1202	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL
Pyrene	6768	<PQL	1777	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL

<PQL = Value not detected.
J = Estimated value detected below laboratory reported PQL.

4. A

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES

Source	CENTRAL TREATMENT PLANT SLUDGE
Log Number 91-	05312
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	9.5
TOTAL SOLIDS, WT%	33.5
FREON EXTRACTABLES (SOXHLET), PPM	83,410
MOISTURE CONTENT, WT. %	66.5
TOTAL CYANIDE, CN, PPM	0.70
FLUORIDE (DISTILLED), F, PPM	354
AMMONIA, N, PPM	22
PHENOL (4AAP), PHOH, PPM	<0.1
DENSITY, G/ML	1.13
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ALUMINUM, AL, PPM	2,120
ARSENIC, AS, PPM	<1
BARIUM, BA, PPM	16
CADMIUM, CD, PPM	1.5
CALCIUM, CA, PPM	17,500
TOTAL CHROMIUM, CR, PPM	625
COPPER, CU, PPM	32
TOTAL IRON, FE, PPM	55,400
LEAD, PB, PPM	275
MAGNESIUM, MG, PPM	11,400
MANGANESE, MN, PPM	522
MERCURY, HG, PPM	<0.02
NICKEL, NI, PPM	117
POTASSIUM, K, PPM	133

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES
(Continued)

Source	CENTRAL TREATMENT PLANT SLUDGE
Log Number 91-	05312
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
SELENIUM, SE, PPM	<1
SILVER, AG, PPM	<0.5
SODIUM, NA, PPM	1,830
TOTAL SULFUR, S, PPM	812
ZINC, ZN, PPM	4,960

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05312	TCLP NONVOLATILE EXTRACTION OF LOG #91-05312
Log Number 91-	05330	05348
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED, GRAMS	25	100
INITIAL FILTRATE, ML	0	0
EXTRACTION FLUID	#1	#2
EXTRACT pH, UNITS	8.4	6.5
ARSENIC, AS, MG/L	--	<0.03
BARIUM, BA, MG/L	--	0.22
CADMIUM, CD, MG/L	--	<0.005
TOTAL CHROMIUM, CR, MG/L	--	<0.01
LEAD, PB, MG/L	--	<0.02
MERCURY, HG, MG/L	--	<0.0002
NICKEL, NI, MG/L	--	1.8
SELENIUM, SE, MG/L	--	<0.04
SILVER, AG, MG/L	--	0.01
BENZENE, UG/L	<5	--
CARBON TETRACHLORIDE, UG/L	<5	--
CHLOROBENZENE, UG/L	<5	--
CHLOROFORM, UG/L	14	--
1,2-DICHLOROETHANE, UG/L	<5	--
1,1-DICHLOROETHYLENE, UG/L	<5	--
TETRACHLOROETHYLENE, UG/L	<5	--
TRICHLOROETHYLENE, UG/L	<5	--
VINYL CHLORIDE, UG/L	<5	--
METHYL ETHYL KETONE, UG/L	<5	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05312	TCLP NONVOLATILE EXTRACTION OF LOG #91-05312
Log Number 91-	05330	05348
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

4. E-2

ChesterLab
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Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

	#6 REGENERATOR SUMP WASTE
Source	PICKLE LIQUOR
Log Number 91-	05319
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	<1
TOTAL SOLIDS, MG/L	425,400
FREON EXTRACTABLES (LIQUID EXTR.), MG/L	<1
TOTAL CYANIDE, CN, MG/L	<0.01
PHENOL (4AAP), PHOW, MG/L	<0.03
TOTAL ORGANIC CARBON ,C, MG/L	9,500
DENSITY, G/ML	1.25
CORROSIVITY	CORROSIVE
REACTIVITY	NONREACTIVE
SULFIDE REACTIVITY, MG H2S/KG	<20
IGNITABILITY	NONIGNITABLE
FLASH POINT, DEG F	>200
PAINT FILTER LIQUIDS TEST	FAIL
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ARSENIC, AS, MG/L	<0.1
BARIUM, BA, MG/L	0.60
CADMIUM, CD, MG/L	2.6
HEXAVALENT CHROMIUM, CR, PPM	<1
TOTAL CHROMIUM, CR, MG/L	90
LEAD, PB, MG/L	9.1
MERCURY, HG, MG/L	<0.01
SELENIUM, SE, MG/L	<0.1
SILVER, AG, MG/L	0.49
NAPHTHALENE, MG/L	<1

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

	#6 REGENERATOR SUMP WASTE PICKLE LIQUOR
Source	
Log Number 91-	05319
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
TOTAL PCB, MG/L	<1

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05319	TCLP NONVOLATILE EXTRACTION OF LOG #91-05319
Log Number 91-	05337	05355
Date Collected	What	XXXXX
Time Collected		XXXXX
Date Received		26/91
WEIGHT EXTRACTED		TRATE
INITIAL FILTRATE, %		100
EXTRACTION FLUID	Fe Cr Pb ?	NONE
EXTRACT pH, UNITS		<1
ARSENIC, AS, MG/L		<0.1
BARIUM, BA, MG/L	--	<0.1
CADMIUM, CD, MG/L	--	2.6
TOTAL CHROMIUM, CR, MG/L	--	44
LEAD, PB, MG/L	--	6.3
MERCURY, HG, MG/L	--	<0.01
NICKEL, NI, MG/L	--	26
SELENIUM, SE, MG/L	--	<0.01
SILVER, AG, MG/L	--	0.42
BENZENE, UG/L	<10	--
CARBON TETRACHLORIDE, UG/L	<10	--
CHLOROBENZENE, UG/L	<10	--
CHLOROFORM, UG/L	<10	--
1,2-DICHLOROETHANE, UG/L	<10	--
1,1-DICHLOROETHYLENE, UG/L	<10	--
TETRACHLOROETHYLENE, UG/L	<10	--
TRICHLOROETHYLENE, UG/L	<10	--
VINYL CHLORIDE, UG/L	<10	--
METHYL ETHYL KETONE, UG/L	<10	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05319	TCLP NONVOLATILE EXTRACTION OF LOG #91-05319
Log Number 91-	05337	05355
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

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* "Less-than" (<) values are indicative of detection limit.

4. B-2

PLEASE PRINT TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: OHD080409521

Form Approved. OMB No. 2040-0086 Approval expires 7-31-88

OUTFALL NO. 4603

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 1)*

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG-TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	4.8	65.4					1	mg/L	KG	3.3	44.9	1
b. Chemical Oxygen Demand *(COD)*	51.2	697.7					1	mg/L	KG	16.0	218.0	1
c. Total Organic Carbon *(TOC)*	11.0	149.9					1	mg/L	KG	7.3	99.5	1
d. Total Suspended Solids *(TSS)*	39.0	531.4					1	mg/L	KG	17.0	231.6	1
e. Ammonia *(as N)*	<0.10	<1.363					1	mg/L	KG	0.21	2.9	1
f. Flow	VALUE 3.600		VALUE		VALUE		1	MGD		VALUE		
g. Temperature *(winter)*	VALUE 34.9		VALUE		VALUE		4	°C		VALUE 7.4		4
h. Temperature *(summer)*	VALUE 40.0		VALUE		VALUE		1	°C		VALUE No Data		
i. pH	MINIMUM 7.4	MAXIMUM 7.9	MINIMUM	MAXIMUM			4	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X													
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite *(as N)*		X												

CONTINUE ON REVERSE

OHD080409521

4603

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease	X		9.0	122.6					4	mg/L	KG	1	13.6	1
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		6638	90.4					1	ug/L	KG	1358	18.5	1
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OHD080409521	4603

Form Approved
OMB No. 40-0086
Approval expires 7-31-88

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the result of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. [illegible]
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X	X		110	1.499					1	ug/L	KG	90	1.226	1
2M. Arsenic, Total (7440-38-2)	X	X		<5	<0.068					1	ug/L	KG	<5	<0.068	1
3M. Beryllium, Total, 7440 41-7)	X	X		<12	<0.164					1	ug/L	KG	<12	<0.164	1
4M. Cadmium, Total (7440-43-9)	X	X		<1	<0.014					1	ug/L	KG	<1	<0.014	1
5M. Chromium, Total (7440 47-3)	X	X		<12	<0.164					1	ug/L	KG	<12	<0.164	1
6M. Copper, Total (7440-50-8)	X	X		23	0.313					1	ug/L	KG	19	0.259	1
7M. Lead, Total (7439-92-1)	X	X		29	0.395					1	ug/L	KG	29	0.395	1
8M. Mercury, Total (7439-97-6)	X	X		<0.2	<0.003					1	ug/L	KG	<0.2	<0.003	1
9M. Nickel, Total (7440-02 0)	X	X		35	0.477					1	ug/L	KG	32	0.436	1
10M. Selenium, Total (7782-49-2)	X	X		<5	<0.068					1	ug/L	KG	<5	<0.068	1
11M. Silver, Total (7440 22-4)	X	X		<10	<0.136					1	ug/L	KG	<10	<0.136	1
12M. Thallium, Total (7440-28 0)	X	X		<20	<0.273					1	ug/L	KG	20	0.273	1
13M. Zinc, Total (7440-66-6)	X	X		60	0.818					1	ug/L	KG	55	0.749	1
14M. Cyanide, Total (57 12 5)	X	X		<0.010	<0.136					1	mg/L	KG	<0.010	<0.136	1
15M. Phenols, Total	X	X		7	0.095					1	ug/L	KG	<5	<0.068	1
DIOXIN															
2,3,7,8 Tetrachlorodibenzo-P-Dioxin (1764-01			X	DESCRIBE RESULTS											

CONTINUE ON REVERSE

4. F-1

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/13/91

ANALYSES

Source	TERNE LINE WASTE PICKLE LIQUOR
Log Number 91-	05324
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	<1
TOTAL DISSOLVED SOLIDS, MG/L	260,120
TOTAL SOLIDS, MG/L	260,120
FREON EXTRACTABLES (LIQUID EXTR.), MG/L	2
TOTAL CYANIDE, CN, MG/L	<0.01
PHENOL (4AAP), PHOH, MG/L	<0.03
TOTAL ORGANIC CARBON ,C, MG/L	235
DENSITY, G/ML	1.22
CORROSIVITY	CORROSIVE
REACTIVITY	NONREACTIVE
SULFIDE REACTIVITY, MG H2S/KG	<20
IGNITABILITY	NONIGNITABLE
FLASH POINT, DEG F	>200
PAINT FILTER LIQUIDS TEST	FAIL
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ARSENIC, AS, MG/L	<0.1
BARIUM, BA, MG/L	0.45
CADMIUM, CD, MG/L	2.2
HEXAVALENT CHROMIUM, CR, PPM	<1
TOTAL CHROMIUM, CR, MG/L	18
LEAD, PB, MG/L	685
MERCURY, HG, MG/L	<0.01
SELENIUM, SE, MG/L	<0.1
SILVER, AG, MG/L	0.46

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/13/91

ANALYSES
(Continued)

Source	TERNE LINE WASTE PICKLE LIQUOR
Log Number 91-	05324
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
NAPHTHALENE, MG/L	<1
TOTAL PCB, MG/L	<1

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05324	TCLP NONVOLATILE EXTRACTION OF LOG #91-05324
Log Number 91-	05342	05360
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED	FILTRATE	FILTRATE
INITIAL FILTRATE, %	100	100
EXTRACTION FLUID	NONE	NONE
EXTRACT pH, UNITS	<1	<1
ARSENIC, AS, MG/L	--	<0.1
BARIUM, BA, MG/L	--	<0.1
CADMIUM, CD, MG/L	--	2.2
TOTAL CHROMIUM, CR, MG/L	--	18
LEAD, PB, MG/L	--	633
MERCURY, HG, MG/L	--	<0.01
NICKEL, NI, MG/L	--	1.0
SELENIUM, SE, MG/L	--	<0.01
SILVER, AG, MG/L	--	0.46
BENZENE, UG/L	<10	--
CARBON TETRACHLORIDE, UG/L	110	--
CHLOROBENZENE, UG/L	<10	--
CHLOROFORM, UG/L	805	--
1,2-DICHLOROETHANE, UG/L	<10	--
1,1-DICHLOROETHYLENE, UG/L	<10	--
TETRACHLOROETHYLENE, UG/L	<10	--
TRICHLOROETHYLENE, UG/L	<10	--
VINYL CHLORIDE, UG/L	<10	--
METHYL ETHYL KETONE, UG/L	<10	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05324	TCLP NONVOLATILE EXTRACTION OF LOG #91-05324
Log Number 91-	05342	05360
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	GALVANIZING LINE WASTE PICKLE LIQUOR
Log Number 91-	05325
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	<1
TOTAL DISSOLVED SOLIDS, MG/L	275,500
TOTAL SOLIDS, MG/L	275,500
FREON EXTRACTABLES (LIQUID EXTR.), MG/L	5
TOTAL CYANIDE, CN, MG/L	<0.01
PHENOL (4AAP), PHOH, MG/L	<0.03
TOTAL ORGANIC CARBON ,C, MG/L	250
DENSITY, G/ML	1.99
CORROSIVITY	CORROSIVE
REACTIVITY	NONREACTIVE
SULFIDE REACTIVITY, MG H2S/KG	<20
IGNITABILITY	NONIGNITABLE
FLASH POINT, DEG F	>200
PAINT FILTER LIQUIDS TEST	FAIL
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ARSENIC, AS, MG/L	<0.1
BARIUM, BA, MG/L	0.25
CADMIUM, CD, MG/L	1.7
HEXAVALENT CHROMIUM, CR, PPM	<1
TOTAL CHROMIUM, CR, MG/L	15
LEAD, PB, MG/L	12
MERCURY, HG, MG/L	<0.01
SELENIUM, SE, MG/L	<0.1
SILVER, AG, MG/L	0.43

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	GALVANIZING LINE WASTE PICKLE LIQUOR
Log Number 91-	05325
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
NAPHTHALENE, MG/L	<1
TOTAL PCB, MG/L	<1

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05325	TCLP NONVOLATILE EXTRACTION OF LOG #91-05325
Log Number 91-	05343	05361
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED	FILTRATE	FILTRATE
INITIAL FILTRATE, %	100	100
EXTRACTION FLUID	NONE	NONE
EXTRACT pH, UNITS	<1	<1
ARSENIC, AS, MG/L	--	<0.1
BARIUM, BA, MG/L	--	<0.1
CADMIUM, CD, MG/L	--	1.7
TOTAL CHROMIUM, CR, MG/L	--	15
LEAD, PB, MG/L	--	12
MERCURY, HG, MG/L	--	<0.01
NICKEL, NI, MG/L	--	18
SELENIUM, SE, MG/L	--	<0.01
SILVER, AG, MG/L	--	0.38
BENZENE, UG/L	<10	--
CARBON TETRACHLORIDE, UG/L	<10	--
CHLOROBENZENE, UG/L	<10	--
CHLOROFORM, UG/L	<10	--
1,2-DICHLOROETHANE, UG/L	<10	--
1,1-DICHLOROETHYLENE, UG/L	<10	--
TETRACHLOROETHYLENE, UG/L	<10	--
TRICHLOROETHYLENE, UG/L	<10	--
VINYL CHLORIDE, UG/L	<10	--
METHYL ETHYL KETONE, UG/L	<10	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05325	TCLP NONVOLATILE EXTRACTION OF LOG #91-05325
Log Number 91-	05343	05361
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

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* "Less-than" (<) values are indicative of detection limit.

4. F-2

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	#6 REGENERATOR SUMP WASTE PICKLE LIQUOR
Log Number 91-	05319
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	<1
TOTAL SOLIDS, MG/L	425,400
FREON EXTRACTABLES (LIQUID EXTR.), MG/L	<1
TOTAL CYANIDE, CN, MG/L	<0.01
PHENOL (4AAP), PHON, MG/L	<0.03
TOTAL ORGANIC CARBON ,C, MG/L	9,500
DENSITY, G/ML	1.25
CORROSIVITY	CORROSIVE
REACTIVITY	NONREACTIVE
SULFIDE REACTIVITY, MG H2S/KG	<20
IGNITABILITY	NONIGNITABLE
FLASH POINT, DEG F	>200
PAINT FILTER LIQUIDS TEST	FAIL
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ARSENIC, AS, MG/L	<0.1
BARIUM, BA, MG/L	0.60
CADMIUM, CD, MG/L	2.6
HEXAVALENT CHROMIUM, CR, PPM	<1
TOTAL CHROMIUM, CR, MG/L	90
LEAD, PB, MG/L	9.1
MERCURY, HG, MG/L	<0.01
SELENIUM, SE, MG/L	<0.1
SILVER, AG, MG/L	0.49
NAPHTHALENE, MG/L	<1

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

	#6 REGENERATOR SUMP WASTE PICKLE LIQUOR
Source	
Log Number 91-	05319
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
TOTAL PCB, MG/L	<1

399901

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ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05319	TCLP NONVOLATILE EXTRACTION OF LOG #91-05319
Log Number 91-	05337	05355
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED	FILTRATE	FILTRATE
INITIAL FILTRATE, %	100	100
EXTRACTION FLUID	NONE	NONE
EXTRACT pH, UNITS	<1	<1
ARSENIC, AS, MG/L	--	<0.1
BARIUM, BA, MG/L	--	<0.1
CADMIUM, CD, MG/L	--	2.6
TOTAL CHROMIUM, CR, MG/L	--	44
LEAD, PB, MG/L	--	6.3
MERCURY, HG, MG/L	--	<0.01
NICKEL, NI, MG/L	--	26
SELENIUM, SE, MG/L	--	<0.01
SILVER, AG, MG/L	--	0.42
BENZENE, UG/L	<10	--
CARBON TETRACHLORIDE, UG/L	<10	--
CHLOROBENZENE, UG/L	<10	--
CHLOROFORM, UG/L	<10	--
1,2-DICHLOROETHANE, UG/L	<10	--
1,1-DICHLOROETHYLENE, UG/L	<10	--
TETRACHLOROETHYLENE, UG/L	<10	--
TRICHLOROETHYLENE, UG/L	<10	--
VINYL CHLORIDE, UG/L	<10	--
METHYL ETHYL KETONE, UG/L	<10	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05319	TCLP NONVOLATILE EXTRACTION OF LOG #91-05319
Log Number 91-	05337	05355
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

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4. F-3

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	#5 SURGE TANK WASTE PICKLE LIQUOR
Log Number 91-	05320
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	<1
TOTAL SOLIDS, MG/L	430,800
FREON EXTRACTABLES (LIQUID EXTR.), MG/L	1
TOTAL CYANIDE, CN, MG/L	<0.01
PHENOL (4AAP), PHOH, MG/L	<0.03
TOTAL ORGANIC CARBON ,C, MG/L	325
DENSITY, G/ML	1.26
CORROSIVITY	CORROSIVE
REACTIVITY	NONREACTIVE
SULFIDE REACTIVITY, MG H2S/KG	<20
IGNITABILITY	NONIGNITABLE
FLASH POINT, DEG F	>200
PAINT FILTER LIQUIDS TEST	FAIL
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ARSENIC, AS, MG/L	<0.1
BARIUM, BA, MG/L	0.31
CADMIUM, CD, MG/L	2.5
HEXAVALENT CHROMIUM, CR, MG/L	<1
TOTAL CHROMIUM, CR, MG/L	171
LEAD, PB, MG/L	9.1
MERCURY, HG, MG/L	<0.01
SELENIUM, SE, MG/L	<0.1
SILVER, AG, MG/L	0.47
NAPHTHALENE, MG/L	<1

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	#5 SURGE TANK WASTE PICKLE LIQUOR
Log Number 91-	05320
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
TOTAL PCB, MG/L	<1

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05320	TCLP NONVOLATILE EXTRACTION OF LOG #91-05320
Log Number 91-	05338	05356
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED	FILTRATE	FILTRATE
INITIAL FILTRATE, %	100	100
EXTRACTION FLUID	NONE	NONE
EXTRACT pH, UNITS	<1	<1
ARSENIC, AS, MG/L	--	<0.1
BARIUM, BA, MG/L	--	<0.1
CADMIUM, CD, MG/L	--	2.5
TOTAL CHROMIUM, CR, MG/L	--	160
LEAD, PB, MG/L	--	7.1
MERCURY, HG, MG/L	--	<0.01
NICKEL, NI, MG/L	--	90
SELENIUM, SE, MG/L	--	<0.01
SILVER, AG, MG/L	--	0.47
BENZENE, UG/L	<10	--
CARBON TETRACHLORIDE, UG/L	<10	--
CHLOROBENZENE, UG/L	<10	--
CHLOROFORM, UG/L	<10	--
1,2-DICHLOROETHANE, UG/L	<10	--
1,1-DICHLOROETHYLENE, UG/L	<10	--
TETRACHLOROETHYLENE, UG/L	<10	--
TRICHLOROETHYLENE, UG/L	<10	--
VINYL CHLORIDE, UG/L	<10	--
METHYL ETHYL KETONE, UG/L	<10	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05320	TCLP NONVOLATILE EXTRACTION OF LOG #91-05320
Log Number 91-	05338	05356
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

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4. A

ChesterLab
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Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/06/91

ANALYSES

Source	BOF SLAG
Log Number 91-	05326
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	12.1
TOTAL SOLIDS, WT%	99.4
FREON EXTRACTABLES (SOXHLET), PPM	105
MOISTURE CONTENT, WT%	0.6
TOTAL CYANIDE, CN, PPM	28
FLUORIDE (DISTILLED), F, PPM	1,550
AMMONIA, N, PPM	<1
PHENOL (4AAP), PHOH, PPM	<0.2
DENSITY, G/ML	3.30
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ALUMINUM, AL, PPM	7,340
ARSENIC, AS, PPM	<1
BARIUM, BA, PPM	15
CADMIUM, CD, PPM	<0.5
CALCIUM, CA, PPM	176,000
TOTAL CHROMIUM, CR, PPM	2,230
COPPER, CU, PPM	3.3
TOTAL IRON, FE, PPM	147,000
LEAD, PB, PPM	<1
MAGNESIUM, MG, PPM	33,200
MANGANESE, MN, PPM	17,700
MERCURY, HG, PPM	<0.02
NICKEL, NI, PPM	<1
POTASSIUM, K, PPM	20

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/06/91

ANALYSES
(Continued)

Source	BOF SLAG
Log Number 91-	05326
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
SELENIUM, SE, PPM	<1
SILVER, AG, PPM	<1
SODIUM, NA, PPM	2,510
TOTAL SULFUR, S, PPM	1,010
ZINC, ZN, PPM	13

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/06/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05326	TCLP NONVOLATILE EXTRACTION OF LOG #91-05326
Log Number 91-	05344	05362
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED, GRAMS	25	100
INITIAL FILTRATE, ML	0	0
EXTRACTION FLUID	#1	#1
EXTRACT pH, UNITS	11.5	11.8
ARSENIC, AS, MG/L	--	<0.1
BARIUM, BA, MG/L	--	<0.2
CADMIUM, CD, MG/L	--	<0.005
TOTAL CHROMIUM, CR, MG/L	--	<0.01
LEAD, PB, MG/L	--	<0.1
MERCURY, HG, MG/L	--	<0.0002
NICKEL, NI, MG/L	--	<0.04
SELENIUM, SE, MG/L	--	<0.1
SILVER, AG, MG/L	--	<0.01
BENZENE, UG/L	<5	--
CARBON TETRACHLORIDE, UG/L	<5	--
CHLOROBENZENE, UG/L	<5	--
CHLOROFORM, UG/L	7	--
1,2-DICHLOROETHANE, UG/L	<5	--
1,1-DICHLOROETHYLENE, UG/L	<5	--
TETRACHLOROETHYLENE, UG/L	<5	--
TRICHLOROETHYLENE, UG/L	<5	--
VINYL CHLORIDE, UG/L	<5	--
METHYL ETHYL KETONE, UG/L	<5	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/06/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05326	TCLP NONVOLATILE EXTRACTION OF LOG #91-05326
Log Number 91-	05344	05362
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

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4. A

ChesterLab
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4990 Grand Avenue
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Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/07/91

ANALYSES

Source	BOF PRECIPITATOR ~~BAGHOUSE~~ DUST
Log Number 91-	05310
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	11.9
TOTAL SOLIDS, WT%	99.5
FREON EXTRACTABLES (SOXHLET), PPM	180
MOISTURE CONTENT, WT%	0.5
TOTAL CYANIDE, CN, PPM	<0.1
FLUORIDE (DISTILLED), F, PPM	1,300
AMMONIA, N, PPM	3.6
PHENOL (4AAP), PHOH, PPM	<0.2
DENSITY, G/ML	4.17
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ALUMINUM, AL, PPM	330
ARSENIC, AS, PPM	<1
BARIUM, BA, PPM	3.3
CADMIUM, CD, PPM	14
CALCIUM, CA, PPM	18,400
TOTAL CHROMIUM, CR, PPM	170
COPPER, CU, PPM	117
TOTAL IRON, FE, PPM	679,000
LEAD, PB, PPM	1,470
MAGNESIUM, MG, PPM	8,200
MANGANESE, MN, PPM	3,040
MERCURY, HG, PPM	<0.02
NICKEL, NI, PPM	72
POTASSIUM, K, PPM	1,640

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/07/91

ANALYSES
(Continued)

Source	PRECIPITATOR BAGHOUSE DUST
Log Number 91-	05310
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
SELENIUM, SE, PPM	<1
SILVER, AG, PPM	<1
SODIUM, NA, PPM	8,270
TOTAL SULFUR, S, PPM	562
ZINC, ZN, PPM	4,920

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/07/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05310	TCLP NONVOLATILE EXTRACTION OF LOG #91-05310
Log Number 91-	05328	05346
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED, GRAMS	25	100
INITIAL FILTRATE, ML	0	0
EXTRACTION FLUID	#1	#2
EXTRACT pH, UNITS	8.5	6.8
ARSENIC, AS, MG/L	--	<0.03
BARIUM, BA, MG/L	--	0.09
CADMIUM, CD, MG/L	--	0.03
TOTAL CHROMIUM, CR, MG/L	--	<0.01
LEAD, PB, MG/L	--	<0.02
MERCURY, HG, MG/L	--	<0.0002
NICKEL, NI, MG/L	--	0.28
SELENIUM, SE, MG/L	--	<0.04
SILVER, AG, MG/L	--	<0.01
BENZENE, UG/L	<5	--
CARBON TETRACHLORIDE, UG/L	<5	--
CHLOROBENZENE, UG/L	<5	--
CHLOROFORM, UG/L	57	--
1,2-DICHLOROETHANE, UG/L	<5	--
1,1-DICHLOROETHYLENE, UG/L	<5	--
TETRACHLOROETHYLENE, UG/L	<5	--
TRICHLOROETHYLENE, UG/L	<5	--
VINYL CHLORIDE, UG/L	<5	--
METHYL ETHYL KETONE, UG/L	<5	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

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Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/07/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05310	TCLP NONVOLATILE EXTRACTION OF LOG #91-05310
Log Number 91-	05328	05346
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

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4. B-1

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

840 S. MAIN STREET
AKRON, OHIO 44311
(216) 535-1300

WORK ORDER #: 91-01-009

SAMPLES RECEIVED: 01/02/91
ANALYSIS REPORTED: 01/18/91

REPORT ISSUED TO:

Dick Gradishar / Tom Shepker
Warren Consolidated
Industries, Inc.
1040 Pine Avenue, SE
Warren, Ohio 44482-1550

WORK ID: Flood Surveillance

SAMPLED BY: Dick Gradishar
SAMPLE TYPE: Water

SAMPLE ANALYSIS REPORT

SAMPLE ID / AAL LAB #	DATE COLLECTED	PARAMETER(S)	RESULT(S)	UNITS	METHOD(S)
G090 9101009-01	01/01/91				
DESCRIPTION: Grab					
		Conduit Flow	**0.170**	MGD	AAL_SPECIAL
		pH	**4.0**	s.u.	EPA_150_1
		Naphthalene	**< 1.0**	ug/L	EPA_625
		Lead	**223**	ug/L	EPA_239_1
		Zinc	**11890**	ug/L	EPA_289_1
		Tetrachloroethylene	**< 10.0**	ug/L	EPA_624
		Oil & Grease, Total	**23.0**	mg/L	EPA_413_1
		Residue, Total(Nonfilter)	**107**	mg/L	EPA_160_2
G602 9101009-02	01/01/91				
DESCRIPTION: Composite					
		Conduit Flow	**1.277**	MGD	AAL_SPECIAL
		pH (max)	**10.0**	s.u.	EPA_150_1
		pH (min)	**9.0**	s.u.	EPA_150_1
		Naphthalene	**< 1.0**	ug/L	EPA_625
		Lead	**< 25.0**	ug/L	EPA_239_1
		Zinc	**920**	ug/L	EPA_289_1
		Tetrachloroethylene	**< 10.0**	ug/L	EPA_624
		Oil & Grease, Total	**4.0**	mg/L	EPA_413_1
		Residue, Total(Nonfilter)	**44**	mg/L	EPA_160_2

ANALYSIS REVIEWED AND APPROVED BY Terence M. Hayes

4.G-2

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES

Source	GALVANIZE BAGHOUSE DUST
Log Number 91-	05309
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	4.4
TOTAL SOLIDS, WT%	99.7
FREON EXTRACTABLES (SOXHLET), PPM	100
MOISTURE CONTENT, WT%	0.3
TOTAL CYANIDE, CN, PPM	1.5
PHENOL (4AAP), PHOH, PPM	16
DENSITY, G/ML	2.40
CORROSIVITY	NONCORROSIVE
REACTIVITY	NONREACTIVE
SULFIDE REACTIVITY, MG H2S/KG	<20
IGNITABILITY	NONIGNITABLE
FLASH POINT, DEG F	>200
PAINT FILTER LIQUIDS TEST	PASS
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ARSENIC, AS, PPM	<1
BARIUM, BA, PPM	<1
CADMIUM, CD, PPM	15
HEXAVALENT CHROMIUM, CR, PPM	<1
TOTAL CHROMIUM, CR, PPM	15
LEAD, PB, PPM	611
MANGANESE, MN, PPM	6.1
MERCURY, HG, PPM	<0.02
NICKEL, NI, PPM	18
SELENIUM, SE, PPM	<1

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES
(Continued)

Source	GALVANIZE BAGHOUSE DUST
Log Number 91-	05309
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
SILVER, AG, PPM	<1
ZINC, ZN, PPM	355,000
NAPHTHALENE, PPM	<0.1
TOTAL PCB, PPM	<1

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05309	TCLP NONVOLATILE EXTRACTION OF LOG #91-05309
Log Number 91-	05327	05345
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED, GRAMS	25	100
INITIAL FILTRATE, ML	0	0
EXTRACTION FLUID	#1	#1
EXTRACT pH, UNITS	6.0	5.8
ARSENIC, AS, MG/L	--	<0.03
BARIUM, BA, MG/L	--	0.02
CADMIUM, CD, MG/L	--	<0.005
TOTAL CHROMIUM, CR, MG/L	--	<0.01
LEAD, PB, MG/L	--	<0.02
MERCURY, HG, MG/L	--	<0.0002
NICKEL, NI, MG/L	--	0.06
SELENIUM, SE, MG/L	--	<0.04
SILVER, AG, MG/L	--	<0.01
BENZENE, UG/L	<5	--
CARBON TETRACHLORIDE, UG/L	<5	--
CHLOROBENZENE, UG/L	<5	--
CHLOROFORM, UG/L	22	--
1,2-DICHLOROETHANE, UG/L	<5	--
1,1-DICHLOROETHYLENE, UG/L	<5	--
TETRACHLOROETHYLENE, UG/L	<5	--
TRICHLOROETHYLENE, UG/L	<5	--
VINYL CHLORIDE, UG/L	<5	--
METHYL ETHYL KETONE, UG/L	38	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/05/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05309	TCLP NONVOLATILE EXTRACTION OF LOG #91-05309
Log Number 91-	05327	05345
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

4. H-1

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: OHD080409521

Form Approved. OMB No. 2040-0086 Approval expires 7-31-88

OUTFALL NO. 4602

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page V-1)*

PART A - You must provide the results of at least one analysis for every pollutant in this section. Complete one table for each outfall. See the instructions for additional details.

1. POLLUTANT	2. MARK "X"		3. EFFLUENT					3. UNITS (specify if blank)		4. INTAKE (optional)		b. NO. OF ANALYSES
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand *(BOD)*	4.2	27.5					1	mg/L	KG	3.3	21.6	1
b. Chemical Oxygen Demand *(COD)*	138.0	902.6					1	mg/L	KG	16.0	104.6	1
c. Total Organic Carbon *(TOC)*	38.0	248.5					1	mg/L	KG	7.3	47.7	1
d. Total Suspended Solids *(TSS)*	10	65.4					1	mg/L	KG	17.0	111.2	1
e. Ammonia *(as N)*	5.60	36.6					1	mg/L	KG	0.21	1.4	1
f. Flow	VALUE 1.728		VALUE		VALUE		1	MGD		VALUE		
g. Temperature *(winter)*	VALUE 22.4		VALUE		VALUE		4	°C		VALUE 7.4		4
h. Temperature *(summer)*	VALUE No Data		VALUE		VALUE			°C		VALUE No Data		
i. pH	MINIMUM 8.8	MAXIMUM 9.5	MINIMUM	MAXIMUM			4	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE *(optional)*		b. NO. OF ANALYSES
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (if available)		c. LONG TERM AVG. VALUE (if available)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X													
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite *(as N)*		X												

CONTINUE ON REVERSE

ITEM V-B CONTIN FROM FRONT

OHD080409521

4602

1. POLLUTANT AND CAS NO. (If available)	2. MARK 'X' a. BELIEVED PRESENT	2. MARK 'X' b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (If available) (2) MASS	c. LONG TERM AVERAGE VALUE (If available) (1) CONCENTRATION	c. LONG TERM AVERAGE VALUE (If available) (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	4. UNITS b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (2) MASS	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease	X		3.0	19.6					4	mg/L	KG	1	6.5	4
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		203	1.33					1	ug/L	KG	1358	8.90	1
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OHD080409521	4602

Form Ap, ed.
OMB No. 2040-0086
Approval expires 7-31-88

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, [illegible] which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for [illegible] are not required [illegible] *secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions,* mark "X" in [illegible] have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide [illegible] for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe [illegible] concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK "X" a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. AN YS
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X	X		170	1.112					1	ug/L	KG	90	0.589	1
2M. Arsenic, Total (7440-38-2)	X	X		<5	<0.033					1	ug/L	KG	<5	<0.033	1
3M. Beryllium, Total, 7440-41-7)	X	X		<12	<0.078					1	ug/L	KG	<12	<0.078	1
4M. Cadmium, Total (7440-43-9)	X	X		1	0.007					1	ug/L	KG	<1	<0.007	1
5M. Chromium, Total (7440-47-3)	X	X		<12	<0.078					1	ug/L	KG	<12	<0.078	1
6M. Copper, Total (7440-50-8)	X	X		<12	<0.078					1	ug/L	KG	19	0.124	1
7M. Lead, Total (7439-92-1)	X	X		<25	<0.164					1	ug/L	KG	29	0.190	1
8M. Mercury, Total (7439-97-6)	X	X		<0.2	<0.001					1	ug/L	KG	<0.2	<0.001	1
9M. Nickel, Total (7440-02-0)	X	X		35	0.229					1	ug/L	KG	32	0.209	1
10M. Selenium, Total (7782-49-2)	X	X		<5	<0.033					1	ug/L	KG	<5	<0.033	1
11M. Silver, Total (7440-22-4)	X	X		<10	<0.065					1	ug/L	KG	<10	<0.065	1
12M. Thallium, Total (7440-28-0)	X	X		70	0.458					1	ug/L	KG	20	0.131	1
13M. Zinc, Total (7440-66-6)	X	X		80	0.523					1	ug/L	KG	55	0.360	1
14M. Cyanide, Total (57-12-5)	X	X		<0.010	<0.065					1	mg/L	KG	<0.010	<0.065	1
15M. Phenols, Total	X	X		32	0.209					1	ug/L	KG	<5	<0.033	1

DIOXIN				DESCRIBE RESULTS
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	

CONTINUE ON REVERSE

4. H-2

PLEASE PRINT TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: OHD080409521

Form Approved OMB No. 20[illegible]86 Approval expi[illegible]/-31-88

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from [illegible] Form [illegible])*

OUTFALL N[illegible]: 4601

PART A - You must provide the results of at least one analysis for every pollutant [illegible] one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	[illegible]	[illegible]	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	12.8	7.0					1	mg/L	KG	3.3	1.8	1
b. Chemical Oxygen Demand *(COD)*	143.0	77.9					1	mg/L	KG	16.0	8.7	1
c. Total Organic Carbon *(TOC)*	17.0	9.3					1	mg/L	KG	7.3	4.0	1
d. Total Suspended Solids *(TSS)*	166.0	90.5					1	mg/L	KG	17.0	9.3	1
e. Ammonia *(as N)*	83.6	45.6					1	mg/L	KG	0.21	0.11	1
f. Flow	VALUE 0.144		VALUE		VALUE		1	MGD		VALUE		
g. Temperature *(winter)*	VALUE 35.0		VALUE		VALUE		4	°C		VALUE 7.4		4
h. Temperature *(summer)*	VALUE No Data		VALUE		VALUE			°C		VALUE No Data		
i. pH	MINIMUM 7.1	MAXIMUM 8.1	MINIMUM	MAXIMUM			4	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X													
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate—Nitrite *(as N)*		X												

OHD080409521

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (if available)	2. MARK "X" a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease	X		1.0	0.55					4	mg/L	KG	1	0.55	4
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		6250	3.41					1	ug/L	KG	1358	0.74	1
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OHD080409521	4601

Form Approved.
OMB N 40-0086
Approval Expires 7-31-88

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanide, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls; and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4-dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)	
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS
METALS, CYANIDE, AND TOTAL PHENOLS														
1M. Antimony, Total (7440-36-0)	X	X		220	0.120					1	ug/L	KG	90	0.049
2M. Arsenic, Total (7440-38-2)	X	X		30	0.016					1	ug/L	KG	<5	<0.003
3M. Beryllium, Total, 7440-41-7)	X	X		<12	<0.007					1	ug/L	KG	<12	<0.007
4M. Cadmium, Total (7440-43-9)	X	X		8	0.004					1	ug/L	KG	<1	<0.001
5M. Chromium, Total (7440-47-3)	X	X		<12	<0.007					1	ug/L	KG	<12	<0.007
6M. Copper, Total (7440-50-8)	X	X		13	0.007					1	ug/L	KG	19	0.010
7M. Lead, Total (7439-92-1)	X	X		75	0.041					1	ug/L	KG	29	0.016
8M. Mercury, Total (7439-97-6)	X	X		<0.2	<0.0001					1	ug/L	KG	<0.2	<0.0001
9M. Nickel, Total (7440-02-0)	X	X		45	0.025					1	ug/L	KG	32	0.017
10M. Selenium, Total (7782-49-2)	X	X		<5	<0.003					1	ug/L	KG	<5	<0.003
11M. Silver, Total (7440-22-4)	X	X		<10	<0.005					1	ug/L	KG	<10	<0.005
12M. Thallium, Total (7440-28-0)	X	X		130	0.071					1	ug/L	KG	20	0.011
13M. Zinc, Total (7440-66-6)	X	X		652	0.355					1	ug/L	KG	55	0.030
14M. Cyanide, Total (57-12-5)	X	X		<0.010	<0.005					1	mg/L	KG	<0.010	<0.005
15M. Phenols, Total	X	X		24	0.013					1	ug/L	KG	<5	<0.003

DIOXIN				
2,3,7,8-Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS

CONTINUE ON REVERSE

4. H-3

PLEASE PRINT (TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets *(use the same format)* instead of completing these pages. SEE INSTRUCTIONS.

EPA I.D. NUMBER *(copy from Item 1 of Form 1)*: OHD080409521

Form Approved. OMB No. 2040-[illegible]6 Approval expires [illegible]31-88

OUTFALL NO. 4604

V. INTAKE AND EFFLUENT CHARACTERISTICS *(continued from page 3 of Form 2-C)*

PART A - You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. (2) MASS	d. NO. OF ANALYSES	3. UNITS (specify if blank) a. CONCENTRATION	b. MASS	4. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. (2) MASS	b. NO. OF ANALYSES
a. Biochemical Oxygen Demand *(BOD)*	3.1	16.9					1	mg/L	KG	3.3	18.0	1
b. Chemical Oxygen Demand *(COD)*	27.0	147.2					1	mg/L	KG	16.0	87.2	1
c. Total Organic Carbon *(TOC)*	7.3	39.8					1	mg/L	KG	7.3	39.8	1
d. Total Suspended Solids *(TSS)*	42.0	228.9					1	mg/L	KG	17.0	92.7	1
e. Ammonia *(as N)*	0.23	1.25					1	mg/L	KG	0.21	1.15	1
f. Flow	VALUE 1.440		VALUE		VALUE		1	MGD		VALUE		
g. Temperature *(winter)*	VALUE 9.7		VALUE		VALUE		4	°C		VALUE 7.4		4
h. Temperature *(summer)*	VALUE No Data		VALUE		VALUE			°C		VALUE No Data		
i. pH	MINIMUM 7.2	MAXIMUM 7.7	MINIMUM	MAXIMUM			4	STANDARD UNITS				

PART B - Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. *(if available)*	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. (2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. (2) MASS	b. NO. OF ANALYSES
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color	X													
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite *(as N)*		X												

CONTINUE ON REVERSE

ITEM V-B CONTINUED FROM FRONT

OHD080409521

4604

1. POLLUTANT AND CAS NO. (If available)	2. MARK 'X' a. BELIEVED PRESENT	b. BELIEVED ABSENT	3. EFFLUENT a. MAXIMUM DAILY VALUE (1) CONCENTRATION	(2) MASS	b. MAXIMUM 30 DAY VALUE (If available) (1) CONCENTRATION	(2) MASS	c. LONG TERM AVG. VALUE (If available) (1) CONCENTRATION	(2) MASS	d. NO. OF ANALYSES	4. UNITS a. CONCENTRATION	b. MASS	5. INTAKE (optional) a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	(2) MASS	b. NO. OF ANALYSES
g. Nitrogen, Total Organic (as N)		X												
h. Oil and Grease	X		24.0	130.8					4	mg/L	KG	1	5.5	1
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (as SO_4) (14808-79-8)		X												
l. Sulfide (as S)		X												
m. Sulfite (as SO_3) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)		X												
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)	X		5517	30.1					1	ug/L	KG	1358	7.4	1
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

CONTINUE ON PAGE V-3

EPA I.D. NUMBER (copy from Item 1 of Form 1)	OUTFALL NUMBER
OHD080409521	4604

Form Approved
OMB No. 0-0086
Approval Expires 7-31-88

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in colum 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a *(secondary industries, nonproces wastewater outfalls, and nonrequired GC/MS fractions)*, mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant yo believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the result of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2, dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge i concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected t be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table *(all 7 pages)* for each outfall. See instructions for additional details and requirements

1. POLLUTANT AND CAS NUMBER (if available)	2. MARK 'X'			3. EFFLUENT							4. UNITS		5. INTAKE (optional)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE (1) CONCENTRATION	a. MAXIMUM DAILY VALUE (2) MASS	b. MAXIMUM 30 DAY VALUE (if available) (1) CONCENTRATION	b. MAXIMUM 30 DAY VALUE (if available) (2) MASS	c. LONG TERM AVRG. VALUE (if available) (1) CONCENTRATION	c. LONG TERM AVRG. VALUE (if available) (2) MASS	d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE (1) CONCENTRATION	a. LONG TERM AVERAGE VALUE (2) MASS	b. A
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)	X	X		100	0.545					1	ug/L	KG	90	0.491	
2M. Arsenic, Total (7440-38-2)	X	X		<5	<0.027					1	ug/L	KG	<5	<0.027	
3M. Beryllium, Total, 7440-41-7)	X	X		<12	<0.065					1	ug/L	KG	<12	<0.065	
4M. Cadmium, Total (7440-43-9)	X	X		<1	<0.005					1	ug/L	KG	<1	<0.005	
5M. Chromium, Total (7440-47-3)	X	X		<12	<0.065					1	ug/L	KG	<12	<0.065	
6M. Copper, Total (7440-50-8)	X	X		24	0.131					1	ug/L	KG	19	0.104	
7M. Lead, Total (7439-92-1)	X	X		35	0.191					1	ug/L	KG	29	0.158	
8M. Mercury, Total (7439 97-6)	X	X		<0.2	<0.001					1	ug/L	KG	<0.2	<0.001	
9M. Nickel, Total (7440-02-0)	X	X		20	0.109					1	ug/L	KG	32	0.174	
10M. Selenium, Total (7782 49 2)	X	X		<5	<0.027					1	ug/L	KG	<5	<0.027	
11M. Silver, Total (7440-22-4)	X	X		<10	<0.055					1	ug/L	KG	<10	<0.055	
12M. Thallium, Total (7440-28-0)	X	X		20	0.109					1	ug/L	KG	20	0.109	
13M. Zinc, Total (7440-66-6)	X	X		23	0.125					1	ug/L	KG	55	0.300	
14M. Cyanide, Total (57-12-5)	X	X		<0.010	<0.055					1	mg/L	KG	<0.010	<0.055	
15M. Phenols, Total	X	X		<5	<0.027					1	ug/L	KG	<5	<0.027	

DIOXIN

2,3,7,8 Tetrachlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS

CONTINUE ON REVERSE

4. I

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	#6 REGENERATOR SUMP WASTE PICKLE LIQUOR
Log Number 91-	05319
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
pH, UNITS	<1
TOTAL SOLIDS, MG/L	425,400
FREON EXTRACTABLES (LIQUID EXTR.), MG/L	<1
TOTAL CYANIDE, CN, MG/L	<0.01
PHENOL (4AAP), PHOH, MG/L	<0.03
TOTAL ORGANIC CARBON ,C, MG/L	9,500
DENSITY, G/ML	1.25
CORROSIVITY	CORROSIVE
REACTIVITY	NONREACTIVE
SULFIDE REACTIVITY, MG H2S/KG	<20
IGNITABILITY	NONIGNITABLE
FLASH POINT, DEG F	>200
PAINT FILTER LIQUIDS TEST	FAIL
TCLP VOLATILE EXTRACT	DONE
TCLP NONVOLATILE EXTRACT	DONE
ARSENIC, AS, MG/L	<0.1
BARIUM, BA, MG/L	0.60
CADMIUM, CD, MG/L	2.6
HEXAVALENT CHROMIUM, CR, PPM	<1
TOTAL CHROMIUM, CR, MG/L	90
LEAD, PB, MG/L	9.1
MERCURY, HG, MG/L	<0.01
SELENIUM, SE, MG/L	<0.1
SILVER, AG, MG/L	0.49
NAPHTHALENE, MG/L	<1

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

	#6 REGENERATOR SUMP WASTE PICKLE LIQUOR
Source	
Log Number 91-	05319
Date Collected	4/26/91
Time Collected	GRAB
Date Received	4/26/91
TOTAL PCB, MG/L	<1

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

ChesterLab
A Division of
CHESTER LabNet
4990 Grand Avenue
Pittsburgh, PA 15225
Phone (412)-269-5708

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05319	TCLP NONVOLATILE EXTRACTION OF LOG #91-05319
Log Number 91-	05337	05355
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
WEIGHT EXTRACTED	FILTRATE	FILTRATE
INITIAL FILTRATE, %	100	100
EXTRACTION FLUID	NONE	NONE
EXTRACT pH, UNITS	<1	<1
ARSENIC, AS, MG/L	--	<0.1
BARIUM, BA, MG/L	--	<0.1
CADMIUM, CD, MG/L	--	2.6
TOTAL CHROMIUM, CR, MG/L	--	44
LEAD, PB, MG/L	--	6.3
MERCURY, HG, MG/L	--	<0.01
NICKEL, NI, MG/L	--	26
SELENIUM, SE, MG/L	--	<0.01
SILVER, AG, MG/L	--	0.42
BENZENE, UG/L	<10	--
CARBON TETRACHLORIDE, UG/L	<10	--
CHLOROBENZENE, UG/L	<10	--
CHLOROFORM, UG/L	<10	--
1,2-DICHLOROETHANE, UG/L	<10	--
1,1-DICHLOROETHYLENE, UG/L	<10	--
TETRACHLOROETHYLENE, UG/L	<10	--
TRICHLOROETHYLENE, UG/L	<10	--
VINYL CHLORIDE, UG/L	<10	--
METHYL ETHYL KETONE, UG/L	<10	--
PENTACHLOROPHENOL, UG/L	--	<10
2,4,6-TRICHLOROPHENOL, UG/L	--	<10

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

Laboratory Analysis Report
For
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Report Date: 06/10/91

ANALYSES
(Continued)

Source	TCLP VOLATILE EXTRACTION OF LOG #91-05319	TCLP NONVOLATILE EXTRACTION OF LOG #91-05319
Log Number 91-	05337	05355
Date Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Time Collected	XXXXXXXXXXXXXX	XXXXXXXXXXXXXX
Date Received	4/26/91	4/26/91
1,4-DICHLOROBENZENE, UG/L	--	<10
2,4-DINITROTOLUENE, UG/L	--	<10
HEXACHLOROBENZENE, UG/L	--	<10
HEXACHLOROBUTADIENE, UG/L	--	<10
HEXACHLOROETHANE, UG/L	--	<10
NITROBENZENE, UG/L	--	<10
m-CRESOL, UG/L	--	<10
o-CRESOL, UG/L	--	<10
p-CRESOL, UG/L	--	<10
TOTAL CRESOLS, UG/L	--	<10
PYRIDINE, UG/L	--	<10
2,4,5-TRICHLOROPHENOL, UG/L	--	<10
CHLORDANE, UG/L	--	<10
HEPTACHLOR, UG/L	--	<8

399901

* Unless otherwise noted, analyses are in accordance with the methods and procedures outlined and approved by the Environmental Protection Agency and conform to quality assurance protocol.
* "Less-than" (<) values are indicative of detection limit.

ANALYTICAL RESULTS
FOR

WCI Steel Incorporated
1040 Pine Ave. SE
Warren, Ohio 44483-6528

Name of Collector : K. Royle

ASSIGNED ASAP ID #	CUSTOMER ID	SAMPLE MATRIX	SITE, DATE & TIME OF COLLECTION
*	Blast Furnace Treatment Plant Sludge	Solid	WCI Steel, Inc.
921019-03-C	Casthouse Baghouse Dust	Solid	Refer to Chain-of-Custody
921019-03-A	Central Treatment Plant Sludge	Solid	
921019-03-D	BOF Slag	Solid	
921019-03-E	BOF Precipitator Dust	Solid	
921019-03-F	BOF Desulfurizer Baghouse Dust	Solid	
921019-03-G	Caster Scale Pit Sludge	Solid	
921019-03-H	LMF Baghouse Dust	Solid	
921019-07-A	Heavy (Bottom) Ash	Solid	
921019-07-B	Light Fly Ash	Solid	
921019-03-P	Grinder Baghouse Dust	Solid	
921019-03-I	Scale Pit Solids Entrance End	Solid	
921019-03-J	Scale Pit Solids Exit End	Solid	
921019-03-K	Galvanize Baghouse Dust	Solid	
921019-06-A	56 Inch Mill Lagoon Sludge	Solid	
921019-03-M	Waste Pickle Liquor #5 Surge Tank	Liquid	
921019-03-N	Waste Pickle Liquor #6 Sump	Liquid	
921112-12-A	Waste Pickle Liquor Galvanize Sump	Liquid	
921019-03-O	Waste Pickle Liquor Terne Line Sump	Liquid	
921019-03-L	Iron Oxide Dust	Solid	

* Sample was not collected.
Note: Pesticides extracted on 12/8/92 and analyzed 12/10/92.

Laboratory Information : Samples were refrigerated upon receipt and analyzed as received.

Released by: Husein Sitabkhan

Husein Sitabkhan PhD.
Lab Director

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Pollution
Control
Services
For a Better Tomorrow

ASAP TECHNICAL SERVICES, INC.
19701 South Miles Road Cleveland, Ohio 44128

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/23/92
Date Analyzed : 10/26-11/3/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-C

Customer I.D. : Casthouse Baghouse Dust

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-C

Customer I.D. : Casthouse Baghouse Dust

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	81	70 - 121
Toluene-d8	89	81 - 117
Bromofluorobenzene	84	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	75	23 - 120
2-Fluorobiphenyl	71	30 - 115
Terphenyl-d14	73	18 - 137
2-Fluorophenol	99	25 - 121
Phenol-d6	67	24 - 133
2,4,6-Tribromophenol	100	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	55	24 - 154

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-C

Customer I.D. : Casthouse Baghouse Dust

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.09
Cadmium	(D006)	0.01	1.0	0.05
Chromium	(D007)	0.023	5.0	0.17
Lead	(D008)	0.017	5.0	0.09
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.37
Hexavalent Chrome		0.2	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-C

Customer I.D. : Casthouse Baghouse Dust

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.9	4,686
Arsenic	4.45	BDL
Barium	1.05	21.0
Cadmium	0.5	BDL
Calcium	0.005	5,706
Chromium	1.15	103
Copper	0.45	51.6
Iron	0.85	175,650
Lead	0.85	192
Magnesium	0.005	2,126
Manganese	0.005	4,104
Mercury	0.08	BDL
Nickel	1.8	50.4
Potassium	2.50	22,073
Selenium	5.8	14.7
Silver	0.35	1.03
Sodium	2.50	4,086
Zinc	0.25	4,312

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-C

Customer I.D. : Casthouse Baghouse Dust

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	1.62
Oil & Grease	EPA 413.2	1.0 mg/Kg	318
Fluoride	EPA 340.2	1.0 mg/Kg	547
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	1.62
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	1,692
pH	EPA SW 846(9040)	N.A.	5.38

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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TEL: (216) 663-0808 • (800) 969-0808
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Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/3/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-A

Customer I.D. : Central Treatment Plant Sludge

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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SURROGATE RECOVERIES

ASAP # : 921019-03-A

Customer I.D. : Central Treatment Plant Sludge

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	86	70 - 121
Toluene-d8	91	81 - 117
Bromofluorobenzene	91	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	68	23 - 120
2-Fluorobiphenyl	44	30 - 115
Terphenyl-d14	66	18 - 137
2-Fluorophenol	114	25 - 121
Phenol-d6	89	24 - 133
2,4,6-Tribromophenol	88	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	79	24 - 154

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-A

Customer I.D. : Central Ttreatment Plant Sludge

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	1.18
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	6.45
Lead	(D008)	0.017	5.0	0.95
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	2.54
Hexavalent Chrome		5.0	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-
11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-A

Customer I.D. : Central Treatment Plant Sludge

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.72	53.2
Arsenic	3.56	BDL
Barium	0.84	0.77
Cadmium	4.0	BDL
Calcium	0.004	278
Chromium	0.92	6.19
Copper	0.36	0.84
Iron	0.68	59,844
Lead	0.017	7.0
Magnesium	0.004	211
Manganese	0.004	1,154
Mercury	0.08	BDL
Nickel	1.44	1.81
Potassium	2.0	1.23
Selenium	4.64	BDL
Silver	0.28	BDL
Sodium	2.0	2.30
Zinc	0.2	72.7

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-A

Customer I.D. : Central Treatment Plant Sludge

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	67.5
Oil & Grease	EPA 413.2	1.0 mg/Kg	1,608
Fluoride	EPA 340.2	1.0 mg/Kg	37.6
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	0.76
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	73.3
pH	EPA SW 846(9040)	N.A.	9.14

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-D

Customer I.D. : BOF Slag

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
BDL = Below Detection Limit
1 = Hazardous Waste Number
Method : EPA SW 846(8260,8270,8080)

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SURROGATE RECOVERIES

ASAP # : 921019-03-D

Customer I.D. : BOF Slag

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	97	70 - 121
Toluene-d8	99	81 - 117
Bromofluorobenzene	90	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	60	23 - 120
2-Fluorobiphenyl	61	30 - 115
Terphenyl-d14	69	18 - 137
2-Fluorophenol	79	25 - 121
Phenol-d6	73	24 - 133
2,4,6-Tribromophenol	70	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	82	24 - 154

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-D

Customer I.D. : BOF Slag

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	1.44
Cadmium	(D006)	0.01	1.0	0.07
Chromium	(D007)	0.023	5.0	5.24
Lead	(D008)	0.017	5.0	0.35
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	0.05
Nickel	----	0.036	---	0.57
Hexavalent Chrome		5.0	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-D

Customer I.D. : BOF Slag

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	4.5	15,187
Arsenic	2.23	BDL
Barium	0.525	48.6
Cadmium	0.25	BDL
Calcium	0.0025	15,088
Chromium	0.575	662
Copper	0.225	18.5
Iron	0.425	121,310
Lead	0.425	14.0
Magnesium	0.0025	15,475
Manganese	0.0025	12,813
Mercury	0.08	BDL
Nickel	0.9	35.7
Potassium	1.25	91.8
Selenium	2.9	BDL
Silver	0.175	2.89
Sodium	1.25	196
Zinc	0.125	60.2

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-D

Customer I.D. : BOF Slag

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	10.6
Oil & Grease	EPA 413.2	1.0 mg/Kg	181
Fluoride	EPA 340.2	1.0 mg/Kg	88.6
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	2.17
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	16.8
pH	EPA SW 846(9040)	N.A.	11.9

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-E

Customer I.D. : BOF Precipitator Dust

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-E

Customer I.D. : BOF Precipitator Dust

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	95	70 - 121
Toluene-d8	103	81 - 117
Bromofluorobenzene	96	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	65	23 - 120
2-Fluorobiphenyl	56	30 - 115
Terphenyl-d14	69	18 - 137
2-Fluorophenol	116	25 - 121
Phenol-d6	120	24 - 133
2,4,6-Tribromophenol	85	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	89	24 - 154

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-E

Customer I.D. : BOF Precipitator Dust

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.49
Cadmium	(D006)	0.01	1.0	0.40
Chromium	(D007)	0.023	5.0	0.86
Lead	(D008)	0.017	5.0	18.8
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.25
Hexavalent Chrome		0.2	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-E

Customer I.D. : BOF Precipitator Dust

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.55	1056
Arsenic	2.60	BDL
Barium	0.60	32.0
Cadmium	0.30	73.8
Calcium	0.003	16,147
Chromium	0.70	579
Copper	0.30	413
Iron	0.50	944,179
Lead	0.50	2,451
Magnesium	0.003	8,274
Manganese	0.003	11,015
Mercury	0.08	BDL
Nickel	1.00	165
Potassium	1.5	3,906
Selenium	3.50	BDL
Silver	0.21	5.02
Sodium	1.5	3,493
Zinc	0.15	8,211

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-E

Customer I.D. : BOF Precipitator Dust

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	0.35
Oil & Grease	EPA 413.2	1.0 mg/Kg	23.1
Fluoride	EPA 340.2	1.0 mg/Kg	144
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	BDL
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	60.9
pH	EPA SW 846(9040)	N.A.	11.8

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-F

Customer I.D. : BOF Desulfurizer Baghouse Dust

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-F

Customer I.D. : BOF Desulfurizer Baghouse Dust

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	85	70 - 121
Toluene-d8	93	81 - 117
Bromofluorobenzene	85	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	57	23 - 120
2-Fluorobiphenyl	43	30 - 115
Terphenyl-d14	64	18 - 137
2-Fluorophenol	81	25 - 121
Phenol-d6	41	24 - 133
2,4,6-Tribromophenol	84	10 - 122

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-F

Customer I.D. : BOF Desulfurizer Baghouse Dust

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.10
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	BDL
Hexavalent Chrome		0.02	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-
11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-F

Customer I.D. : BOF Desulfurizer Baghouse Dust

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.9	833
Arsenic	4.45	BDL
Barium	1.05	4.89
Cadmium	0.50	3.08
Calcium	0.005	17,212
Chromium	1.15	56.6
Copper	0.45	30.0
Iron	0.85	107,226
Lead	0.85	33.2
Magnesium	0.005	26,301
Manganese	0.005	1,288
Mercury	0.08	BDL
Nickel	1.80	30.2
Potassium	2.50	3,986
Selenium	5.80	5.38
Silver	0.35	0.45
Sodium	2.50	4,216
Zinc	0.25	1,760

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-F

Customer I.D. : BOF Desulfurizer Baghouse Dust

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	0.85
Oil & Grease	EPA 413.2	1.0 mg/Kg	BDL
Fluoride	EPA 340.2	1.0 mg/Kg	93.0
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	4.44
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	45.3
pH	EPA SW 846(9040)	N.A.	12.3

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/23/92
Date Analyzed : 10/26-11/3/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-G

Customer I.D. : Caster Scale Pit Sludge

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-G

Customer I.D. : Caster Scale Pit Sludge

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	103	70 - 121
Toluene-d8	97	81 - 117
Bromofluorobenzene	93	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	32	23 - 120
2-Fluorobiphenyl	24	30 - 115
Terphenyl-d14	37	18 - 137
2-Fluorophenol	37	25 - 121
Phenol-d6	35	24 - 133
2,4,6-Tribromophenol	31	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	85	24 - 154

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-G

Customer I.D. : Caster Scale Pit Sludge

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	11.8
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	0.08
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.82
Hexavalent Chrome		0.02	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-
11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-G

Customer I.D. : Caster Scale Pit Sludge

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.54	5,693
Arsenic	2.67	BDL
Barium	0.63	1,237
Cadmium	0.3	BDL
Calcium	0.003	8,771
Chromium	0.69	154
Copper	0.27	134
Iron	0.51	279,679
Lead	0.51	22.3
Magnesium	0.003	1,148
Manganese	0.003	1,190
Mercury	0.08	BDL
Nickel	1.08	107
Potassium	1.5	629
Selenium	3.48	36.5
Silver	0.21	1.45
Sodium	1.5	10,180
Zinc	0.15	40.8

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/19-10/30/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-G

Customer I.D. : Caster Scale Pit Sludge

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	4.54
Oil & Grease	EPA 413.2	1.0 mg/Kg	1,070
Fluoride	EPA 340.2	1.0 mg/Kg	134
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	0.2
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	35.1
pH	EPA SW 846(9040)	N.A.	10.0

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-H

Customer I.D. : LMF Baghouse Dust

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-H

Customer I.D. : LMF Baghouse Dust

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	100	70 - 121
Toluene-d8	101	81 - 117
Bromofluorobenzene	100	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	67	23 - 120
2-Fluorobiphenyl	63	30 - 115
Terphenyl-d14	69	18 - 137
2-Fluorophenol	135	25 - 121
Phenol-d6	106	24 - 133
2,4,6-Tribromophenol	73	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	92	24 - 154

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-H

Customer I.D. : LMF Baghouse Dust

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.51
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	1.40
Lead	(D008)	0.017	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	0.21
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	BDL
Hexavalent Chrome		1.5	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-H

Customer I.D. : LMF Baghouse Dust

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.9	14,500
Arsenic	4.45	BDL
Barium	1.05	216
Cadmium	0.5	14.1
Calcium	0.005	21,611
Chromium	1.15	474
Copper	0.45	331
Iron	0.85	39,093
Lead	0.85	664
Magnesium	0.005	15,806
Manganese	0.005	32,262
Mercury	0.08	BDL
Nickel	1.8	45.0
Potassium	2.5	15,073
Selenium	5.8	8.02
Silver	0.35	7.90
Sodium	2.5	19,752
Zinc	0.25	6,715

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-H

Customer I.D. : LMF Baghouse Dust

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	0.16
Oil & Grease	EPA 413.2	1.0 mg/Kg	BDL
Fluoride	EPA 340.2	1.0 mg/Kg	185
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	13.7
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	62.9
pH	EPA SW 846(9040)	N.A.	12.4

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/30/92
Date Analyzed : 11/2-
11/3/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-A

Customer I.D. : Heavy (Bottom) Ash

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-07-A

Customer I.D. : Heavy (Bottom) Ash

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	104	70 - 121
Toluene-d8	92	81 - 117
Bromofluorobenzene	97	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	51	23 - 120
2-Fluorobiphenyl	59	30 - 115
Terphenyl-d14	68	18 - 137
2-Fluorophenol	73	25 - 121
Phenol-d6	78	24 - 133
2,4,6-Tribromophenol	57	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	55	24 - 154

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-A

Customer I.D. : Heavy (Bottom) Ash

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.76
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.04
Hexavalent Chrome		0.02	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/11-11/12/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-A

Customer I.D. : Heavy (Bottom) Ash

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.63	2,200
Arsenic	3.115	49.9
Barium	0.735	205
Cadmium	0.35	0.56
Calcium	0.0035	975
Chromium	0.805	3.66
Copper	0.315	13.0
Iron	0.595	4,930
Lead	0.595	11.7
Magnesium	0.0035	251
Manganese	0.0035	25.5
Mercury	0.08	BDL
Nickel	1.26	6.74
Potassium	1.75	651
Selenium	4.05	BDL
Silver	0.245	BDL
Sodium	1.75	90.5
Zinc	0.175	128

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/26-11/6/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-A

Customer I.D. : Heavy (Bottom) Ash

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	47
Oil & Grease	EPA 413.2	1.0 mg/Kg	BDL
Fluoride	EPA 340.2	0.1 mg/Kg	4.80
Cyanide	EPA SW 846(9010)	0.02 mg/Kg	0.34
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	30.4
pH	EPA SW 846(9040)	N.A.	8.39

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/30/92
Date Analyzed : 11/2-11/3/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-B

Customer I.D. : Light Fly Ash

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-07-B

Customer I.D. : Light Fly Ash

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	86	70 - 121
Toluene-d8	94	81 - 117
Bromofluorobenzene	90	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	65	23 - 120
2-Fluorobiphenyl	67	30 - 115
Terphenyl-d14	74	18 - 137
2-Fluorophenol	85	25 - 121
Phenol-d6	97	24 - 133
2,4,6-Tribromophenol	72	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	59	24 - 154

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19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-B

Customer I.D. : Light Fly Ash

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.57
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	0.29
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	2.89
Hexavalent Chrome		0.02	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/11-11/12/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-B

Customer I.D. : Light Fly Ash

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.63	1,740
Arsenic	3.115	BDL
Barium	0.735	24.4
Cadmium	0.35	24.3
Calcium	0.0035	2,690
Chromium	0.805	175
Copper	0.315	231
Iron	0.595	116,000
Lead	0.595	307
Magnesium	0.0035	610
Manganese	0.0035	604
Mercury	0.08	BDL
Nickel	1.26	422
Potassium	1.75	159
Selenium	4.05	BDL
Silver	0.245	BDL
Sodium	1.75	26.8
Zinc	0.175	190

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/26-11/6/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-07-B

Customer I.D. : Light Fly Ash

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	19.6
Oil & Grease	EPA 413.2	0.02 %	18.0
Fluoride	EPA 340.2	1.0 mg/Kg	3.70
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	1.35
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	23.0
pH	EPA SW 846(9040)	N.A.	7.88

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-P

Customer I.D. : Grinder Baghouse Dust

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-P

Customer I.D. : Grinder Baghouse Dust

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	82	70 - 121
Toluene-d8	91	81 - 117
Bromofluorobenzene	86	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	38	23 - 120
2-Fluorobiphenyl	34	30 - 115
Terphenyl-d14	53	18 - 137
2-Fluorophenol	81	25 - 121
Phenol-d6	63	24 - 133
2,4,6-Tribromophenol	52	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	91	24 - 154

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-P

Customer I.D. : Grinder Baghouse Dust

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	1.49
Cadmium	(D006)	0.01	1.0	0.46
Chromium	(D007)	0.023	5.0	0.83
Lead	(D008)	0.017	5.0	1.64
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	4.73
Hexavalent Chrome		1.0	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/19-11/24/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-P

Customer I.D. : Grinder Baghouse Dust

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.54	405
Arsenic	2.67	BDL
Barium	0.63	28.9
Cadmium	0.3	4.28
Calcium	0.003	2,076
Chromium	0.69	156
Copper	0.27	205
Iron	0.51	324,175
Lead	0.51	42.6
Magnesium	0.003	223
Manganese	0.003	1,772
Mercury	0.08	BDL
Nickel	1.08	214
Potassium	1.5	17.0
Selenium	3.48	51.7
Silver	0.21	1.0
Sodium	1.5	146
Zinc	0.15	54.6

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-P

Customer I.D. : Grinder Baghouse Dust

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	0.02
Oil & Grease	EPA 413.2	1.0 mg/Kg	67.5
Fluoride	EPA 340.2	1.0 mg/Kg	20.0
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	0.99
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	60.6
pH	EPA SW 846(9040)	N.A.	9.58

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-I

Customer I.D. : Scale Pit Solids Entrance End

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-I

Customer I.D. : Scale Pit Solids Entrance End

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	96	70 - 121
Toluene-d8	94	81 - 117
Bromofluorobenzene	101	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	50	23 - 120
2-Fluorobiphenyl	39	30 - 115
Terphenyl-d14	56	18 - 137
2-Fluorophenol	59	25 - 121
Phenol-d6	61	24 - 133
2,4,6-Tribromophenol	51	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	92	24 - 154

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date Received : 10/19/92
Date Analyzed : 10/29-
11/23/92

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1C.

ids Entrance End

ACCEPTABLE LIMITS	RACTERISTIC of TCLP METALS g/L	RL mg/L	RESULTS mg/L
	89	5.0	BDL
	21	100.0	0.68
70 - 121	1	1.0	BDL
81 - 117	23	5.0	BDL
74 - 121	.7	5.0	BDL
	15	0.2	BDL
	6	1.0	BDL
	7	5.0	BDL
	6	---	1.32
23 - 120			
30 - 115			
18 - 137		---	BDL
25 - 121			
24 - 133			
10 - 122			
24 - 154			

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1500-Cr D

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VILLE HEIGHTS, OHIO 44128
00) 969-0808
0656

ICAL SERVICES, INC.
/ARRENSVILLE HEIGHTS, OHIO 44128
1808 • (800) 969-0808
16) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-I

Customer I.D. : Scale Pit Solids Entrance End

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.45	75.3
Arsenic	2.225	BDL
Barium	0.525	17.1
Cadmium	0.25	BDL
Calcium	0.0025	390
Chromium	0.575	17.0
Copper	0.225	21.4
Iron	0.425	19,935
Lead	0.425	1.61
Magnesium	0.0025	30.8
Manganese	0.0025	95.2
Mercury	0.08	BDL
Nickel	0.9	37.1
Potassium	1.25	BDL
Selenium	2.9	BDL
Silver	0.175	BDL
Sodium	1.25	61.8
Zinc	0.125	4.11

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-I

Customer I.D. : Scale Pit Solids Entrance End

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	2.0
Oil & Grease	EPA 413.2	1.0 mg/Kg	3,685
Fluoride	EPA 340.2	1.0 mg/Kg	BDL
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	0.37
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	28.4
pH	EPA SW 846(9040)	N.A.	9.25

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-J

Customer I.D. : Scale Pit Solids Exit End

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
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SURROGATE RECOVERIES

ASAP # : 921019-03-J

Customer I.D. : Scale Pit Solids Exit End

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	101	70 - 121
Toluene-d8	97	81 - 117
Bromofluorobenzene	101	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	33	23 - 120
2-Fluorobiphenyl	28	30 - 115
Terphenyl-d14	24	18 - 137
2-Fluorophenol	35	25 - 121
Phenol-d6	44	24 - 133
2,4,6-Tribromophenol	38	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	83	24 - 154

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-J

Customer I.D. : Scale Pit Solids Exit End

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.51
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.29
Hexavalent Chrome		0.02	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-J

Customer I.D. : Scale Pit Solids Exit End

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.54	69.0
Arsenic	2.67	BDL
Barium	0.63	1.19
Cadmium	0.3	1.18
Calcium	0.003	490
Chromium	0.69	48.0
Copper	0.27	15.9
Iron	0.51	38,083
Lead	0.51	4.38
Magnesium	0.003	109
Manganese	0.003	153
Mercury	0.08	BDL
Nickel	1.08	29.1
Potassium	1.5	BDL
Selenium	3.48	BDL
Silver	0.21	BDL
Sodium	1.5	5.59
Zinc	0.15	19.1

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-J

Customer I.D. : Scale Pit Solids Exit End

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	4.70
Oil & Grease	EPA 413.2	1.0 mg/Kg	1,876
Fluoride	EPA 340.2	1.0 mg/Kg	4.80
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	0.49
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	73.9
pH	EPA SW 846(9040)	N.A.	7.10

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-K

Customer I.D. : Galvanize Baghouse Dust

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.001	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.002	0.008	BDL
Heptachlor epoxide	(D031)	0.002	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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SURROGATE RECOVERIES

ASAP # : 921019-03-K

Customer I.D. : Galvanize Baghouse Dust

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	86	70 - 121
Toluene-d8	91	81 - 117
Bromofluorobenzene	86	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	60	23 - 120
2-Fluorobiphenyl	64	30 - 115
Terphenyl-d14	65	18 - 137
2-Fluorophenol	82	25 - 121
Phenol-d6	90	24 - 133
2,4,6-Tribromophenol	74	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	89	24 - 154

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-K

Customer I.D. : Galvanize Baghouse Dust

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	11.9
Cadmium	(D006)	0.01	1.0	0.03
Chromium	(D007)	0.023	5.0	0.5
Lead	(D008)	0.017	5.0	0.20
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.51
Hexavalent Chrome		0.5	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-K

Customer I.D. : Galvanize Baghouse Dust

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	1.8	154,750
Arsenic	9.0	BDL
Barium	2.0	300
Cadmium	1.0	BDL
Calcium	0.01	125
Chromium	2.5	5.50
Copper	1.0	6.24
Iron	2.0	458
Lead	2.0	BDL
Magnesium	0.01	87.6
Manganese	0.01	5.31
Mercury	0.08	BDL
Nickel	4.0	2.10
Potassium	5.0	BDL
Selenium	12.0	BDL
Silver	1.0	BDL
Sodium	5.0	120
Zinc	0.5	19,839

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-K

Customer I.D. : Galvanize Baghouse Dust

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	19.1
Oil & Grease	EPA 413.2	1.0 mg/Kg	BDL
Fluoride	EPA 340.2	1.0 mg/Kg	BDL
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	1.03
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	59,300
pH	EPA SW 846(9040)	N.A.	4.17

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-06-A

Customer I.D. : 56 Inch Mill Lagoon Sludge

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
BDL = Below Detection Limit
1 = Hazardous Waste Number
Method : EPA SW 846(8260,8270,8080)

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SURROGATE RECOVERIES

ASAP # : 921019-06-A

Customer I.D. : 56 Inch Mill Lagoon Sludge

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	86	70 - 121
Toluene-d8	92	81 - 117
Bromofluorobenzene	84	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	49	23 - 120
2-Fluorobiphenyl	56	30 - 115
Terphenyl-d14	61	18 - 137
2-Fluorophenol	70	25 - 121
Phenol-d6	76	24 - 133
2,4,6-Tribromophenol	60	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	45	24 - 154

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-06-A

Customer I.D. : 56 Inch Lagoon Sludge

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.29
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	0.18
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.09
Hexavalent Chrome		0.02	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-06-A

Customer I.D. : 56 Inch Lagoon Sludge

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	0.65	5,890
Arsenic	3.00	294
Barium	0.75	168
Cadmium	0.35	1.78
Calcium	0.003	2,404
Chromium	0.80	16.6
Copper	0.30	30.1
Iron	0.60	11,710
Lead	0.60	82.6
Magnesium	0.003	479
Manganese	0.003	62.3
Mercury	0.08	BDL
Nickel	1.25	13.0
Potassium	1.25	1,378
Selenium	4.0	BDL
Silver	0.25	BDL
Sodium	1.25	236
Zinc	0.20	289

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-06-A

Customer I.D. : 56 Inch Mill Lagoon Sludge

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	31.0
Oil & Grease	EPA 413.2	1.0 mg/Kg	223
Fluoride	EPA 340.2	1.0 mg/Kg	3.90
Cyanide	EPA SW 846(9010)	0.1 mg/Kg	0.34
Ammonia-nitrogen	EPA 350.3	0.1 mg/Kg	0.7
pH	EPA SW 846(9040)	N.A.	6.62

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-M

Customer I.D. : Waste Pickle Liquor #5 Surge Tank

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	0.06
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
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FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-M

Customer I.D. : Waste Pickle Liquor #5 Surge Tank

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	114	70 - 121
Toluene-d8	93	81 - 117
Bromofluorobenzene	97	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	34	23 - 120
2-Fluorobiphenyl	34	30 - 115
Terphenyl-d14	31	18 - 137
2-Fluorophenol	36	25 - 121
Phenol-d6	43	24 - 133
2,4,6-Tribromophenol	31	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	50	24 - 154

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-M

Customer I.D. : Waste Pickle Liquor #5 Surge Tank

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	1.75	5.0	BDL
Barium	(D005)	0.45	100.0	3.88
Cadmium	(D006)	0.20	1.0	7.98
Chromium	(D007)	0.45	5.0	158
Lead	(D008)	0.35	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	2.30	1.0	BDL
Silver	(D011)	0.15	5.0	0.45
Nickel	----	0.75	---	165
Hexavalent Chrome		1.0	---	1.1

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

ASAP TECHNICAL SERVICES, INC.
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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/5-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-M

Customer I.D. : Waste Pickle Liquor #5 Surge Tank

TOTAL METALS

ELEMENT	DL mg/L	RESULTS mg/L
Arsenic	1.75	BDL
Barium	0.45	3.88
Cadmium	0.20	7.98
Chromium	0.45	158
Iron	0.35	BDL
Lead	0.35	BDL
Manganese	0.002	BDL
Mercury	0.08	BDL
Nickel	0.75	165
Selenium	2.30	BDL
Silver	0.15	0.45
Zinc	0.10	BDL

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

ASAP TECHNICAL SERVICES, INC.
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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/23/92
Date Analyzed : 10/27/92

Analysis For : WCI Steel, Inc.

ASAP # : 9021019-03-M

Customer I.D. : Waste Pickle Liquor #5 Surge Tank

POLYCHLORINATED BIPHENYLS

PARAMETER	DL µg/L	RESULTS µg/L
PCB-1016	10	BDL
PCB-1221	40	BDL
PCB-1232	20	BDL
PCB-1242	10	BDL
PCB-1248	10	BDL
PCB-1254	10	BDL
PCB-1260	10	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
2,4,5,6-Tetrachloro-m-xylene	50	24 - 154

DL = Detection Limit
BDL = Below Detection Limit

Method : EPA SW 846(8080)

ASAP TECHNICAL SERVICES, INC.
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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-M

Customer I.D. : Waste Pickle Liquor #5 Surge Tank

PARAMETER	METHOD	DL	RESULTS
Total Solids	EPA 160.3	10.0 mg/L	266,000
Total Suspended Solids	EPA 160.2	4.0 mg/L	93.0
Oil & Grease	EPA 413.2	1.0 mg/L	BDL
Reactive Cyanide	EPA SW 846(9010)	0.02 mg/Kg	BDL
Reactive Sulfide	EPA SW 846(9030)	1.0 mg/Kg	29.3
Cyanide	EPA SW 846(9010)	0.02 mg/L	BDL
Sulfide	EPA SW 846(9030)	1.0 mg/Kg	67.2
Phenol	EPA SW 846(9060)	0.05 mg/L	0.13
Total Organic Carbon	EPA SW 846(9060)	1.0 mg/L	722
pH	EPA SW 846(9040)	N.A.	<1.0
Specific Gravity	SM 2710F	N.A.	1.34
Flashpoint	EPA SW 846(1010)	N.A.	>200°F

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

ASAP TECHNICAL SERVICES, INC.
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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/24/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-M

Customer I.D. : Waste Pickle Liquor #5 Surge Tank

PARAMETER	DL mg/L	RESULTS mg/L
Naphthalene	0.05	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
Nitrobenzene-d5	34	23-120
Fluorobiphenyl	34	30-115
Terphenyl-d14	31	18-137

DL = Detection Limit
BDL = Below Detection Limit

Method : SW 846(8270)

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 10/24-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-N

Customer I.D. : Waste Pickle Liquor #6 Sump

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	0.24
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-N

Customer I.D. : Waste Pickle Liquor #6 Sump

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	108	70 - 121
Toluene-d8	96	81 - 117
Bromofluorobenzene	98	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	25	23 - 120
2-Fluorobiphenyl	24	30 - 115
Terphenyl-d14	20	18 - 137
2-Fluorophenol	27	25 - 121
Phenol-d6	35	24 - 133
2,4,6-Tribromophenol	27	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	86	24 - 154

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-N

Customer I.D. : Waste Pickle Liquor #6 Sump

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	1.75	5.0	BDL
Barium	(D005)	0.45	100.0	3.91
Cadmium	(D006)	0.20	1.0	7.15
Chromium	(D007)	0.45	5.0	104
Lead	(D008)	0.35	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	2.30	1.0	BDL
Silver	(D011)	0.15	5.0	BDL
Nickel	----	0.75	---	86.2
Hexavalent Chrome		0.2	---	0.3

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/9-
11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-N

Customer I.D. : Waste Pickle Liquor #6 Sump

TOTAL METALS

ELEMENT	DL mg/L	RESULTS mg/L
Arsenic	1.75	BDL
Barium	0.45	3.91
Cadmium	0.20	7.15
Chromium	0.45	104
Iron	0.35	BDL
Lead	0.35	BDL
Manganese	0.002	BDL
Mercury	0.08	BDL
Nickel	0.75	86.2
Selenium	2.30	BDL
Silver	0.15	BDL
Zinc	0.10	BDL

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-N

Customer I.D. : Waste Pickle Liquor #6 Sump

PARAMETER	METHOD	DL	RESULTS
Total Solids	EPA 160.3	10.0 mg/L	220,200
Total Suspended Solids	EPA 160.2	4.0 mg/L	460
Oil & Grease	EPA 413.2	1.0 mg/L	BDL
Reactive Cyanide	EPA SW 846(9010)	0.02 mg/Kg	BDL
Reactive Sulfide	EPA SW 846(9030)	1.0 mg/Kg	28.9
Cyanide	EPA SW 846(9010)	0.02 mg/L	BDL
Sulfide	EPA SW 846(9030)	1.0 mg/Kg	28.9
Phenol	EPA SW 846(9060)	0.05 mg/L	0.11
Total Organic Carbon	EPA SW 846(9060)	1.0 mg/L	524
pH	EPA SW 846(9040)	N.A.	<1.0
Specific Gravity	SM 2710F	N.A.	1.32
Flashpoint	EPA SW 846(1010)	N.A.	>200°F

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/23/92
Date Analyzed : 10/27/92

Analysis For : WCI Steel, Inc.

ASAP # : 9021019-03-N

Customer I.D. : Waste Pickle Liquor #6 Sump

POLYCHLORINATED BIPHENYLS

PARAMETER	DL µg/L	RESULTS µg/L
PCB-1016	10	BDL
PCB-1221	40	BDL
PCB-1232	20	BDL
PCB-1242	10	BDL
PCB-1248	10	BDL
PCB-1254	10	BDL
PCB-1260	10	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
2,4,5,6-Tetrachloro-m-xylene	86	24 - 154

DL = Detection Limit
BDL = Below Detection Limit

Method : EPA SW 846(8080)

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/24/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-N

Customer I.D. : Waste Pickle Liquor #6 Sump

PARAMETER	DL mg/L	RESULTS mg/L
Naphthalene	0.05	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
Nitrobenzene-d5	25	23-120
Fluorobiphenyl	24	30-115
Terphenyl-d14	20	18-137

DL = Detection Limit
BDL = Below Detection Limit

Method : SW 846(8270)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 11/12/92
Date Extracted : 11/18/92
Date Analyzed : 11/17-11/20/92

Analysis For : WCI Steel, Inc.

ASAP # : 9211112-12-A

Customer I.D. : Waste Pickle Liquor Galvanized Sump

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	0.11
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	1.50
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
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FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921112-12-A

Customer I.D. : Waste Pickle Liquor Galvanized Sump

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	89	70 - 121
Toluene-d8	104	81 - 117
Bromofluorobenzene	92	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	60	23 - 120
2-Fluorobiphenyl	67	30 - 115
Terphenyl-d14	82	18 - 137
2-Fluorophenol	71	25 - 121
Phenol-d6	75	24 - 133
2,4,6-Tribromophenol	44	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	71	24 - 154

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 11/12/92
Date Analyzed : 11/12-12/11/92

Analysis For : WCI Steel, Inc.

ASAP # : 921112-12-A

Customer I.D. : Waste Pickle Liquor Galvanized Sump

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.356	5.0	BDL
Barium	(D005)	0.084	100.0	1.99
Cadmium	(D006)	0.04	1.0	BDL
Chromium	(D007)	0.092	5.0	14.9
Lead	(D008)	0.068	5.0	20.6
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.013	1.0	BDL
Silver	(D011)	0.028	5.0	BDL
Nickel	----	0.144	---	24.2
Hexavalent Chrome		0.4	---	0.5

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 11/12/92
Date Analyzed : 11/19-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921112-12-A

Customer I.D. : Waste Pickle Liquor Galvanized Sump

TOTAL METALS

ELEMENT	DL mg/L	RESULTS mg/L
Arsenic	0.365	BDL
Barium	0.084	1.99
Cadmium	0.04	BDL
Chromium	0.092	14.9
Iron	0.068	BDL
Lead	0.0.68	20.6
Manganese	0.0004	BDL
Mercury	0.005	BDL
Nickel	0.144	24.2
Selenium	0.464	BDL
Silver	0.028	BDL
Zinc	0.02	5,578

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 11/12/92
Date Extracted : 11/16/92
Date Analyzed : 11/17/92

Analysis For : WCI Steel, Inc.

ASAP # : 9021112-12-A

Customer I.D. : Waste Pickle Liquor Galvanized Sump

POLYCHLORINATED BIPHENYLS

PARAMETER	DL µg/L	RESULTS µg/L
PCB-1016	10	BDL
PCB-1221	40	BDL
PCB-1232	20	BDL
PCB-1242	10	BDL
PCB-1248	10	BDL
PCB-1254	10	BDL
PCB-1260	10	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
2,4,5,6-Tetrachloro-m-xylene	71	24 - 154

DL = Detection Limit
BDL = Below Detection Limit

Method : EPA SW 846(8080)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 11/12/92
Date Analyzed : 11/12-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921112-12-A

Customer I.D. : Waste Pickle Liquor Galvanized Sump

PARAMETER	METHOD	DL	RESULTS
Total Solids	EPA 160.3	10.0 mg/L	87,852
Total Suspended Solids	EPA 160.2	4.0 mg/L	968
Oil & Grease	EPA 413.2	1.0 mg/L	BDL
Reactive Cyanide	EPA SW 846(9010)	0.02 mg/Kg	BDL
Reactive Sulfide	EPA SW 846(9030)	1.0 mg/Kg	BDL
Cyanide	EPA SW 846(9010)	0.02 mg/L	BDL
Sulfide	EPA SW 846(9030)	1.0 mg/Kg	BDL
Phenol	EPA SW 846(9060)	0.05 mg/L	0.05
Total Organic Carbon	EPA SW 846(9060)	1.0 mg/L	97.2
pH	EPA SW 846(9040)	N.A.	<1.0
Specific Gravity	SM 2710F	N.A.	1.12
Flashpoint	EPA SW 846(1010)	N.A.	>200°F

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 11/12/92
Date Analyzed : 11/24/92

Analysis For : WCI Steel, Inc.

ASAP # : 921112-12-A

Customer I.D. : Waste Pickle Liquor Galvanized Sump

PARAMETER	DL mg/L	RESULTS mg/L
Naphthalene	0.05	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
Nitrobenzene-d5	49	23-120
Fluorobiphenyl	60	30-115
Terphenyl-d14	66	18-137

DL = Detection Limit
BDL = Below Detection Limit

Method : SW 846(8270)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/22/92
Date Analyzed : 11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-O

Customer I.D. : Waste Pickle Liquor Terne Line Sump

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	0.07
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

ASAP TECHNICAL SERVICES, INC.
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FAX: (216) 663-0656

SURROGATE RECOVERIES

ASAP # : 921019-03-O

Customer I.D. : Waste Pickle Liquor Terne Line Sump

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	107	70 - 121
Toluene-d8	95	81 - 117
Bromofluorobenzene	98	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	44	23 - 120
2-Fluorobiphenyl	40	30 - 115
Terphenyl-d14	33	18 - 137
2-Fluorophenol	52	25 - 121
Phenol-d6	67	24 - 133
2,4,6-Tribromophenol	54	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	77	24 - 154

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-O

Customer I.D. : Waste Pickle Liquor Terne Line Sump

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Arsenic	1.78	BDL
Barium	0.42	3.01
Cadmium	0.2	5.54
Chromium	0.46	82.1
Iron	0.34	BDL
Lead	0.34	2,279
Manganese	0.002	BDL
Mercury	0.08	BDL
Nickel	0.72	14.7
Selenium	2.32	BDL
Silver	0.14	0.33
Zinc	0.1	BDL

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-O

Customer I.D. : Waste Pickle Liquor Terne Line Sump

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	1.78	5.0	BDL
Barium	(D005)	0.42	100.0	3.01
Cadmium	(D006)	0.2	1.0	5.54
Chromium	(D007)	0.46	5.0	82.1
Lead	(D008)	0.34	5.0	2,279
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	2.32	1.0	BDL
Silver	(D011)	0.14	5.0	BDL
Nickel	----	0.72	---	14.7
Hexavalent Chrome		0.2	---	0.5

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-O

Customer I.D. : Waste Pickle Liquor Terne Line Sump

PARAMETER	METHOD	DL	RESULTS
Total Solids	EPA 160.3	10.0 mg/L	209,000
Total Suspended Solids	EPA 160.2	4.0 mg/L	309
Oil & Grease	EPA 413.2	1.0 mg/L	BDL
Reactive Cyanide	EPA SW 846(9010)	0.02 mg/Kg	BDL
Reactive Sulfide	EPA SW 846(9030)	1.0 mg/Kg	28.7
Cyanide	EPA SW 846(9010)	0.02 mg/L	BDL
Sulfide	EPA SW 846(9030)	1.0 mg/Kg	28.7
Phenol	EPA SW 846(9060)	0.05 mg/L	0.07
Total Organic Carbon	EPA SW 846(9060)	1.0 mg/L	450
pH	EPA SW 846(9040)	N.A.	>1.0
Specific Gravity	SM 2710F	N.A.	1.17
Flashpoint	EPA SW 846(1010)	N.A.	>200°F

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/23/92
Date Analyzed : 10/27/92

Analysis For : WCI Steel, Inc.

ASAP # : 9021019-03-O

Customer I.D. : Waste Pickle Liquor Terne Line Sump

POLYCHLORINATED BIPHENYLS

PARAMETER	DL µg/L	RESULTS µg/L
PCB-1016	10	BDL
PCB-1221	40	BDL
PCB-1232	20	BDL
PCB-1242	10	BDL
PCB-1248	10	BDL
PCB-1254	10	BDL
PCB-1260	10	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
2,4,5,6-Tetrachloro-m-xylene	77	24 - 154

DL = Detection Limit
BDL = Below Detection Limit

Method : EPA SW 846(8080)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Analyzed: 11/4/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-O

Customer I.D. : Waste Pickle Liquor Terne Line Sump

PARAMETER	DL mg/L	RESULTS mg/L
Naphthalene	0.05	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
Nitrobenzene-d5	44	23-120
Fluorobiphenyl	40	30-115
Terphenyl-d14	33	18-137

DL = Detection Limit
BDL = Below Detection Limit

Method : SW 846(8270)

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 12/18/92

Date Received : 10/19/92
Date Extracted : 10/23/92
Date Analyzed : 10/27/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-L

Customer I.D. : Iron Oxide Dust

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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SURROGATE RECOVERIES

ASAP # : 921019-03-L

Customer I.D. : Iron Oxide Dust

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	101	70 - 121
Toluene-d8	93	81 - 117
Bromofluorobenzene	103	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	70	23 - 120
2-Fluorobiphenyl	56	30 - 115
Terphenyl-d14	76	18 - 137
2-Fluorophenol	89	25 - 121
Phenol-d6	94	24 - 133
2,4,6-Tribromophenol	88	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	85	24 - 154

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/29-11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-L

Customer I.D. : Iron Oxide Dust

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	0.46
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.29
Hexavalent Chrome		0.02	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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TEL: (216) 663-0808 • (800) 969-0808
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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 11/23/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-L

Customer I.D. : Iron Oxide Dust

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Aluminum	1.8	284
Arsenic	8.9	BDL
Barium	2.1	7.25
Cadmium	1.0	BDL
Calcium	0.1	442
Chromium	2.3	155
Copper	0.9	145
Iron	1.7	259,702
Lead	1.7	25.7
Magnesium	0.1	74.0
Manganese	0.1	973
Mercury	0.08	BDL
Nickel	3.6	143
Potassium	5.0	50.7
Selenium	11.6	28.4
Silver	0.7	BDL
Sodium	5.0	200
Zinc	0.5	27.3

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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Date : 12/18/92

Date Received : 10/19/92
Date Analyzed : 10/20-10/29/92

Analysis For : WCI Steel, Inc.

ASAP # : 921019-03-L

Customer I.D. : Iron Oxide Dust

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	0.74
Oil & Grease	EPA 413.2	1.0 mg/Kg	BDL
Fluoride	EPA 340.2	1.0 mg/Kg	BDL
Cyanide	EPA SW 846(9010)	0.2 mg/Kg	BDL
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	462
pH	EPA SW 846(9040)	N.A.	3.78

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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QUALITY CONTROL REPORT

ASAP TECHNICAL SERVICES, INC.
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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

METHOD BLANK

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit
Method : EPA SW 846(8260,8270,8080)

BDL = Below Detection Limit
1 = Hazardous Waste Number

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FAX: (216) 663-0656

SURROGATE RECOVERIES

METHOD BLANK

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	95	70 - 121
Toluene-d8	109	81 - 117
Bromofluorobenzene	89	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	68	23 - 120
2-Fluorobiphenyl	65	30 - 115
Terphenyl-d14	72	18 - 137
2-Fluorophenol	62	25 - 121
Phenol-d6	62	24 - 133
2,4,6-Tribromophenol	86	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	72	24 - 154

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FAX: (216) 663-0656

METHOD BLANK

POLYCHLORINATED BIPHENYLS

PARAMETER	DL µg/L	RESULTS µg/L
PCB-1016	10	BDL
PCB-1221	40	BDL
PCB-1232	20	BDL
PCB-1242	10	BDL
PCB-1248	10	BDL
PCB-1254	10	BDL
PCB-1260	10	BDL

SURROGATE	% RECOVERY	ACCEPTABLE LIMITS
2,4,5,6-Tetrachloro-m-xylene	72	24 - 154

DL = Detection Limit
BDL = Below Detection Limit

Method : EPA SW 846(8080)

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METHOD BLANK

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	BDL
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	BDL
Mercury	(D009)	0.005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	BDL
Hexavalent Chrome		0.2	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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METHOD BLANK

TOTAL METALS

ELEMENT	DL mg/L	RESULTS mg/L
Aluminum	0.018	BDL
Arsenic	0.089	BDL
Barium	0.021	BDL
Cadmium	0.01	BDL
Calcium	0.0001	BDL
Chromium	0.023	BDL
Copper	0.009	BDL
Iron	0.017	BDL
Lead	0.017	BDL
Magnesium	0.0001	BDL
Manganese	0.0001	BDL
Mercury	0.08	BDL
Nickel	0.036	BDL
Potassium	0.05	BDL
Selenium	0.116	BDL
Silver	0.007	BDL
Sodium	0.05	BDL
Zinc	0.005	BDL

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

METHOD BLANK

PARAMETER	METHOD	DL	RESULTS
Total Solids	EPA 160.3	10.0 mg/L	BDL
Total Suspended Solids	EPA 160.2	4.0 mg/L	BDL
Oil & Grease	EPA 413.2	1.0 mg/L	BDL
Reactive Cyanide	EPA SW 846(9010)	0.02 mg/Kg	BDL
Reactive Sulfide	EPA SW 846(9030)	1.0 mg/Kg	BDL
Cyanide	EPA SW 846(9010)	0.02 mg/L	BDL
Sulfide	EPA SW 846(9030)	1.0 mg/Kg	BDL
Phenol	EPA SW 846(9060)	0.05 mg/L	BDL
Total Organic Carbon	EPA SW 846(9060)	1.0 mg/L	BDL
pH	EPA SW 846(9040)	N.A.	N.A.
Specific Gravity	SM 2710F	N.A.	N.A.
Flashpoint	EPA SW 846(1010)	N.A.	N.A.

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

ASAP TECHNICAL SERVICES, INC.
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FAX: (216) 663-0656

JM

[CUSTOMER TO COMPLETE ALL S. .DED AREAS.]

ASAP Chain of Custody	Project Name: WCI Steel, Incorporated	Results Due Date: (Verbal) 11-02-92
Samplers Signature: K. Royle	Waste Disposition (✓ preference & sign) X Kathy Royle	☐ Return all samples C.O.D. ☐ Dispose in accordance with ASAP's Terms & Conditions

Customer Sample I.D.	ASAP #	Date	Time	Sample Location	Sample Matrix	No. of Cont.	Type of Containers
Heavy (Bottom) Ash	921019-07A	10-9-92	10:00 a.m.	Boiler House	Solid	1	1L glass
Light Fly Ash	-07B	10-9-92	10:00 a.m.	Boiler House	Solid	1	1L glass

Relinquished By (Sign)	Date	Time	Received By (sign)	Relinquished By (sign)	Received By (sign)
Keith McLaughlin	10-15-92		Kathy Royle	Kathy Royle	L. Borisenko

Method of shipment (circle one): UPS / FED. EXP. / ASAP PICK-UP / PERSONAL DELIVERY

[CUSTOMER TO COMPLETE ALL SHA D AREAS.]

ASAP
Chain of Custody

Project Name: WCI Steel, Incorporated

Results Due Date: (Verbal) 11-02-92

Samplers Signature: K. Royle

Waste Disposition (✓ preference & sign)
X Kathy Royle

☐ Return all samples C.O.D.
☑ Dispose in accordance with ASAP's Terms & Conditions

Customer Sample I.D.	ASAP #	Date	Time	Sample Location	Sample Matrix	No. of Cont.	Type of Containers
Lagoon Sludge	921019-08 4	10-16-92	12:50	56 Lock Mill.	Solid-mm	1	1 glass

Relinquished By (Sign)	Date	Time	Received By (sign)	Relinquished By (sign)	Received By (sign)
Beth McLaughlin	10-16-92	1:48 pm	Kathy Royle	Kathy Royle	L. Bonisenko

Method of shipment (circle one): UPS / FED. EXP. / ASAP PICK-UP / PERSONAL DELIVERY

[CUSTOMER TO COMPLETE ALL SHADED AREAS.]

ASAP Chain of Custody	WCI Steel, Incoporated Project Name	Results Due Date: (Verbal) 11-2-92
K. Royle Samplers Signature	Waste Disposition (✓ preference & sign) x K. Royle	☐ Return all samples C.O.D. ☑ Dispose in accordance with ASAP's Terms & Conditions

NO SAMPLE MAK/KAR

Customer Sample I.D.	ASAP #	Date	Time	Sample Location	Sample Matrix	No. of Cont.	Type of Containers
Treatment Pl. Sludge 92-1019-034		10-16-92	9:00 am	Blast Furnace	Solid	1	1 l glass
Carthouse Baghouse Dust	-BC			" "	" "	1	" "
Central Treatment Pl. Sludge	-CA			" "	" "	1	" "
X B.O.F Slag	-D			B.O.F	" "	1	" "
X B.O.F Precipitator (PPD) Dust	-E			" "	" "	1	" "
X B.O.F Desulfurizer Baghouse Dust	-F			" "	" "	1	" "
X Caster Scale Pit Sludge	-G			" "	" "	1	" "
X LMF Baghouse Dust	-H			" "	" "	1	" "
X 56 Inch Entrance End Scale Pit Solids	-I			56 Inch Mill	" "	1	" "
X 56 Inch Exit End Scale Pit Solids	-J			56 Inch Mill "	" "	1	" "
X Galvanize Baghouse Dust	-K, B			Coated Products	" "	2	2 l glass
X Iron Oxide Dust	-L			Pickles / Acid Regen Pl.	" "	1	1 l glass
#5 Surge Tank	-M			Waste Pickle Liquor	Liquid	7	5 l glass; 2 glass VOC's
#6 Sump	-N			" "	" "	~~7~~ KR	~~H~~
~~Galvanize Sump~~	~~-O~~	KR		~~"~~			
Terne Line Sump	-O			Waste Pickle Liquor	" "	7	5 l glass; 2 glass VOC's
X Grinder Baghouse Dust	-P		1:00 p.m	36 Inch Mill	Solid	1	1 l glass

Relinquished By (Sign)	Date	Time	Received By (sign)	Relinquished By (sign)	Received By (sign)
Keith McLaughlin	10/16	143	Kathy Royle	Kathy Royle	L. Bonisenko

Method of shipment (circle one): UPS / FED. EXP. / ASAP PICK-UP / PERSONAL DELIVERY

ANALYTICAL RESULTS
FOR

Warren Consolidated Industries, Inc.
1040 Pine Avenue SE
Warren, OH 44483-6528

Name of Collector : WCI, Inc.

ASSIGNED ASAP ID #	CUSTOMER ID	SAMPLE MATRIX	SITE, DATE & TIME OF COLLECTION
930108-04-A	Blast Furnace Treatment Plant Sludge	Solid	Not Available

Laboratory Information : Sample was refrigerated upon receipt and analyzed as received.

Released by: Husein Sitabkhan

Husein Sitabkhan PhD.
Lab Director

ASAP TECHNICAL SERVICES, INC.
19701 SOUTH MILES ROAD, WARRENSVILLE HEIGHTS, OHIO 44128
TEL: (216) 663-0808 • (800) 969-0808
FAX: (216) 663-0656

Date : 1/26/93

Date Received : 1/8/93
Date Extracted :1/8/93
Date Analyzed : 1/13-19/93

Analysis For : WCI Steel, Inc.

ASAP # : 930108-04-A

Customer I.D. : Blast Furnace Treatment Plant Sludge

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.002	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.001	0.008	BDL
Heptachlor epoxide	(D031)	0.001	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit

BDL = Below Detection Limit
1 = Hazardous Waste Number

Method : EPA SW 846(8260,8270,8080)

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SURROGATE RECOVERIES

ASAP # : 930108-04-A

Customer I.D. : Blast Furnace Treatment Plant Sludge

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	111	70 - 121
Toluene-d8	96	81 - 117
Bromofluorobenzene	100	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	85	23 - 120
2-Fluorobiphenyl	83	30 - 115
Terphenyl-d14	88	18 - 137
2-Fluorophenol	72	25 - 121
Phenol-d6	59	24 - 133
2,4,6-Tribromophenol	100	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	63	24 - 154

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Date : 1/26/93

Date Received :1/8/93
Date Analyzed :1/13-20/93

Analysis For : WCI Steel, Inc.

ASAP # : 930108-04-A

Customer I.D. : Blast Furnace Treatment Plant Sludge

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	0.52
Barium	(D005)	0.021	100.0	1.73
Cadmium	(D006)	0.01	1.0	0.06
Chromium	(D007)	0.023	5.0	0.43
Lead	(D008)	0.017	5.0	63.5
Mercury	(D009)	0.0005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	0.17
Hexavalent Chrome		0.1	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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FAX: (216) 663-0656

Date : 1/26/93

Date Received : 1/8/93
Date Analyzed : 1/12-20/93

Analysis For : WCI Steel, Inc.

ASAP # : 930108-04-A

Customer I.D. : Blast Furnace Treatment Plant Sludge

TOTAL METALS

ELEMENT	DL mg/Kg	RESULTS mg/Kg
Antimony	11.2	5,520
Arsenic	2.2	39.3
Barium	0.52	37.3
Cadmium	0.25	13.7
Calcium	0.005	7,080
Chromium	0.58	42.8
Copper	0.22	16.7
Iron	17.0	76,400
Lead	0.42	2,570
Magnesium	0.005	2,360
Manganese	0.06	1,030
Mercury	0.01	0.03
Nickel	0.90	14.4
Potassium	2.50	422
Selenium	2.90	6.77
Silver	0.18	1.0
Sodium	2.50	205
Zinc	2.50	10,600

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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FAX: (216) 663-0656

Date : 1/26/93

Date Received :1/8/93
Date Analyzed :1/12-22/93

Analysis For : WCI Steel, Inc.

ASAP # : 930108-04-A

Customer I.D. : Blast Furnace Treatement Plant Sludge

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	36.7
Oil & Grease	EPA 413.2	10 mg/Kg	4,510
Fluoride	EPA 340.2	1.0 mg/Kg	67.4
Cyanide	EPA SW 846(9010)	1.0 mg/Kg	BDL
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	200
pH	EPA SW 846(9040)	N.A.	9.07

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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QUALITY CONTROL REPORT

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METHOD BLANK

TCLP CONTAMINANTS

PARAMETER/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Benzene	(D018)	0.05	0.5	BDL
Carbon tetrachloride	(D019)	0.05	0.5	BDL
Chlordane	(D020)	0.001	0.03	BDL
Chlorobenzene	(D021)	0.05	100.0	BDL
Chloroform	(D022)	0.05	6.0	BDL
o-Cresol	(D023)	0.1	200.0	BDL
m-Cresol	(D024)	0.1	200.0	BDL
p-Cresol	(D025)	0.1	200.0	BDL
Cresol	(D026)	0.1	200.0	BDL
1,4-Dichlorobenzene	(D027)	0.1	7.5	BDL
1,2-Dichloroethane	(D028)	0.05	0.5	BDL
1,1-Dichloroethylene	(D029)	0.05	0.7	BDL
2,4-Dinitrotoluene	(D030)	0.02	0.13	BDL
Heptachlor	(D031)	0.0002	0.008	BDL
Heptachlor epoxide	(D031)	0.0002	0.008	BDL
Hexachlorobenzene	(D032)	0.02	0.13	BDL
Hexachlorobutadiene	(D033)	0.1	0.5	BDL
Hexachloroethane	(D034)	0.1	3.0	BDL
Methyl ethyl ketone	(D035)	0.5	200.0	BDL
Nitrobenzene	(D036)	0.1	2.0	BDL
Pentachlorophenol	(D037)	0.1	100.0	BDL
Pyridine	(D038)	0.1	5.0	BDL
Tetrachloroethylene	(D039)	0.05	0.7	BDL
Trichloroethylene	(D040)	0.05	0.5	BDL
2,4,5-Trichlorophenol	(D041)	0.1	400.0	BDL
2,4,6-Trichlorophenol	(D042)	0.1	2.0	BDL
Vinyl chloride	(D043)	0.05	0.2	BDL

DL = Detection Limit
RL = Regulatory Limit

BDL = Below Detection Limit
1 = Hazardous Waste Number

Method : EPA SW 846(8260,8270,8080)

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METHOD BLANK

SURROGATE RECOVERIES

PARAMETER	% RECOVERY	ACCEPTABLE LIMITS
Volatile Organic Compounds		
1,2-Dichloroethane-d4	102	70 - 121
Toluene-d8	100	81 - 117
Bromofluorobenzene	98	74 - 121
BN/AP Compounds		
Nitrobenzene-d5	104	23 - 120
2-Fluorobiphenyl	112	30 - 115
Terphenyl-d14	121	18 - 137
2-Fluorophenol	102	25 - 121
Phenol-d6	94	24 - 133
2,4,6-Tribromophenol	129	10 - 122
Pesticides		
2,4,5,6-Tetrachloro-m-xylene	64	24 - 154

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METHOD BLANK

CHARACTERISTIC of TCLP METALS

ELEMENT/(EPA HW No.[1])		DL mg/L	RL mg/L	RESULTS mg/L
Arsenic	(D004)	0.089	5.0	BDL
Barium	(D005)	0.021	100.0	BDL
Cadmium	(D006)	0.01	1.0	BDL
Chromium	(D007)	0.023	5.0	BDL
Lead	(D008)	0.017	5.0	BDL
Mercury	(D009)	0.0005	0.2	BDL
Selenium	(D010)	0.116	1.0	BDL
Silver	(D011)	0.007	5.0	BDL
Nickel	----	0.036	---	BDL
Hexavalent Chrome		0.1	---	BDL

RL = Regulatory Limit

DL = Detection Limit

BDL = Below Detection Limit

1 = Hazardous Waste Number

Methods : Extraction - EPA SW 846(1311)
Mercury - SW 846(7470)
Other metals - SW 846(6010)
Hexavalent Chrome - SM 3500-Cr D

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FAX: (216) 663-0656

METHOD BLANK

TOTAL METALS

ELEMENT	DL mg/L	RESULTS mg/L
Antimony	0.018	BDL
Arsenic	0.089	BDL
Barium	0.021	BDL
Cadmium	0.001	BDL
Calcium	0.0001	BDL
Chromium	0.023	BDL
Copper	0.009	BDL
Iron	0.017	BDL
Lead	0.017	BDL
Magnesium	0.0001	BDL
Manganese	0.0001	BDL
Mercury	0.0005	BDL
Nickel	0.036	BDL
Potassium	0.05	BDL
Selenium	0.116	BDL
Silver	0.007	BDL
Sodium	0.05	BDL
Zinc	0.004	BDL

DL = Detection Limit
BDL = Below Detection Limit

Method : Mercury - EPA SW 846(7470)
Other metals - EPA SW 846(6010)

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FAX: (216) 663-0656

METHOD BLANK

PARAMETER	METHOD	DL	RESULTS
% Moisture	EPA 160.3	0.01%	N.A.
Oil & Grease	EPA 413.2	10 mg/Kg	BDL
Fluoride	EPA 340.2	1.0 mg/Kg	BDL
Cyanide	EPA SW 846(9010)	1.0 mg/Kg	BDL
Ammonia-nitrogen	EPA 350.3	5.0 mg/Kg	BDL
pH	EPA SW 846(9040)	N.A.	N.A.

DL = Detection Limit
BDL = Below Detection Limit
N.A. = Not Applicable

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SAMPLING PLAN
FOR
TAR DECANTER SLUDGE MIXING AREAS
NORTHWEST OF ORE YARD
WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Submitted by:

WARREN CONSOLIDATED INDUSTRIES, INC.
WARREN, OHIO

Prepared by:

BAKER ENVIRONMENTAL, INC.
CORAOPOLIS, PENNSYLVANIA

MAY 1991

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Appendix (Separate Volume)

Appendix A	Laboratory Quality Assurance Plan

1.0 INTRODUCTION

1.1 Objective

The objective of the sampling and analysis program is to determine if the bulk concentrations of selected organic constituents are significantly higher statistically in the former tar decanter sludge (TDS) mixing areas than in the background areas for similar strata. If no statistically significant differences are detected, this demonstrates that these facilities are not contaminated with TDS nor present any risk or hazard to human health or the environment.

1.2 Project Description

A total of 10 test borings will be installed at locations presented on Figure 1-1. Six borings will be drilled through former TDS mixing areas. Four will be advanced through a coal storage area which will serve as the "background" sample location, common to investigations for both LTV Steel Company's (LTV) and Warren Consolidated Industries, Inc. (WCI) former TDS mixing areas.

It is assumed that three distinct subsurface layers will be encountered during drilling. The first layer will consist primarily of coal material. The second layer will include a mixture of coal and original soil. Finally, the third layer will consist primarily of original soil. ("Original soil" is defined as the existing base material over which coal has been stockpiled. soil very likely could consist of slag or natural soil material, or a mixture of the two).

It is estimated that this program will take nine to ten weeks, including two to three weeks for mobilization (essentially coordinating schedules with the driller). The laboratory turn-around will require two to three weeks.

1.3 Site Background

LTV Steel Company (LTV) mixed tar decanter sludge (TDS), a listed hazardous waste (K087), with metallurgical coal at its Warren Works during a two-year period of time from 1984 to 1986. The mixing areas consisted of several coal piles which are identified in Figure 1-1. The mixing areas owned by LTV consist of the former "Kitt" and "Emerald" coal piles located northwest of the coke batteries. The mixing areas located on property owned since mid-1988

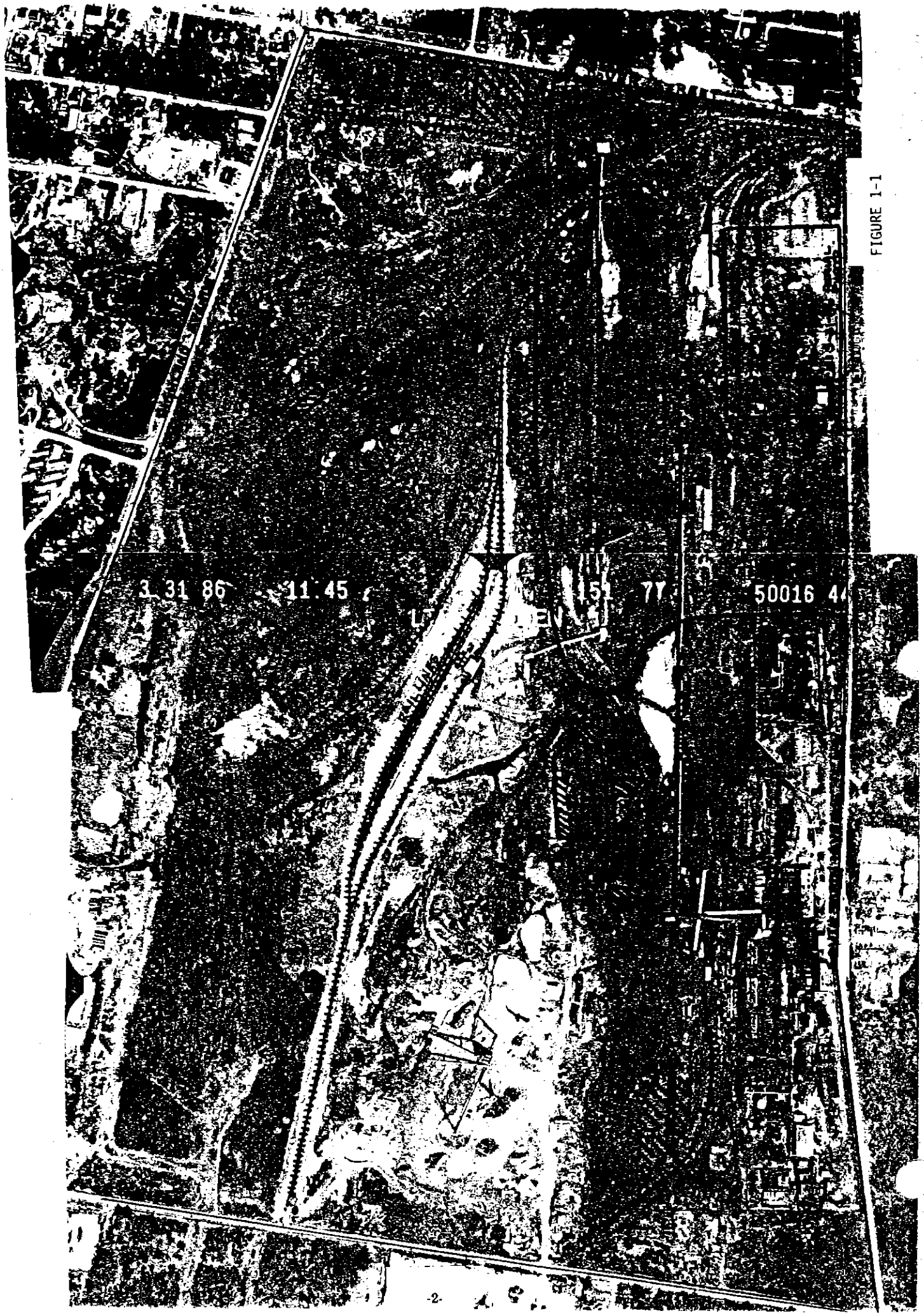


FIGURE 1-1

by WCI consist of the former "Knox Creek" and "Beatrice" coal piles which are located northwest of the ore yard.

The purpose of mixing TDS with coal was to effect recycling of TDS back to the coke ovens. Prior to 1984, TDS was transported to an off-site hazardous waste landfill; since 1986, TDS has been recycled to the coke batteries by A.K.J. Industries, Inc. by heating the TDS, mixing it with a diluent, and spraying it onto the coal conveyors that lead to the batteries. The former TDS mixing areas residing on WCI property are no longer used for coal storage. All inventory of the tar decanter sludge/coal mixture has been removed.

2.0 FIELD ACTIVITIES

Specific procedures for sample collection and equipment decontamination, and a summary of the environmental and QC samples that will be collected, are outlined in this section. All analytical sampling will be performed by an experienced geologist according to USEPA standard operating procedures.

2.1 Drilling

Prior to mobilization, a qualified drilling firm will be selected to perform the drilling and sampling operations. As described in Section 1.2, a total of 10 test borings will be advanced of which 6 will be located in the TDS mixing areas. Approximate boring locations in the TDS mixing areas are:

- Two (2) borings at the working face of the former Beatrice coalpile; and
- Four (4) borings at the working face of the former Knotts Creek #3 coalpile.

In addition, four test borings will be advanced in the common background area identified on Figure 1-1.

Each boring will be advanced to two to three feet below the interface of the soil/coal mixture and the original soil using a truck-mounted drill rig with 3.25-inch diameter hollow stem augers.

Split-spoon soil samples will be collected continuously from the ground surface to approximately three feet below the interface between the soil/coal mixture and the original soil. A qualified geologist will observe the drilling and sampling operations. During the advancement of the augers, soil cuttings, split-spoon samples, and ambient air will be monitored using a photoionization detector (PID) to measure for the presence of volatile vapors. Stratigraphic horizon descriptions, discolorations, odors, PID readings, and other visual observations (including estimated percentages of coal and original soil) will be described and recorded on a Field Test Boring Record (see Figure 2-1).

Subsequent to drilling and sampling, borings will be grouted to grade with a mixture of cement and bentonite gel. Soil cuttings generated during drilling will be spread evenly on the ground surrounding the boring. The locations of the borings will be referenced to permanent landmarks and noted on the field sketches.

2.2 Sampling

Two subsurface samples will be obtained from each of the 6 borings advanced within the former TDS mixing areas for a total of 12 samples as follows:

- One sample consisting of a mixture of soil and coal is to be collected one foot above the interface between the coal/soil mixture and the original soil, or at the approximate midpoint of the coal/soil mixture layer if that layer is less than one-foot thick; and

- One sample of soil from one foot below the interface between the coal/soil mixture and the original soil (i.e., a sample of original soil).

For the background area, three samples will be obtained from each background boring location as follows:

- One sample of coal/soil mixture collected at the approximate midpoint of the coal/soil layer;

- One sample of soil collected just beneath the interface between the coal/soil mixture and the original soil; and

FIGURE 2-1

FIELD TEST BORING RECORD

Baker Engineers

Michael Baker, Jr., Inc.

PROJECT: _____
S.O. NO.: _____ BORING NO.: _____
COORDINATES: EAST: _____ NORTH: _____
ELEVATION: SURFACE: _____ TOP OF STEEL CASING: _____

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT)	WEATHER	WATER DEPTH (FT)	TIME
SIZE (DIAM.)									
LENGTH									
TYPE									
HAMMER WT.									
FALL									
STICK UP									

REMARKS: _____

DRILL RECORD							VISUAL DESCRIPTION					
DEPTH	SOIL / ROCK	Sample ID — Type - No. (N = No Samp.)	Samp. Rec. (Ft. & %)	SPT Blows Per 0.5' / RQD (Ft. & %)	Lab. Class / Pen. Rate	Lab. M.C. %	Classification (Grain Size, Principal Constituents, Etc.) / Classification (Name, Grain Size, Principal Constituents, Etc.)	Color / Color	Consist. or Density / Hardness	Moisture Content, Organic Content, Plasticity, and Other Observations / Weathering, Bedding, Fracturing, and Other Observations	SOIL / ROCK	ELEVATION
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

DRILLING CO.: _____ BAKER REP.: _____
DRILLER: _____ BORING NO.: _____ SHEET ___ OF ___

FIGURE 2-1
(continued)

FIELD TEST BORING RECORD

Baker Engineers

Michael Baker, Jr., Inc.

PROJECT: _____

S.O. NO.: _____ BORING NO.: _____

DRILL RECORD							VISUAL DESCRIPTION					
DEPTH	SOIL	Sample ID ----	Samp. Rec.	SPT Blows Per 0.5'	Lab Class	Lab M.C. %	Classification (Grain Size, Principal Constituents, Etc.)	Color	Consist. or Density	Moisture Content, Organic Content, Plasticity, and Other Observations	SOIL	ELEVATION
	ROCK	Type - No. (N = No Samp.)	(Ft & %)	RQD (Ft. & %)	Pen. Rate		Classification (Name, Grain Size, Principal Constituents, Etc.)	Color	Hardness	Weathering, Bedding, Fracturing, and Other Observations	ROCK	
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												

DRILLING CO.: _____ BAKER REP.: _____

DRILLER: _____ BORING NO.: _____ SHEET ___ OF ___

- One sample of soil collected approximately one foot below the previous sample within the original soil.

Figure 2-2 presents a soil sampling scheme.

In addition to the 12 samples from the background borings, two samples of coal will be collected from the background area.

All samples will be analyzed using Method 8270 for the following parameters:

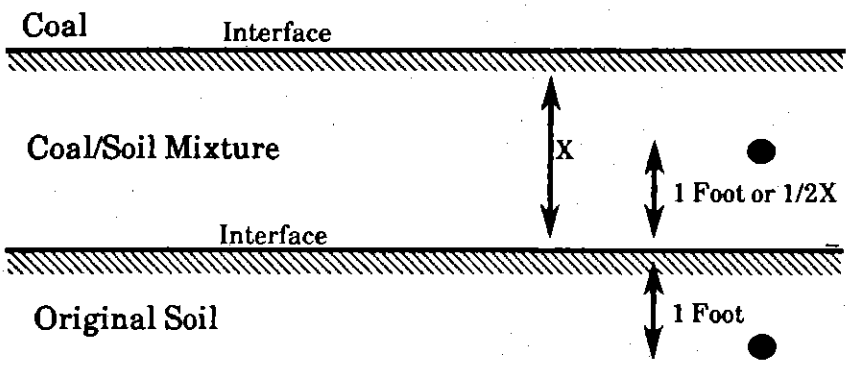
- Acenaphthene
- Anthracene
- Benzo(a)pyrene
- Chrysene
- 2,4-Dimethylphenol
- Fluoranthene
- Fluorene
- Indeno (1,2,3-cd) pyrene
- Napthalene
- Phenanthrene
- Phenol
- Pyrene

Background concentrations will be calculated for each strata (e.g., coal/soil mixture and original soil) as the sum of the mean of background values plus two standard deviations. The concentrations of the corresponding strata from the TDS mixing areas then will be compared to these constructed background concentrations.

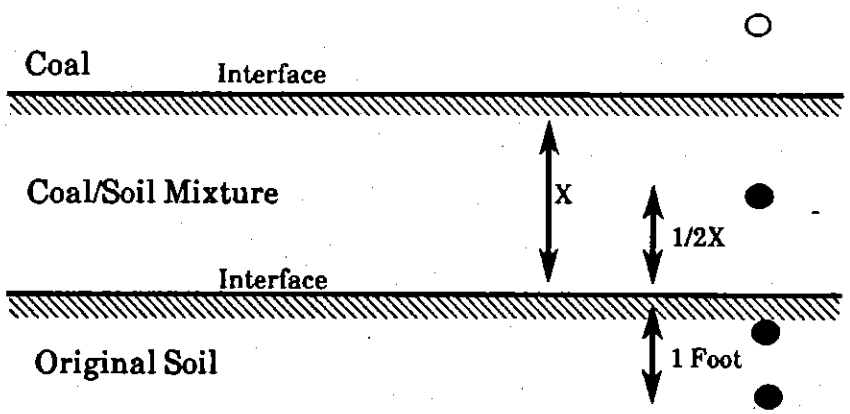
In addition to the 12 environmental samples, duplicates and field blanks will be collected for quality assurance. One out of every 20 environmental samples collected will be a duplicate sample. Field blanks will be submitted at the rate of one field blank per day or one duplicate sample for every 20 investigative samples, whichever results in fewer samples. These field blanks, also known as equipment rinsate samples, are the final analyte-free water rinse from equipment cleaning collected daily during a sampling event, and are used to evaluate the effectiveness of the decontamination procedures described in Section 2.3.

FIGURE 2-2
SAMPLING SCHEME

FORMER COAL/TDS MIXING AREAS (TYPICAL)



BACKGROUND AREA (TYPICAL)



○ - A total of two coal samples to be obtained from background borings

● - Sample for analysis

Solid-phase samples to be submitted for analysis will be placed into eight-ounce wide mouth glass jars, supplied by the laboratory. The aqueous-phase samples (field blanks) will be placed into a 4-liter amber glass bottle also provided by the laboratory. The samples will be labeled, documented, packaged, and transported as described in Section 3.0, Sample Custody.

Table 2-1 provides a summary of the sample material, container volume, and preservation required for site activities, along with other sampling and analysis information.

2.3 Equipment Decontamination

Sampling equipment will be decontaminated prior to each sampling event by performing the following steps:

- Wash in an Alconox soap and water solution
- Rinse with distilled water
- Rinse with hexane
- Rinse with distilled water

The drill rig and associated equipment will be steam cleaned before drilling begins, between each boring, and prior to demobilization. All decontamination fluids will be discharged to the ground surface adjacent to the completed boring.

3.0 SAMPLE CUSTODY

The purpose of this section is to outline the sample handling and sample documentation procedures to be used during the project. The objective of the sample handling procedures is to deliver representative samples to the laboratories for analysis. The objectives of the sample documentation procedures are: first, to ensure complete analysis of the requested parameters within the required turnaround times; and second, to document the sample from the point of collection to the final data report.

3.1 Sample Handling

New 8 oz. wide-mouth glass bottles and 4-liter amber glass bottles will be provided by the laboratories for solid and aqueous matrix samples, respectively. Samples will be stored on ice at 4°C in a waterproof metal or sturdy plastic cooler, if appropriate.

TABLE 2-1
SUMMARY OF SAMPLE BOTTLE REQUIREMENTS

Sample Description	Media	Number of Samples	Analytical Method	Container Requirements	Preservation	Holding Time
Background*	Coal Coal/Soil Soil	2 4 8	8270	8 oz. Wide-mouth Glass Jar	Cool to 4°C	5 days until extraction, 40 days after extraction
WCI						
Beatrice	Coal/Soil Soil	2 2	8270	8 oz. Wide-mouth Glass Jar	Cool to 4°C	5 days until extraction, 40 days after extraction
Knox Creek	Coal/Soil Soil	4 4	8270	8 oz. Wide-mouth Glass Jar	Cool to 4°C	5 days until extraction, 40 days after extraction
QA/QC Samples*						
Duplicates	Solid	3	8270	8 oz. Wide-mouth Glass Jar	Cool to 4°C	5 days until extraction, 40 days after extraction
Field Blanks	Aqueous	3	8270	4-liter Amber Glass Bottle	Cool to 4°C	5 days until extraction, 40 days after extraction

* These samples are common to sampling plans for both LTV and WCI TDS mixing areas.

3.2 Sample Documentation in the Field

Up to five types of documentation will be used in tracking and shipping the analytical samples:

- Field Log Book
- Sample labels
- Chain-of-Custody (COC) records
- Custody seals (if necessary)
- Commercial carrier airbills (if necessary)

At a minimum, the label for each sample bottle will contain the following information:

- Site name
- Sample number
- Date of collection
- Sample type (grab or composite)
- Matrix
- Sampler's initials

The sample information, as well as the analysis to be performed on the sample, will be entered into the field log book for each sampling point. Additionally, the following items will be entered:

- Dates and times of entry;
- Names of field personnel on site
- Names of visitors on site
- Field conditions
- Description of activities
- Sampling remarks and observations
- QA/QC samples collected
- List of photographs taken
- Sketch of site conditions and reference measurements to permanent landmarks
- The source of reagents and other field supplies

Custody of the samples will be maintained by sampling personnel from the time of sampling until the time the samples are forwarded to the analytical laboratory. A sample is considered to be in an individual's possession if:

- It is in the sampler's possession or it is in the sampler's view after being in his/her possession;
- It was in the sampler's possession and then locked or sealed to prevent tampering; or
- It is in a secure area.

The sample custody is documented using Chain-of-Custody (COC) records. Figure 3-1 shows a typical COC record for laboratory samples. Field personnel will complete a COC record, in waterproof ink, to accompany each cooler forwarded from the site to the laboratory. Any errors on the COC records will not be erased; instead, a line will be drawn through the error and initialed by the person completing the form. The original copy will be placed in a sealable plastic bag and put inside the appropriate cooler, secured to the cooler's lid. The laboratory may provide their own COC record, in which case it will be completed and forwarded to compliment the form completed in the field.

If the sample cooler is to be shipped by commercial air carrier, the cooler will be secured with custody seals so that the seals would be broken if the cooler was opened. The commercial carrier is not required to sign the COC record as long as the custody seals remain intact and the COC record stays in the cooler. The only other documentation required is the completed airbill.

If the sample shipment is hand delivered to the laboratory by sampling personnel or picked-up by the laboratory personnel at the site, custody seals are not necessary. The laboratory sample custodian (or his/her designee) accepting the sample shipment, whether it is from the air carrier or sampling personnel, signs and dates the COC record upon sample receipt. The original COC record will be returned along with the final data report. The laboratory will be responsible for maintaining internal log books and records that provide a custody record during sample preparation and analysis.

FIGURE 3-1

CHAIN-OF-CUSTODY RECORD

Sampler: _____
(Print)

Signature: _____

Sheet ____ of ____

BAKER ENVIRONMENTAL, INC.
Airport Office Park - Bldg No. 3
420 Rouser Road
Coraopolis, PA 15108
(412) 269-6000

Project Name: _____
S. O. Number: _____

Baker Sample I.D. No.	Sample Type	Sampled		Sample Storage and Preservation Details*									
				Cooling		HNO_3		H_2SO_4 Cooling		Other		Other	
		Date	Time	No. of Contnr.	Type/ Volume Contnr.	No. of Contnr.	Type/ Volume Contnr.	No. of Contnr.	Type/ Volume Contnr.	No. of Contnr.	Type/ Volume Contnr.	No. of Contnr.	Type/ Volume Contnr.

General Remarks:

*NOTES: Record type of container used with abbreviation P (plastic) or G (glass)
Record volume of containers in leters

Relinguished By (Sign):
Date: Time:
Remarks:

Received By (Sign):
Date: Time:
Remarks:

Shipment/Transportation Details:

Relinguished By (Sign):
Date: Time:
Remarks:

Received By (Sign):
Date: Time:
Remarks:

Shipment/Transportation Details:

Relinguished By (Sign):
Date: Time:
Remarks:

Received By (Sign):
Date: Time:
Remarks:

Shipment/Transportation Details:

Distribution:
Original - Sent with samples to lab (return with lab results to Project Manager for filing)
Copy - Retained by sampling personnel for filing

3.3 Sample Custody in the Laboratories

Specific procedures for sample custody, including sample handling, storage, and dispersement for analysis and disposal, are provided in Appendix A, Laboratory Quality Assurance Plan.

4.0 ANALYTICAL PROCEDURES

The samples collected during the field studies will be analyzed using Method 8270. The Practical Quantitiation Limits (PQLs) for the compounds to be analyzed using Method 8270 are listed in Table 4-1. This method is taken from "Test Methods for Evaluating Solid Waste" (USEPA, 1986), the standard reference for sampling and analysis related to compliance with RCRA regulations. Since this project relates to a potential RCRA closure, the methods given in this reference are appropriate. This particular method was chosen because: 1) it can analyze all of the required compounds; and 2) samples to be analyzed under this method can be performed in large quantities, resulting in a lower per unit cost.

5.0 DATA REDUCTION, REVIEW, AND REPORTING

Data review practices will be followed to insure that raw data are not altered and that an audit trail is developed for those data which require reduction. All the field data, such as those generated during field measurements, observations, and field instrument calibrations, will be entered directly into a bound field notebook. Sampling personnel will be responsible for proofing all data transfers made, and the project manager will review at least 10 percent of all data transfers.

The data will be received from the laboratory in a hard copy format. Included in the data package will be the following data summary forms, which will be reviewed by project personnel:

- Organic Analysis Data Sheet (Form I)
- Surrogate Percent Recovery Summary (Form II)
- Matrix Spike/Matrix Spike Duplicate Recovery (Form III)
- Method Blank Summary (Form IV)
- GC/MS Tuning and Mass Calibration (Form V)
- Initial Calibration Data (Form VI)
- Continuing Calibration Check (Form VII)

TABLE 4-1
PRACTICAL QUANTITATION LIMITS (PQLs)

Compounds	Practical Quantitation Limits	
	Field Blank Water (mg/l)	Soil/Sediment (µg/kg)
Acenaphthene	10	660
Anthracene	10	660
Benzo(a)anthracene	10	660
Benzo(a)pyrene	10	660
Chrysene	10	660
2,4-Dimethylphenol	10	660
Fluoranthene	10	660
Fluorene	10	660
Indeno (1,2,3-cd) pyrene	10	660
Naphthalene	10	660
Phenanthrene	10	660
Phenol	10	660
Pyrene	10	660

Data determined to be acceptable after this review will be entered into spreadsheet software so that a statistical analysis can be performed on the data. Unacceptable results will not be included in the statistical analysis, while the results for compounds not detected in a sample (non-detects) will be set equal to one-half the detection limit.

The results of the samples collected of each strata from the background area will be used to calculate the background concentration. The background concentration for each compound listed in Section 2.2 will be calculated as the sum of the arithmetic mean plus two standard deviations in conformance with the method outlined in Ohio EPA's "Closure Plan Review Guidance". The standard deviation will be calculated using the formula:

$$s = \sqrt{\frac{\Sigma x - n\bar{x}^2}{n - 1}}$$

where

S = Standard deviation with population parameter taken as "n-1"

x = Sample Value

$\bar{x}$ = Sample arithmetic mean

n = sample size

A background concentration value will be calculated for each sampling interval. That is, a separate background concentration will be calculated for the coal/soil mixture and the original soil material. No background concentration will be calculated for the coal samples collected from the background area.

The hardcopy of the laboratory data, the resulting spreadsheets, and other project documents such as log books, field data records, correspondence, chain-of-custody records, photographs, computer disks, and reports will be placed in a project file. The project manager is responsible for maintaining this project file in which all critical project documents will be stored.

The report that will be prepared for this project will include the following sections:

- Introduction
- Field Activity Description
- Laboratory Data Summary
- Statistical analysis

- Summary and Conclusions

Additionally, the Organic Data Summary Sheets (Form I) for the sample analysis will be attached as an appendix to the report.

WATER QUALITY BASED EFFLUENT LIMITS REPORT

WARREN CONSOLIDATED
OHIO NPDES #:3ID00071 /USEPA #:

Ohio Environmental Protection Agency

Division of Water Quality Planning and Assessment

January 26, 1990

Dave Altfater through Ray Beaumier

Distribution
Andy Turner
John Sadzewicz
John Morrison
Seif Amragy
Chris Yoder
Bob Wysenski
Bob Heitzman (Stream Use Info. only)
Stream Code 18-001 (Mahoning River, Trumbull County) Toxics Report File

Water Quality Based Effluent Limits (WQBELs) for Warren Consolidated is a report of the Division of Water Quality Planning and Assessment (DWQPA) at the Ohio EPA to assist in the development of permit limits for this activity. Stream use designations, factors evaluated in developing WQBELs, a table of recommended limits (Table 2), an assessment of the risk associated with water quality based parameters (text) and supporting material (Tables 1-8, Biomonitoring Permit Language, WLA Values) are provided. Raw data and analyses are kept in DWQPA's files for technical justification.

STREAM USE DESIGNATIONS

Receiving Stream Network: Warren Consolidated discharges into the Mahoning River from several outfalls between River Mile (RM) 37.7 and 16.4. The remaining stream network is the Beaver River in Pennsylvania to the Ohio River.

Mahoning River (Ohio EPA River Code: 18-001, USEPA River Reach #:05030103-007, County: Trumbull). The Mahoning River is presently designated for the following uses: Warmwater Habitat (WWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS) and Primary Contact Recreation (PCR). The field survey conducted during 1980, 1983 and 1986 confirmed the above uses are appropriate.

Table 1. Factors evaluated in developing Water Quality Based Effluent Limits for Warren Consolidated.

- Aquatic Life Water Quality Criteria/Standards
- WLA
- Effluent and Instream Chemical Evaluation (solids, oxygen demanding substances, nutrients, metals)
- Effluent Chemical Evaluation (GC/MS organic compounds)
- Sediment Chemistry Evaluation (metals and GC/MS organic compounds)
- Instream fish community biosurvey
- Effluent Characterization: MOR data, Form 2C data
- Current Permit Limits
- Reported Fish Kills and Chemical Spills
- Fish Tissue Analysis

I. ENVIRONMENTAL HAZARD ASSESSMENT

Fish community health evaluations of the Mahoning River in the Warren area have been conducted by the Ohio EPA during 1980, 1983 and 1986. Upstream from the Warren Consolidated/ LTV - Warren steel making complex, fish community health was generally in the fair to good range (IBI = 26-35, Modified Iwb = 4.8-8.0). The station immediately upstream from the Warren Consolidated discharges (RM 39.8) indicated partial biological attainment of the Warmwater Habitat use. The station at RM 39.8 has shown steady improvement in modified Iwb scores between 1980 and 1986 and this appears to correspond with reduced pollutant loadings from the Copperweld Steel Co. (CSC Industries).

Downstream from the Warren Consolidated/ LTV - Warren plant steel making complex (RM 37.0-30.4), the fish communities underwent substantial modification in terms of diversity, relative abundance and composition. In addition, pollutant loads from the Warren WWTP (which enter the Mahoning River at RM 33.52) contributed to the severe biological degradation noted in the Mahoning River. Fish sampling results in the Mahoning River downstream from the Warren steel making complex revealed that the Warmwater Habitat use was not being attained (1980 - 1986 data) with each sampling site representing poor to very poor biological conditions (IBI = 12-27, Modified Iwb = 1.4-4.9). Many of the individual fish in the Mahoning River downstream from the Warren Consolidated/LTV Warren steel making complex had visible external lesions, tumors and eroded fins, a further indication of stressful conditions.

Instream chemical water quality results are depicted in Table 3. Increases in ammonia-N, BOD5 and iron were observed in the Mahoning River downstream from the Warren Consolidated/ LTV Warren steel making complex and the Warren WWTP. These moderate increases appear to be associated with effluent discharges from Warren Consolidated, LTV Steel and the Warren WWTP. Significant increases in cyanide, zinc and phenolic compounds were also observed in the Mahoning River downstream from the above mentioned dischargers. Several of the zinc values were in violation of the Warmwater Habitat water quality standard. Iron precipitate in the water column and on submerged objects has been observed in the Mahoning River downstream from the Warren Consolidated/ LTV Warren steel making complex.

Mahoning River sediments were evaluated for heavy metal concentrations (see Table 8). Relative concentrations are compared with the stream sediment classification system described by Kelly and Hite (1984). It is important to realize that the Kelly and Hite classification system does not directly assess toxicity but only presents a relative concentration comparison. Metals concentrations at RM 46.0 (upstream from Warren Consolidated) were non-elevated except for total lead which was elevated to highly elevated in 1975 and 1980. At the locations downstream from Warren Consolidated/LTV Warren/ and Warren WWTP concentrations of total chromium, copper, iron, lead, and zinc reflected extreme contamination. Total cadmium, manganese, and mercury concentrations were in the elevated and highly elevated categories. Bottom sediment metals concentrations in the lower Mahoning River mainstem were comparable to those found in the most industrialized streams in Illinios (Kelly and Hite 1984).

A report on fish tissue and sediment organic chemical evaluation for the lower Mahoning River completed in 1988 by Ohio EPA is attached. Fish samples were collected both upstream (RM 39.8) and downstream (RM 30.4) from the Warren Consolidated/ LTV Warren/ Warren WWTP discharger complex, in addition

to other stations further downstream in the Mahoning River. In general, the priority pollutant compounds analyzed for were quantified at low concentrations. Numerous volatile organic chemicals were identified in fish tissue at stations both upstream and downstream from the above three dischargers. In addition, two phthalate esters and PCBs were identified in fish tissue from both upstream and downstream stations. Sediment analysis for PAH (polynuclear aromatic hydrocarbons) compounds was conducted in 1975 and 1986. Total PAHs in the Mahoning River sediment within one mile downstream from the Warren Consolidated/ LTV Warren steel making complex ranged between 75 and 263 mg/kg dry weight. The sediment within the drainage ditch (RM 36.6) to the Mahoning River which had received coke plant discharges during previous years (LTV Warren coke plant operation) had a total PAH value of 101,720 mg/kg. This value is extremely high, and is much higher than values reported from the Black River where tumors on fish have been documented. The highest PAH contamination of the Mahoning River sediment within the Warren area occurs downstream from the LTV coke plant discharge drainage ditch. Based upon a comparison of PAH values between the Mahoning River and Black River, the segment of the Mahoning River downstream from the Warren dischargers has the potential to cause tumors in fish. Because of highly elevated levels of several PAH compounds in the Mahoning River, a fish comsumption advisory has been issued for all fish species in the Mahoning River from Warren to the Ohio/Pennsylvania state line.

Further details of the instream biological and water quality assessment are provided in the Ohio EPA document: Lower Mahoning River Basin, Water Quality Technical Support Document, 1986.

Fish Kills and Chemical Spills

Ohio Department of Natural Resources, Fish Kill Records from 1965 to 1987 contained no reported fish kills caused by Warren Consolidated. The Ohio EPA Emergency Response Records from 1978 to 1988 contained 28 reported spills (12 of 28 spills have occurred between 1986 and 1988) at Warren Consolidated (previously called LTV Warren and Republic Steel - Warren). Materials spilled included oil, pickle liquor, brine, wastewater, hydrochloric acid, ammonia, phenol, ammonium sulfate and ferrous chloride. It is evident that materials and waste handling practices at Warren Consolidated have a potential to cause additional impairment to the Mahoning River; therefore, plans should be developed to minimize and contain spills.

II. RISK ASSESSMENT OF WATER QUALITY BASED PARAMETERS

Recommended water quality based effluent limits to protect against an environmental hazard are summarized in Table 2. These limits were developed to protect against both acute and chronic toxicity. In 1985 a new wastewater treatment system went on line. MOR effluent data and Form 2C data prior to 1986 were not considered in the assessment of water quality based parameters. Warren Consolidated outfalls which discharge non-contact cooling water and stormwater runoff (001, 002, 003, 004, 007, 011, and 012) were evaluated as part of the water quality based effluent review process and a determination was made that these outfalls did not contribute toxic parameters in toxic amounts to the Mahoning River. For outfalls 001, 002, 003, 004, 007, 011, and 012 chemical specific water quality based effluent limits are not recommended.

Table 2. Recommended Water Quality Based Effluent Limits (WQBELs) to protect against an environmental hazard. These limits were developed following the procedures in the Ohio EPA's Users Manual for Establishing WQBELs. Loadings are in kg/day and concentrations are in ug/l unless otherwise noted.

Parameter	Recommended WQBELs			
	Average [a]		Maximum	
	Conc.	Loading	Conc.	Loading
	OUTFALL 3ID00071013			
Ammonia-N (mg/l)				
– summer	0.18	23.809	0.34	45.609
– winter (Dec – Feb)	0.10	14.127	0.26	35.930
Lead,T.R.	5.9	0.804	63	8.584
Zinc,T.R.	31	4.224	53	7.222
Phenolics,T.R.	4.8	0.654	–	–
Cyanide,Free	17.0	2.316	49	6.677
Thallium, T.R.	Monitoring			
Acute Toxicity	Monitoring (once per month for one year without a trigger)			
Chronic Toxicity	Monitoring (quarterly for one year without a trigger)			

Table 2. Continued.

Parameter	Recommended WQBELs			
	Average [a]		Maximum	
	Conc.	Loading	Conc.	Loading
	OUTFALL 3ID00071008			
Thallium, T.R.	56	1.099	142	2.786
Acute Toxicity	Monitoring (once per month for one year without a trigger)			
Chronic Toxicity	Monitoring (quarterly for one year without a trigger)			
	OUTFALL 3ID00071010			
Copper, T.R.[b]	12	0.098	58	0.474
Phenolics, T.R.	Monitoring			
Acute Toxicity	Monitoring (once per month for one year without a trigger)			
Chronic Toxicity	Monitoring (quarterly for one year without a trigger)			

a The probability of actually determining the true long term average limit for metals at an entity is dependant on the number of samples collected. For this reason it is recommended that metals be monitored twice per week.

b Interim limits for this parameter are provided in the WLA attachment.

Rationale for limits are presented below following the guidelines in the Ohio EPA 1988 Users Manual for Establishing Water Quality Based Effluent Limits. The following parameters were identified, or are suspected of being present in the effluent. The following water quality determinations were made with regard to each parameter using the following groupings:

1) WLA not required because there is insufficient information to develop criteria.
2) does not require a WLA but criteria are available.
3) does not require inclusion of any WQBEL conditions in the permit.
4) recommended inclusion of monitoring conditions.
5) recommended limits based upon WLA output.
6) recommended limits based on adjusted WLA output.

Parameter(s) rationale — Group

OUTFALL 3ID00071013

Group 2

Cadmium-T
Napthalene
Copper-T
Silver-T
Tetrachloroethylene

These parameters were detected at below detection levels and therefore do not pose an environmental hazard. No chemical specific recommendations are suggested for these compounds.

Group 3

Chromium-T
Antimony-T
Nickel-T

These parameters were detected at concentrations greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available for each parameter) and therefore do not pose an environmental hazard. No chemical specific recommendations are suggested for these parameters.

Group 4

Thallium

Monitoring is the recommended permit condition. Thallium was detected at 14% of the maximum WLA (only one sample available). Monitoring is recommended to determine if thallium is routinely present and, if present, what effluent variability exists.

OUTFALL 3ID00071013 (continued)

Group 5

Ammonia-N
Lead-T
Zinc-T
Phenolics-T
Cyanide-Free

Effluent limits are recommended based upon the WLA. Based on monthly operating report (MOR) data (50th and 95th percentile values) from 1988 and Form 2C data from 1988, lead-T was detected at 0% to 2373% of the average WLA, zinc-T was detected at 161% to 613% of the average WLA, phenolics-T was detected at 125% to 729% of the average WLA and cyanide-T was detected at 0% to 118% of the average WLA. Monthly operating report data for ammonia-N from 1983-1987 (July-Sept.) reported 50th and 95th percentile values between 255% and 555% of the average summer WLA of 0.18 mg/l. The 1988 Form 2C ammonia-N effluent concentration of 0.40 ug/l comprised 222% of the average summer WLA. The recommended limits should protect against an environmental hazard.

OUTFALL 3ID00071010

Group 3

Antimony-T
Cadmium-T
Chromium-T
Lead-T
Nickel-T
Zinc-T
Bis(2-ethylhexyl) phthalate

These parameters were detected at concentrations greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available for each parameter) and therefore do not pose an environmental hazard. No chemical specific recommendations are suggested for these parameters.

Group 4

Phenolics-T

Monitoring is the recommended permit condition. This parameter was detected at a concentration of 15% of the average WLA. Monitoring is recommended to determine if this parameter is routinely present and, if present, what effluent variability exists.

OUTFALL 3ID00071010 (continued)

Group 5

Copper-T

WLA output is the recommended limit. Based on a comparison of the 1988 Form 2C data with the WLA, copper was detected at 22% of the maximum WLA. The recommended limits should protect against an environmental hazard.

OUTFALL 3ID00071008

Group 3

Antimony-T
Cadmium-T
Chromium-T
Nickel-T
Zinc-T
1,1,1-Trichloroethane
Bis(2-ethylhexyl) phthalate

These parameters were detected at concentrations greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available for each parameter) and therefore do not pose an environmental hazard. No chemical specific recommendations are suggested for these parameters.

Group 5

Thallium-T

WLA output is the recommended limit. Based on a comparison of the 1988 Form 2C data with the WLA, thallium was detected at 21% of the maximum WLA. The recommended limits should protect against an environmental hazard.

OUTFALL 3ID00071001

Group 3

Zinc-T

Zinc was detected at a concentration greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available for each parameter) and therefore does not pose an environmental hazard. No chemical specific recommendations are suggested for zinc.

OUTFALL 3ID0007100 2

Group 3

Zinc-T

Zinc was detected at a concentration greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available) and therefore does not pose an environmental hazard. No chemical specific recommendations are suggested for zinc.

OUTFALL 3ID0007100 3

Group 2

Cadmium-T

Cadmium was listed in the 1988 Form 2C as 'believed absent'. This outfall is composed of noncontact cooling water and stormwater runoff and therefore should not pose an environmental hazard. No chemical specific recommendations are suggested for cadmium.

Group 3

Zinc-T

Zinc was detected at a concentration greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available) and therefore does not pose an environmental hazard. No chemical specific recommendations are suggested for zinc.

OUTFALL 3ID0007100 4

Group 3

Cadmium-T
Chromium-T
Nickel-T
Zinc-T

These parameters were detected at concentrations greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available for each parameter) and therefore do not pose an environmental hazard. No chemical specific recommendations are suggested for these parameters.

OUTFALL 3ID00071007

Group 3

Zinc-T

Zinc was detected at a concentration greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available) and therefore does not pose an environmental hazard. No chemical specific recommendations are suggested for zinc.

OUTFALL 3ID00071011

Group 3

Zinc-T

Zinc was detected at a concentration greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available) and therefore does not pose an environmental hazard. No chemical specific recommendations are suggested for zinc.

OUTFALL 3ID00071012

Group 3

Zinc-T

Zinc was detected at a concentration greater than 10% of the Chronic Criteria but less than 10% of the maximum WLA (only one sample was available) and therefore does not pose an environmental hazard. No chemical specific recommendations are suggested for zinc.

Whole Effluent Evaluation

Chemical specific limits recommended for Warren Consolidated address categorical guideline parameters. However, because of historically documented severe biological degradation in the Mahoning River downstream from the Warren Consolidated discharge (1980 sampling results) and the lack of any effluent bioassay testing, biomonitoring requirements for the 008, 010 and 013 outfalls (monthly acute and quarterly chronic tests for one year) are recommended. Suggested biomonitoring permit language is attached at the end of this report. Upon review of the bioassay test results, Ohio EPA will make a decision on whether to require additional biomonitoring or require a toxicity reduction evaluation.

WARREN CONSOLIDATED

WATER QUALITY BASED EFFLUENT LIMITS (WQBELs) REPORT

TECHNICAL SUPPORTING MATERIAL

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Table 3. Summary of the analyses of samples collected in the Mahoning River upstream from (River Mile [RM] 38.1) and downstream from (RM 33.7) the Warren Consolidated/ LTV Warren steel making complex. Samples were collected by the Ohio EPA during 1980, 1981 and 1988. Concentrations are in ug/l unless otherwise noted. n = number of samples; K = less than.

Parameter	Upstream from Warren Consolidated/LTV RM 38.1 n / mean / range	Downstream from Warren Consolidated/LTV RM 33.7 n / mean / range
Dissolved Oxygen (mg/l)	14/ 9.3/ 7.0–13.9	15/ 8.6/ 4.9–13.6
BOD5 (mg/l)	9/ 1.8/ 0.4–3.3	9/ 3.5/ 2.2–4.4
COD (mg/l)	13/ 16.8/ 8.0–32.0	14/ 21.3/ 16–35.9
pH – lab (S.U.)	10/ 7.5/ 6.4–7.9	11/ 7.3/ 6.2–7.8
TSS (mg/l)	13/ 15.7/ 7–29	14/ 16.8/ 5–44
Ammonia-N (mg/l)	14/ 0.12/ 0.0–0.57	14/ 0.82/ 0.28–4.26
Nitrite-N (mg/l)	11/ 0.02/ K0.01–0.03	11/ 0.06/ 0.02–0.25
TKN (mg/l)	13/ 0.65/ 0.4–1.24	13/ 1.55/ 0.80–5.25
NO2 + NO3-N (mg/l)	13/ 0.58/ 0.28–1.11	13/ 0.61/ 0.29–1.11
Phosphorus-T (mg/l)	13/ 0.10/ 0.05–0.17	13/ 0.22/ 0.10–0.36
Cyanide-T	13/ 25/ K10–210	13/ 41/ K10–400
Hardness-T (mg/l)	5/ 166/ 133–190	6/ 175/ 148–197
Cadmium-T	13/ K5/ K1–K5	14/ 2.4/ K0.2–5
Chromium-T	13/ 39/ K30–80	13/ 45/ K30–120
Copper-T	13/ 27.7/ K5–170	14/ 15.7/ K5–40
Iron-T	13/ 1007/ 360–1840	13/ 1677/ 880–3700
Lead-T	13/ 12/ K5–50	14/ 21/ K5–100
Nickel-T	13/ 64/ K40–50	14/ 63/ 5–100
Zinc-T	13/ 101/ 25–370	14/ 145/ K30–660
Phenolics-T	13/ 5.7/ K2–16	13/ 20.5/ 5–148
Mercury-T	5/ K0.5/ K0.5	5/ 0.5/ K0.5–0.5

Values reported at 3 fish sampling stations adjacent to and downstream from the Warren Consolidated/ LTV Warren steel making complex during 1980

River Mile	BOD5	Ammonia-N	Cyanide-T	Phenolics-T
RM 37.0	2.0	0.06	K10	5
	4.9	0.10	–	5
RM 36.1	2.6	0.49	K10	4
	3.8	0.12	K10	2
RM 35.1	4.2	0.40	K10	4
	4.3	0.34	K10	4

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Table 4. Concentrations (ug/l) of specific chemicals found present in Warren Consolidated outfalls as reported in Form 2C data from 1981 and 1988. Concentration are in ug/l, unless noted otherwise. ND = not detected.

Parameter	1988		1981	
	Effluent	Intake	Effluent	Intake
Outfall 001				
Ammonia-N (mg/l)	<0.10	0.21	–	–
O & G (mg/l)	1.0	1.0	–	–
Zinc-T	77	55	–	–
Outfall 002				
Ammonia-N (mg/l)	0.14	0.21	–	–
O & G (mg/l)	2.0	1.0	–	–
Zinc-T	77	55	1100	80
Cadmium-T	–	–	6	1
Cyanide-T	–	–	20	10
Phenols-T	–	–	18	10
Outfall 003				
Ammonia-N (mg/l)	0.15	0.21	–	–
O & G (mg/l)	1.0	1.0	–	–
Zinc-T	91	55	550	80
Cyanide-T	–	–	10	10
Phenols-T	–	–	16	10
Outfall 004				
Ammonia-N (mg/l)	0.17	0.21	–	–
O & G (mg/l)	1.0	1.0	–	–
Cadmium-T	1	<1	11	1
Chromium-T	13	<12	29	6
Lead-T	<25	29	44	23
Nickel-T	22	32	–	–
Methylene chloride	–	–	39	37
Zinc-T	31	55	–	–
Outfall 007				
Ammonia-N (mg/l)	0.25	0.21	0.21	0.28
Zinc-T	67	55	180	26
Cadmium-T	–	–	5	1
O & G (mg/l)	1.0	1.0	5.3	2.6
Cyanide-T	–	–	26	10

Table 4. Continued.

Parameter	1988 Effluent	1988 Intake	1981 Effluent	1981 Intake
Outfall 008				
Ammonia-N (mg/l)	0.20	0.21	–	–
Antimony-T	100	90	–	–
O & G (mg/l)	3.0	1.0	–	–
Cadmium-T	1	<1	–	–
Chromium-T	13	<12	26	6
Lead-T	<25	29	55	23
Nickel-T	22	32	73	28
Thallium-T	30	20	–	–
Zinc-T	24	55	75	26
Phenols-T	<5	<5	14	10
1,1,1-Trichloroethane	33.6	ND	23	ND
Bis(2-ethylhexyl) phthalate	7.2	5.5	–	–
Outfall 010				
Ammonia-N (mg/l)	0.20	0.21	0.15	0.26
Antimony-T	90	90	–	–
O & G (mg/l)	2.0	1.0	–	–
Cadmium-T	1	<1	–	–
Chromium-T	13	<12	–	–
Copper-T	13	19	27	11
Lead-T	29	29	146	30
Nickel-T	22	32	–	–
Zinc-T	19	55	310	160
Cyanide-T	<10	<10	34	21
Phenols-T	6	<5	–	–
1,1,1-Trichloroethane	7.7	ND	182	ND
Bis(2-ethylhexyl) phthalate	13.1	5.5	–	–
Outfall 011				
Ammonia-N (mg/l)	0.28	0.21	0.39	0.26
O & G (mg/l)	2	1	–	–
Chromium-T	<12	<12	113	3
Lead-T	<25	29	59	30
Zinc-T	38	55	430	160
Outfall 012				
Ammonia-N (mg/l)	0.18	–	–	–
O & G (mg/l)	1.0	–	–	–
Cadmium-T	<1	–	11	–
Zinc-T	21	–	–	–

Table 4. Continued.

Parameter	1988 Effluent	1988 Intake	1981 Effluent	1981 Intake
Outfall 013				
Ammonia-N (mg/l)	0.40	0.21	4.9	0.26
Antimony-T	100	90	–	–
O & G (mg/l)	1.0	1.0	–	–
Arsenic-T	<5	<5	37.4	2
Cadmium-T	<1	<1	16	9
Chromium-T	13	<12	–	–
Copper-T	<12	19	39	17
Lead-T	<25	29	133	30
Nickel-T	22	32	–	–
Thallium-T	20	20	–	–
Zinc-T	50	55	690	151
Cyanide-T	<10	<10	550	21
Phenols-T	6	<5	140	12
Outfall 601				
Ammonia-N (mg/l)	83.6	0.21	–	–
O & G (mg/l)	1.0	1.0	–	–
Antimony-T	220	90	–	–
Arsenic-T	30	<5	–	–
Cadmium-T	8	<1	–	–
Copper-T	13	19	–	–
Lead-T	75	29	–	–
Thallium-T	130	20	–	–
Nickel-T	45	32	–	–
Zinc-T	652	55	–	–
Phenols-T	24	<5	–	–
Bis(2-ethylhexyl) phthalate	27.6	5.5	–	–
Fluoranthene	7.1	ND	–	–
Outfall 602				
Ammonia-N (mg/l)	5.60	0.21	–	–
O & G (mg/l)	3.0	1.0	–	–
Antimony-T	170	90	–	–
Cadmium-T	1	<1	–	–
Nickel-T	35	32	–	–
Thallium-T	70	20	–	–
Zinc-T	80	55	–	–
Phenols-T	32	<5	–	–
Methylene chloride	1240	ND	–	–
Bis(2-ethylhexyl) phthalate	9.2	5.5	–	–
Fluoranthene	7.1	ND	–	–

Table 4. Continued.

Parameter	1988 Effluent	1988 Intake	1981 Effluent	1981 Intake
Outfall 603				
O & G (mg/l)	9.0	1	–	–
1,1,1-Trichloroethane	17.5	ND	–	–
Antimony-T	110	90	–	–
Copper-T	23	19	–	–
Lead-T	29	29	–	–
Nickel-T	35	32	–	–
Zinc-T	60	55	–	–
Phenols-T	7	<5	–	–
Outfall 604				
O & G (mg/l)	24.0	1	–	–
1,1,1-Trichloroethane	10.4	ND	–	–
Antimony-T	100	90	–	–
Copper-T	24	19	–	–
Lead-T	35	29	–	–
Nickel-T	20	32	–	–
Thallium-T	20	20	–	–
Zinc-T	23	55	–	–

Table 5. Summary of biological use attainment status for sampling locations in the Mahoning River near Warren during 1980, 1983 and 1986. Attainment status follows guidance in Ohio EPA (1987b).

River Mile/ Year	IBI	Mod. Iwb	ICI	QHEI	WWH Attainment Status	Comments
44.9/ 1980	35^{ns}	7.4*	-	73	Partial	Leavittsburg - free flowing
44.9/ 1983	32^{ns}	8.0^{ns}	-	73	Full	
43.7/ 1980	29*	6.6*	-	-	Non	Upst. Copperweld Steel
41.7/ 1980	31*	6.2*	-	-	Non	Dst. Copperweld Steel
40.2/ 1980	26*	4.8*	-	-	Non	Dst. Copperweld - impounded
39.8/ 1980	26*	4.9*	-	73	Non	Dst. Thomas Strip Steel, free-flowing
39.8/ 1983	29*	6.3*	-	73	Non	
39.8/ 1986	26*	8.0^{ns}	-	73	Partial	
38.3/ 1980	26*	5.0*	-	-	Non	Upst. Warren Consolidated
37.0/ 1980	21*	2.9*	-	-	Non	Adjac. Warren Consolidated
36.1/ 1980	19*	4.4*	-	-	Non	Dst. Warren Consolidated, Upst. Warren WWTP
35.1/ 1980	27*	4.9*	-	-	Non	Dst. Warren WWTP
31.8/ 1980	13*	1.4*	-	62	Non	Dst. Warren WWTP
31.0/ 1983	12*	3.9*	-	-	Non	
30.4/ 1980	19*	4.3*	-	68	Non	Dst. Mosquito and Meander Creeks
30.4/ 1983	19*	4.0*	-	68	Non	
30.4/ 1986	16*	4.0*	-	68	Non	

Erie/Ontario Lake Plain (EOLP) Ecoregion criteria

IBI = 36
Mod. Iwb = 8.3

* significant departure from ecoregion biocriteria; underlined values represent poor and very poor conditions.

ns non significant departure from ecoregion biocriteria (4 IBI and ICI units; 0.5 Iwb units).

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Table 6. Mean, maximum, and minimum dissolved oxygen concentrations (mg/l) recorded with Datasonde continuous monitors during two different periods at various locations during the 1988 field survey in the Mahoning River study area.

Date / River Mile (RM)	Mean	Maximum	Minimum
June 28-30, 1988			
RM 46.0	8.03	8.35	7.87
RM 38.1	7.72	8.67	7.11
RM 33.7	7.13	7.68	6.73
RM 31.4	6.70	7.12	6.26
RM 30.5	6.41	6.63	6.13
RM 27.0	4.50*	5.40	3.73*
July 18-20, 1988			
RM 35.8	6.47	7.18	6.07
RM 35.4	6.68	7.27	6.07
RM 33.7	5.89	6.39	4.97
RM 32.3	5.72	6.31	4.66
RM 31.2	4.70*	5.19	3.49*
RM 30.5	4.42*	4.83*	3.59*
RM 28.4	3.81*	5.02	2.97*
RM 27.7	3.26*	4.05*	2.51*
RM 27.0	3.73*	4.66*	2.29*

* indicates violation of WWH water quality standard

** indicates violation of LRW water quality standard for the prevention of nuisance conditions.

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Table 7. Warren Consolidated current permit limits and a summary of the unaltered monthly operating report data for 1988 and 1983 - 88. All values are based on annual records except for ammonia-N which is based on third quarter (July-September) records. Values are in ug/l unless otherwise noted; n = number of analyses; NA = not analyzed.

Parameter	Current Permit Limits 30 day daily	1988 n	1988 50th. %ile	1988 95th. %ile	1988 Range	1983-1988 n	1983-1988 50th. %ile	1983-1988 95th. %ile	1983-1988 Range
			Outfall 001						
O & G (mg/l)	Monitor	2	2	2	2	32	3	18	1-78
Flow (MGD)	Monitor	2	0.108	0.108	0.108	47	0.14	0.14	0.108-0.14
			Outfall 002						
O & G (mg/l)	Monitor	2	2	2	2	79	3	10	1-20
Flow (MGD)	Monitor	2	0.58	0.58	0.58	138	0.58	0.58	0.029-0.58
Zinc-T	-	-	-	-	-	63[a]	760	27000	45-72000
			Outfall 003						
O & G (mg/l)	Monitor	2	1	2	1-2	80	3	6	1-44
Zinc-T	-	-	-	-	-	63[a]	172	580	18-1980
Flow (MGD)	Monitor	2	2.59	2.59	2.59	147	2.59	2.59	2.59
			Outfall 004						
O & G (mg/l)	-	22	2	7	1-7	113	3	8	1-21
Flow (MGD)	Monitor	22	0.432	0.432	0.432	226	0.14	0.43	0.07-0.43
			Outfall 007						
O & G (mg/l)	Monitor	5	2	7	1-7	114	3	7	1-15
Flow (MGD)	Monitor	5	1.9	1.9	1.9	179	1.9	1.9	0.07-1.9
			Outfall 008						
TSS (mg/l)	Monitor	5	12	21	8-21	169	37	222	4-462
O & G (mg/l)	Monitor	5	4	5	1-5	170	9	29	1-48
Flow (MGD)	Monitor	5	8.64	8.64	8.64	232	5.71	8.64	5.71-8.64
			Outfall 010						
TSS (mg/l)	Monitor	22	40	94	12-107	261	44	133	4-622
O & G (mg/l)	Monitor	22	5	14	2-15	262	6	12	2-20
Flow (MGD)	Monitor	22	4.32	4.32	4.32	324	4.32	4.32	4.32

Table 7. Continued.

Parameter	Current Permit Limits 30 day	daily	1988 n	50th. %ile	95th. %ile	Range	1983-1988 n	50th. %ile	95th. %ile	Range
				Outfall 011						
O & G (mg/l)	Monitor		2	2	3	2-3	81	3	7	1-39
Flow (MGD)	Monitor		2	0.86	0.86	0.86	145	0.86	0.86	0.86
				Outfall 013						
TSS (mg/l)	Monitor		21	24	95	11-102	276	32	141	5-2378
O & G (mg/l)	Monitor		21	2	6	1-19	275	3	8	1-117
Ammonia-N (mg/l)	Monitor		-	-	-	-	66[b]	0.46	1.0	0.1-1.3
Cyanide-T	Monitor		21	10	20	10-30	276	20	400	0-2800
Lead-T	Monitor		21	20	140	10-170	212	20	100	10-260
Zinc-T	Monitor		21	110	190	60-210	212	160	980	10-30,010
Phenolics-T	Monitor		21	6	35	5-54	276	8	37	0-770
Flow (MGD)	Monitor		21	29.7	29.7	29.7	341	29.7	29.7	29.7
				Outfall 601						
TSS (kg/day)	80	241	22	5.4	9.1	2.9-9.8	258	11.6	133.9	0.1-3423
TSS (mg/l)	Monitor		22	42	50	20-53	261	35	111	3-241
Ammonia-N (mg/l)	Monitor		-	-	-	-	57[b]	55.2	100.0	0.85-127
Cyanide-T (kg/day)	2.7	5.4	22	0.009	0.04	<.01-0.08	257	0.112	21.9	0-323
Cyanide-T	Monitor		22	70	270	10-720	261	410	13000	10-71000
Lead-T (kg/day)	0.27	0.82	22	0.02	0.05	<.01-0.08	227	0.027	0.212	0.001-6.7
Lead-T	Monitor		22	160	450	10-800	232	80	300	10-3600
Zinc-T (kg/day)	0.40	1.22	22	0.059	0.153	0.02-0.17	228	0.06	1.66	0.001-14.5
Zinc-T	Monitor		22	350	950	110-1030	232	220	1600	10-6500
Phenolics-T	Monitor		22	45	243	16-6000	261	77	3400	5-11900
Flow (MGD)	Monitor		22	0.04	0.06	0.03-0.07	260	0.07	0.63	0.001-8.7

Table 7. Continued.

Parameter	Current Permit Limits 30 day	daily	1988 n	50th. %ile	95th. %ile	Range	1983-1988 n	50th. %ile	95th. %ile	Range
				Outfall 602						
TSS (kg/day)	228	527	22	17.8	45.1	4.0-83.4	265	63.8	959	1.1-5250
TSS (mg/l)	Monitor		22	4	12	1-17	270	16	449	1-2688
O & G (kg/day)	76	227	22	20	78	2.3-241	264	18.5	225	1.1-1291
O & G (mg/l)	Monitor		22	4	16	1-58	269	5	93	1-661
Lead-T (kg/day)	1.22	3.66	22	0.05	0.5	0.03-1.1	265	0.2	2.5	0.003-16.6
Lead-T	Monitor		22	10	100	10-250	270	60	1000	2-8500
Zinc-T (kg/day)	1.65	4.93	22	1.3	2.7	0.3-4.5	280	1.5	44.9	0.04-392
Zinc-T	Monitor		22	290	650	110-1200	285	400	24000	10-90000
Flow (MGD)	Monitor		22	1.18	1.32	0.61-1.38	280	0.99	1.67	0.07-3.07
				Outfall 603						
TSS (kg/day)	905	2417	21	431	675	53-686	128	317	824	4-2060
TSS (mg/l)	Monitor		21	35	55	4-56	128	29	69	1-630
O & G (kg/day)	-	606	21	123	207	51-295	128	99	207	3-307
O & G (mg/l)	Monitor		21	9.0	19.0	5.0-24.0	128	9.0	22.0	2-93
Flow (MGD)	Monitor		21	3.41	4.04	2.72-4.05	128	3.24	4.29	0.1-4.79

a 1983-1984.
b 1983-1987.

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Table 8. Concentrations of heavy metals in the sediments of the Mahoning River, from samples collected during 1975, 1980 and 1983.[1] Warren Consolidated dischargers to the Mahoning River at approximately River Mile (RM) 37.7 - 36.4.

Stream Name / River Mile	Concentration (mg/kg dry weight)								
	Cd	Cr	Cu	Fe	Pb	Ni	Zn	Mn	Hg
Mahoning River									
RM 46.0 (1975)	1K[b]	15[a]	6[a]	7,800[a]	15[a]	50	36[a]	155[a]	0.10K[a]
(1980)	0.2[a]	28[c]	14[a]	11,700[a]	79[d]	47	65[a]	533[a]	0.04[a]
(1983)	0.2[a]	8[a]	10K[a]	7,870[a]	47[c]	10	65[a]	280[a]	-
RM 30.5 (1975)	4.0[d]	370[e]	330[e]	200,000[e]	670[e]	360	1,990[e]	3,220[d]	0.20[d]
RM 22.7 (1975)	3.0[d]	23[c]	115[d]	410,000[e]	290[e]	50	530[e]	4,160[d]	0.10K[a]
RM 21.0 (1980)	0.3[a]	89[e]	130[d]	79,500[e]	232[e]	58	530[e]	1,380[b]	0.14[c]
(1983)	7.0[d]	570[e]	350[e]	119,000[e]	1,060[e]	300	7,390[e]	3,930[d]	-

1 All parameter concentrations, excluding nickel, were ranked based on a stream sediment classification system described by Kelly and Hite (1984) as:

a Non-elevated
b Slightly elevated
c Elevated
d Highly elevated
e Extremely elevated

The Kelly and Hite classification system addresses relative concentrations but does not directly assess toxicity.

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SUGGESTED BIOMONITORING PERMIT LANGUAGE PAGE 1

As soon as possible, but not later than three months after the effective date of this permit, the entity shall initiate an effluent biomonitoring program to determine the toxicity of effluent from outfalls 3ID00071-013, -010, and -008.

Testing Requirements:

1. Chronic Bioassays:

The entity shall conduct quarterly 7-day Ceriodaphnia Survival and Reproduction Tests and 7-day fathead minnow (Pimephales promelas) Larval Survival and Growth Tests for a period of one year. Twenty-four hour composite samples of the final effluent from outfalls 3ID00071-013, -010, and -008 shall be collected during three separate 24 hour compositing periods; these samples will be used for daily renewal of the test solutions. The maximum holding time allowed between collection of a 24 hour composite sample and use for the first renewal of test solutions is 36 hours. The first sample should be collected to initiate the test (Day 0) and to renew the test solutions at 24 hours (Day 1). The second sample should be collected to renew test solutions at 48 hours (Day 2) and 72 hours (Day 3). The third sample should be collected to renew test solutions at 96 hours (Day 4), 120 hours (Day 5) and 144 hours (Day 6). In addition, grab samples collected in the Mahoning River will be tested to evaluate near and far field toxicity. See item 4 under testing protocol for specifics on sampling locales.

2. Acute Bioassays:

The entity shall conduct monthly 48-hour acute bioassays using Ceriodaphnia and 96-hour acute bioassays using the fathead minnow (Pimephales promelas) for a period of one year, except that a separate acute test is not required during the months chronic tests are conducted because acute endpoints are determined during the chronic tests. The tests shall be conducted using 24-hour composite samples of final effluent from outfalls 3ID00071-013, -010, and -008. In addition, an instream grab sample will be tested to determine near field toxicity. See item 4 under testing protocol for specifics on sampling locales.

3. Chemical Analysis:

For acute tests a sufficient volume of effluent shall be collected to allow for chemical analysis. For chronic tests a sufficient volume of effluent shall be collected during each of the three compositing periods so aliquots can be held for chemical analysis. Chemical analysis should be conducted if acute effects result from a sample. If no acute effects are seen in the bioassay only the third aliquot needs to be analyzed for chemical parameters. Bioassay effluent sampling may be coordinated with other permit sampling requirements as appropriate to avoid duplication. The analyses detailed in the Final Effluent Limitations and Monitoring Requirements tables should be conducted for the effluent sample. In addition alkalinity and hardness (as $CaCO_3$) should also be measured. Chemical analysis must comply with Ohio EPA accepted procedures.

WARREN CONSOLIDATED WQBELs REPORT TECHNICAL SUPPORTING MATERIAL

SUGGESTED BIOMONITORING PERMIT LANGUAGE PAGE 2

Testing Protocol

1. The test shall be conducted using procedures contained in the Ohio EPA Quality Assurance Manual (or current revisions). Any request to use a different methodology must be approved by the OEPA prior to the initiation of testing.

2. The permittee shall determine a median lethal concentration (LC_{50}) and/or median effective concentration (EC_{50}) for acute and chronic effects, and a lowest observed effect concentration (LOEC) and a no observed effect concentration (NOEC) for chronic effects for each test species.

3. A minimum of 5 effluent concentrations (e.g., 100, 56, 32, 18, and 10 percent by volume effluent) shall be used in each effluent bioassay. Dilution and primary control water shall be collected as a grab sample at Station _____ (a site upstream from the outfalls outside the zone of effluent and receiving water interaction). Reconstituted water, rearing unit water (water in which the test organisms were reared) or other high quality water shall be used as a second control water. If the primary control and dilution water from Station _____ is demonstrated to contain unacceptable toxicity in a test, then the secondary control shall be used as the diluent in succeeding tests until water from Station _____ is shown to be acceptable for use as a diluent in three successive bioassays where it has been tested at full-strength (i.e., no dilutions). An acute test shall be repeated if mortality, or combination of mortality plus other adverse effects, exceeds ten percent of one of the species of test organisms in both control waters (primary and secondary). A chronic test shall be repeated if, in both control waters (primary and secondary), mortality, or combination of mortality plus other adverse effects, exceeds 20 percent of one of the species of test organisms, or Ceriodaphnia mean young production is less than 15, or there is less than a three-fold weight increase in the fish larval growth test.

4. Testing of ambient water shall be conducted as follows. In conjunction with the chronic tests of the effluent, instream grab samples shall be collected at Stations _____ (a point located midplume or if a plume no longer exists midstream 123 meters (440 feet) downstream from outfalls 3ID00071-013, -010, and -008) to determine chronic effects. In conjunction with the acute and chronic tests of the effluent, instream grab samples shall be collected at Stations_____ (a point located within the effluent plume 6.2 meters (22 feet) downstream from outfalls 3ID00071-013, -010, and -008). The location of the effluent plume should be confirmed at the time of sampling using temperature measurements, conductivity measurements or a dye study. A detailed mixing zone study can be used to justify an alternative far field sample location upon prior approval by the Ohio EPA. Bioassays of these instream samples will determine if near or far field toxicity is occurring.

Reporting:

All bioassay results shall be submitted in duplicate to the Ohio EPA Central Office no later than 60 days following the sampling date. One copy shall be routed to the Division of Water Pollution Control - Permits Section and one copy shall be routed to The Division of Water Quality Monitoring and Assessment - Water Quality Appraisal Group.

Results to be reported for acute endpoints include:

1. Name of testing laboratory.
2. Effluent tested and source.
3. Receiving water used.
4. Date and times of sample collection.
5. Collector(s) names(s)
6. Type of bioassay.
7. Test organisms used.
8. Test organisms origin and acclimation process.
9. Number of organisms per container and per concentration.
10. Test containers size, number per concentration, and depth of test solution.
11. Concentrations tested and volume.
12. Test temperature.
13. Results of chemical analyses.
14. Results of physicochemical measurements taken.
15. Definition of adverse effects measured in the test (endpoints).
16. Number of organisms in each concentration showing the adverse effects at specified times.
17. Median lethal concentrations (LC_{50}) and/or the median effective concentrations (EC_{50}) at 24, 48, 72 and 96 hours, and confidence limits, and methods used for these calculations.
18. The 7-day flow with a 10-year recurrence interval ($Q_7 10$) of the receiving water.
19. Exact details on the near field sample location in relation to the outfall and effluent plume location along with the results from the temperature, conductivity or dye study used to confirm the effluent plume. If conducted, results of the detailed mixing zone study shall be provided.
20. Any other relevant information.

SUGGESTED BIOMONITORING PERMIT LANGUAGE

Results to be reported for chronic effects include the above results for acute effects and:

1. All raw data obtained in the bioassays concerning test organism survival, growth of fathead minnow larvae, and reproduction of Ceriodaphnia. The raw data shall be in tabular form according to date and effluent concentrations and/or receiving water locations.

2. Median lethal concentrations (LC_{50}) and/or the median effective concentrations (EC_{50}) for each day of the chronic bioassays.

3. The lowest observed effect concentration (LOEC) and a no observed effect concentration (NOEC) and the geometric mean of the LOEC and NOEC for growth of fathead minnow larvae and reproduction of Ceriodaphnia.

4. The median effective concentrations that cause 50% reduction in fathead minnow growth and daphnid reproduction.

5. Average daily discharge of the effluent(s) of concern and the receiving water during the bioassay sampling.

6. The 30-day flow with a 10-year recurrence interval ($Q_{30}10$) of the receiving water.

7. Exact details on the far field sample location in relation to the outfall and effluent plume location along with the results from the temperature, conductivity or dye study used to confirm the effluent plume. If conducted, results of the detailed mixing zone study shall be provided.

Data Review:

Following completion of each monthly bioassay requirements, the entity shall forward the results to Ohio EPA. Based on Ohio EPA's review of the results this permit may be modified to require additional biomonitoring, require a toxicity reduction evaluation, or contain whole effluent toxicity limits.

WASTELOAD ALLOCATION FOR

SELECTED MAHONING RIVER DISCHARGERS

JANUARY 1990

PREPARED BY

Division of Water Quality Planning and Assessment

Ohio Environmental Protection Agency

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania WQS and add Sharon Steel and several Warren Consolidated outfalls to allocation.

ENTITY: Warren Consolidated Industries (3ID00071) - 001

DISCHARGE FLOW: 0.223cfs (0.144 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

PARAMETER	YEAR ROUND EFFLUENT LIMITS			
	AVERAGE		MAXIMUM	
	(ug/l)	(kg/day)	(ug/l)	(kg/day)
Zinc	—	—	986.[A]	0.538

COMMENTS: A) Limited by the Final Acute Value.

ANALYSIS CONDUCTED BY: Trinka Mount ANALYSIS REVIEWED BY: Randy I. Bonnington

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania WQS and add Sharon Steel and several Warren Consolidated outfalls to allocation.

ENTITY: Warren Consolidated Industries (3ID00071) - 002

DISCHARGE FLOW: 0.891 cfs (0.576 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

PARAMETER	YEAR ROUND EFFLUENT LIMITS AVERAGE (ug/l)	AVERAGE (kg/day)	MAXIMUM (ug/l)	MAXIMUM (kg/day)
Zinc	—	—	986.[A]	2.150

COMMENTS: A) Limited by the Final Acute Value.

ANALYSIS CONDUCTED BY: Trinka Mount ANALYSIS REVIEWED BY: Randy D. Bowman

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania WQ d add Sharon Steel and several Warren Consolidated outfalls to a ation.

ENTITY: Warren Consolidated Industries (3ID00071) - 003

DISCHARGE FLOW: 4.23 cfs (2.74 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

PARAMETER	YEAR ROUND EFFLUENT LIMITS AVERAGE (ug/l)	AVERAGE (kg/day)	MAXIMUM (ug/l)	MAXIMUM (kg/day)
Cadmium[B]	2.0	0.021	21.	0.217
Cadmium[C]	5.0	0.052	21.	0.217
Zinc	—	—	986.[A]	10.205

COMMENTS: A) Limited by the Final Acute Value.
B) Results to maintain Chronic and Acute Criteria
C) Average limit is Most Stringent Limit (Procedure A20). The application of this procedure to all dischargers results in an instream Cd concentration of 1.80 ug/l, and the Chronic Criteria of 1.1 is violated from RM 34.32 into Pennsylvania.

ANALYSIS CONDUCTED BY: Trinka Mount ANALYSIS REVIEWED BY: Randy D. Bennington

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania WQS and add Sharon Steel and several Warren Consolidated outfalls to allocation.

ENTITY: Warren Consolidated Industries (3ID00071) - 004

DISCHARGE FLOW: 0.446 cfs (0.288 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

PARAMETER	YEAR ROUND EFFLUENT LIMITS AVERAGE (ug/l)	AVERAGE (kg/day)	MAXIMUM (ug/l)	MAXIMUM (kg/day)
Cadmium[B]	2.0	0.002	21.	0.023
Cadmium[C]	5.0	0.005	21.	0.023
Chromium, Total	148.	0.162	5480.[A]	5.980
Nickel	669.	0.730	4120.[A]	4.496
Zinc	—	—	986.[A]	1.076

COMMENTS: A) Limited by the Final Acute Value.
B) Results to maintain Chronic and Acute Criteria.
C) Average limit is Most Stringent Limit (Procedure A20). The application of this procedure to all dischargers results in an instream Cd concentration of 1.80 ug/l, and the Chronic Criteria of 1.1 is violated from RM 34.32 into Pennsylvania.

ANALYSIS CONDUCTED BY: Trinka Mount ANALYSIS REVIEWED BY: Randy D Bourquin

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania W[illegible] and add Sharon Steel and several Warren Consolidated outfalls to a [illegible]cation.

ENTITY: Warren Consolidated Industries (3ID00071) - 007

DISCHARGE FLOW: 3.83 cfs (2.48 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

	YEAR ROUND EFFLUENT LIMITS			
	AVERAGE		MAXIMUM	
PARAMETER	(ug/l)	(kg/day)	(ug/l)	(kg/day)
Zinc	—	—	986.[A]	9.240

COMMENTS: A) Limited by the Final Acute Value.

ANALYSIS CONDUCTED BY: Tonka Mount ANALYSIS REVIEWED BY: Randy D. Bonnington

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania WQS and add Sharon Steel and several Warren Consolidated outfalls to allocation.

ENTITY: Warren Consolidated Industries (3ID00071) - 008

DISCHARGE FLOW: 8.02 cfs (5.18 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

PARAMETER	YEAR ROUND EFFLUENT LIMITS AVERAGE (ug/l)	AVERAGE (kg/day)	MAXIMUM (ug/l)	MAXIMUM (kg/day)
Antimony	639.	12.539	1300.[A]	25.509
Cadmium[B]	2.0	0.039	21.	0.412
Cadmium[C]	5.0	0.098	21.	0.412
Chromium, Total	148	2.904	5480.[A]	107.532
Nickel	669.	13.128	4120.[A]	80.845
Thallium	56.	1.099	142.[A]	2.786
Zinc	—	—	986.[A]	19.348
1,1,1-Trichloroethane	1482.	29.081	4000.[A]	78.491
Bis(2-ethylhexyl) phthalate	110.	2.158	2200.[A]	43.170

COMMENTS: A) Limited by the Final Acute Value.
B) Results to maintain Chronic and Acute Criteria.
C) Average limit is Most Stringent Limit (Procedure A20). The application of this procedure to all dischargers results in an instream Cd concentration of 1.80 ug/l, and the Chronic Criteria of 1.1 is violated from RM 34.32 into Pennsylvania.

ANALYSIS CONDUCTED BY: Trinka Blount ANALYSIS REVIEWED BY: Randy D. Bowman

6376m/

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania WQS and add Sharon Steel and several Warren Consolidated outfalls to allocation.

ENTITY: Warren Consolidated Industries (3ID00071) - 010

DISCHARGE FLOW: 3.34 cfs (2.16 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

PARAMETER	YEAR ROUND EFFLUENT LIMITS			
	AVERAGE		MAXIMUM	
	(ug/l)	(kg/day)	(ug/l)	(kg/day)
Antimony	447.	3.653	1300.[A]	10.624
Cadmium[B]	1.6	0.013	15.	0.123
Cadmium[C]	5.0	0.041	15.	0.123
Chromium, Total	108.	0.883	5480.[A]	44.783
Copper[B]	12.	0.098	58.[A]	0.474
Copper[D]	30.	0.245	58.[A]	0.474
Lead	5.9	0.048	390.[A]	3.187
Nickel	475.	3.882	4120.[A]	33.669
Zinc	781.	6.382	986.[A]	8.058
Bis(2-ethylhexyl) phthalate	66.	0.539	2200.[A]	17.978
Total Phenolics	39.	0.319	—	—

COMMENTS: A) Limited by the Final Acute Value.
B) Results to maintain Chronic and Acute Criteria.
C) Average limit is Most Stringent Limit (Procedure A20). The application of this procedure to all dischargers results in an instream Cd concentration of 1.80 ug/l, and the Chronic Criteria of 1.1 is violated from RM 34.32 into Pennsylvania.
D) Average limit is Most Stringent Limit (Procedure A20). The application of this procedure to all dischargers results in an instream Cu concentration of 11.12 ug/l, and the Chronic Criteria of 9.1 ug/l is violated from RM 34.32 into Pennsylvania.

ANALYSIS CONDUCTED BY: Trinka Mount ANALYSIS REVIEWED BY: Randy D. Bassinger

6376m/

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvania WQS and add Sharon Steel and several Warren Consolidated outfalls to allocation.

ENTITY: Warren Consolidated Industries (3ID00071) - 011

DISCHARGE FLOW: 0.891 cfs (0.576 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

	YEAR ROUND EFFLUENT LIMITS			
	AVERAGE		MAXIMUM	
PARAMETER	(ug/l)	(kg/day)	(ug/l)	(kg/day)
Zinc	781.	1.703	986.[A]	2.150

COMMENTS: A) Limited by the Final Acute Value.

ANALYSIS CONDUCTED BY: Trinka Mount ANALYSIS REVIEWED BY: Randy D. Bennington

DATE: 1/16/90

REVISION: Supercedes 6/19/89 WLA. Revised to update Pennsylvan WQS a add Sharon Steel and several Warren Consolidated outfalls all tion.

ENTITY: Warren Consolidated Industries (3ID00071) - 012

DISCHARGE FLOW: 0.432 cfs (0.668 MGD)

RECEIVING STREAM: Mahoning River

APPLICABLE USE DESIGNATION: WWH

WQS: Effective 1/3/89 and Ohio EPA Aquatic Life Water Quality Criteria

	YEAR ROUND EFFLUENT LIMITS			
	AVERAGE		MAXIMUM	
PARAMETER	(ug/l)	(kg/day)	(ug/l)	(kg/day)
Zinc	781.	1.276	986.[A]	1.612

COMMENTS: A) Limited by the Final Acute Value.

ANALYSIS CONDUCTED BY: Trinka Mount ANALYSIS REVIEWED BY: Randy W. Bennington

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

RECEIVED
MAR - 2 1995

Date: FEB 27 1995

Subject: Review of Region 5 Data for WCI Steel

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: EDO

Attached are the results for WCI Steel
CRL request number 950057
for analyses for ICP
Results are reported for sample designations: 95EC02S02, 95EC02S18 and 95EC02R39

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(x) Sewer Disposal Criteria Met; Exceptions: Acid preserved samples must be neutralized prior to disposal. Sample 95EC02S18 exceeds the disposal criteria for copper, iron, lead and manganese

Comments on Data Quality by Reviewer

Cadmium spike recovery was high (116%), but this does not affect the data, since no cadmium was detected.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for WCI Steel

John Moore 27 Feb 95

Team Leader and Date (X) Reviewed ( ) Unreviewed

Chuck Elly 2/27/95

Section Chief and Date ( ) Reviewed (✓) Unreviewed

Chuck Elly 2/27/95

QC Coordinator and Date ( ) Reviewed (✓) Unreviewed

Sylvia Griffin FEB 27 1995

Data Management Coordinator and Date Received

Date Transmitted FEB 27 1995

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Eugene Rice 3-7-95

Received by and Date

Comments:

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 21-FEB-95

SAMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
SAMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02S02 FIELD: 95EC02S02

COLLECTED: 29-NOV-94 30-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 20-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Aluminum	80U	(ug/L)	BDL	7429-90-5
Barium	25	(ug/L)		7440-39-3
Beryllium	2U	(ug/L)	BDL	7440-41-7
Boron	923	(ug/L)		7440-42-8
Cadmium	10U	(ug/L)	BDL	7440-43-9
Calcium	193000	(ug/L)		7440-70-2
Chromium	10U	(ug/L)	BDL	7440-47-3
Cobalt	6U	(ug/L)	BDL	7440-48-4
Copper	6U	(ug/L)	BDL	7440-50-8
Iron	1230	(ug/L)		7439-89-6
Lead	80U	(ug/L)	BDL	7439-92-1
Lithium	28	(ug/L)		7439-93-2
Magnesium	10000	(ug/L)		7439-95-4
Manganese	51	(ug/L)		7439-96-5
Molybdenum	41	(ug/L)		7439-98-7
Nickel	20U	(ug/L)	BDL	7440-02-0
Potassium	7000	(ug/L)		7440-09-7
Silver	6U	(ug/L)	BDL	7440-22-4
Sodium	57000	(ug/L)		7440-23-5
Strontium	296	(ug/L)		7440-24-6
Tin	40U	(ug/L)	BDL	7440-31-5
Titanium	25U	(ug/L)	BDL	7440-32-6
Vanadium	8U	(ug/L)	BDL	7440-62-2
Yttrium	5U	(ug/L)	BDL	7440655
Zinc	40U	(ug/L)	BDL	7440-66-6

ANALYZED BY: DCF 2/22/95

JVM 27 Feb 95

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 21-FEB-95

SAMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
SAMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02S18 FIELD: 95EC02S18

COLLECTED: 29-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 20-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Aluminum	36000	(ug/L)		7429-90-5
Barium	161	(ug/L)		7440-39-3
Beryllium	4	(ug/L)		7440-41-7
Boron	228	(ug/L)		7440-42-8
Cadmium	10U	(ug/L)	BDL	7440-43-9
Calcium	284000	(ug/L)		7440-70-2
Chromium	253	(ug/L)		7440-47-3
Cobalt	13	(ug/L)		7440-48-4
Copper	5360	(ug/L)		7440-50-8
Iron	167000	(ug/L)		7439-89-6
Lead	2730	(ug/L)		7439-92-1
Lithium	64	(ug/L)		7439-93-2
Magnesium	29000	(ug/L)		7439-95-4
Manganese	4970	(ug/L)		7439-96-5
Molybdenum	22	(ug/L)		7439-98-7
Nickel	220	(ug/L)		7440-02-0
Potassium	8000	(ug/L)		7440-09-7
Silver	6U	(ug/L)	BDL	7440-22-4
Sodium	46000	(ug/L)		7440-23-5
Strontium	670	(ug/L)		7440-24-6
Tin	40U	(ug/L)	BDL	7440-31-5
Titanium	373	(ug/L)		7440-32-6
Vanadium	62	(ug/L)		7440-62-2
Yttrium	22	(ug/L)		7440655
Zinc	37000	(ug/L)		7440-66-6

ANALYZED BY: DCJ 2/22/95

JVM
27 Feb 95

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 27-FEB-95

SAMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
SAMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02R39 FIELD: 95EC02R39

COLLECTED: 30-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 23-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Aluminum	80U	(ug/L)	BDL	7429-90-5
Barium	6U	(ug/L)	BDL	7440-39-3
Beryllium	2U	(ug/L)	BDL	7440-41-7
Boron	80U	(ug/L)	BDL	7440-42-8
Cadmium	10U	(ug/L)	BDL	7440-43-9
Calcium	500U	(ug/L)	BDL	7440-70-2
Chromium	10U	(ug/L)	BDL	7440-47-3
Cobalt	6U	(ug/L)	BDL	7440-48-4
Copper	6U	(ug/L)	BDL	7440-50-8
Iron	80U	(ug/L)	BDL	7439-89-6
Lead	80U	(ug/L)	BDL	7439-92-1
Lithium	20U	(ug/L)	BDL	7439-93-2
Magnesium	100U	(ug/L)	BDL	7439-95-4
Manganese	5U	(ug/L)	BDL	7439-96-5
Molybdenum	15U	(ug/L)	BDL	7439-98-7
Nickel	20U	(ug/L)		7440-02-0
Potassium	5000U	(ug/L)	BDL	7440-09-7
Silver	6U	(ug/L)	BDL	7440-22-4
Sodium	1000U	(ug/L)	BDL	7440-23-5
Strontium	10U	(ug/L)	BDL	7440-24-6
Tin	40U	(ug/L)	BDL	7440-31-5
Titanium	25U	(ug/L)	BDL	7440-32-6
Vanadium	8U	(ug/L)	BDL	7440-62-2
Yttrium	5U	(ug/L)	BDL	7440655
Zinc	40U	(ug/L)	BDL	7440-66-6

ANALYZED BY: DCF ~~2/26/95~~ 2/27/95

JW 27 Feb 95

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: FEB 17 1995

Subject: Review of Region 5 Data for WCI Steel

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: EDO

Attached are the results for WCI Steel
CRL request number 950057
for analyses for Zinc
Results are reported for sample designations: 95EC02S01, 95EC02S05, 95EC02S07, 95EC02S09 and 95EC02R39

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(x) Sewer Disposal Criteria Met; Exceptions: Acid preserved samples must be neutralized prior to disposal.

Comments on Data Quality by Reviewer

These samples were analyzed by ICP for zinc. Because CRL's detection limit is a very conservative 40 μg Zn/L, the samples were concentrated 2-fold to achieve the permit required detection limit of 20 μg Zn/L. Too many significant figures were used by the analyst in the report. Otherwise, all quality control measures were met.

Comments by Laboratory Director or Quality Control Coordinator

John R. Moore 17 Feb 95

Team Leader and Date (X) Reviewed ( ) Unreviewed

Chuck Ellis 2/17/95

Section Chief and Date ( ) Reviewed (✓) Unreviewed

Chuck Ellis 2/17/95

QC Coordinator and Date ( ) Reviewed (✓) Unreviewed

Sylvia Griffin FEB 17 1995

Data Management Coordinator and Date Received

Date Transmitted FEB 17 1995

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Eugene Rivers 2-22-95

Received by and Date

Comments:

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 14-FEB-95

SAMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
SAMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02S01 FIELD: 95EC02S01

COLLECTED: 29-NOV-94 30-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 23-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Zinc	25.5	(ug/L)		7440-66-6

ANALYZED BY: DCF 2/14/95

JM
17 Feb 95

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 14-FEB-95

AMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
AMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02S05 FIELD: 95EC02S05

COLLECTED: 29-NOV-94 30-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 23-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Zinc	23.5	(ug/L)		7440-66-6

ANALYZED BY: DCJ 2/14/95 JVM 17 Feb 95

PAGE NO.

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 14-FEB-95

AMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
AMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02S07 FIELD: 95EC02S07

COLLECTED: 29-NOV-94 30-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 23-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Zinc	28.0	(ug/L)		7440-66-6

ANALYZED BY: DCF 2/14/95

JVM 17 Feb 95

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 14-FEB-95

SAMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
SAMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02S09 FIELD: 95EC02S09

COLLECTED: 29-NOV-94 30-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 23-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Zinc	20U	(ug/L)	BDL	7440-66-6

ANALYZED BY: DCF 2/14/95

JVM
17 Feb 95

EPA RLIMS CRL - REGION V
FINAL RESULTS REPORT
REPORT PRODUCED ON: 14-FEB-95

SAMPLE ORGANIZATION: EASTERN DISTRICT OFFICE
SAMPLE REQUESTOR: A.R.WINKLHOFER
LABORATORY: CRL

SAMPLE BATCH ID: 950057
ACCOUNT NO: AFE101
FACILITY: WCI STEEL

SAMPLE: 95EC02R39 FIELD: 95EC02R39

COLLECTED: 30-NOV-94 RECEIVED: 02-DEC-94 ANALYZED: 23-JAN-95

COMPOUND	AMOUNT	(Units)	QUALIFIERS	CAS NUMBER
Zinc	20U	(ug/L)	BDL	7440-66-6

ANALYZED BY: DCF 2/14/95

JVM 17Feb95

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

FEB 23 1995

Date: FEB 21 1995

Subject: Review of Region 5 Data for WCI Steel

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To: EDO

Attached are the results for WCI Steel
CRL request number 950057
for analyses for Ammonia and Cyanide.
Results are reported for sample designations: 95EC02S05, 95EC02S07, 95EC02S09, and 95EC02R39.

Results Status:

(X) Acceptable for Use: Cyanide
(X) Data Qualified, but Acceptable for use: Ammonia
( ) Data Unacceptable for Use:

( ) Sewer Disposal Criteria Met;

The portion of samples 95EC02S05, 95EC02S07, 95EC02S09, and 95EC02R39 which were collected and analyzed for ammonia are preserved with sulfuric acid. All the samples should be neutralized prior to disposal down the drain. The concentration of ammonia in the samples are less than detection.

The portion of samples 95EC02S05, 95EC02S07, 95EC02S09, and 95EC02R39 which were collected and analyzed for Cyanide are preserved with sodium hydroxide. All the samples should be neutralized prior to disposal down the drain. The concentration of Cyanide in the samples are less than detection.

Comments on Data Quality by Reviewer:

All the cyanide results are acceptable for use. The holding time for ammonia was exceeded by about two days. This resulted from problems with the instrument heating coil. The ammonia results could be biased low. The results are acceptable for use.

Comments by Laboratory Director or Quality Control Coordinator:

Francis A. Awanya 2/17/95

Team Leader and Date (X) Reviewed ( ) Unreviewed

Chuck Elly 2/21/95

Section Chief and Date ( ) Reviewed (✓) Unreviewed

Chuck Elly 2/21/95

QC Coordinator and Date ( ) Reviewed (✓) Unreviewed

Sylvia Griffin FEB 21 1995

Data Management Coordinator and Date Received

Date Transmitted FEB 21 1995

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Eugene Rice 2-24-95

Received by and Date

Comments:

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT for the team: MINERALS-NUTRIENTS

Report produced on: 15-FEB-95

Sample Organization: **EASTERN DISTRICT OFFICE**
Sample Requestor: **A.R.WINKLHOFER**
Laboratory: **CRL**

Sample Batch ID: **950057**
Account NO: **AFE101**
Facility: **WCI STEEL**

Sample: **95EC02R39**

Field: **95EC02R39**

Collected: **30-NOV-94 /**

Received: **02-DEC-94**

Parameter	Result	(Units)	QUALIFIERS	Anal. Date	Analyst
Ammonia Nitrogen	0.05	(mg/L)	U	29-NOV-94	VCL
Cyanide	8	(ug/L)	U	12-DEC-94	FAA

Reviewed by : Francis A. Awanya 2/15/95

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT for the team: MINERALS-NUTRIENTS

Report produced on: 17-FEB-95

Sample Organization: **EASTERN DISTRICT OFFICE**
Sample Requestor: **A.R.WINKLHOFER**
Laboratory: **CRL**

Sample Batch ID: **950057**
Account NO: **AFE101**
Facility: **WCI STEEL**

Sample: **95EC02S05**

Field: **95EC02S05**

Collected: **29-NOV-94 / 30-NOV-94**

Received: **02-DEC-94**

Parameter	Result	(Units)	QUALIFIERS	Anal. Date	Analyst
Ammonia Nitrogen	0.05	(mg/L)	U	29-NOV-94	VCL
Cyanide	8	(ug/L)	U	12-DEC-94	FAA

Reviewed by : Francis A. Awanya 2/17/95

pm2#0503

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT for the team: MINERALS-NUTRIENTS

Report produced on: 15-FEB-95

Sample Organization: **EASTERN DISTRICT OFFICE**
Sample Requestor: **A.R.WINKLHOFER**
Laboratory: **CRL**

Sample Batch ID: **950057**
Account NO: **AFE101**
Facility: **WCI STEEL**

Sample: **95EC02S07**

Field: **95EC02S07**

Collected: **29-NOV-94 / 30-NOV-94**

Received: **02-DEC-94**

Parameter	Result	(Units)	QUALIFIERS	Anal. Date	Analyst
Ammonia Nitrogen	0.05	(mg/L)	U	29-NOV-94	VCL
Cyanide	8	(ug/L)	U	12-DEC-94	FAA

Reviewed by : Francis A. Aranyga 2/15/95

ENVIRONMENTAL PROTECTION AGENCY
REGION V
CENTRAL REGIONAL LABORATORY
FINAL RESULT REPORT for the team: MINERALS-NUTRIENTS

Report produced on: 15-FEB-95

Sample Organization: **EASTERN DISTRICT OFFICE**
Sample Requestor: **A.R.WINKLHOFER**
Laboratory: **CRL**

Sample Batch ID: **950057**
Account NO: **AFE101**
Facility: **WCI STEEL**

Sample: **95EC02S09**

Field: **95EC02S09**

Collected: **29-NOV-94 / 30-NOV-94**

Received: **02-DEC-94**

Parameter	Result	(Units)	QUALIFIERS	Anal. Date	Analyst
Ammonia Nitrogen	0.05	(mg/L)	U	29-NOV-94	VCL
Cyanide	8	(ug/L)	U	12-DEC-94	FAA

Reviewed by : Francis A. Awanga 2/15/95

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Received 9-27-93
M Cont.

Date: SEP 16 1993

Subject: Review of Region 5 Data for WCI Steel

From: Charles T. Elly, Director Chi Yang for
Region 5 Central Regional Laboratory

To:

Attached are the results for WCI Steel
CRL request number EDO1240
for analyses for ICP
Results are reported for sample designations: 93EC54S01, 93EC54S02, 93EC54S04 and 93EC54R06

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(x) Sewer Disposal Criteria Met; Exceptions: Acid preserved samples must be neutralized prior to disposal. Samples 93EC54S01, 93EC54S02 and 93EC54S04 exceed the disposal criteria for chromium, iron, lead and manganese.

Comments on Data Quality by Reviewer

The analyst had prepared these samples intending to use yttrium as an internal standard. The final analysis was done without using the internal standard protocol. Consequently, no compensation was made for the yttrium interference on calcium and silver. Because the calcium results were high enough that the interference was merely 2-4% of the final result, the correction was made manually. Silver was not reported. All other data were unaffected.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for WCI Steel

John W Moore 14 Sept 93

Team Leader and Date (X) Reviewed ( ) Unreviewed

James H. Adams, Jr. 9/14/93

Section Chief and Date (✓) Reviewed ( ) Unreviewed

James H. Adams, Jr. 9/14/93

QC Coordinator and Date (✓) Reviewed ( ) Unreviewed

Sylvia Griffin 9-16-93

Data Management Coordinator and Date Received

Date Transmitted SEP 16 1993

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Mayanne A Stys 9/27/93

Received by and Date

Comments:

JVM
14 Sept 93

SAMPLE REPORT

Sample edo1240 93ec54 s01 Operator

Date analyzed 09/01/93 Correction 1.24000 File name 137A

Element	Concentration		Units
Aluminum	9660.		micrograms/liter
Barium	290.		micrograms/liter
Beryllium	2.0	U	micrograms/liter
Boron	122.		micrograms/liter
Cadmium	26.1		micrograms/liter
Calcium	~~129000.~~ 127000	JVM 14Sept93	micrograms/liter
Chromium	592.		micrograms/liter
Cobalt	7.0	U	micrograms/liter
Copper	106.		micrograms/liter
Iron	198000.		micrograms/liter
Lead	2490.		micrograms/liter
Lithium	25.0	U	micrograms/liter
Magnesium	14700.		micrograms/liter
Manganese	7100.		micrograms/liter
Molybdenum	23.3		micrograms/liter
Nickel	120.		micrograms/liter
Potassium	6200.	U	micrograms/liter
~~Silver~~	~~12.3~~	JVM	micrograms/liter
Sodium	26600.		micrograms/liter
Strontium	279.		micrograms/liter
Tin	126.		micrograms/liter
Titianium	203.		micrograms/liter
Vanadium	89.4		micrograms/liter
~~Yttrium~~	~~20500.~~	JVM	micrograms/liter
Zinc	4480.		micrograms/liter

KMS
9/13/93

JVM
14 Sep 93

SAMPLE REPORT

Sample edc1240 93ec54 s02 Operator

Date analyzed 09/01/93 Correction 1.24000 File name 137A

Element	Concentration	Units
Aluminum	5690.	micrograms/liter
Barium	126.	micrograms/liter
Beryllium	2.0 U	micrograms/liter
Boron	124.	micrograms/liter
Cadmium	12.0 U	micrograms/liter
Calcium	~~104000.~~ 102000 JVM 14 Sep 93	micrograms/liter
Chromium	363.	micrograms/liter
Cobalt	7.0 U	micrograms/liter
Copper	86.6	micrograms/liter
Iron	145000.	micrograms/liter
Lead	1730.	micrograms/liter
Lithium	25.0 U	micrograms/liter
Magnesium	13600.	micrograms/liter
Manganese	5710.	micrograms/liter
Molybdenum	19.6	micrograms/liter
Nickel	68.2	micrograms/liter
Potassium	6880.	micrograms/liter
~~Silver~~	~~17.2~~ JVM	micrograms/liter
Sodium	34500.	micrograms/liter
Strontium	242.	micrograms/liter
Tin	89.0	micrograms/liter
Titianium	107.	micrograms/liter
Vanadium	54.9	micrograms/liter
~~Yttrium~~	~~20400.~~ JVM	micrograms/liter
Zinc	1330.	micrograms/liter

KMS
9 13 93

JVM 14 Sept 93

SAMPLE REPORT

Sample edo1240 93ec54 s04 Operator

Date analyzed 09/01/93 Correction 1.26000 File name 137A

Element	Concentration		Units
Aluminum	8810.		micrograms/liter
Barium	112.		micrograms/liter
Beryllium	3.0 U		micrograms/liter
Boron	122.		micrograms/liter
Cadmium	36.4		micrograms/liter
Calcium	~~116000.~~	112000 JVM	micrograms/liter
Chromium	761.	14 Sept 93	micrograms/liter
Cobalt	8.0 U		micrograms/liter
Copper	141.		micrograms/liter
Iron	313000.		micrograms/liter
Lead	360.		micrograms/liter
Lithium	25.0 U		micrograms/liter
Magnesium	15900.		micrograms/liter
Manganese	7660.		micrograms/liter
Molybdenum	50.9		micrograms/liter
Nickel	276.		micrograms/liter
Potassium	6880.		micrograms/liter
~~Silver~~	~~33.6~~	JVM	micrograms/liter
Sodium	52600.		micrograms/liter
Strontium	288.		micrograms/liter
Tin	57.6		micrograms/liter
Titianium	206.		micrograms/liter
Vanadium	103.		micrograms/liter
~~Yttrium~~	~~41300.~~	JVM	micrograms/liter
Zinc	1360.		micrograms/liter

KMS 9/13/93

pms 14 Sep 93

SAMPLE REPORT

Sample edo1240 93ec54 r05 Operator

Date analyzed 09/01/93 Correction 1.24000 File name 137A

Element	Concentration		Units
Aluminum	99.0 U		micrograms/liter
Barium	7.0 U		micrograms/liter
Beryllium	2.0 U		micrograms/liter
Boron	99.0 U		micrograms/liter
Cadmium	12.0 U		micrograms/liter
~~Calcium~~	~~2270.~~	Y interference	micrograms/liter
Chromium	12.0 U		micrograms/liter
Cobalt	7.0 U		micrograms/liter
Copper	7.3		micrograms/liter
Iron	99.0 U		micrograms/liter
Lead	99.0 U		micrograms/liter
Lithium	25.0 U		micrograms/liter
Magnesium	124. U		micrograms/liter
Manganese	6.0 U		micrograms/liter
Molybdenum	19.0 U		micrograms/liter
Nickel	25.0 U		micrograms/liter
Potassium	6200. U		micrograms/liter
~~Silver~~	~~16.6~~	JVA	micrograms/liter
Sodium	1240. U		micrograms/liter
Strontium	12.0 U		micrograms/liter
Tin	50.0 U		micrograms/liter
Titianium	31.0 U		micrograms/liter
Vanadium	10.0 U		micrograms/liter
~~Yttrium~~	~~20400.~~	JVM	micrograms/liter
Zinc	50.0 U		micrograms/liter

KMS 9 13 93

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: AUG 0 2 1993

Subject: Review of Region 5 Data for WCI Steel

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To:

Attached are the results for WCI Steel
CRL request number EDO 1190
for analyses for ICP
Results are reported for sample designations: 93EC21S05 and 93EC21R07

Results Status:
(x) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(x) Sewer Disposal Criteria Met; Exceptions: Acid preserved samples must be neutralized prior to disposal. Sample 93EC21S05 exceeds the disposal criteria for chromium, iron, lead and manganese.

Comments on Data Quality by Reviewer

Zinc drifted outside the $\pm 5\%$ limits and was restandardized and reanalyzed for these samples. The analyst transcribed the reanalysis for zinc by hand.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for WCI Steel

John R Morris 29 July 93

Team Leader and Date (✓) Reviewed ( ) Unreviewed

James H. Adams, Jr. 7/30/93

Section Chief and Date (✓) Reviewed ( ) Unreviewed

James H. Adams, Jr. 7/30/93

QC Coordinator and Date (✓) Reviewed ( ) Unreviewed

Sylvia Griffin 8-2-93

Data Management Coordinator and Date Received

Date Transmitted AUG 0 2 1993

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Marjorie A Stigs 8/4/93

Received by and Date

Comments:

JVM
29 July 93

SAMPLE REPORT

Sample edo1190 93ec21 s05 Operator

Date analyzed 07/08/92 Correction 1.22000 File name RUN113

Element	Concentration	Units
Aluminum	5990.	micrograms/liter
Barium	144.	micrograms/liter
Beryllium	2.0 U	micrograms/liter
Boron	152.	micrograms/liter
Cadmium	12.0 U	micrograms/liter
Calcium	101000.	micrograms/liter
Chromium	615.	micrograms/liter
Cobalt	9.5	micrograms/liter
Copper	122.	micrograms/liter
Iron	168000.	micrograms/liter
Lead	405.	micrograms/liter
Lithium	24.0 U	micrograms/liter
Magnesium	14100.	micrograms/liter
Manganese	4750.	micrograms/liter
Molybdenum	27.1	micrograms/liter
Nickel	150.	micrograms/liter
Potassium	6200.	micrograms/liter
Silver	7.0 U	micrograms/liter
Sodium	50900.	micrograms/liter
Strontium	291.	micrograms/liter
Tin	49.0 U	micrograms/liter
Titianium	155.	micrograms/liter
Vanadium	62.6	micrograms/liter
Yttrium	7.6	micrograms/liter
Zinc	~~8200.~~ 3080 KMS	micrograms/liter

KMS
7 26 93

JVM
29 July 93

SAMPLE REPORT

Sample edc1130 93ec21 r07 Operator

Date analyzed 07/08/93 Correction 1.22000 File name RUN113

Element	Concentration	Units
Aluminum	98.0 U	micrograms/liter
Barium	7.0 U	micrograms/liter
Beryllium	2.0 U	micrograms/liter
Boron	98.0 U	micrograms/liter
Cadmium	12.0 U	micrograms/liter
Calcium	610. U	micrograms/liter
Chromium	12.0 U	micrograms/liter
Cobalt	7.0 U	micrograms/liter
Copper	7.0 U	micrograms/liter
Iron	98.0 U	micrograms/liter
Lead	98.0 U	micrograms/liter
Lithium	24.0 U	micrograms/liter
Magnesium	122. U	micrograms/liter
Manganese	6.0 U	micrograms/liter
Molybdenum	18.0 U	micrograms/liter
Nickel	24.0 U	micrograms/liter
Potassium	6100. U	micrograms/liter
Silver	7.0 U	micrograms/liter
Sodium	1220. U	micrograms/liter
Strontium	12.0 U	micrograms/liter
Tin	49.0 U	micrograms/liter
Titianium	31.0 U	micrograms/liter
Vanadium	10.0 U	micrograms/liter
Yttrium	6.0 U	micrograms/liter
Zinc	49.0 U	micrograms/liter

KMS
7 23 93

WCI STEEL

February 23, 1993

Mr. Mark Kalmeyer
ASAP Technical Services, Inc.
19701 South Miles Road
Warrensville Heights, Ohio 44128

Dear Mr. Kalmeyer:

On October 16, 1992, nineteen assorted waste stream samples were collected from WCI Steel. One sample was submitted by us on January 8, 1993.

After careful scrutiny of the final analytical results, I have found quite a few questions. I realize you probably don't have the samples, but I would like you to check your laboratory data log books and any other information you have, to help explain these questions. Below I have listed the samples and the questions I have concerning each sample.

1) Central Treatment Plant Sludge, ASAP #921019-03-A
   Total Cr 6.19 mg/Kg TCLP Cr 6.45 mg/l
   Total Pb 7.0 mg/Kg TCLP Pb .95 mg/l

   Is it possible to have TCLP values this high compared to the total values?

2) BOF Slag, ASAP #921019-03-D
   Total Cd <.25 mg/Kg TCLP Cd .07 mg/l
   Total Cr 662 mg/Kg TCLP Cr 5.24 mg/l

   The TCLP Cadmium result is too high for the total cadmium result.

   We have never found any chrome in the TCLP extract for this waste stream. Could it be rechecked?

3) BOF Precipitator Dust, ASAP #921019-03-E
   Total Pb 2,451 mg/Kg TCLP Pb 18.8 mg/l

   This waste stream periodically shows TCLP lead values above the 5 mg/l regulatory limit. Could a recheck be done?

4) Grinder Baghouse Dust, ASAP #921019-03-P
   Total Cd 4.28 mg/Kg TCLP Cd .46 mg/l

   Is it possible to have TCLP values this high compared to the total values?

WCI Steel, Incorporated
1040 Pine Avenue, SE
Warren, OH 44483-6528
(216) 841-8000

5) Galvanize Baghouse Dust, ASAP #921019-03-K
   Total Cr 5.50 mg/Kg TCLP Cr .5 mg/l
   Total Pb <2 mg/Kg TCLP Pb .20 mg/l

   Is it possible to have TCLP values this high compared to the total values? Also the total zinc value for this sample should be much higher.

6) 56" Mill Lagoon Sludge, ASAP #921019-06-A
   Oil & Grease 223 mg/Kg

   This value should be at least 15% - 30%. Your lab reported ~ 40% oil & grease on this waste stream in the Spring.

7) Blast Furnace Treatment Plant Sludge, ASAP #930108-04-A
   Total Pb 2570 mg/Kg TCLP Pb 63.5 mg/l

   This waste stream periodically shows TCLP Lead values above the 5.0 mg/l regulatory limit. Could a recheck be done?

8) The following waste streams contain high levels of iron oxide or metallic iron. The values you reported are much lower than they normally run.
   Iron Oxide ASAP #921019-03-L
   Blast Furnace Treatment Sludge ASAP #930108-04-A
   56" Mill Lagoon Sludge ASAP #921019-06-A
   LMF Baghouse Dust ASAP #921019-03-H
   Casthouse Baghouse Dust ASAP #921019-03-C
   BOF Desulfurizer Baghouse Dust ASAP #921019-03-F
   Grinder Baghouse Dust ASAP #921019-03-P
   Scale Pit Solids Entrance End ASAP #921019-03-I
   Scale Pit Solids Exit End ASAP #921019-03-J

   Can these values be rechecked?

9) The following waste streams are waste pickle liquor and contain anywhere from 5-15% total iron. Your lab reported less than detectable level for all of them.
   Waste Pickle Liquor #5 Surge Tank ASAP #921019-03-M
   Waste Pickle Liquor #6 Sump ASAP #921019-03-N
   Waste Pickle Liquor Galvanize Sump ASAP #921112-12-A
   Waste Pickle Liquor Terne Line Sump ASAP #921019-03-0

   Can these values be rechecked?

If you have any questions concerning these samples, please call Keith McLaughlin at (216) 841-8162.

Sincerely,

Thomas O. Shepker
Manager
Environmental Control

KAM:yt

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: JUN 1 1 1993

Subject: Review of Region 5 Data for **WCI STEEL (EDO1190)**

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To:

Attached are the results for: **WCI STEEL**
CRL request number: **EDO1190**
Analyzed for: VOA Organics
Results are reported for sample designations: 93EC21S05 and -R07 (Two Water samples)

Results Status:
(X) Acceptable for Use
( ) Data Qualified, but Acceptable for use
( ) Data Unacceptable for Use

(X) Sewer Disposal Criteria Met; Exceptions: none
Comments on Data Quality by Reviewer:

The laboratory conducted site specific matrix precision and accuracy (P&A) study on 93EC21S05. The laboratory generated acceptable accuracy data but the precision for benzene and toluene were slightly higher. The laboratory was unable to reanalyze the samples within sample holding time requirements because of the GC/MS instrument related problems. The higher precision numbers (16% to 23% compared to 15% for %RPD) should not affect sample results, because spike recoveries for both matrix spike & matrix spike duplicate analyses were excellent (Recoveries of 92 to 110%). CMJ

The site data are acceptable for use.

Comments by Laboratory Director or Quality Control Coordinator

Review Record for **WCI STEEL (EDO1190) VOA Organics**

Babu Parvachuri 06/02/93

Team Leader Date (X) Reviewed ( ) Unreviewed

Chi Tang 6/9/93

Section Chief and Date (✓) Reviewed ( ) Unreviewed

Francis A. Awanya for JHA Jr 6/10/93

QC Coordinator and Date ( ) Reviewed (X) Unreviewed

~~Francis A. Aw~~ Sylvia Griffin 6-11-93

Data Management Coordinator and Date Received

Date Transmitted

JUN 11 1993

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

[signature]

Received by and Date

Comments:

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LAB BLANK

Site Name: WCI STEEL Contract: CRL/ESD

Lab Code: 5SCRL Case No.: EDO1190 SAS No.: WCISTEE SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 5 (g/mL) mL Lab File ID: >AG193

Level: (low/med) LOW Date Received: 05/17/93

% Moisture: not dec.---- Date Analyzed: 5/17/93

Column: (pack/cap) CAP Dilution Factor: 1.00000

Final extract Volume: -- (uL) Conversion Factor: 1.0000

Aliquot Volume: -- (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	3.	U
74-87-3	Chloromethane	3.	U
75-01-4	Vinyl chloride	3.	U
74-83-9	Bromomethane	3.	U
75-00-3	Chloroethane	3.	U
75-69-4	Trichlorofluoromethane	3.	U
107-64-1	Acrolein	10.	U
75-35-4	1,1-Dichloroethene	2.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon disulfide	2.	U
75-09-2	Methylene chloride	2.	U
156-60-5	trans-1,2-Dichloroethene	2.	U
107-13-1	Acrylonitrile	10.	U
75-34-3	1,1-Dichloroethane	2.	U
108-05-4	Vinylacetate	10.	U
594-20-7	2,2-Dichloropropane	2.	U
156-59-2	cis-1,2-Dichloroethene	2.	U
78-93-3	2-Butanone	10.	U
74-97-5	Bromochloromethane	2.	U
67-66-3	Chloroform	2.	U
71-55-6	1,1,1-trichloroethane	2.	U
56-23-5	Carbon tetrachloride	2.	U
563-58-6	1,1-Dichloropropene	2.	U
71-43-2	Benzene	2.	U
107-06-2	1,2-Dichloroethane	2.	U
79-01-6	Trichloroethene	2.	U
78-87-5	1,2-Dichloropropane	2.	U
74-95-3	Dibromomethane	2.	U
110-75-8	2-Chloroethyl vinylether	10.	U
75-27-4	Bromodichloromethane	2.	U
10061-01-5	cis-1,3-dichloropropene	2.	U
108-88-3	Toluene	2.	U
108-10-1	4-Methyl-2-pentanone	5.	U
10061-02-6	trans-1,3-Dichloropropene	2.	U
127-18-4	Tetrachloroethene	2.	U
79-00-5	1,1,2-Trichloroethane	2.	UJ
142-28-9	1,3-Dichloropropane	2.	U

Are there any TICs ? (Please check a box) YES [ ] NO [✓]

1A-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LAB BLANK

Site Name:WCI STEEL Contract:CRL/ESD

Lab Code: 5SCRL Case No.: EDO1190 SAS No.: WCISTEE SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 5 (g/mL) mL Lab File ID: >AG193

Level: (low/med) LOW Date Received: 05/17/93

% Moisture: not dec.---- Date Analyzed: 5/17/93

Column: (pack/cap) CAP Dilution Factor: 1.00000

Final extract Volume: -- (uL) Conversion Factor: 1.0000

Aliquot Volume: -- (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	5.	U
124-48-1	Dibromochloromethane	2.	U
106-93-4	1,2-Dibromoethane	2.	U
108-90-7	Chlorobenzene	2.	U
630-20-6	1,1,1,2-Tetrachloroethane	2.	U
100-41-4	Ethylbenzene	2.	U
1083836423	m &/or p-Xylene	2.	U
95-47-6	o-Xylene	2.	U
100-42-5	Styrene	2.	U
75-25-2	Bromoform	2.	U
98-82-8	Isopropylbenzene	2.	U
108-86-1	Bromobenzene	2.	U
96-18-4	1,2,3-Trichloropropane	2.	U
79-34-5	1,1,2,2-Tetrachloroethane	2.	U
103-65-1	n-Propylbenzene	2.	U
95-49-8	2-Chlorotoluene	2.	U
106-43-4	4-Chlorotoluene	2.	U
108-67-8	1,3,5-Trimethylbenzene	2.	U
98-06-6	tert-Butylbenzene	2.	U
95-63-6	1,2,4-Trimethylbenzene	2.	U
135-98-8	sec-Butylbenzene	2.	U
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
99-87-6	p-Isopropyltoluene	2.	U
95-50-1	1,2-Dichlorobenzene	2.	U
104-51-8	n-Butylbenzene	2.	U
96-12-8	1,2-Dibromo-3-chloropropane	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	2.	U
87-68-3	Hexachlorobutadiene	2.	U
87-61-6	1,2,3-Trichlorobenzene	2.	U

FORM I-2 VOA 1/89 Rev.

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES NO

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21S05

Site Name:WCI STEEL Contract:CRL/ESD

Lab Code: 5SCRL Case No.: ED01190 SAS No.: WCISTEE SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21S05

Sample wt/vol: 5 (g/mL) mL Lab File ID: >AG194

Level: (low/med) LOW Date Received: 05/17/93

% Moisture: not dec.---- Date Analyzed: 5/17/93

Column: (pack/cap) CAP Dilution Factor: 1.00000

Final extract Volume: -- (uL) Conversion Factor: 1.0000

Aliquot Volume: -- (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	3.	U
74-87-3	Chloromethane	3.	U
75-01-4	Vinyl chloride	3.	U
74-83-9	Bromomethane	3.	U
75-00-3	Chloroethane	3.	U
75-69-4	Trichlorofluoromethane	3.	U
107-64-1	Acrolein	10.	U
75-35-4	1,1-Dichloroethene	2.	U
67-64-1	Acetone	690.	
75-15-0	Carbon disulfide	20.	
75-09-2	Methylene chloride	2.	U
156-60-5	trans-1,2-Dichloroethene	2.	U
107-13-1	Acrylonitrile	10.	U
75-34-3	1,1-Dichloroethane	6.	
108-05-4	Vinylacetate	10.	U
594-20-7	2,2-Dichloropropane	2.	U
156-59-2	cis-1,2-Dichloroethene	2.	U
78-93-3	2-Butanone	14.	
74-97-5	Bromochloromethane	2.	U
67-66-3	Chloroform	4.	
71-55-6	1,1,1-trichloroethane	10.	
56-23-5	Carbon tetrachloride	2.	J
563-58-6	1,1-Dichloropropene	2.	U
71-43-2	Benzene	4.	
107-06-2	1,2-Dichloroethane	2.	U
79-01-6	Trichloroethene	2.	U
78-87-5	1,2-Dichloropropane	2.	U
74-95-3	Dibromomethane	2.	U
110-75-8	2-Chloroethyl vinylether	10.	U
75-27-4	Bromodichloromethane	2.	U
10061-01-5	cis-1,3-dichloropropene	2.	U
108-88-3	Toluene	12.	
108-10-1	4-Methyl-2-pentanone	5.	U
10061-02-6	trans-1,3-Dichloropropene	2.	U
127-18-4	Tetrachloroethene	2.	U
79-00-5	1,1,2-Trichloroethane	2.	UJ
142-28-9	1,3-Dichloropropane	2.	U

Are there any TICs ? (Please check a box) YES [✓] NO [ ]

FORM I VOA 1/89 Rev.

1A-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21S05

Site Name:WCI STEEL Contract:CRL/ESD

Lab Code: 5SCRL Case No.: EDO1190 SAS No.: WCISTEE SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21S05

Sample wt/vol: 5 (g/mL) mL Lab File ID: >AG194

Level: (low/med) LOW Date Received: 05/17/93

% Moisture: not dec.---- Date Analyzed: 5/17/93

Column: (pack/cap) CAP Dilution Factor: 1.00000

Final extract Volume: -- (uL) Conversion Factor: 1.0000

Aliquot Volume: -- (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	5.	U
124-48-1	Dibromochloromethane	2.	U
106-93-4	1,2-Dibromoethane	2.	U
108-90-7	Chlorobenzene	2.	U
630-20-6	1,1,1,2-Tetrachloroethane	2.	U
100-41-4	Ethylbenzene	2.	
1083836423	m &/or p-Xylene	9.	
95-47-6	o-Xylene	5.	
100-42-5	Styrene	2.	U
75-25-2	Bromoform	2.	U
98-82-8	Isopropylbenzene	2.	U
108-86-1	Bromobenzene	2.	U
96-18-4	1,2,3-Trichloropropane	2.	U
79-34-5	1,1,2,2-Tetrachloroethane	2.	U
103-65-1	n-Propylbenzene	1.	J
95-49-8	2-Chlorotoluene	2.	U
106-43-4	4-Chlorotoluene	2.	U
108-67-8	1,3,5-Trimethylbenzene	2.	U
98-06-6	tert-Butylbenzene	2.	U
95-63-6	1,2,4-Trimethylbenzene	19.	
135-98-8	sec-Butylbenzene	1.	J
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
99-87-6	p-Isopropyltoluene	2.	J
95-50-1	1,2-Dichlorobenzene	2.	U
104-51-8	n-Butylbenzene	4.	
96-12-8	1,2-Dibromo-3-chloropropane	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	28.	
87-68-3	Hexachlorobutadiene	2.	U
87-61-6	1,2,3-Trichlorobenzene	2.	U

FORM I-2 VOA 1/89 Rev.

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES/NO

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

93EC21S05

Lab Name: WCI STEEL Contract: CRL/ESD

Lab Code: 5SCRL Case No.: ED01190 SAS No.: WCISTEE SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21S05

Sample wt/vol: 5 (g/mL) mL Lab File ID: >AG194

Level: (low/med) LOW Date Received: 05/17/93

% Moisture: not dec.---- dec. 10 Date Extracted: 05/17/93

Extraction: (Sepf/Cont/Sonc) PURGE Date Analyzed: 5/17/93

GPC Cleanup: (Y/N) N pH:--- Dilution Factor: 1.00000

Number TICs found: 11

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	98828	Benzene, (1-methylethyl)-	22.54	16.	
2.	124185	Decane	22.87	26.	
3.	620144	Benzene, 1-ethyl-3-methyl-	24.44	20.	
4.	1120214	Undecane	25.56	49.	
5.	99876	Benzene, 1-methyl-4-(1-methy	25.80	16.	
6.	25155151	Benzene, methyl(1-methylethy	25.99	12.	
7.		Unknown	26.31	13.	
8.		Unknown	26.84	23.	
9.	2870044	Benzene, 2-ethyl-1,3-dimethy	27.88	19.	
10.	112403	Dodecane	28.06	38.	
11.	629787	Heptadecane	30.40	17.	
13.					
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21R07

Site Name:WCI STEEL Contract:CRL/ESD

Lab Code: 5SCRL Case No.: EDO1190 SAS No.: WCISTEE SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21R07

Sample wt/vol: 5 (g/mL) mL Lab File ID: >AG195

Level: (low/med) LOW Date Received: 05/17/93

% Moisture: not dec.---- Date Analyzed: 5/17/93

Column: (pack/cap) CAP Dilution Factor: 1.00000

Final extract Volume: -- (uL) Conversion Factor: 1.0000

Aliquot Volume: -- (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	3.	U
74-87-3	Chloromethane	3.	U
75-01-4	Vinyl chloride	3.	U
74-83-9	Bromomethane	3.	U
75-00-3	Chloroethane	3.	U
75-69-4	Trichlorofluoromethane	3.	U
107-64-1	Acrolein	10.	U
75-35-4	1,1-Dichloroethene	2.	U
67-64-1	Acetone	16.	
75-15-0	Carbon disulfide	2.	U
75-09-2	Methylene chloride	3.	
156-60-5	trans-1,2-Dichloroethene	2.	U
107-13-1	Acrylonitrile	10.	U
75-34-3	1,1-Dichloroethane	2.	U
108-05-4	Vinylacetate	10.	U
594-20-7	2,2-Dichloropropane	2.	U
156-59-2	cis-1,2-Dichloroethene	2.	U
78-93-3	2-Butanone	10.	U
74-97-5	Bromochloromethane	2.	U
67-66-3	Chloroform	1.	J
71-55-6	1,1,1-trichloroethane	2.	U
56-23-5	Carbon tetrachloride	2.	U
563-58-6	1,1-Dichloropropene	2.	U
71-43-2	Benzene	2.	U
107-06-2	1,2-Dichloroethane	2.	U
79-01-6	Trichloroethene	2.	U
78-87-5	1,2-Dichloropropane	2.	U
74-95-3	Dibromomethane	2.	U
110-75-8	2-Chloroethyl vinylether	10.	U
75-27-4	Bromodichloromethane	2.	U
10061-01-5	cis-1,3-dichloropropene	2.	U
108-88-3	Toluene	2.	U
108-10-1	4-Methyl-2-pentanone	5.	U
10061-02-6	trans-1,3-Dichloropropene	2.	U
127-18-4	Tetrachloroethene	2.	U
79-00-5	1,1,2-Trichloroethane	2.	UJ
142-28-9	1,3-Dichloropropane	2.	U

Are there any TICs ? (Please check a box) YES |__| NO |✓|

FORM I VOA 1/89 Rev.

1A-2
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21R07

Site Name:WCI STEEL Contract:CRL/ESD

Lab Code: 5SCRL Case No.: EDO1190 SAS No.: WCISTEE SDG No.: ------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21R07

Sample wt/vol: 5 (g/mL) mL Lab File ID: >AG195

Level: (low/med) LOW Date Received: 05/17/93

% Moisture: not dec.---- Date Analyzed: 5/17/93

Column: (pack/cap) CAP Dilution Factor: 1.00000

Final extract Volume: -- (uL) Conversion Factor: 1.0000

Aliquot Volume: -- (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	5.	U
124-48-1	Dibromochloromethane	2.	U
106-93-4	1,2-Dibromoethane	2.	U
108-90-7	Chlorobenzene	2.	U
630-20-6	1,1,1,2-Tetrachloroethane	2.	U
100-41-4	Ethylbenzene	2.	U
1083836423	m &/or p-Xylene	2.	U
95-47-6	o-Xylene	2.	U
100-42-5	Styrene	2.	U
75-25-2	Bromoform	2.	U
98-82-8	Isopropylbenzene	2.	U
108-86-1	Bromobenzene	2.	U
96-18-4	1,2,3-Trichloropropane	2.	U
79-34-5	1,1,2,2-Tetrachloroethane	2.	U
103-65-1	n-Propylbenzene	2.	U
95-49-8	2-Chlorotoluene	2.	U
106-43-4	4-Chlorotoluene	2.	U
108-67-8	1,3,5-Trimethylbenzene	2.	U
98-06-6	tert-Butylbenzene	2.	U
95-63-6	1,2,4-Trimethylbenzene	2.	U
135-98-8	sec-Butylbenzene	2.	U
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
99-87-6	p-Isopropyltoluene	2.	U
95-50-1	1,2-Dichlorobenzene	2.	U
104-51-8	n-Butylbenzene	2.	U
96-12-8	1,2-Dibromo-3-chloropropane	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	2.	U
87-68-3	Hexachlorobutadiene	2.	U
87-61-6	1,2,3-Trichlorobenzene	2.	U

FORM I-2 VOA 1/89 Rev.

Data Qualifiers: U = Compounds were analyzed but not detected. The value reported is the method detection limit for reagent water; J = Estimated; D=Diluted Sample; X = Result rejected for failing mass spectral confirmation; E = Concentration exceeded calibration range; B = Contaminant found in laboratory method blank; ARE THERE TICs ? (Circle) YES NO

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Received 7/6/93 M. Conti

Date: JUN 0 2 1993

Subject: Review of Region 5 Data for **WCI Steel (EDO1190)**

From: Charles T. Elly, Director Chuck Elly
Region 5 Central Regional Laboratory

To:

Attached are the results for: **WCI Steel AFE108**
CRL request number: **EDO1190**
Analyzed for: **ABNs** Organics
Results are reported for sample designations: 93EC21S05 and -R07 (2 Samples)

Results Status:
(X) Acceptable for Use except for 4-nitrophenol in 93EC21S05
( ) Data Qualified, but Acceptable for use
(X) Data Unacceptable for Use for 4-nitrophenol in 93EC21S05 and for bis(2-ethylhexy phthate in both samp emoy 6/2

(X) Sewer Disposal Criteria Met; Exceptions: none
Comments on Data Quality by Reviewer:

A common laboratory contaminant, bis(2-ethylhexyl)phthalate, was detected in the laboratory method blank sample. Therefore, the site sample results were flagged as Found in the Blank (B) when this contaminant was detected in the field samples.

The laboratory conducted a site specific matrix precision and accuracy (P&A) study on the field sample 93EC21S05. The P&A data are acceptable for use for all parameters except for 4-nitrophenol. Since 4-nitrophenol was not detected in the matrix spike and matrix spike duplicate samples, its result for 93EC21S05 was flagged as Unacceptable for use (R).

Review Record for **WCI Steel** **EDO1190** **AFE108** **ABN** Organics
Baba Parachuri 06/01/93

Team Leader Date (X) Reviewed ( ) Unreviewed

Chi Tang 6/2/93

Section Chief and Date (✓) Reviewed ( ) Unreviewed

James H. Adams, Jr. 6/2/93

QC Coordinator and Date (✓) Reviewed ( ) Unreviewed

Sylvia Griffin 6-2-93

Data Management Coordinator and Date Received

Date Transmitted JUN 0 2 1993

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date Dr R. Winklhofer 6/4/93

Comments:

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LAB BLANK

Lab Name: WCI STEEL AFE108 Contract: CHICAGOIL

Lab Code: SLO-10C Case No.: ED01190 SAS No.: WCISTL SDG No.: -------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 1000 (g/mL) mL Lab File ID: >BP104

Level: (low/med) LOW Date Received: 05/14/93

% Moisture: not dec.---- dec. ---- Date Extracted: 05/24/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 5/24/93

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	2.	U
111-44-4	bis(2-Chloroethyl)Ether	2.	U
95-57-8	2-Chlorophenol	2.	U
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
100-51-6	Benzyl alcohol	2.	U
95-50-1	1,2-Dichlorobenzene	3.	U
95-48-7	2-Methylphenol	1.	U
39638-32-9	bis(2-chloroisopropyl)ether	3.	U
106-44-5	4-Methylphenol	1.	U
621-64-7	N-Nitroso-Di-n-propylamine	2.	U
67-72-1	Hexachloroethane	2.	U
98-95-3	Nitrobenzene	3.	U
78-59-1	Isophorone	3.	U
88-75-5	2-Nitrophenol	2.	U
105-67-9	2,4-Dimethylphenol	2.	U
65-85-0	Benzoic acid	30.	U
111-91-1	bis(2-Chloroethoxy)methane	3.	U
120-83-2	2,4-Dichlorophenol	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	2.	U
106-47-8	4-Chloroaniline	2.	U
87-68-3	Hexachlorobutadiene	3.	U
59-50-7	4-Chloro-3-methylphenol	2.	U
91-57-6	2-Methylnaphthalene	2.	U
77-47-4	Hexachlorocyclopentadiene	2.	U
88-06-2	2,4,6-Trichlorophenol	2.	U
95-95-4	2,4,5-Trichlorophenol	2.	U
91-58-7	2-Chloronaphthalene	2.	U
88-74-4	2-Nitroaniline	3.	U
131-11-3	Dimethylphthalate	2.	U
208-96-8	Acenaphthylene	2.	U
606-20-2	2,6-Dinitrotoluene	1.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LAB BLANK

Lab Name:WCI STEEL AFE108 Contract:CHICAGOIL

Lab Code: SLO-10C Case No.: ED01190 SAS No.: WCISTL SDG No.: -------

Matrix: (soil/water) WATER Lab Sample ID: LAB BLANK

Sample wt/vol: 1000 (g/mL) mL Lab File ID: >BP104

Level: (low/med) LOW Date Received: 05/14/93

% Moisture: not dec.---- dec. ---- Date Extracted:05/24/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 5/24/93

GPC Cleanup: (Y/N) N pH:NA Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	3.	U
83-32-9	Acenaphthene	2.	U
51-28-5	2,4-Dinitrophenol	15.	U
100-02-7	4-Nitrophenol	2.	U
132-64-9	Dibenzofuran	1.	U
121-14-2	2,4-Dinitrotoluene	1.	U
84-66-2	Diethylphthalate	1.	U
7005-72-3	4-Chlorophenyl-phenylether	1.	U
86-73-7	Fluorene	1.	U
100-01-6	4-Nitroaniline	3.	U
534-52-1	4,6-Dinitro-2-methylphenol	15.	U
86-30-6	N-Nitrosodiphenylamine (1)	2.	U
101-55-3	4-Bromophenyl-phenylether	2.	U
118-74-1	Hexachlorobenzene	2.	U
87-86-5	Pentachlorophenol	2.	U
85-01-8	Phenanthrene	1.	U
120-12-7	Anthracene	3.	U
84-74-2	Di-n-butylphthalate	2.	U
206-44-0	Fluoranthene	2.	U
129-00-0	Pyrene	2.	U
85-68-7	Butylbenzylphthalate	4.	U
56-55-3	Benzo(a)anthracene	2.	U
218-01-9	Chrysene	2.	U
117-81-7	bis(2-Ethylhexyl)phthalate	39.	
117-84-0	Di-n-octylphthalate	2.	U
205-99-2	Benzo(b)fluoranthene	2.	U
207-08-9	Benzo(k)fluoranthene	2.	U
50-32-8	Benzo(a)pyrene	2.	U
193-39-5	Indeno(1,2,3-cd)pyrene	4.	U
53-70-3	Dibenzo(a,h)anthracene	3.	U
191-24-2	Benzo(g,h,i)perylene	4.	U

(1) - Cannot be separated from Diphenylamine

TENTATIVELY IDENTIFIED COMPOUNDS YES[ ] NO [X]

FORM I SV-2

1/87 Rev.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21R07

Lab Name:WCI STEEL AFE108 Contract:CHICAGOIL

Lab Code: SLO-10C Case No.: EDO1190 SAS No.: WCISTL SDG No.: -------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21R07

Sample wt/vol: 950 (g/mL) mL Lab File ID: >BP105

Level: (low/med) LOW Date Received: 05/14/93

% Moisture: not dec.---- dec. ---- Date Extracted:05/24/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 5/24/93

GPC Cleanup: (Y/N) N pH:NA Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	2.	U
111-44-4	bis(2-Chloroethyl)Ether	2.	U
95-57-8	2-Chlorophenol	2.	U
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
100-51-6	Benzyl alcohol	2.	U
95-50-1	1,2-Dichlorobenzene	3.	U
95-48-7	2-Methylphenol	1.	U
39638-32-9	bis(2-chloroisopropyl)ether	3.	U
106-44-5	4-Methylphenol	1.	U
621-64-7	N-Nitroso-Di-n-propylamine	2.	U
67-72-1	Hexachloroethane	2.	U
98-95-3	Nitrobenzene	3.	U
78-59-1	Isophorone	3.	U
88-75-5	2-Nitrophenol	2.	U
105-67-9	2,4-Dimethylphenol	2.	U
65-85-0	Benzoic acid	32.	U
111-91-1	bis(2-Chloroethoxy)methane	3.	U
120-83-2	2,4-Dichlorophenol	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	2.	U
106-47-8	4-Chloroaniline	2.	U
87-68-3	Hexachlorobutadiene	3.	U
59-50-7	4-Chloro-3-methylphenol	2.	U
91-57-6	2-Methylnaphthalene	2.	U
77-47-4	Hexachlorocyclopentadiene	2.	U
88-06-2	2,4,6-Trichlorophenol	2.	U
95-95-4	2,4,5-Trichlorophenol	2.	U
91-58-7	2-Chloronaphthalene	2.	U
88-74-4	2-Nitroaniline	3.	U
131-11-3	Dimethylphthalate	2.	U
208-96-8	Acenaphthylene	2.	U
606-20-2	2,6-Dinitrotoluene	1.	U

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21R07

Lab Name: WCI STEEL AFE108 Contract: CHICAGOIL

Lab Code: SLO-10C Case No.: EDO1190 SAS No.: WCISTL SDG No.: -------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21R07

Sample wt/vol: 950 (g/mL) mL Lab File ID: >BP105

Level: (low/med) LOW Date Received: 05/14/93

% Moisture: not dec.---- dec. ---- Date Extracted: 05/24/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 5/24/93

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	3.	U
83-32-9	Acenaphthene	2.	U
51-28-5	2,4-Dinitrophenol	16.	U
100-02-7	4-Nitrophenol	2.	U
132-64-9	Dibenzofuran	1.	U
121-14-2	2,4-Dinitrotoluene	1.	U
84-66-2	Diethylphthalate	1.	U
7005-72-3	4-Chlorophenyl-phenylether	1.	U
86-73-7	Fluorene	1.	U
100-01-6	4-Nitroaniline	3.	U
534-52-1	4,6-Dinitro-2-methylphenol	16.	U
86-30-6	N-Nitrosodiphenylamine (1)	2.	U
101-55-3	4-Bromophenyl-phenylether	2.	U
118-74-1	Hexachlorobenzene	2.	U
87-86-5	Pentachlorophenol	2.	U
85-01-8	Phenanthrene	1.	U
120-12-7	Anthracene	3.	U
84-74-2	Di-n-butylphthalate	2.	U
206-44-0	Fluoranthene	2.	U
129-00-0	Pyrene	2.	U
85-68-7	Butylbenzylphthalate	4.	U
56-55-3	Benzo(a)anthracene	2.	U
218-01-9	Chrysene	2.	U
117-81-7	bis(2-Ethylhexyl)phthalate	45.	B
117-84-0	Di-n-octylphthalate	2.	U
205-99-2	Benzo(b)fluoranthene	2.	U
207-08-9	Benzo(k)fluoranthene	2.	U
50-32-8	Benzo(a)pyrene	2.	U
193-39-5	Indeno(1,2,3-cd)pyrene	4.	U
53-70-3	Dibenzo(a,h)anthracene	3.	U
191-24-2	Benzo(g,h,i)perylene	4.	U

(1) - Cannot be separated from Diphenylamine

TENTATIVELY IDENTIFIED COMPOUNDS YES[ ] NO [X]

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21S05

Lab Name: WCI STEEL AFE108 Contract: CHICAGOIL

Lab Code: SLO-10C Case No.: EDO1190 SAS No.: WCISTL SDG No.: -------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21S05

Sample wt/vol: 950 (g/mL) mL Lab File ID: >BP106

Level: (low/med) LOW Date Received: 05/14/93

% Moisture: not dec.---- dec. ---- Date Extracted: 05/24/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 5/24/93

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
108-95-2	Phenol	45.	
111-44-4	bis(2-Chloroethyl)Ether	2.	U
95-57-8	2-Chlorophenol	2.	U
541-73-1	1,3-Dichlorobenzene	2.	U
106-46-7	1,4-Dichlorobenzene	2.	U
100-51-6	Benzyl alcohol	2.	U
95-50-1	1,2-Dichlorobenzene	3.	U
95-48-7	2-Methylphenol	1.	U
39638-32-9	bis(2-chloroisopropyl)ether	3.	U
106-44-5	4-Methylphenol	5.	
621-64-7	N-Nitroso-Di-n-propylamine	2.	U
67-72-1	Hexachloroethane	2.	U
98-95-3	Nitrobenzene	3.	U
78-59-1	Isophorone	3.	U
88-75-5	2-Nitrophenol	7.	
105-67-9	2,4-Dimethylphenol	2.	U
65-85-0	Benzoic acid	38.	
111-91-1	bis(2-Chloroethoxy)methane	3.	U
120-83-2	2,4-Dichlorophenol	2.	U
120-82-1	1,2,4-Trichlorobenzene	2.	U
91-20-3	Naphthalene	11.	
106-47-8	4-Chloroaniline	2.	U
87-68-3	Hexachlorobutadiene	3.	U
59-50-7	4-Chloro-3-methylphenol	2.	U
91-57-6	2-Methylnaphthalene	9.	
77-47-4	Hexachlorocyclopentadiene	2.	U
88-06-2	2,4,6-Trichlorophenol	2.	U
95-95-4	2,4,5-Trichlorophenol	2.	U
91-58-7	2-Chloronaphthalene	2.	U
88-74-4	2-Nitroaniline	3.	U
131-11-3	Dimethylphthalate	2.	U
208-96-8	Acenaphthylene	2.	U
606-20-2	2,6-Dinitrotoluene	1.	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

93EC21S05

Lab Name:WCI STEEL AFE108 Contract:CHICAGOIL

Lab Code: SLO-10C Case No.: EDO1190 SAS No.: WCISTL SDG No.: -------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21S05

Sample wt/vol: 950 (g/mL) mL Lab File ID: >BP106

Level: (low/med) LOW Date Received: 05/14/93

% Moisture: not dec.---- dec. ---- Date Extracted:05/24/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 5/24/93

GPC Cleanup: (Y/N) N pH:NA Dilution Factor: 1.00000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
99-09-2	3-Nitroaniline	3.	U
83-32-9	Acenaphthene	2.	U
51-28-5	2,4-Dinitrophenol	16.	U
100-02-7	4-Nitrophenol	2.	U R
132-64-9	Dibenzofuran	1.	
121-14-2	2,4-Dinitrotoluene	1.	U
84-66-2	Diethylphthalate	1.	U
7005-72-3	4-Chlorophenyl-phenylether	1.	U
86-73-7	Fluorene	3.	
100-01-6	4-Nitroaniline	3.	U
534-52-1	4,6-Dinitro-2-methylphenol	16.	U
86-30-6	N-Nitrosodiphenylamine (1)	2.	U
101-55-3	4-Bromophenyl-phenylether	2.	U
118-74-1	Hexachlorobenzene	2.	U
87-86-5	Pentachlorophenol	2.	U
85-01-8	Phenanthrene	6.	
120-12-7	Anthracene	3.	U
84-74-2	Di-n-butylphthalate	2.	U
206-44-0	Fluoranthene	2.	
129-00-0	Pyrene	2.	
85-68-7	Butylbenzylphthalate	3.	U
56-55-3	Benzo(a)anthracene	2.	U
218-01-9	Chrysene	2.	U
117-81-7	bis(2-Ethylhexyl)phthalate	19.	B
117-84-0	Di-n-octylphthalate	2.	U
205-99-2	Benzo(b)fluoranthene	2.	U
207-08-9	Benzo(k)fluoranthene	2.	U
50-32-8	Benzo(a)pyrene	2.	U
193-39-5	Indeno(1,2,3-cd)pyrene	4.	U
53-70-3	Dibenzo(a,h)anthracene	3.	U
191-24-2	Benzo(g,h,i)perylene	4.	U

(1) - Cannot be separated from Diphenylamine

TENTATIVELY IDENTIFIED COMPOUNDS YES[X] NO [ ]

FORM I SV-2

1/87 Rev.

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

93EC21S05

Lab Name: WCI STEEL AFE108 Contract: CHICAGOIL

Lab Code: SLO-10C Case No.: EDO1190 SAS No.: WCISTL SDG No.: -------

Matrix: (soil/water) WATER Lab Sample ID: 93EC21S05

Sample wt/vol: 950 (g/mL) mL Lab File ID: >BP106

Level: (low/med) LOW Date Received: 05/14/93

% Moisture: not dec.---- dec. ---- Date Extracted: 05/24/93

Extraction: (Sepf/Cont/Sonc) SEPF Date Analyzed: 5/24/93

GPC Cleanup: (Y/N) N pH: NA Dilution Factor: 1.00000

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	111762	Ethanol, 2-butoxy-	2.90	330.	J
2.		Unknown	5.22	380.	
3.	1120214	Undecane	6.13	59.	J
4.		Unknown	7.87	65.	
5.	112403	Dodecane	8.02	54.	J
6.	17301234	Undecane, 2,6-dimethyl-	8.25	44.	J
7.		Unknown	9.60	42.	
8.	629594	Tetradecane	11.55	82.	J
9.	719222	2,5-Cyclohexadiene-1,4-dione	12.52	60.	J
10.	629629	Pentadecane	13.16	54.	J
11.	112538	1-Dodecanol	15.81	64.	J
12.	629787	Heptadecane	16.14	31.	J
13.		Unknown	16.33	38.	
14.	544638	Tetradecanoic acid	17.06	72.	J
15.	638368	Hexadecane, 2,6,10,14-tetram	17.58	41.	J
16.	629594	Tetradecane	17.73	40.	J
17.	112390	Hexadecanoic acid, methyl es	19.13	260.	J
18.	18654847	17-Octadecenoic acid, methyl	21.19	35.	J
19.	5129613	Heptadecanoic acid, 16-methy	21.54	240.	J
20.		Total Hydrocarbons (Ion m/e 55)	7.00 -36.5	8300.	J
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311

Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin
Invoice Number:

Order #: 95-04-178
Date: 04/17/95
Work ID: TCLP Analysis
Date Received: 04/12/95
Date Completed: 04/14/95
Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Pond 5-A Sludge 04/11 Grab		

Definitions: BDL - Below Detection Limit
Data Flags: J - Approximate value or below detection limit
B - Analyte also detected in blank
Q - Surrogate diluted out or out of control

Certified By
Irina Evseeva, Ph.D.

Sample Description: Pond 5-A Sludge 04/11 Grab Lab No: 01A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 04/12/95
ANALYST AMM

Sample Description: Pond 5-A Sludge 04/11 Grab Lab No: 01C
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 04/12/95
ANALYST AMM

Sample Description: Pond 5-A Sludge 04/11 Grab Lab No: 01C
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V

PARAMETER	RESULT	DETECTION LIMIT
Benzene	BDL	0.050
Carbon Tetrachloride	BDL	0.050
Chlorobenzene	BDL	0.050
Chloroform	BDL	0.10
1,2-Dichloroethane	BDL	0.050
1,1-Dichloroethene	BDL	0.050
Methyl ethyl ketone	BDL	0.50
Tetrachloroethylene	BDL	0.050
Trichloroethylene	BDL	0.050
Vinyl Chloride	BDL	0.10

SURROGATE	%RECOVERY	LIMITS
1,2-Dichloroethane d4	106	70 - 121
Toluene d8	100	81 - 117
4-Bromofluorobenzene	100	74 - 121

Notes and Definitions for this Report:

DATE RUN 04/13/95
ANALYST DRB
UNITS mg/L

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Pond 5-A Sludge 04/11 Grab	169825	mg/Kg	40	04/14/95	ROZ

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	0.008	mg/L	0.005	04/14/95	JCE

TCLP Metal - Barium
Method: EPA 6010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	0.19	mg/L	0.1	04/13/95	CS

TCLP Metal - Cadmium
Method: EPA 6010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	< 0.02	mg/L	0.02	04/13/95	JCE

TCLP Metal - Chromium
Method: EPA 6010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	< 0.1	mg/L	0.1	04/13/95	CS

TCLP Metal - Lead
Method: EPA 6010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	< 0.1	mg/L	0.1	04/13/95	CS

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	< 0.0002	mg/L	0.0002	04/13/95	JCE

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	< 0.005	mg/L	0.005	04/14/95	JSC

TCLP Metal - Silver
Method: EPA 6010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Pond 5-A Sludge 04/11 Grab	< 0.05	mg/L	0.05	04/13/95	CS

AMERICAN ANALYTICAL LABORATORIES, INC.
640 S. Main St.
Akron, OH 44311 216-535-1300

ANALYSIS AUTHORIZATION

AAL No. : [illegible]

Company Name: WCI Steel, Inc.	Phone No.
Project Name / Location	Quote No.
Report To: Keith McLaughlin	Project No.
Sampled By (Name and Signature): Keith McLaughlin	P.O. No.

PARAMETERS

Date Sampled	Time Sampled	Sample Matrix	Comp	Grab	Sample Description	No. of Containers	TCLP For 8 Heavy Metals	Total Oil + Grease	TCLP Volatiles							Lab #
4/11/95		Sludge		✓	POND 5-A SLUDGE	1	✓	✓	✓							

CHAIN OF CUSTODY	Relinquished by	Date	Time	Received By
		4/12/95	11:55	Robert E Shepard
	[illegible]	[illegible]	[illegible]	

Received at Lab by : _____ Date :

Authorized by : Keith McLaughlin Date : 4/12/95
(Client Signature Must Accompany Request)

A living signature hereto, customer acknowledges they have read and agree to the terms and conditions on the reverse of this form

Frac.

Turn-around : Normal ____ Rush ✓

Special Instructions :
Need Results No later than Monday April 16!!!!

Page 1 of 1

WCI-R 011656

ENVIRONMENTAL CONTROL LABORATORIES INC.

21845 Drake Road
Strongsville, Ohio 44136
(216) 238-6100
FAX: (216) 238-0395

Mr. Dick Gadishaw

WCI Steel Incorporated
1040 Pine Avenue, SE
Warren OH 44483-6528

E.C. Lab #:	9505-02012
Sample Date:	5/2/95
Received Date:	5/2/95
TCLP Extract Date:	5/3/95
Report Date:	5/12/95
Matrix:	Sludge

Report Covering Analysis of: 5-B Pond Sludge

TCLP Metals*	Method	Detection Limit	9505-02012 5-B Pond Sludge Result	Unit	Analysis Date
Arsenic	6010	0.2	BDL	mg/l	5/11/95
Barium	6010	0.1	2.0	mg/l	5/11/95
Cadmium	6010	0.1	BDL	mg/l	5/11/95
Chromium	6010	0.1	BDL	mg/l	5/11/95
Lead	6010	0.1	BDL	mg/l	5/11/95
Mercury	7470	0.0002	BDL	mg/l	5/8/95
Selenium	6010	0.1	BDL	mg/l	5/11/95
Silver	6010	0.1	BDL	mg/l	5/11/95

Note: BDL (Below Detection Limit)

* Extraction: Method SW846 1311

ENVIRONMENTAL CONTROL LABORATORIES INC.

21845 Drake Road
Strongsville, Ohio 44136
(216) 238-6100
FAX: (216) 238-0395

Mr. Dick Gadishaw

WCI Steel Incorporated
1040 Pine Avenue, SE
Warren OH 44483-6528

E.C. Lab #:	9505-02012
Sample Date:	5/2/95
Received Date:	5/2/95
TCLP Extract Date:	5/3/95
Analysis Date:	5/9/95
Report Date:	5/12/95
Matrix:	Sludge

Report Covering Analysis of: 5-B Pond Sludge

TCLP VOLATILES *
Method SW846 8240

Compound	Detection Limit	9505-02012 5-B Pond Sludge Result	Unit
Vinyl Chloride	0.01	BDL	mg/l
1,1-Dichloroethene	0.005	BDL	mg/l
2-Butanone(MEK)	0.05	BDL	mg/l
Chloroform	0.015	BDL	mg/l
Carbon Tetrachloride	0.005	BDL	mg/l
Benzene	0.005	BDL	mg/l
1,2-Dichloroethane	0.005	BDL	mg/l
Trichloroethene	0.005	BDL	mg/l
Tetrachloroethene	0.005	BDL	mg/l
Chlorobenzene	0.005	BDL	mg/l

Surrogates	Acceptable Range	Percent Recovery
1,2-Dichloroethane-d4	76-114	112
Toluene-d8	88-110	98
4-Bromofluorobenzene	86-115	98

Note: BDL (Below Detection Limit)
* Extraction: Method SW846 1311

ENVIRONMENTAL CONTROL LABORATORIES INC.

21845 Drake Road
Strongsville, Ohio 44136
(216) 238-6100
FAX: (216) 238-0395

Mr. Dick Gadishaw

WCI Steel Incorporated
1040 Pine Avenue, SE
Warren OH 44483-6528

E.C. Lab #:	9505-02012
Sample Date:	5/2/95
Received Date:	5/2/95
TCLP Extract Date:	5/3/95
Extraction Date:	5/3/95
Analysis Date:	5/8/95
Report Date:	5/12/95
Matrix:	Sludge

Report Covering Analysis of: 5-B Pond Sludge

TCLP SEMI-VOLATILES *

Method SW846 8270 Compound	Detection Limit	9505-02012 5-B Pond Sludge Result	Unit
Cresol	0.2	BDL	mg/l
1,4-Dichlorobenzene	0.1	BDL	mg/l
Hexachlorobenzene	0.1	BDL	mg/l
Hexachlorobutadiene	0.1	BDL	mg/l
Hexachloroethane	0.1	BDL	mg/l
2,4-Dinitrotoluene	0.1	BDL	mg/l
Nitrobenzene	0.1	BDL	mg/l
Pentachlorophenol	0.5	BDL	mg/l
Pyridine	0.2	BDL	mg/l
2,4,5-Trichlorophenol	0.1	BDL	mg/l
2,4,6-Trichlorophenol	0.1	BDL	mg/l

Surrogates	Acceptable Range	Percent Recovery
2-Fluorophenol	21-100	75
Phenol-D6	10-94	61
Nitrobenzene-D5	35-114	92
2-Fluorobiphenyl	43-116	92
2,4,6-Tribromophenol	10-123	109
P-Terphenyl-D14	33-141	89

Note: BDL (Below Detection Limit)

* Extraction: Method SW846 1311

Signed:

Robert S. Crookston
Lab Director

E. C. LABORATORIES

21845 Drake Rd. / Strongsville, OH 44136
(216) 238-6100 • 1-800-662-8116

9505-02012

COMPANY NAME: WCI STEEL, INC.

PROJECT NAME / LOCATION / NO.: 5-B POND SLUDGE

SAMPLERS: (Signature) Keith McLaughlin

DATE	TIME	COMP	GRAB	STATION LOCATION STATION NO.	# of CONT.	H_2SO_4	HNO_3	NaOH	OTHER	TCLP Total Metals, Volatiles & Semi Volatiles	REMARKS
5/2/95			✓	5-B POND SLUDGE	1						

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Keith McLaughlin	05/02/95	1:30pm	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received by: (Signature)

Received in Laboratory by: [signature] Date 5/2/95 Time

Remarks

DISTRIBUTION ORIGINAL ACCOMPANIES SHIPMENT. COPY RETURNED WITH REPORT

Rev. 10/89

WCI-R 011660

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
Strongsville Ohio 44136
(216) 238-6100
FAX: (216) 238-6294

Mr. Keith McLaughlin
WCI Steel Incorporated

1040 Pine Ave., SE
Warren, OH 44483-6528

E. C. Lab #: 9605-16004
Received Date: 5/16/96
Report Date: 5/31/96

Purchase Order #:

Subject: WCI Waste Characterizations

Sample No: 3
Client I.D. #5 Pond Top Sludge
Sample Date: 5/15/96
Matrix: Sludge

TCLP Extract*: 5/17/96

Analyte	Method	Detection Limit	Results	Units	Analysis Date
TCLP VOLATILES*					
Vinyl Chloride	8260	0.01	BDL	mg/L	5/17/96
1,1-Dichloroethene	8260	0.005	BDL	mg/L	5/17/96
2-Butanone (MEK)	8260	0.05	BDL	mg/L	5/17/96
Chloroform	8260	0.02	BDL	mg/L	5/17/96
Carbon Tetrachloride	8260	0.005	BDL	mg/L	5/17/96
Benzene	8260	0.01	BDL	mg/L	5/17/96
1,2-Dichloroethane	8260	0.005	BDL	mg/L	5/17/96
Trichloroethene	8260	0.005	BDL	mg/L	5/17/96
Tetrachloroethene	8260	0.005	BDL	mg/L	5/17/96
Chlorobenzene	8260	0.005	BDL	mg/L	5/17/96
Dibromofluoromethane (SURR)			92	% Recovery	5/17/96
1,2-Dichloroethane-d4 (SURR)			106	% Recovery	5/17/96
Toluene-d8 (SURR)			100	% Recovery	5/17/96
4-Bromofluorobenzene (SURR)			100	% Recovery	5/17/96

*Extraction Method: SW 846 1311

Note: BDL (Below Detection Limit)

Signed:
Robert S. Crookston
Laboratory Director

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
Strongsville, Ohio 44136
(216) 238-6100
FAX: (216) 238-6294

Mr. Keith McLaughlin
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1040 Pine Ave., SE
Warren, OH 44483-6528

E. C. Lab #: 9605-16004
Received Date: 5/16/96
Report Date: 5/31/96

Purchase Order #:

Subject: WCI Waste Characterizations

Sample No: 3
Client I.D. #5 Pond Top Sludge
Sample Date: 5/15/96
Matrix: Sludge

TCLP Extract*: 5/18/96
BNA Extract: 5/28/96

Analyte	Method	Detection Limit	Results	Units	Analysis Date
TCLP SEMIVOLATILES*					5/23/96
Cresol	8270	0.2	BDL	mg/L	5/23/96
1,4-Dichlorobenzene	8270	0.1	BDL	mg/L	5/23/96
Hexachlorobenzene	8270	0.1	BDL	mg/L	5/23/96
Hexachlorobutadiene	8270	0.1	BDL	mg/L	5/23/96
Hexachloroethane	8270	0.1	BDL	mg/L	5/23/96
2,4-Dinitrotoluene	8270	0.1	BDL	mg/L	5/23/96
Nitrobenzene	8270	0.1	BDL	mg/L	5/23/96
Pentachlorophenol	8270	0.5	BDL	mg/L	5/23/96
Pyridine	8270	0.2	BDL	mg/L	5/23/96
2,4,5-Trichlorophenol	8270	0.1	BDL	mg/L	5/23/96
2,4,6-Trichlorophenol	8270	0.1	BDL	mg/L	5/23/96
2-Fluorophenol (SURR)			61	% Recovery	5/23/96
Phenol-d6 (SURR)			26	% Recovery	5/23/96
Nitrobenzene-d5 (SURR)			50	% Recovery	5/23/96
2-Fluorobiphenyl (SURR)			51	% Recovery	5/23/96
2,4,6-Tribromophenol (SURR)			37	% Recovery	5/23/96
p-Terphenyl-d14 (SURR)			83	% Recovery	5/23/96

*Extraction Method: SW 846 1311

Note:BDL(Below Detection Limit)

Signed:
Robert S. Crookston
Laboratory Director

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
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Warren, OH 44483-6528

E. C. Lab #: 9605-16004
Received Date: 5/16/96
Report Date: 5/31/96

Purchase Order #:

Subject: WCI Waste Characterizations

Sample No: 3
Client I.D. #5 Pond Top Sludge
Sample Date: 5/15/96
Matrix: Sludge

TCLP Extract*: 5/23/96
Pest Extract: 5/23/96

Analyte	Method	Detection Limit	Results	Units	Analysis Date
TCLP PESTICIDES*					5/23/96
Chlordane	8080	0.0004	BDL	mg/L	5/23/96
Heptachlor, Total	8080	0.001	BDL	mg/L	5/23/96
TCMX			86	% Recovery	5/23/96

*Extraction Method: SW 846 1311

Note: BDL(Below Detection Limit)

Signed:
Robert S. Crookston
Laboratory Director

ENVIRONMENTAL CONTROL LABORATORIES INC.

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1040 Pine Ave., SE
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E. C. Lab #: 9605-16004
Received Date: 5/16/96
Report Date: 5/31/96

Purchase Order #:

Subject: WCI Waste Characterizations

Sample No: 3
Client I.D. #5 Pond Top Sludge
Sample Date: 5/15/96
Matrix: Sludge

Analyte	Method	Detection Limit	Results	Units	Analysis Date
Fluoride,(Extractable)	340.2	0.1	2.2	mg/Kg	5/22/96
Cyanide, Total	9010A	10	BDL	mg/Kg	5/21/96

*Extraction Method: SW 846 1311

Note:BDL(Below Detection Limit)

Signed:
Robert S. Crookston
Laboratory Director

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
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Mr. Keith McLaughlin
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1040 Pine Ave., SE
Warren, OH 44483-6528

E. C. Lab #: 9605-16004
Received Date: 5/16/96
Report Date: 5/31/96

Purchase Order #:

Subject: WCI Waste Characterizations

Sample No: 3
Client I.D. #5 Pond Top Sludge
Sample Date: 5/15/96
Matrix: Sludge

TCLP Extract*: 5/18/96

Analyte	Method	Detection Limit	Results	Units	Analysis Date
TCLP METALS*					
Arsenic	6010	0.2	BDL	mg/L	5/30/96
Barium	6010	0.1	0.2	mg/L	5/30/96
Cadmium	6010	0.1	BDL	mg/L	5/30/96
Chromium	6010	0.1	BDL	mg/L	5/30/96
Lead	6010	0.1	BDL	mg/L	5/30/96
Mercury	7470A	0.0002	BDL	mg/L	5/23/96
Selenium	6010	0.1	BDL	mg/L	5/30/96
Silver	6010	0.1	BDL	mg/L	5/30/96
Nickel	6010	0.1	0.1	mg/L	5/30/96
Cadmium, Total	6010	5.0	BDL	mg/Kg	5/29/96
Chromium, Total	6010	5.0	266	mg/Kg	5/29/96
Copper, Total	6010	5.0	147	mg/Kg	5/29/96
Lead, Total	6010	5.0	5.8	mg/Kg	5/29/96
Nickel, Total	6010	5.0	BDL	mg/Kg	5/29/96
Aluminum, Total	6010	5.0	887	mg/Kg	5/29/96
Barium, Total	6010	5.0	21.2	mg/Kg	5/29/96
Iron, Total	6010	5.0	16200	mg/Kg	5/29/96
Manganese, Total	6010	5.0	128	mg/Kg	5/29/96
Zinc, Total	6010	5.0	698	mg/Kg	5/29/96
Silver, Total	6010	5.0	BDL	mg/Kg	5/29/96
Calcium, Total	6010	5.0	2710	mg/Kg	5/29/96
Arsenic, Total	6010	5.0	6.8	mg/Kg	5/29/96
Selenium, Total	6010	5.0	BDL	mg/Kg	5/29/96
Potassium, Total	6010	5.0	38	mg/Kg	5/29/96
Sodium, Total	6010	50	BDL	mg/Kg	5/29/96
Magnesium, Total	6010	5.0	136	mg/Kg	5/29/96
Mercury, Total	7471A	0.015	BDL	mg/Kg	5/21/96
% Solids	160.3	0.01	76	%	5/30/96
Oil and Grease	9070	50	128000	mg/Kg	5/28/96
Nitrogen, Ammonia	350.1	10	BDL	mg/Kg	5/22/96
pH	9045C		5.9	S.U.	5/20/96
Chromium, Hex	3500CRD	10	BDL	ug/L	5/24/96

---Continued on Next Page---

9605-16004

See Attached Sheet

E. C. LABORATORIES

21337 Drake Rd. / Strongsville, OH 44136
(216) 238-6100 • 1-800-962-0118

COMPANY NAME: WCI

PROJECT NAME / LOCATION / NO.:

SAMPLERS: (Signature) Keith McLaughlin

DATE	TIME	COMP	GRAB	STATION LOCATION STATION NO.	# of CONT.	PRESERVATIVE H_2SO_4	HNO_3	NaOH	OTHER	PARAMETER TCLP-Heavy Metals	TCLP Metals	TCLP Organics	[illegible] Metals	[illegible] Moisture	% O&G	Flouride	CN	NH_3	Ph	PCB	REMARKS
5/15/96		X		Heckett Fill Material	1				1	X											
		/																			
5/15/96		X		Davis Mine Fill Material	1				1	X											
5/14/96		X		#5 Pond Top Sludge	1				1			X	X	X	X	X	X	X	X	X	X

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Keith McLaughlin	5/15/96	1623	[signature]
Relinquished by: (Signature)	Date	Time	Received by: (Signature)
[signature]	5/15/96	1902	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)

Received in Laboratory by: | Date | Time

Remarks: *All Results to Keith McLaughlin

DISTRIBUTION Original Accompanies Shipment Yellow–Transporter Pink–Generator

Rev 6/95

WCI-R 011666

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
Strongsville, Ohio 44136
(216) 238-6100
FAX: (216) 238-6294

Mr. Joseph Stock
WCI Steel Incorporated
1040 Pine Avenue, SE
Warren, OH 44483-6528

E. C. Lab #: 9705-13033
Received Date: 5/13/97
Report Date: 5/22/97

Purchase Order #:

Subject: #5A Pond

Sample No: 1
Client I.D. #5A Pond
Sample Date: 5/13/97
Matrix: Solid

TCLP Extract*: 5/15/97

Analyte	Method	Detection Limit	Results	Units	Analysis Date
TCLP METALS*					5/22/97
Arsenic	6010	0.2	BDL	mg/L	5/22/97
Barium	6010	0.1	0.1	mg/L	5/22/97
Cadmium	6010	0.1	BDL	mg/L	5/22/97
Chromium	6010	0.1	BDL	mg/L	5/22/97
Lead	6010	0.1	BDL	mg/L	5/22/97
Mercury	7470A	0.0002	BDL	mg/L	5/19/97
Selenium	6010	0.1	BDL	mg/L	5/22/97
Silver	6010	0.1	BDL	mg/L	5/21/97
Nickel	6010	0.1	BDL	mg/L	5/22/97
Copper	6010	0.1	BDL	mg/L	5/22/97
Zinc	6010	0.1	3.1	mg/L	5/22/97

*Extraction Method: SW 846 1311

Note:BDL(Below Detection Limit)

Signed: Robert S. Crookston
Robert S. Crookston
Laboratory Director

ENVIRONMENTAL CONTROL LABORATORIES INC.

21337 Drake Road
Strongsville, Ohio 44136
(216) 238-6100
FAX: (216) 238-6294

Mr. Joseph Stock
WCI Steel Incorporated
1040 Pine Avenue, SE
Warren, OH 44483-6528

E. C. Lab #: 9705-13033
Received Date: 5/13/97
Report Date: 5/22/97

Purchase Order #:

Subject: #5A Pond

Sample No: 1
Client I.D. #5A Pond
Sample Date: 5/13/97
Matrix: Solid

TCLP Extract*: 5/15/97

Analyte	Method	Detection Limit	Results	Units	Analysis Date
TCLP VOLATILES*					5/10/97
Vinyl Chloride	8260	0.01	BDL	mg/L	5/10/97
1,1-Dichloroethene	8260	0.005	BDL	mg/L	5/10/97
2-Butanone (MEK)	8260	0.05	0.06	mg/L	5/10/97
Chloroform	8260	0.02	BDL	mg/L	5/10/97
Carbon Tetrachloride	8260	0.005	BDL	mg/L	5/10/97
Benzene	8260	0.005	BDL	mg/L	5/10/97
1,2-Dichloroethane	8260	0.005	BDL	mg/L	5/10/97
Trichloroethene	8260	0.005	BDL	mg/L	5/10/97
Tetrachloroethene	8260	0.005	BDL	mg/L	5/10/97
Chlorobenzene	8260	0.005	BDL	mg/L	5/10/97
Dibromofluoromethane (SURR)			100	58 - 144%	5/10/97
1,2-Dichloroethane-d4 (SURR)			93	72 - 128%	5/10/97
Toluene-d8 (SURR)			104	81 - 120%	5/10/97
4-Bromofluorobenzene (SURR)			104	80 - 120%	5/10/97

*Extraction Method: SW 846 1311

Note:BDL(Below Detection Limit)

Signed: Robert S. Crookston
Robert S. Crookston
Laboratory Director

E. C. LABORATORIES INC.

21337 Drake Rd./Strongsville, OH 44136
(216) 238-6100 • 1-800-962-0118 • Fax(216) 238-6294

ECL WORK ORDER NUMBER: 9705-13033

COMPANY NAME: WCI

PURCHASE ORDER NO.:

QUOTATION #:

PROJECT NAME / LOCATION / NO.:

SAMPLERS: (Signature)

SAMPLERS: (Print Name): R. KUHLMAN

DATE	TIME	COMP	GRAB	STATION LOCATION STATION NO.	# of CONT.	H_2SO_4	HNO_3	NaOH	UNPRESERVED	OTHER	TCLP METALS + Cu, Zn, Ni	TCLP VOA									REMARKS
5-13-97		X		#5A POND	1				1		X	X									

Turnaround Requirement (surcharges may apply):
- Same Day
- 24 Hour
- 48 Hour
- ✓ 72 Hour
- Standard

Authorized by Signature:

Relinquished By: (signature)	Received By: (signature)	Relinquished By: (signature)	Received By: (signature)	Relinquished By: (signature)
Brett McLaughlin	R. Kuhlman	R. Kuhlman		
Printed Name: K. McLaughlin	Printed Name: R. KUHLMAN	Printed Name: R. KUHLMAN	Printed Name:	Printed Name:
Date: 5-13-97 Time: 1357	Date: 5-13-97 Time: 1357	Date: 5-13-97 Time: 1631	Date: Time:	Date: Time:

RECEIVED IN LABORATORY BY: Brett W. Hanglich

Date 5/13/97 Time 1631

COMMENTS

DISTRIBUTION: Org-Accompanies Shipment, Yellow-Transporter, Pink-Accounting, Goldenrod Generator

WCI-R 011669

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin
Invoice Number: 12202

Order #: 92-11-274
Date: 12/04/92 18:13
Work ID: Tank #12 Acid Regen. Plant
Date Received: 11/18/92
Date Completed: 12/01/92
Client Code: WCISTEEL

Amended Report - originally Issued 12/2/92.

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
02	Sludge #5 Pond Hold. Cell		

BDL - Below Detection Limit

Certified By
T.J. Lavey

Sample Description: Sludge #5 Pond Hold. Cell Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 11/18/92 01:30

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	52	35	-	114
2-Fluorobiphenyl	31 Q	43	-	116
p-Terphenyl d14	56	33	-	141
2-Fluorophenol	55	21	-	100
Phenol d5	50	10	-	94
2,4,6-Tribromophenol	46	10	-	123

Notes and Definitions for this Report:

EXTRACTED 11/19/92
DATE RUN 11/23/92
ANALYST IYE
UNITS mg/L

Sample Description: Sludge #5 Pond Hold. Cell Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 11/18/92 01:30

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.050
Carbon Tetrachloride	BDL	0.050
Chlorobenzene	BDL	0.050
Chloroform	BDL	0.050
1,2-Dichloroethane	BDL	0.050
1,1-Dichloroethene	BDL	0.050
Methyl ethyl ketone	BDL	0.50
Tetrachloroethylene	BDL	0.050
Trichloroethylene	BDL	0.050
Vinyl Chloride	BDL	0.10

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	101	76	-	114
Toluene d8	100	88	-	110
4-Bromofluorobenzene	106	86	-	115

Notes and Definitions for this Report:

% Moisture
Method: ASTM D2216

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02D	Sludge #5 Pond Hold. Cell	23	%			11/23/92	AMM

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	3200	mg/Kg	780		11/30/92	CAZ

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02D	Sludge #5 Pond Hold. Cell	96.5	mg/Kg	0.8		11/25/92	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	19	mg/Kg	0.78		11/23/92	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	89	mg/Kg	78		11/24/92	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	< 3.1	mg/Kg	3.1		11/25/92	DRB

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	7100	mg/Kg	1600		11/30/92	CAZ

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	450	mg/Kg	16		11/24/92	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	0.88	mg/Kg	0.16		11/24/92	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	120	mg/Kg	7.8		11/25/92	AMN

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02D	Sludge #5 Pond Hold. Cell	64	%	1		11/23/92	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	< 1600	mg/Kg	1600		11/27/92	CAZ

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	< 0.78	mg/Kg	0.78		11/27/92	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	< 7.8	mg/Kg	7.8		11/25/92	DRB

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	710	mg/Kg	39		11/30/92	CAZ

TCLP - Hexavalent Chromium
Method: ASTM D-1687

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Sludge #5 Pond Hold. Cell	<0.025	mg/L	0.025		11/20/92	LAK

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Sludge #5 Pond Hold. Cell	< 0.05	mg/L	0.05		11/23/92	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Sludge #5 Pond Hold. Cell	1900	mg/Kg	310		11/25/92	DRB

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

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840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 16885

Order #: 93-10-430
Date: 11/30/93
Work ID: Bi-Annual Waste Stream
Date Received: 10/28/93
Date Completed: 11/22/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Galv.Waste Pickle Liquor		

Definitions: BDL - Below Detection Limit
Data Flags: J - Approximate value or below detection limit
B - Analyte also detected in blank
Q - Surrogate diluted out or out of control

Certified By
T.J. Lavey

Sample Description: Galv.Waste Pickle Liquor Lab No: 01A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 10/28/93 11:00

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 11/02/93
ANALYST AMM

Sample Description: Galv.Waste Pickle Liquor Lab No: 01A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 10/28/93 11:00

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 10/29/93
ANALYST ROZ

Sample Description: Galv.Waste Pickle Liquor Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 10/28/93 11:00

PARAMETER	RESULT	DETECTION LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10
Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	2 Q	35	-	114
2-Fluorobiphenyl	36 Q	43	-	116
p-Terphenyl d14	26 Q	33	-	141
2-Fluorophenol	2 Q	21	-	100
Phenol d5	10	10	-	94
2,4,6-Tribromophenol	2 Q	10	-	123

Notes and Definitions for this Report:

EXTRACTED 10/29/93
DATE RUN 11/03/93
ANALYST IYE
UNITS mg/L

Sample Description: Galv.Waste Pickle Liquor Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 10/28/93 11:00

PARAMETER	RESULT	DETECTION LIMIT
Benzene	BDL	0.050
Carbon Tetrachloride	0.22	0.050
Chlorobenzene	BDL	0.050
Chloroform	2.8	0.10
1,2-Dichloroethane	BDL	0.050
1,1-Dichloroethene	BDL	0.050
Methyl ethyl ketone	BDL	0.50
Tetrachloroethylene	BDL	0.050
Trichloroethylene	BDL	0.050
Vinyl Chloride	BDL	0.10

SURROGATE	%RECOVERY	LIMITS
1,2-Dichloroethane d4	93	76 - 114
Toluene d8	99	88 - 110
4-Bromofluorobenzene	99	86 - 115

Notes and Definitions for this Report:

DATE RUN 11/01/93
ANALYST DRB
UNITS mg/L

Sample Description: Galv.Waste Pickle Liquor Lab No: 01B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 10/28/93 11:00

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 10/29/93
ANALYST LAK

Sample Description: Galv.Waste Pickle Liquor Lab No: 01D
Test Description: Naphthalene Method: EPA 625 Test Code: 34696S
Collected: 10/28/93 11:00

PARAMETER	RESULT	DETECTION LIMIT
Naphthalene	230	20

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene-d5	2 Q	35	-	114
2-Fluorobiphenyl	36 Q	43	-	116
p-Terphenyl-d14	26 Q	33	-	141

Notes and Definitions for this Report:

EXTRACTED 10/29/93
DATE RUN 11/03/93
ANALYST IYE
UNITS ug/L

Sample Description: Galv.Waste Pickle Liquor Lab No: 01D
Test Description: Polychlorinated Biphenyls Method: SW846 8080 Test Code: PCB_W
Collected: 10/28/93 11:00

PARAMETER	RESULT	DETECTION LIMIT
PCB-1016	BDL	10
PCB-1221	BDL	10
PCB-1232	BDL	10
PCB-1242	BDL	10
PCB-1248	BDL	10
PCB-1254	BDL	10
PCB-1260	BDL	10

SURROGATE	%RECOVERY	LIMITS
Tetrachloro-m-xylene	Q	24 - 154

Notes and Definitions for this Report:

EXTRACTED 10/29/93
DATE RUN 11/01/93
ANALYST ET
UNITS ug/L

% Solids
Method: ASTM D2216

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	13.7	%		11/15/93	AMM

Arsenic
Method: EPA 206.2

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	2.1	mg/L	0.05	11/30/93	JSC

Barium
Method: EPA 208.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	48	mg/L	5	11/19/93	JSC

Cadmium
Method: EPA 213.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	0.20	mg/L	0.020	11/26/93	TL

Chromium
Method: EPA 218.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	3.8	mg/L	0.10	11/20/93	TL

Chromium - Hexavalent
Method: ASTM D1687

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Galv.Waste Pickle Liquor	<0.050	mg/L	0.050	11/03/93	LAK

Cyanide (Total)
Method: EPA 335.2

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	<0.010	mg/L	0.010	10/29/93	LAK

Ignitability (flashpoint)
Method: SW846 1010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galv.Waste Pickle Liquor	> 212	Degrees F		10/29/93	ROZ

Iron
Method: EPA 236.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	3300	mg/L	120	11/10/93	TL

Lead
Method: EPA 239.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	7.4	mg/L	1.0	11/26/93	TL

Manganese
Method: EPA 243.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	63	mg/L	5.0	11/10/93	JE

Mercury
Method: EPA 245.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	0.0008	mg/L	0.0002	11/17/93	TL

Nickel
Method: EPA 249.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	18	mg/L	0.5	11/27/93	JSC

Oil and Grease
Method: EPA 413.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galv.Waste Pickle Liquor	51	mg/L	1	10/29/93	AMM

Phenolics
Method: EPA 420.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	487	ug/L	5	11/03/93	WBB

Reactive-Sulfide
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	<25	mg/Kg	25	10/30/93	LAK

Reactivity-CN
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	<1.0	mg/Kg	1.0	10/30/93	LAK

Selenium
Method: EPA 270.2

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	0.008	mg/L	0.005	11/20/93	JSC

Silver
Method: EPA 272.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	0.19	mg/L	0.05	11/26/93	TL

Specific Gravity
Method: ASTM D 1429

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	1.120	*		11/01/93	WBB

Sulfide
Method: EPA 376.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	<1.0	mg/L	1.0	10/30/93	LAK

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	1.4	mg/L	0.5	11/11/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	2.7	mg/L	0.5	11/04/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	0.10	mg/L	0.02	11/10/93	JE

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	1.8	mg/L	0.1	11/05/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	5.3	mg/L	0.1	11/03/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	0.001	mg/L	0.0002	11/03/93	TL

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	15	mg/L	0.5	11/05/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	< 0.05	mg/L	0.05	11/08/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galv.Waste Pickle Liquor	0.13	mg/L	0.05	11/05/93	JSC

Total Organic Carbon
Method: EPA 415.2

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01G	Galv.Waste Pickle Liquor	952	mg/L		11/08/93	SUB

Total Solids
Method: EPA 160.3

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	13.68	%		11/03/93	WBB

Total Suspended Solids
Method: EPA 160.2

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	13200	mg/L	5	10/30/93	LAK

Zinc
Method: EPA 289.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01F	Galv.Waste Pickle Liquor	2900	mg/L	500	11/08/93	JSC

pH (Lab)
Method: EPA 150.1

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01E	Galv.Waste Pickle Liquor	< .5	s.u.		10/28/93	LAK

REPORT COMMENTS

The following problems occurred on samples analyzed by method 8080 for PCB analysis. The surrogate recoveries were out of control for sample 93-10-430-01D. Corrective action was followed by re-extracting and re-analyzing the sample, and the surrogates were again out of control. This indicates the sample matrix may interfere with the method 8080 analysis.

The following problems occured on samples analyzed by method 8270. The surrogate recoveries were out of control for sample 93-10-430-01. Corrective action was followed by re-extracting and re-analyzing the sample, and the surrogates were again out of control. This indicates the sample matrix may interfere with the method 8270 analysis.

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WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14430

Order #: 93-05-068
Date: 05/24/93
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

The base-neutral and acid surrogate recoveries for sample 93-05-068-01A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore the sample matrix may interfere with the TCLP analysis.

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Grinder Baghouse Dust		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T.J. Lavey

Sample Description: Grinder Baghouse Dust Lab No: 01A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Grinder Baghouse Dust Lab No: 01A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/10/93
ANALYST ROZ

Sample Description: Grinder Baghouse Dust Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	DETECTION LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Grinder Baghouse Dust Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	2 Q	35	-	114
2-Fluorobiphenyl	89	43	-	116
p-Terphenyl d14	92	33	-	141
2-Fluorophenol	1 Q	21	-	100
Phenol d5	1 Q	10	-	94
2,4,6-Tribromophenol	22	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/11/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: Grinder Baghouse Dust Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	DETECTION LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	81	76	-	114
Toluene d8	92	88	-	110
4-Bromofluorobenzene	94	86	-	115

Notes and Definitions for this Report:

Sample Description: Grinder Baghouse Dust Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/12/93
DATE RUN 05/12/93
ANALYST DB
UNITS mg/L

Sample Description: Grinder Baghouse Dust Lab No: 01B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/18/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	1800	mg/Kg	220	05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Grinder Baghouse Dust	34.2	mg/Kg	2.5	05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	13	mg/Kg	0.45	05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	310	mg/Kg	45	05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	< 1.8	mg/Kg	1.8	05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	9500	mg/Kg	1000	05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	1900	mg/Kg	89	05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	50	mg/Kg	4	05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Grinder Baghouse Dust	10.5	s.u.		05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Grinder Baghouse Dust	0.63	mg/Kg	0.3	05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Grinder Baghouse Dust	64.6	mg/Kg	10	05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Grinder Baghouse Dust	<0.2	mg/Kg	0.2	05/19/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	460000	mg/Kg	18000	05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	< 8.9	mg/Kg	8.9	05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	1000	mg/Kg	89	05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	4000	mg/Kg	450	05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	< 0.10	mg/Kg	0.10	05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	770	mg/Kg	45	05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Grinder Baghouse Dust	420	mg/Kg	5	05/12/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	< 500	mg/Kg	500	05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	< 0.45	mg/Kg	0.45	05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	7.0	mg/Kg	4.5	05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	1400	mg/Kg	450	05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.005	mg/L	0.005	05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	4.0	mg/L	0.5	05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.02	mg/L	0.02	05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.10	mg/L	0.10	05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.10	mg/L	0.10	05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.0002	mg/L	0.0002	05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.05	mg/L	0.05	05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.005	mg/L	0.005	05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Grinder Baghouse Dust	< 0.05	mg/L	0.05	05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Grinder Baghouse Dust	76	mg/Kg	1.8	05/14/93	JSC

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14432

Order #: 93-05-070
Date: 05/24/93
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Galvanized Baghouse Dust		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T.J. Lavey

Sample Description: Galvanized Baghouse Dust Lab No: 01A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Galvanized Baghouse Dust Lab No: 01A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/11/93
ANALYST AMM

Sample Description: Galvanized Baghouse Dust Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	DETECTION LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Galvanized Baghouse Dust Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	0.032	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	74	35	-	114
2-Fluorobiphenyl	95	43	-	116
p-Terphenyl d14	85	33	-	141
2-Fluorophenol	13 Q	21	-	100
Phenol d5	18	10	-	94
2,4,6-Tribromophenol	19	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/11/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: Galvanized Baghouse Dust Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	DETECTION LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	85	76	-	114
Toluene d8	91	88	-	110
4-Bromofluorobenzene	90	86	-	115

Notes and Definitions for this Report:

Sample Description: Galvanized Baghouse Dust Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Galvanized Baghouse Dust Lab No: 01B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	130000	mg/Kg	24000	05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Galvanized Baghouse Dust	44	mg/Kg	2.5	05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	7.9	mg/Kg	0.5	05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	130	mg/Kg	49	05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 2.0	mg/Kg	2.0	05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 200	mg/Kg	200	05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	13	mg/Kg	10	05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	9	mg/Kg	5	05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Galvanized Baghouse Dust	3.69	s.u.		05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Galvanized Baghouse Dust	0.30	mg/Kg	0.3	05/19/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Galvanized Baghouse Dust	<10	mg/Kg	10	05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Galvanized Baghouse Dust	<0.2	mg/Kg	0.2	05/19/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	460	mg/Kg	4.9	05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	9.9	mg/Kg	9.8	05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	130	mg/Kg	98	05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	7.6	mg/Kg	4.9	05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 0.10	mg/Kg	0.10	05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 4.9	mg/Kg	4.9	05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01B	Galvanized Baghouse Dust	220	mg/Kg	5	05/12/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 500	mg/Kg	500	05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 1.0	mg/Kg	1.0	05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 5.0	mg/Kg	5.0	05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	< 490	mg/Kg	490	05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	< 0.020	mg/L	0.020	05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	10	mg/L	0.5	05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	< 0.020	mg/L	0.020	05/22/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	< 0.10	mg/L	0.10	05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	< 0.10	mg/L	0.10	05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	< 0.0002	mg/L	0.0002	05/13/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	0.095	mg/L	0.05	05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	< 0.050	mg/L	0.050	05/18/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01A	Galvanized Baghouse Dust	< 0.05	mg/L	0.05	05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Detection Limit	Analyzed	By
01C	Galvanized Baghouse Dust	19000	mg/Kg	2000	05/14/93	JSC

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Order #: 93-05-069
Date: 05/25/93 14:57
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Scale Pit Solids-Entrance		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T.J. Lavey

TEST RESULTS BY SAMPLE

Sample Description: **Scale Pit Solids-Entrance** Lab No: **01A**
Test Description: **Prep - TCLP Extraction** Method: **SW846 1311** Test Code: **TCLPEX**
Collected: **05/05/93**

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: **Scale Pit Solids-Entrance** Lab No: **01A**
Test Description: **Prep - TCLP ZHE** Method: **SW846 1311** Test Code: **TCLPZH**
Collected: **05/05/93**

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/10/93
ANALYST ROZ

Sample Description: **Scale Pit Solids-Entrance** Lab No: **01A**
Test Description: **TCLP Semivolatiles** Method: **SW846 8270** Test Code: **TCLP_S**
Collected: **05/05/93**

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

TEST RESULTS BY SAMPLE

Sample Description: **Scale Pit Solids-Entrance** Lab No: **01A**
Test Description: **TCLP Semivolatiles** Method: **SW846 8270** Test Code: **TCLP_S**
Collected: **05/05/93**

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	57	35	-	114
2-Fluorobiphenyl	78	43	-	116
p-Terphenyl d14	92	33	-	141
2-Fluorophenol	23	21	-	100
Phenol d5	20	10	-	94
2,4,6-Tribromophenol	45	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/11/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: **Scale Pit Solids-Entrance** Lab No: **01A**
Test Description: **TCLP Volatiles** Method: **SW846 8240** Test Code: **TCLP_V**
Collected: **05/05/93**

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	92	76	-	114
Toluene d8	107	88	-	110
4-Bromofluorobenzene	113	86	-	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: **Scale Pit Solids-Entrance** Lab No: **01A**
Test Description: **TCLP Volatiles** Method: **SW846 8240** Test Code: **TCLP_V**
Collected: **05/05/93**

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST DB
UNITS mg/L

Sample Description: **Scale Pit Solids-Entrance** Lab No: **01B**
Test Description: **Alkaline Leachate** Method: **ASTM D3987** Test Code: **ALKEXT**
Collected: **05/05/93**

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	520	mg/Kg	250		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Scale Pit Solids-Entrance	<2.5	mg/Kg	2.5		05/24/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	3.0	mg/Kg	0.5		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 50	mg/Kg	50		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	720	mg/Kg	200		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	570	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	64	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Scale Pit Solids-Entrance	8.94	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Scale Pit Solids-Entrance	<0.3	mg/Kg	0.3		05/19/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Scale Pit Solids-Entrance	<10	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Scale Pit Solids-Entrance	<0.2	mg/Kg	0.2		05/19/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	270000	mg/Kg	50000		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 9.9	mg/Kg	9.9		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 100	mg/Kg	100		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	1800	mg/Kg	200		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	110	mg/Kg	5		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Scale Pit Solids-Entrance	9250	mg/Kg	5		05/12/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 500	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 0.5	mg/Kg	0.5		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 5.0	mg/Kg	5.0		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	< 500	mg/Kg	500		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	0.022	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	0.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	0.84	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Scale Pit Solids-Entrance	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Scale Pit Solids-Entrance	19	mg/Kg	2		05/14/93	JSC

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Purchase Order: 351346
Invoice Number: 14431

Order #: 93-05-069
Date: 05/25/93 15:16
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
02	Scale Pit Solids-Exit		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Scale Pit Solids-Exit Lab No: 02A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Scale Pit Solids-Exit Lab No: 02A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/11/93
ANALYST AMM

Sample Description: Scale Pit Solids-Exit Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

TEST RESULTS BY SAMPLE

Sample Description: Scale Pit Solids-Exit Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	66	35	-	114
2-Fluorobiphenyl	76	43	-	116
p-Terphenyl d14	80	33	-	141
2-Fluorophenol	25	21	-	100
Phenol d5	22	10	-	94
2,4,6-Tribromophenol	37	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/11/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: Scale Pit Solids-Exit Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	100	76	-	114
Toluene d8	90	88	-	110
4-Bromofluorobenzene	93	86	-	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: Scale Pit Solids-Exit Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Scale Pit Solids-Exit Lab No: 02B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	1000	mg/Kg	240		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Scale Pit Solids-Exit	<2.5	mg/Kg	2.5		05/18/93	WBB

Arsenic♦c
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	20	mg/Kg	0.5		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	< 48	mg/Kg	48		05/19/93	JS[illegible]

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	< 1.9	mg/Kg	1.9		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	2300	mg/Kg	200		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	310	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	110	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Scale Pit Solids-Exit	8.92	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Scale Pit Solids-Exit	<0.3	mg/Kg	0.3		05/19/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Scale Pit Solids-Exit	<10	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Scale Pit Solids-Exit	<0.2	mg/Kg	0.2		05/19/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	490000	mg/Kg	48000		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	< 9.7	mg/Kg	9.7		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	510	mg/Kg	97		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	2700	mg/Kg	190		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	120	mg/Kg	5		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Scale Pit Solids-Exit	1070	mg/Kg	5		05/12/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	< 500	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	< 0.48	mg/Kg	0.48		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	7.0	mg/Kg	5.0		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	540	mg/Kg	480		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	0.14	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Scale Pit Solids-Exit	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Scale Pit Solids-Exit	590	mg/Kg	19		05/14/93	JSC

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14448

Order #: 93-05-062
Date: 05/25/93 15:17
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Blast Furnace Treat. Plant		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Blast Furnace Treat. Plant Lab No: 01A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: Blast Furnace Treat. Plant Lab No: 01A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST ROZ

Sample Description: Blast Furnace Treat. Plant Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	0.033	0.020
m&p-Cresol	0.094	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

TEST RESULTS BY SAMPLE

Sample Description: Blast Furnace Treat. Plant Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	71	35	-	114
2-Fluorobiphenyl	80	43	-	116
p-Terphenyl d14	65	33	-	141
2-Fluorophenol	16 Q	21	-	100
Phenol d5	20	10	-	94
2,4,6-Tribromophenol	13	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/12/93
ANALYST JYE
UNITS ug/L

Sample Description: Blast Furnace Treat. Plant Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	81	76	-	114
Toluene d8	96	88	-	110
4-Bromofluorobenzene	94	86	-	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: Blast Furnace Treat. Plant Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Blast Furnace Treat. Plant Lab No: 01B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	4800	mg/Kg	470		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Blast Furnace Treat. Plant	174	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	0.79	mg/Kg	0.47		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	58	mg/Kg	47		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	6.8	mg/Kg	1.9		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	15000	mg/Kg	1900		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	57	mg/Kg	9		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	27	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Blast Furnace Treat. Plant	9.52	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Blast Furnace Treat. Plant	<0.3	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Blast Furnace Treat. Plant	364	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Blast Furnace Treat. Plant	<0.2	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	150000	mg/Kg	5000		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	1800	mg/Kg	100		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	3900	mg/Kg	940		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	760	mg/Kg	190		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	9.3	mg/Kg	4.7		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Blast Furnace Treat. Plant	785	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	700	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	0.69	mg/Kg	0.47		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	6.9	mg/Kg	4.7		05/13/93	AMN

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	630	mg/Kg	470		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	0.046	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	0.86	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	0.66	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	< 0.05	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Blast Furnace Treat. Plant	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Blast Furnace Treat. Plant	16000	mg/Kg	1900		05/14/93	JSC

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14448

Order #: 93-05-062
Date: 05/25/93 15:17
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
02	Casthouse Baghouse Dust		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Casthouse Baghouse Dust Lab No: 02A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: Casthouse Baghouse Dust Lab No: 02A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST ROZ

Sample Description: Casthouse Baghouse Dust Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Casthouse Baghouse Dust Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	0 0	35	-	114
2-Fluorobiphenyl	76	43	-	116
p-Terphenyl d14	78	33	-	141
2-Fluorophenol	39	21	-	100
Phenol d5	23	10	-	94
2,4,6-Tribromophenol	42	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: Casthouse Baghouse Dust Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	84	76	-	114
Toluene d8	102	88	-	110
4-Bromofluorobenzene	91	86	-	115

Notes and Definitions for this Report:

Sample Description: Casthouse Baghouse Dust Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Casthouse Baghouse Dust Lab No: 02B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	5300	mg/Kg	2000		04/30/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Casthouse Baghouse Dust	2730	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	0.53	mg/Kg	0.49		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	< 49	mg/Kg	49		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	9400	mg/Kg	200		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	190	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	71	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Casthouse Baghouse Dust	6.08	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Casthouse Baghouse Dust	0.56	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Casthouse Baghouse Dust	2370	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Casthouse Baghouse Dust	<0.2	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	380000	mg/Kg	4900		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	130	mg/Kg	9.8		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	2200	mg/Kg	2200		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	4200	mg/Kg	490		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	0.11	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	26	mg/Kg	4.9		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Casthouse Baghouse Dust	2025	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	33000	mg/Kg	4900		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	49	mg/Kg	4.9		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	7.4	mg/Kg	4.9		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	6100	mg/Kg	490		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.05	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	0.034	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Casthouse Baghouse Dust	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Casthouse Baghouse Dust	3300	mg/Kg	79		05/14/93	JSC

REPORT COMMENTS

The base-neutral surrogate recoveries for sample 93-05-062-02A were out of control and re-extract of this sample also had out of control base-neutral surrogate recoveries. Therefore, the sample matrix may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-062-03A were out of control and re-extract of this sample also had out of control acid surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

AMERICAN ANALYTICAL LABORATORIES, INC.
INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14448

Order #: 93-05-062
Date: 05/25/93 15:17
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
03	Central Treatment Plant		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Central Treatment Plant Lab No: 03A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: Central Treatment Plant Lab No: 03A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST ROZ

Sample Description: Central Treatment Plant Lab No: 03A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Central Treatment Plant Lab No: 03A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	61	35	-	114
2-Fluorobiphenyl	71	43	-	116
p-Terphenyl d14	43	33	-	141
2-Fluorophenol	0 Q	21	-	100
Phenol d5	0 Q	10	-	94
2,4,6-Tribromophenol	0 Q	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: Central Treatment Plant Lab No: 03A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	DBL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	79	76	-	114
Toluene d8	92	88	-	110
4-Bromofluorobenzene	92	86	-	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: Central Treatment Plant Lab No: 03A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Central Treatment Plant Lab No: 03B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	2000	mg/Kg	490		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Central Treatment Plant	78	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	< 0.49	mg/Kg	0.49		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	65	mg/Kg	49		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	25000	mg/Kg	2000		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	250	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	19	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Central Treatment Plant	9.66	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Central Treatment Plant	1.10	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Central Treatment Plant	43.6	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Central Treatment Plant	<0.2	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	38000	mg/Kg	490		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	160	mg/Kg	9.9		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	8100	mg/Kg	990		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	800	mg/Kg	200		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	0.12	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	25	mg/Kg	4.9		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Central Treatment Plant	4665	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	< 500	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	< 0.49	mg/Kg	0.49		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	< 4.9	mg/Kg	4.9		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	< 490	mg/Kg	490		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	1.1	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	0.52	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	0.61	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Central Treatment Plant	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Central Treatment Plant	2600	mg/Kg	79		05/14/93	JSC

The base-neutral surrogate recoveries for sample 93-05-062-02A were out of control and re-extract of this sample also had out of control base-neutral surrogate recoveries. Therefore, the sample matrix may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-062-03A were out of control and re-extract of this sample also had out of control acid surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14445

Order #: 93-05-067
Date: 05/25/93 15:17
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
02	Light Fly Ash		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

TEST RESULTS BY SAMPLE

Sample Description: Light Fly Ash Lab No: 02A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Light Fly Ash Lab No: 02A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/10/93
ANALYST ROZ

Sample Description: Light Fly Ash Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Light Fly Ash Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	62	35	-	114
2-Fluorobiphenyl	73	43	-	116
p-Terphenyl d14	77	33	-	141
2-Fluorophenol	11 Q	21	-	100
Phenol d5	10	10	-	94
2,4,6-Tribromophenol	34	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/11/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: Light Fly Ash Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	81	76	-	114
Toluene d8	95	88	-	110
4-Bromofluorobenzene	94	86	-	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: Light Fly Ash Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/12/93
DATE RUN 05/12/93
ANALYST DB
UNITS mg/L

Sample Description: Light Fly Ash Lab No: 02B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	17000	mg/Kg	2500		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Light Fly Ash	15	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	620	mg/Kg	100		05/21/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	430	mg/Kg	50		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	4600	mg/Kg	200		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	56	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	74	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Light Fly Ash	3.63	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Light Fly Ash	<0.3	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Light Fly Ash	11.8	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Light Fly Ash	<0.2	mg/Kg	0.2		05/19/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	50000	mg/Kg	5000		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	63	mg/Kg	9.9		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	1400	mg/Kg	99		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	72	mg/Kg	5		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	0.58	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	84	mg/Kg	5		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Light Fly Ash	85	mg/Kg	5		05/12/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	2800	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	2.5	mg/Kg	0.5		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	< 5.0	mg/Kg	5.0		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	840	mg/Kg	500		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	0.58	mg/L	0.1		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	< 0.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	0.054	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	0.24	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	0.33	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	0.009	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Light Fly Ash	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Light Fly Ash	250	mg/Kg	20		05/14/93	JSC

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14445

Order #: 93-05-067
Date: 05/25/93 15:16
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Heavy (Bottom) Ash		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Heavy (Bottom) Ash Lab No: 01A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Heavy (Bottom) Ash Lab No: 01A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/10/93
ANALYST ROZ

Sample Description: Heavy (Bottom) Ash Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Heavy (Bottom) Ash Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	52	35	-	114
2-Fluorobiphenyl	58	43	-	116
p-Terphenyl d14	74	33	-	141
2-Fluorophenol	13 Q	21	-	100
Phenol d5	11	10	-	94
2,4,6-Tribromophenol	36	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/11/93
DATE RUN 05/12/93
ANALYST LYE
UNITS mg/L

Sample Description: Heavy (Bottom) Ash Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS		
1,2-Dichloroethane d4	81	76	-	114
Toluene d8	90	88	-	110
4-Bromofluorobenzene	94	86	-	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: Heavy (Bottom) Ash Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/12/93
DATE RUN 05/12/93
ANALYST DB
UNITS mg/L

Sample Description: Heavy (Bottom) Ash Lab No: 01B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/17/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	6100	mg/Kg	2500		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Heavy (Bottom) Ash	7	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	91	mg/Kg	20		05/21/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	210	mg/Kg	50		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	3900	mg/Kg	200		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	21	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	52	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Heavy (Bottom) Ash	6.16	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Heavy (Bottom) Ash	<.3	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Heavy (Bottom) Ash	<10	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Heavy (Bottom) Ash	<0.2	mg/Kg	0.2		05/19/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	120000	mg/Kg	5000		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	< 10	mg/Kg	10		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	720	mg/Kg	100		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	130	mg/Kg	5		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	0.26	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	48	mg/Kg	5		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Heavy (Bottom) Ash	205	mg/Kg	5		05/12/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	1000	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	< 0.5	mg/Kg	0.5		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	< 5.0	mg/Kg	5.0		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	< 500	mg/Kg	500		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	0.56	mg/L	0.1		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	< 0.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	0.08	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	0.006	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Heavy (Bottom) Ash	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Heavy (Bottom) Ash	100	mg/Kg	20		05/14/93	JSC

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14442

Order #: 93-05-065
Date: 05/25/93 15:12
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
05	LMF Baghouse Dust		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: LMF Baghouse Dust Lab No: 05A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: LMF Baghouse Dust Lab No: 05A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: LMF Baghouse Dust Lab No: 05A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: LMF Baghouse Dust Lab No: 05A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	48	35 -	114
2-Fluorobiphenyl	43	43 -	116
p-Terphenyl d14	62	33 -	141
2-Fluorophenol	44	21 -	100
Phenol d5	45	10 -	94
2,4,6-Tribromophenol	48	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/13/93
ANALYST IYE
UNITS mg/L

Sample Description: LMF Baghouse Dust Lab No: 05A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS	
1,2-Dichloroethane d4	89	76 -	114
Toluene d8	88	88 -	110
4-Bromofluorobenzene	101	86 -	115

Notes and Definitions for this Report:

American Analytical

TEST RESULTS BY SAMPLE

Sample Description: LMF Baghouse Dust
Test Description: TCLP Volatiles
Collected: 05/05/93

Lab No: 05A
Method: SW846 8240 Test Code: TCLP_V

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST DB
UNITS mg/L

Sample Description: LMF Baghouse Dust
Test Description: Alkaline Leachate
Collected: 05/05/93

Lab No: 05B
Method: ASTM D3987 Test Code: ALKEXT

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/18/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	13000	mg/Kg	500		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05B	LMF Baghouse Dust	121	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	33	mg/Kg	5		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	540	mg/Kg	50		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	27	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	170000	mg/Kg	10000		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	250	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	250	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05B	LMF Baghouse Dust	13.7	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05B	LMF Baghouse Dust	<0.3	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05B	LMF Baghouse Dust	154	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05B	LMF Baghouse Dust	2.6	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	45000	mg/Kg	500		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	1500	mg/Kg	100		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	240000	mg/Kg	100000		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	36000	mg/Kg	5000		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	12	mg/Kg	5		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05B	LMF Baghouse Dust	395	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	16000	mg/Kg	2500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	< 0.5	mg/Kg	0.5		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	13	mg/Kg	5		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	25000	mg/Kg	5000		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	3.0	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	3.4	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	< 0.05	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	LMF Baghouse Dust	0.069	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05C	LMF Baghouse Dust	11000	mg/Kg	200		05/14/93	JSC

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INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
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840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14442

Order #: 93-05-065
Date: 05/25/93 15:11
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
04	Caster Scale Pit Sludge		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Caster Scale Pit Sludge Lab No: 04A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: Caster Scale Pit Sludge Lab No: 04A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Caster Scale Pit Sludge Lab No: 04A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Caster Scale Pit Sludge
Test Description: TCLP Semivolatiles
Collected: 05/05/93

Lab No: 04A
Method: SW846 8270
Test Code: TCLP_S

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	0 0	35 -	114
2-Fluorobiphenyl	51	43 -	116
p-Terphenyl d14	73	33 -	141
2-Fluorophenol	42	21 -	100
Phenol d5	41	10 -	94
2,4,6-Tribromophenol	44	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/13/93
ANALYST 1YE
UNITS mg/L

Sample Description: Caster Scale Pit Sludge
Test Description: TCLP Volatiles
Collected: 05/05/93

Lab No: 04A
Method: SW846 8240
Test Code: TCLP_V

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS	
1,2-Dichloroethane d4	85	76 -	114
Toluene d8	107	88 -	110
4-Bromofluorobenzene	105	86 -	115

Notes and Definitions for this Report:

Sample Description: Caster Scale Pit Sludge Lab No: 04A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Caster Scale Pit Sludge Lab No: 04B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/18/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	9700	mg/Kg	500		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04B	Caster Scale Pit Sludge	<2.5	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	2.5	mg/Kg	0.5		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	1700	mg/Kg	500		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	46000	mg/Kg	10000		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	440	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	100	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04B	Caster Scale Pit Sludge	11.6	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04B	Caster Scale Pit Sludge	0.66	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04B	Caster Scale Pit Sludge	180	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04B	Caster Scale Pit Sludge	<0.2	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	530000	mg/Kg	5000		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	< 10	mg/Kg	10		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	2400	mg/Kg	1000		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	6400	mg/Kg	500		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	93	mg/Kg	5		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04B	Caster Scale Pit Sludge	290	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	820	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	< 0.5	mg/Kg	0.5		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	10	mg/Kg	5		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	16000	mg/Kg	500		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	8.9	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.05	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	Caster Scale Pit Sludge	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04C	Caster Scale Pit Sludge	28	mg/Kg	2		05/14/93	JSC

The acid surrogate recoveries for sample 93-05-065-02A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The base-neutral surrogate recoveries for sample 93-05-065-04A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the base-neutral fraction analysis.

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Attn: Keith McLaughlin

Purchase Order: 351346
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Order #: 93-05-065
Date: 05/25/93 15:11
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
03	Desulfurizer Baghouse Dust		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Desulfurizer Baghouse Dust Lab No: 03A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: Desulfurizer Baghouse Dust Lab No: 03A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Desulfurizer Baghouse Dust Lab No: 03A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Desulfurizer Baghouse Dust Lab No: 03A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	68	35 -	114
2-Fluorobiphenyl	73	43 -	116
p-Terphenyl d14	53	33 -	141
2-Fluorophenol	32	21 -	100
Phenol d5	38	10 -	94
2,4,6-Tribromophenol	27	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/13/93
ANALYST 1YE
UNITS mg/L

Sample Description: Desulfurizer Baghouse Dust Lab No: 03A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS	
1,2-Dichloroethane d4	90	76 -	114
Toluene d8	99	88 -	110
4-Bromofluorobenzene	115	86 -	115

Notes and Definitions for this Report:

Sample Description: Desulfurizer Baghouse Dust Lab No: 03A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Desulfurizer Baghouse Dust Lab No: 03B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/18/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	1100	mg/Kg	49		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Desulfurizer Baghouse Dust	24	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	15	mg/Kg	0.49		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	260	mg/Kg	49		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	140000	mg/Kg	20000		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	200	mg/Kg	10		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	24	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Desulfurizer Baghouse Dust	13.2	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Desulfurizer Baghouse Dust	1.51	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Desulfurizer Baghouse Dust	36.6	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Desulfurizer Baghouse Dust	<0.2	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	240000	mg/Kg	4900		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	< 9.9	mg/Kg	9.9		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	44000	mg/Kg	9900		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	2700	mg/Kg	490		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	9.9	mg/Kg	4.9		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	Desulfurizer Baghouse Dust	250	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	740	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	< 0.49	mg/Kg	0.49		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	7.0	mg/Kg	4.9		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	1100	mg/Kg	490		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	1.1	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	< 0.05	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	Desulfurizer Baghouse Dust	0.088	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03C	Desulfurizer Baghouse Dust	300	mg/Kg	20		05/14/93	JSC

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Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
02	Precipitator Dust		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: Precipitator Dust Lab No: 02A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: Precipitator Dust Lab No: 02A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST ROZ

Sample Description: Precipitator Dust Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

Sample Description: Precipitator Dust Lab No: 02A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	59	35 -	114
2-Fluorobiphenyl	61	43 -	116
p-Terphenyl d14	51	33 -	141
2-Fluorophenol	0 Q	21 -	100
Phenol d5	1 Q	10 -	94
2,4,6-Tribromophenol	1 Q	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/13/93
ANALYST IYE
UNITS mg/L

Sample Description: Precipitator Dust Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS	
1,2-Dichloroethane d4	77	76 -	114
Toluene d8	94	88 -	110
4-Bromofluorobenzene	94	86 -	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: Precipitator Dust Lab No: 02A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/12/93
DATE RUN 05/12/93
ANALYST DB
UNITS mg/L

Sample Description: Precipitator Dust Lab No: 02B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/18/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	1000	mg/Kg	470		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Precipitator Dust	5	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	3.4	mg/Kg	0.47		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	74	mg/Kg	47		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	26	mg/Kg	1.9		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	34000	mg/Kg	8000		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	430	mg/Kg	9		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	140	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Precipitator Dust	13.0	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Precipitator Dust	<0.3	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Precipitator Dust	147	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Precipitator Dust	<0.2	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	510000	mg/Kg	4700		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	1000	mg/Kg	47		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	14000	mg/Kg	9500		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	8700	mg/Kg	470		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	48	mg/Kg	4.7		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	Precipitator Dust	235	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	1300	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	< 0.47	mg/Kg	0.47		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	14	mg/Kg	4.7		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	2200	mg/Kg	470		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	0.081	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.05	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	Precipitator Dust	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02C	Precipitator Dust	31000	mg/Kg	760		05/14/93	JSC

REPORT COMMENTS

The acid surrogate recoveries for sample 93-05-065-02A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The base-neutral surrogate recoveries for sample 93-05-065-04A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the base-neutral fraction analysis.

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number: 14442

Order #: 93-05-065
Date: 05/25/93 15:11
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/24/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	B.O.F. Slag		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: B.O.F. Slag Lab No: 01A
Test Description: Prep - TCLP Extraction Method: SW846 1311 Test Code: TCLPEX
Collected: 05/05/93

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST AMM

Sample Description: B.O.F. Slag Lab No: 01A
Test Description: Prep - TCLP ZHE Method: SW846 1311 Test Code: TCLPZH
Collected: 05/05/93

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/06/93
ANALYST ROZ

Sample Description: B.O.F. Slag Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

TEST RESULTS BY SAMPLE

Sample Description: B.O.F. Slag Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	44	35 -	114
2-Fluorobiphenyl	41 Q	43 -	116
p-Terphenyl d14	38	33 -	141
2-Fluorophenol	19 Q	21 -	100
Phenol d5	34	10 -	94
2,4,6-Tribromophenol	15	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/10/93
DATE RUN 05/13/93
ANALYST IYE
UNITS mg/L

Sample Description: B.O.F. Slag Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS	
1,2-Dichloroethane d4	77	76 -	114
Toluene d8	91	88 -	110
4-Bromofluorobenzene	92	86 -	115

Notes and Definitions for this Report:

TEST RESULTS BY SAMPLE

Sample Description: B.O.F. Slag Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

EXTRACTED 05/12/93
DATE RUN 05/12/93
ANALYST DB
UNITS mg/L

Sample Description: B.O.F. Slag Lab No: 01B
Test Description: Alkaline Leachate Method: ASTM D3987 Test Code: ALKEXT
Collected: 05/05/93

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/18/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	19000	mg/Kg	1900		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	B.O.F. Slag	4	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	0.86	mg/Kg	0.48		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	710	mg/Kg	48		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	< 1.9	mg/Kg	1.9		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	270000	mg/Kg	19000		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	1200	mg/Kg	95		05/12/93	JSC

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	17	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	B.O.F. Slag	13.1	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	B.O.F. Slag	1.30	mg/Kg	0.3		05/17/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	B.O.F. Slag	125	mg/Kg	10		05/24/93	WBB

Hexavalent Chromium
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	B.O.F. Slag	<0.2	mg/Kg	0.2		05/18/93	LAK

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	110000	mg/Kg	4800		05/17/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	< 9.5	mg/Kg	9.5		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	53000	mg/Kg	9500		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	13000	mg/Kg	480		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	< 4.8	mg/Kg	4.8		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	B.O.F. Slag	255	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	< 500	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	< 0.48	mg/Kg	0.48		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	8.3	mg/Kg	4.8		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	640	mg/Kg	480		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	1.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	< 0.05	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	B.O.F. Slag	0.087	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	B.O.F. Slag	28	mg/Kg	1.9		05/14/93	JSC

AMERICAN ANALYTICAL LABORATORIES, INC.
INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number:

Order #: 93-05-071
Date: 05/27/93 14:04
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/25/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
01	Iron Oxide Dust		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

American Analytical

TEST RESULTS BY SAMPLE

Sample Description: Iron Oxide Dust
Test Description: Prep - TCLP Extraction
Collected: 05/05/93

Lab No: 01A
Method: SW846 1311 Test Code: TCLPEX

PARAMETER

TCLP Extraction

Notes and Definitions for this Report:

DATE RUN 05/07/93
ANALYST AMM

Sample Description: Iron Oxide Dust
Test Description: Prep - TCLP ZHE
Collected: 05/05/93

Lab No: 01A
Method: SW846 1311 Test Code: TCLPZH

PARAMETER

Zero-Headspace Extraction

Notes and Definitions for this Report:

DATE RUN 05/11/93
ANALYST AMM

Sample Description: Iron Oxide Dust
Test Description: TCLP Semivolatiles
Collected: 05/05/93

Lab No: 01A
Method: SW846 8270 Test Code: TCLP_S

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10

TEST RESULTS BY SAMPLE

Sample Description: Iron Oxide Dust Lab No: 01A
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	61	35 -	114
2-Fluorobiphenyl	72	43 -	116
p-Terphenyl d14	66	33 -	141
2-Fluorophenol	1 Q	21 -	100
Phenol d5	0 Q	10 -	94
2,4,6-Tribromophenol	17	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/11/93
DATE RUN 05/12/93
ANALYST IYE
UNITS mg/L

Sample Description: Iron Oxide Dust Lab No: 01A
Test Description: TCLP Volatiles Method: SW846 8240 Test Code: TCLP_V
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.025
Carbon Tetrachloride	BDL	0.025
Chlorobenzene	BDL	0.025
Chloroform	BDL	0.05
1,2-Dichloroethane	BDL	0.025
1,1-Dichloroethene	BDL	0.025
Methyl ethyl ketone	BDL	0.25
Tetrachloroethylene	BDL	0.025
Trichloroethylene	BDL	0.025
Vinyl Chloride	BDL	0.05

SURROGATE	%RECOVERY	LIMITS	
1,2-Dichloroethane d4	80	76 -	114
Toluene d8	93	88 -	110
4-Bromofluorobenzene	94	86 -	115

Notes and Definitions for this Report:

American Analytical

TEST RESULTS BY SAMPLE

Sample Description: Iron Oxide Dust
Test Description: TCLP Volatiles
Collected: 05/05/93

Lab No: 01A
Method: SW846 8240 Test Code: TCLP_V

EXTRACTED 05/13/93
DATE RUN 05/13/93
ANALYST DB
UNITS mg/L

Sample Description: Iron Oxide Dust
Test Description: Alkaline Leachate
Collected: 05/05/93

Lab No: 01B
Method: ASTM D3987 Test Code: ALKEXT

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/18/93
ANALYST WBB

Aluminum
Method: EPA 7020

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	25000	mg/Kg	10000		05/18/93	JSC

Ammonia as N
Method: EPA 350.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Iron Oxide Dust	106	mg/Kg	2.5		05/18/93	WBB

Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	< 0.5	mg/Kg	0.5		05/17/93	JSC

Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	< 50	mg/Kg	50		05/19/93	JSC

Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	< 2.0	mg/Kg	2.0		05/11/93	JSC

Calcium
Method: EPA 7140

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	780	mg/Kg	200		05/15/93	JSC

Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	360	mg/Kg	10		05/12/93	JSC

Chromium - Hexavalent
Method: ASTM D1687 A

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Iron Oxide Dust	0.214	mg/Kg	0.2		05/19/93	LAK

Copper
Method: EPA 7210

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	120	mg/Kg	5		05/12/93	JSC

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Iron Oxide Dust	4.35	s.u.			05/13/93	LAK

Cyanide (Total)
Method: SW846 9010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Iron Oxide Dust	<0.3	mg/Kg	0.3		05/19/93	LAK

Flouride (distilled/solid)
Method: EPA 340.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Iron Oxide Dust	<10	mg/Kg	10		05/24/93	WBB

Iron
Method: EPA 7380

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	590000	mg/Kg	50000		05/26/93	JSC

Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	< 10	mg/Kg	10		05/12/93	JSC

Magnesium
Method: EPA 7450

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	190	mg/Kg	100		05/20/93	JSC

Manganese
Method: EPA 7460

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	2200	mg/Kg	200		05/13/93	JSC

Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	< 0.10	mg/Kg	0.10		05/13/93	JSC

Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	190	mg/Kg	5		05/17/93	JSC

Oil & Grease
Method: SW846 9071

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01B	Iron Oxide Dust	185	mg/Kg	5		05/11/93	AMM

Potassium
Method: SW846 7610

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	< 500	mg/Kg	500		05/15/93	JSC

Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	< 0.5	mg/Kg	0.5		05/18/93	JSC

Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	6.8	mg/Kg	5.0		05/13/93	JSC

Sodium
Method: EPA 7770

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	750	mg/Kg	500		05/20/93	JSC

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.005	mg/L	0.005		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.5	mg/L	0.5		05/14/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.02	mg/L	0.02		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.10	mg/L	0.10		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.10	mg/L	0.10		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.0002	mg/L	0.0002		05/11/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	0.12	mg/L	0.05		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.005	mg/L	0.005		05/10/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01A	Iron Oxide Dust	< 0.05	mg/L	0.05		05/13/93	JSC

Zinc
Method: EPA 7950

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
01C	Iron Oxide Dust	28	mg/Kg	2		05/14/93	JSC

The base-neutral surrogate recoveries for samples 93-05-071-02D, -02G, -03D, -03G, -04D, -04G, -05D, and -05G were out of control and re-extracts of these samples also had out of control surrogate recoveries. Therefore, the samples' matrieces may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-071-01A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The PCB surrogate recovery for sample 93-05-071-04G was out of control and re-extract of this sample also had an out of control surrogate recovery. Therefore, the sample matrix may interfere with the PCB analysis.

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number:

Order #: 93-05-071
Date: 05/27/93 14:05
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/25/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
05	WPL Terne Line Sump		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: WPL Terne Line Sump
Test Description: Alkaline Leachate
Collected: 05/05/93

Lab No: 05B
Method: ASTM D3987 Test Code: ALKEXT

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/19/93
ANALYST WBB

Sample Description: WPL Terne Line Sump
Test Description: TCLP Volatiles
Collected: 05/06/93

Lab No: 05C
Method: SW846 8240 Test Code: TCLP_V

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.050
Carbon Tetrachloride	BDL	0.050
Chlorobenzene	BDL	0.050
Chloroform	0.46	0.10
1,2-Dichloroethane	BDL	0.050
1,1-Dichloroethene	BDL	0.050
Methyl ethyl ketone	BDL	0.50
Tetrachloroethylene	BDL	0.050
Trichloroethylene	BDL	0.050
Vinyl Chloride	BDL	0.10

SURROGATE	%RECOVERY	LIMITS
1,2-Dichloroethane d4	81	76 - 114
Toluene d8	90	88 - 110
4-Bromofluorobenzene	94	86 - 115

Notes and Definitions for this Report:

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST DB
UNITS mg/L

Sample Description: WPL Terne Line Sump Lab No: 05D
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/06/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10
Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	7 0	35 -	114
2-Fluorobiphenyl	89	43 -	116
p-Terphenyl d14	91	33 -	141
2-Fluorophenol	36	21 -	100
Phenol d5	41	10 -	94
2,4,6-Tribromophenol	40	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS mg/L

Sample Description: WPL Terne Line Sump Lab No: 05G
Test Description: Naphthalene Method: EPA 625 Test Code: 34696S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Naphthalene	BDL	20

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene-d5	7 0	35 -	114
2-Fluorobiphenyl	89	43 -	116

Sample Description: WPL Terne Line Sump
Test Description: Naphthalene
Collected: 05/05/93

Lab No: 05G
Method: EPA 625
Test Code: 34696S

p-Terphenyl-d14	91	33 -	141

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS ug/L

Sample Description: WPL Terne Line Sump
Test Description: Polychlorinated Biphenyls
Collected: 05/05/93

Lab No: 05G
Method: SW846 8080
Test Code: PCB_W

PARAMETER	RESULT	LIMIT
PCB-1016	BDL	0.50
PCB-1221	BDL	0.50
PCB-1232	BDL	0.50
PCB-1242	BDL	0.50
PCB-1248	BDL	0.50
PCB-1254	BDL	0.50
PCB-1260	BDL	0.50

SURROGATE	%RECOVERY	LIMITS	
Tetrachloro-m-xylene	60	24 -	154

Notes and Definitions for this Report:

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST IYE
UNITS mg/L

Arsenic
Method: EPA 206.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	3.1	mg/L	0.11		05/21/93	JSC

Barium
Method: EPA 208.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	140	mg/L	11		05/19/93	JSC

Cadmium
Method: EPA 213.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	< 0.044	mg/L	0.044		05/11/93	JSC

Chromium
Method: EPA 218.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	15	mg/L	1.1		05/12/93	JSC

Chromium - Hexavalent
Method: ASTMD1687A86

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05B	WPL Terne Line Sump	<0.05	mg/L	0.05		05/17/93	LAK

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	<0.5	s.u.			05/13/93	LAK

Cyanide (Total)
Method: EPA 335.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05I	WPL Terne Line Sump	0.014	mg/L	0.010		05/10/93	LAK

Ignitability (flashpoint)
Method: SW846 1010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	> 212	Degrees F			05/21/93	ROZ

Iron
Method: EPA 236.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	72000	mg/L	1100		05/26/93	JSC

Lead
Method: EPA 239.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	6.2	mg/L	0.22		05/13/93	JSC

Manganese
Method: EPA 243.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	160	mg/L	4.4		05/13/93	JSC

Mercury
Method: EPA 245.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	< 0.002	mg/L	0.002		05/13/93	JSC

Nickel
Method: EPA 249.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	11	mg/L	1.1		05/17/93	JSC

Oil and Grease
Method: EPA 413.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05F	WPL Terne Line Sump	4	mg/L	1		05/07/93	SKB

Phenolics
Method: EPA 420.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05H	WPL Terne Line Sump	25	ug/L	5		05/14/93	WBB

Reactive-Sulfide
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	<25	mg/Kg	25		05/10/93	LAK

Reactivity-CN
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05I	WPL Terne Line Sump	<1.0	mg/Kg	1.0		05/10/93	LAK

Selenium
Method: EPA 270.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	< 0.11	mg/L	0.11		05/18/93	JSC

Silver
Method: EPA 272.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	0.20	mg/L	0.11		05/13/93	JSC

Specific Gravity
Method: ASTM D 1429

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	1.220	*			05/11/93	WBB

Sulfide
Method: EPA 376.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	<1.0	mg/L	1.0		05/10/93	LAK

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	3.1	mg/L	0.11		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	140	mg/L	1.1		05/19/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	< 0.044	mg/L	0.044		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	15	mg/L	1.1		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	6.2	mg/L	0.22		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	< 0.002	mg/L	0.002		05/13/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	11	mg/L	1.1		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	< 0.11	mg/L	0.11		05/18/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05A	WPL Terne Line Sump	0.20	mg/L	0.11		05/13/93	JSC

Total Organic Carbon
Method: EPA 415.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05E	WPL Terne Line Sump	15.0	mg/L			05/21/93	SUB

Total Solids
Method: EPA 160.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	26.43	%			05/17/93	WBB

Total Suspended Solids
Method: EPA 160.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	2090	mg/L	5		05/17/93	WBB

Zinc
Method: EPA 289.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05K	WPL Terne Line Sump	2400	mg/L	180		05/14/93	JSC

pH (Lab)
Method: EPA 150.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
05J	WPL Terne Line Sump	<0.5	s.u.			05/13/93	LAK

The base-neutral surrogate recoveries for samples 93-05-071-02D, -02G, -03D, -03G, -04D, -04G, -05D, and -05G were out of control and re-extracts of these samples also had out of control surrogate recoveries. Therefore, the samples' matrieces may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-071-01A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The PCB surrogate recovery for sample 93-05-071-04G was out of control and re-extract of this sample also had an out of control surrogate recovery. Therefore, the sample matrix may interfere with the PCB analysis.

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

American Analytical
Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
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Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number:

Order #: 93-05-071
Date: 05/27/93 14:05
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/25/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
04	WPL Galvanizen Sump		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: WPL Galvanizen Sump
Test Description: Alkaline Leachate
Collected: 05/05/93

Lab No: 04B
Method: ASTM D3987 Test Code: ALKEXT

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/19/93
ANALYST WBB

Sample Description: WPL Galvanizen Sump
Test Description: TCLP Volatiles
Collected: 05/05/93

Lab No: 04C
Method: SW846 8240 Test Code: TCLP_V

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.050
Carbon Tetrachloride	BDL	0.050
Chlorobenzene	BDL	0.050
Chloroform	0.64	0.10
1,2-Dichloroethane	BDL	0.050
1,1-Dichloroethene	BDL	0.050
Methyl ethyl ketone	BDL	0.50
Tetrachloroethylene	BDL	0.050
Trichloroethylene	BDL	0.050
Vinyl Chloride	BDL	0.10

SURROGATE	%RECOVERY	LIMITS
1,2-Dichloroethane d4	82	76 - 114
Toluene d8	99	88 - 110
4-Bromofluorobenzene	90	86 - 115

Notes and Definitions for this Report:

EXTRACTED 05/25/93
DATE RUN 05/25/93
ANALYST DB
UNITS mg/L

TEST RESULTS BY SAMPLE

Sample Description: WPL Galvanizen Sump Lab No: 04D
Test Description: TCLP Semivolatiles Method: SW846 8270 Test Code: TCLP_S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10
Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	3 Q	35 -	114
2-Fluorobiphenyl	42 Q	43 -	116
p-Terphenyl d14	44	33 -	141
2-Fluorophenol	77	21 -	100
Phenol d5	75	10 -	94
2,4,6-Tribromophenol	45	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS mg/L

Sample Description: WPL Galvanizen Sump Lab No: 04G
Test Description: Naphthalene Method: EPA 625 Test Code: 34696S
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
Naphthalene	BDL	20

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene-d5	3 Q	35 -	114
2-Fluorobiphenyl	42 Q	43 -	116

Sample Description: WPL Galvanizen Sump Lab No: 04G
Test Description: Naphthalene Method: EPA 625 Test Code: 34696S
Collected: 05/05/93

p-Terphenyl-d14	44	33	-	141

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS ug/L

Sample Description: WPL Galvanizen Sump Lab No: 04G
Test Description: Polychlorinated Biphenyls Method: SW846 8080 Test Code: PCB_W
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
PCB-1016	BDL	0.50
PCB-1221	BDL	0.50
PCB-1232	BDL	0.50
PCB-1242	BDL	0.50
PCB-1248	BDL	0.50
PCB-1254	BDL	0.50
PCB-1260	BDL	0.50

SURROGATE	%RECOVERY	LIMITS		
Tetrachloro-m-xylene	16 Q	24	-	154

Notes and Definitions for this Report:

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST IYE
UNITS mg/L

Arsenic
Method: EPA 206.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	< 0.11	mg/L	0.11		05/21/93	JSC

Barium
Method: EPA 208.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	1.1	mg/L	1.1		05/19/93	JSC

Cadmium
Method: EPA 213.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	< 0.044	mg/L	0.044		05/11/93	JSC

Chromium
Method: EPA 218.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	27	mg/L	2.2		05/12/93	JSC

Chromium - Hexavalent
Method: ASTMD1687A86

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04B	WPL Galvanizen Sump	<0.05	mg/L	0.05		05/17/93	LAK

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	<0.5	s.u.			05/13/93	LAK

Cyanide (Total)
Method: EPA 335.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04I	WPL Galvanizen Sump	0.053	mg/L	0.010		05/10/93	LAK

Ignitability (flashpoint)
Method: SW846 1010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	> 212	Degrees F			05/21/93	ROZ

Iron
Method: EPA 236.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	83000	mg/L	1100		05/17/93	JSC

Lead
Method: EPA 239.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	190	mg/L	22		05/13/93	JSC

Manganese
Method: EPA 243.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	520	mg/L	110		05/13/93	JSC

Mercury
Method: EPA 245.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	< 0.002	mg/L	0.002		05/13/93	JSC

Nickel
Method: EPA 249.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	2.6	mg/L	0.11		05/17/93	JSC

Oil and Grease
Method: EPA 413.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04F	WPL Galvanizen Sump	125	mg/L	1		05/07/93	SKB

Phenolics
Method: EPA 420.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04H	WPL Galvanizen Sump	326	ug/L	5		05/14/93	WBB

Reactive-Sulfide
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	<25	mg/Kg	25		05/10/93	LAK

Reactivity-CN
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04I	WPL Galvanizen Sump	<1.0	mg/Kg	1.0		05/10/93	LAK

Selenium
Method: EPA 270.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	< 0.11	mg/L	0.11		05/18/93	JSC

Silver
Method: EPA 272.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	0.63	mg/L	0.11		05/13/93	JSC

Specific Gravity
Method: ASTM D 1429

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	1.098	*			05/11/93	WBB

Sulfide
Method: EPA 376.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	<1.0	mg/L	1.0		05/10/93	LAK

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	< 0.11	mg/L	0.11		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	1.1	mg/L	1.1		05/19/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	< 0.044	mg/L	0.044		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	27	mg/L	1.1		05/22/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	190	mg/L	0.22		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	< 0.002	mg/L	0.002		05/13/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	2.6	mg/L	1.1		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	< 0.11	mg/L	0.11		05/18/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04A	WPL Galvanizen Sump	0.63	mg/L	0.11		05/13/93	JSC

Total Organic Carbon
Method: EPA 415.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04E	WPL Galvanizen Sump	130.0	mg/L			05/21/93	SUB

Total Solids
Method: EPA 160.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	9.13	%			05/17/93	WBB

Total Suspended Solids
Method: EPA 160.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	6410	mg/L	5		05/17/93	WBB

Zinc
Method: EPA 289.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04K	WPL Galvanizen Sump	3.7	mg/L	0.44		05/14/93	JSC

pH (Lab)
Method: EPA 150.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
04J	WPL Galvanizen Sump	<0.5	s.u.			05/13/93	LAK

The base-neutral surrogate recoveries for samples 93-05-071-02D, -02G, -03D, -03G, -04D, -04G, -05D, and -05G were out of control and re-extracts of these samples also had out of control surrogate recoveries. Therefore, the samples' matrieces may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-071-01A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The PCB surrogate recovery for sample 93-05-071-04G was out of control and re-extract of this sample also had an out of control surrogate recovery. Therefore, the sample matrix may interfere with the PCB analysis.

AMERICAN ANALYTICAL LABORATORIES, INC.

INDUSTRIAL HYGIENE AND ENVIRONMENTAL SCIENCES

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Laboratories, Inc.
840 S. Main Street
Akron, Ohio 44311
Attn: Tim Lavey
Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number:

Order #: 93-05-071
Date: 05/27/93 14:04
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/25/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
02	WPL #5 Surge Tank		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: WPL #5 Surge Tank
Test Description: Alkaline Leachate
Collected: 05/05/93

Lab No: 02B
Method: ASTM D3987 Test Code: ALKEXT

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/19/93
ANALYST WBB

Sample Description: WPL #5 Surge Tank
Test Description: TCLP Volatiles
Collected: 05/06/93

Lab No: 02C
Method: SW846 8240 Test Code: TCLP_V

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.050
Carbon Tetrachloride	BDL	0.050
Chlorobenzene	BDL	0.050
Chloroform	BDL	0.10
1,2-Dichloroethane	BDL	0.050
1,1-Dichloroethene	BDL	0.050
Methyl ethyl ketone	BDL	0.50
Tetrachloroethylene	BDL	0.050
Trichloroethylene	BDL	0.050
Vinyl Chloride	BDL	0.10

SURROGATE	%RECOVERY	LIMITS
1,2-Dichloroethane d4	84	76 - 114
Toluene d8	95	88 - 110
4-Bromofluorobenzene	98	86 - 115

Notes and Definitions for this Report:

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST DB
UNITS mg/L

American Analytical

TEST RESULTS BY SAMPLE

Sample Description: WPL #5 Surge Tank
Test Description: TCLP Semivolatiles
Collected: 05/06/93

Lab No: 02D
Method: SW846 8270 Test Code: TCLP_S

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10
Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene d5	9 Q	35 -	114
2-Fluorobiphenyl	139 Q	43 -	116
p-Terphenyl d14	82	33 -	141
2-Fluorophenol	71	21 -	100
Phenol d5	63	10 -	94
2,4,6-Tribromophenol	41	10 -	123

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS mg/L

Sample Description: WPL #5 Surge Tank
Test Description: Naphthalene
Collected: 05/05/93

Lab No: 02G
Method: EPA 625 Test Code: 34696S

PARAMETER	RESULT	LIMIT
Naphthalene	BDL	20

SURROGATE	%RECOVERY	LIMITS	
Nitrobenzene-d5	9 Q	35 -	114
2-Fluorobiphenyl	138 Q	43 -	116

TEST RESULTS BY SAMPLE

Sample Description: WPL #5 Surge Tank Lab No: 02G
Test Description: Naphthalene Method: EPA 625 Test Code: 34696S
Collected: 05/05/93

p-Terphenyl-d14	82	33	-	141

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS ug/L

Sample Description: WPL #5 Surge Tank Lab No: 02G
Test Description: Polychlorinated Biphenyls Method: SW846 8080 Test Code: PCB_W
Collected: 05/05/93

PARAMETER	RESULT	LIMIT
PCB-1016	BDL	0.50
PCB-1221	BDL	0.50
PCB-1232	BDL	0.50
PCB-1242	BDL	0.50
PCB-1248	BDL	0.50
PCB-1254	BDL	0.50
PCB-1260	BDL	0.50

SURROGATE	%RECOVERY	LIMITS		
Tetrachloro-m-xylene	32	24	-	154

Notes and Definitions for this Report:

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST IYE
UNITS mg/L

Arsenic
Method: EPA 206.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	< 0.11	mg/L	0.11		05/21/93	JSC

Barium
Method: EPA 208.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	< 1.1	mg/L	1.1		05/19/93	JSC

Cadmium
Method: EPA 213.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	< 0.044	mg/L	0.044		05/11/93	JSC

Chromium
Method: EPA 218.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	36	mg/L	1.1		05/12/93	JSC

Chromium - Hexavalent
Method: ASTMD1687A86

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02B	WPL #5 Surge Tank	<0.05	mg/L	0.05		05/17/93	LAK

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	<0.5	s.u.			05/13/93	LAK

Cyanide (Total)
Method: EPA 335.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02I	WPL #5 Surge Tank	<0.010	mg/L	0.010		05/10/93	LAK

Ignitability (flashpoint)
Method: SW846 1010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	> 212	Degrees F			05/21/93	ROZ

Iron
Method: EPA 236.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	96000	mg/L	1100		05/26/93	JSC

Lead
Method: EPA 239.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	< 0.22	mg/L	0.22		05/13/93	JSC

Manganese
Method: EPA 243.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	230	mg/L	11		05/13/93	JSC

Mercury
Method: EPA 245.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	< 0.002	mg/L	0.002		05/13/93	JSC

Nickel
Method: EPA 249.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	24	mg/L	1.1		05/17/93	JSC

Oil and Grease
Method: EPA 413.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02F	WPL #5 Surge Tank	3	mg/L	1		05/07/93	SKB

Phenolics
Method: EPA 420.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02H	WPL #5 Surge Tank	47	ug/L	5		05/14/93	WBB

Reactive-Sulfide
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	<25	mg/Kg	25		05/10/93	LAK

Reactivity-CN
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02I	WPL #5 Surge Tank	<1.0	mg/Kg	1.0		05/10/93	LAK

Selenium
Method: EPA 270.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	< 0.11	mg/L	0.11		05/18/93	JSC

Silver
Method: EPA 272.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	0.58	mg/L	0.11		05/13/93	JSC

Specific Gravity
Method: ASTM D 1429

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	1.266	*			05/11/93	WBB

Sulfide
Method: EPA 376.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	<1.0	mg/L	1.0		05/10/93	LAK

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	< 0.11	mg/L	0.11		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	< 1.1	mg/L	1.1		05/19/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	< 0.044	mg/L	0.044		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	36	mg/L	1.1		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	< 0.22	mg/L	0.22		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	< 0.002	mg/L	0.002		05/13/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	24	mg/L	1.1		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	< 0.11	mg/L	0.11		05/18/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02A	WPL #5 Surge Tank	0.58	mg/L	0.11		05/13/93	JSC

Total Organic Carbon
Method: EPA 415.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02E	WPL #5 Surge Tank	340.0	mg/L			05/21/93	SUB

Total Solids
Method: EPA 160.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	36.21	%			05/17/93	WBB

Total Suspended Solids
Method: EPA 160.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	9220	mg/L	5		05/17/93	WBB

Zinc
Method: EPA 289.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02K	WPL #5 Surge Tank	4.2	mg/L	0.44		05/14/93	JSC

pH (Lab)
Method: EPA 150.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
02J	WPL #5 Surge Tank	<0.5	s.u.			05/13/93	LAK

The base-neutral surrogate recoveries for samples 93-05-071-02D, -02G, -03D, -03G, -04D, -04G, -05D, and -05G were out of control and re-extracts of these samples also had out of control surrogate recoveries. Therefore, the samples' matrieces may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-071-01A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The PCB surrogate recovery for sample 93-05-071-04G was out of control and re-extract of this sample also had an out of control surrogate recovery. Therefore, the sample matrix may interfere with the PCB analysis.

AMERICAN ANALYTICAL LABORATORIES, INC.

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Phone: (216) 535-1300

WCI Steel, Incorporated
1040 Pine Avenue, S.E.
Warren, Ohio 44482-1550

Attn: Keith McLaughlin

Purchase Order: 351346
Invoice Number:

Order #: 93-05-071
Date: 05/27/93 14:04
Work ID: Semi-Annual Waste Stream
Date Received: 05/06/93
Date Completed: 05/25/93

Client Code: WCISTEEL

SAMPLE IDENTIFICATION

Sample Number	Sample Description	Sample Number	Sample Description
03	WPL #6 Sump		

Definitions : BDL - Below Detection Limit
Data Flags : J - Value measured below detection limit
B - Analyte also detected in blank

Certified By
T. J. Lavey

Sample Description: WPL #6 Sump
Test Description: Alkaline Leachate
Collected: 05/05/93

Lab No: 038
Method: ASTM D3987 Test Code: ALKEXT

PARAMETER

Alkaline Leaching Procedure

Notes and Definitions for this Report:

DATE RUN 05/19/93
ANALYST WBB

Sample Description: WPL #6 Sump
Test Description: TCLP Volatiles
Collected: 05/06/93

Lab No: 03C
Method: SW846 8240 Test Code: TCLP_V

PARAMETER	RESULT	LIMIT
Benzene	BDL	0.050
Carbon Tetrachloride	BDL	0.050
Chlorobenzene	BDL	0.050
Chloroform	BDL	0.10
1,2-Dichloroethane	BDL	0.050
1,1-Dichloroethene	BDL	0.050
Methyl ethyl ketone	BDL	0.50
Tetrachloroethylene	BDL	0.050
Trichloroethylene	BDL	0.050
Vinyl Chloride	BDL	0.10

SURROGATE	%RECOVERY	LIMITS
1,2-Dichloroethane d4	84	76 - 114
Toluene d8	96	88 - 110
4-Bromofluorobenzene	97	86 - 115

Notes and Definitions for this Report:

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST DB
UNITS mg/L

American Analytical

TEST RESULTS BY SAMPLE

Sample Description: WPL #6 Sump
Test Description: TCLP Semivolatiles
Collected: 05/06/93

Lab No: 03D
Method: SW846 8270 Test Code: TCLP_S

PARAMETER	RESULT	LIMIT
o-Cresol	BDL	0.020
m&p-Cresol	BDL	0.020
1,4-Dichlorobenzene	BDL	0.020
2,4-Dinitrotoluene	BDL	0.020
Hexachlorobenzene	BDL	0.020
Hexachloro-1,3-butadiene	BDL	0.020
Hexachloroethane	BDL	0.020
Nitrobenzene	BDL	0.020
Pentachlorophenol	BDL	0.10
Pyridine	BDL	0.020
2,4,6-Trichlorophenol	BDL	0.020
2,4,5-Trichlorophenol	BDL	0.020

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene d5	9 Q	35	-	114
2-Fluorobiphenyl	119 Q	43	-	116
p-Terphenyl d14	82	33	-	141
2-Fluorophenol	98	21	-	100
Phenol d5	98 Q	10	-	94
2,4,6-Tribromophenol	75	10	-	123

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS mg/L

Sample Description: WPL #6 Sump
Test Description: Naphthalene
Collected: 05/05/93

Lab No: 03G
Method: EPA 625 Test Code: 34696S

PARAMETER	RESULT	LIMIT
Naphthalene	BDL	20

SURROGATE	%RECOVERY	LIMITS		
Nitrobenzene-d5	9 Q	35	-	114
2-Fluorobiphenyl	119 Q	43	-	116

Sample Description: WPL #6 Sump
Test Description: Naphthalene
Collected: 05/05/93

Lab No: 03G
Method: EPA 625
Test Code: 34696S

p-Terphenyl-d14	81	33 -	141

Notes and Definitions for this Report:

EXTRACTED 05/13/93
DATE RUN 05/17/93
ANALYST IYE
UNITS ug/L

Sample Description: WPL #6 Sump
Test Description: Polychlorinated Biphenyls
Collected: 05/05/93

Lab No: 03G
Method: SW846 8080
Test Code: PCB_W

PARAMETER	RESULT	LIMIT
PCB-1016	BDL	0.50
PCB-1221	BDL	0.50
PCB-1232	BDL	0.50
PCB-1242	BDL	0.50
PCB-1248	BDL	0.50
PCB-1254	BDL	0.50
PCB-1260	BDL	0.50

SURROGATE	%RECOVERY	LIMITS	
Tetrachloro-m-xylene	58	24 -	154

Notes and Definitions for this Report:

EXTRACTED 05/14/93
DATE RUN 05/14/93
ANALYST IYE
UNITS mg/L

Arsenic
Method: EPA 206.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.11	mg/L	0.11		05/21/93	JSC

Barium
Method: EPA 208.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 1.1	mg/L	1.1		05/19/93	JSC

Cadmium
Method: EPA 213.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.044	mg/L	0.044		05/11/93	JSC

Chromium
Method: EPA 218.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	200	mg/L	8.9		05/12/93	JSC

Chromium - Hexavalent
Method: ASTMD1687A86

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	WPL #6 Sump	<0.05	mg/L	0.05		05/17/93	LAK

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<0.5	s.u.			05/13/93	LAK

Cyanide (Total)
Method: EPA 335.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03I	WPL #6 Sump	<0.010	mg/L	0.010		05/10/93	LAK

Ignitability (flashpoint)
Method: SW846 1010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	> 212	Degrees F			05/20/93	ROZ

Iron
Method: EPA 236.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	100000	mg/L	1100		05/17/93	JSC

Lead
Method: EPA 239.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.22	mg/L	0.22		05/13/93	JSC

Manganese
Method: EPA 243.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	850	mg/L	110		05/13/93	JSC

Mercury
Method: EPA 245.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.002	mg/L	0.002		05/13/93	JSC

Nickel
Method: EPA 249.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	66	mg/L	1.1		05/17/93	JSC

Oil and Grease
Method: EPA 413.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03F	WPL #6 Sump	13	mg/L	1		05/07/93	SKB

Phenolics
Method: EPA 420.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03H	WPL #6 Sump	<5	ug/L	5		05/14/93	WBB

Reactive-Sulfide
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<25	mg/Kg	25		05/10/93	LAK

Reactivity-CN
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03I	WPL #6 Sump	<1.0	mg/Kg	1.0		05/10/93	LAK

Selenium
Method: EPA 270.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.11	mg/L	0.11		05/18/93	JSC

Silver
Method: EPA 272.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	0.74	mg/L	0.11		05/13/93	JSC

Specific Gravity
Method: ASTM D 1429

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	1.167	*			05/11/93	WBB

Sulfide
Method: EPA 376.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<1.0	mg/L	1.0		05/10/93	LAK

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.11	mg/L	0.11		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 1.1	mg/L	1.1		05/19/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.044	mg/L	0.044		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	200	mg/L	1.1		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.22	mg/L	0.22		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.002	mg/L	0.002		05/13/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	66	mg/L	1.1		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.11	mg/L	0.11		05/18/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	0.74	mg/L	0.11		05/13/93	JSC

Total Organic Carbon
Method: EPA 415.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03E	WPL #6 Sump	390.0	mg/L			05/21/93	SUB

Total Solids
Method: EPA 160.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	18.50	%			05/17/93	WBB

Total Suspended Solids
Method: EPA 160.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	96	mg/L	5		05/17/93	WBB

Zinc
Method: EPA 289.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	5.1	mg/L	0.44		05/14/93	JSC

pH (Lab)
Method: EPA 150.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<0.5	s.u.			05/13/93	LAK

The base-neutral surrogate recoveries for samples 93-05-071-02D, -02G, -03D, -03G, -04D, -04G, -05D, and -05G were out of control and re-extracts of these samples also had out of control surrogate recoveries. Therefore, the samples' matrieces may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-071-01A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The PCB surrogate recovery for sample 93-05-071-04G was out of control and re-extract of this sample also had an out of control surrogate recovery. Therefore, the sample matrix may interfere with the PCB analysis.

Arsenic
Method: EPA 206.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.11	mg/L	0.11		05/21/93	JSC

Barium
Method: EPA 208.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 1.1	mg/L	1.1		05/19/93	JSC

Cadmium
Method: EPA 213.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.044	mg/L	0.044		05/11/93	JSC

Chromium
Method: EPA 218.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	200	mg/L	8.9		05/12/93	JSC

Chromium - Hexavalent
Method: ASTMD1687A86

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03B	WPL #6 Sump	<0.05	mg/L	0.05		05/17/93	LAK

Corrosivity - Soil pH
Method: SW846 9045

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<0.5	s.u.			05/13/93	LAK

Cyanide (Total)
Method: EPA 335.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03I	WPL #6 Sump	<0.010	mg/L	0.010		05/10/93	LAK

Ignitability (flashpoint)
Method: SW846 1010

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	> 212	Degrees F			05/20/93	ROZ

Iron
Method: EPA 236.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	100000	mg/L	1100		05/17/93	JSC

Lead
Method: EPA 239.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.22	mg/L	0.22		05/13/93	JSC

Manganese
Method: EPA 243.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	850	mg/L	110		05/13/93	JSC

Mercury
Method: EPA 245.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.002	mg/L	0.002		05/13/93	JSC

Nickel
Method: EPA 249.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	66	mg/L	1.1		05/17/93	JSC

Oil and Grease
Method: EPA 413.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03F	WPL #6 Sump	13	mg/L	1		05/07/93	SKB

Phenolics
Method: EPA 420.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03H	WPL #6 Sump	<5	ug/L	5		05/14/93	WBB

Reactive-Sulfide
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<25	mg/Kg	25		05/10/93	LAK

Reactivity-CN
Method: SW846 CH 7

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03I	WPL #6 Sump	<1.0	mg/Kg	1.0		05/10/93	LAK

Selenium
Method: EPA 270.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	< 0.11	mg/L	0.11		05/18/93	JSC

Silver
Method: EPA 272.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	0.74	mg/L	0.11		05/13/93	JSC

Specific Gravity
Method: ASTM D 1429

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	1.167	*			05/11/93	WBB

Sulfide
Method: EPA 376.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<1.0	mg/L	1.0		05/10/93	LAK

TCLP Metal - Arsenic
Method: EPA 7060

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.11	mg/L	0.11		05/21/93	JSC

TCLP Metal - Barium
Method: EPA 7080

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 1.1	mg/L	1.1		05/19/93	JSC

TCLP Metal - Cadmium
Method: EPA 7130

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.044	mg/L	0.044		05/11/93	JSC

TCLP Metal - Chromium
Method: EPA 7190

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	200	mg/L	1.1		05/12/93	JSC

TCLP Metal - Lead
Method: EPA 7420

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.22	mg/L	0.22		05/13/93	JSC

TCLP Metal - Mercury
Method: EPA 7471

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.002	mg/L	0.002		05/13/93	JSC

TCLP Metal - Nickel
Method: EPA 7520

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	66	mg/L	1.1		05/17/93	JSC

TCLP Metal - Selenium
Method: EPA 7740

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	< 0.11	mg/L	0.11		05/18/93	JSC

TCLP Metal - Silver
Method: EPA 7760

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03A	WPL #6 Sump	0.74	mg/L	0.11		05/13/93	JSC

Total Organic Carbon
Method: EPA 415.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03E	WPL #6 Sump	390.0	mg/L			05/21/93	SUB

Total Solids
Method: EPA 160.3

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	18.50	%			05/17/93	WBB

Total Suspended Solids
Method: EPA 160.2

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	96	mg/L	5		05/17/93	WBB

Zinc
Method: EPA 289.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03K	WPL #6 Sump	5.1	mg/L	0.44		05/14/93	JSC

pH (Lab)
Method: EPA 150.1

Samp	Sample Description	Result	Units	Limit	Prepared	Analyzed	By
03J	WPL #6 Sump	<0.5	s.u.			05/13/93	LAK

The base-neutral surrogate recoveries for samples 93-05-071-02D, -02G, -03D, -03G, -04D, -04G, -05D, and -05G were out of control and re-extracts of these samples also had out of control surrogate recoveries. Therefore, the samples' matrieces may interfere with the base-neutral fraction analysis.

The acid surrogate recoveries for sample 93-05-071-01A were out of control and re-extract of this sample also had out of control surrogate recoveries. Therefore, the sample matrix may interfere with the acid fraction analysis.

The PCB surrogate recovery for sample 93-05-071-04G was out of control and re-extract of this sample also had an out of control surrogate recovery. Therefore, the sample matrix may interfere with the PCB analysis.