BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR ADJUSTED	)	(RCRA DeListing
STANDARD FROM 35 ILL. ADM.	)	Adjusted Standard)
CODE 721.132	)	

US EPA RECORDS CENTER REGION 5
1000283

NOTICE OF FILING

To: See Attached Service List

PLEASE TAKE NOTICE that on November 21, 1994, we filed with the Office of the Clerk of the Pollution Control Board, Keystone's Response to the Board's Order for Additional Information, copies of which are hereby served upon you.

KEYSTONE STEEL AND WIRE COMPANY

By: Karen Prena
One of its attorneys

CERTIFICATE OF SERVICE

I, Karen L. Prena, certify that I have served the attached Keystone's Response to the Board's Order for Additional Information by regular mail to parties on the attached service list on November 21, 1994.

Karen Prena
Karen L. Prena

DATED: November 21, 1994

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

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Matthew J. Dunn, Esq.
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Robert Sherschligt
Assistant Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
77 West Jackson Boulevard
Chicago, IL 60604

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR	)	(RCRA Delisting
ADJUSTED STANDARD FROM	)	Adjusted Standard)
35 ILL. ADM. CODE §721.132	)	

KEYSTONE'S RESPONSE TO THE BOARD'S ORDER FOR ADDITIONAL INFORMATION IN SUPPORT OF ITS OCTOBER 24, 1994 MOTION FOR MODIFICATION

Petitioner Keystone Steel and Wire Company ("Keystone"), by its attorneys, hereby submits its response to the Board's Order of November 3, requesting additional information in order to evaluate Keystone's Motion for Modification dated October 24, 1994.

In support of this motion, Keystone states as follows:

1. On October 24, 1994, Keystone filed a motion with the Board requesting modification of the Board's March 17, 1994 Order to include within the scope of the RCRA Adjusted Standard certain contaminated wastes recently discovered within an area described as the "Staging Area Waste Pile," also referred to as the "New Solid Waste Management Unit" or "New SWMU." This additional area of contamination was discovered during remediation work conducted by Keystone as part of an IEPA-approved closure plan.

2. On November 3, 1994, the Board issued an Order requesting additional information concerning the nature, source and treatability of the newly discovered waste in order to better evaluate Keystone's motion.

3. In response to the Board's request, Keystone's environmental consultant, ERM-North Central, has prepared a report providing information on the following issues:

(1) the similarities between the waste at the New SWMU and the waste covered by the Adjusted Standard; (2) the differences between the waste at the New SWMU and the waste covered by the Adjusted Standard; (3) the source of the waste and its comparison to the other sources of waste covered by the Adjusted Standard; and (4) the treatability of the waste from the New SWMU under the guidelines of the Adjusted Standard. A copy of the report, ("ERM Report") is attached as Appendix 1.

4. Analytical results detailed in the ERM Report establish that the contaminated soils in the New SWMU are similar in color, texture, total metals content and leachable (TCLP) metals content to the K-062-listed hazardous waste sediments currently undergoing treatment and delisting under the Adjusted Standard. Relative concentration of the contaminants of concern -- cadmium, chromium, lead and zinc -- are also similar.

5. The contaminated waste in the New SWMU differs from the K-062 sediments only in that the material is mixed with additional rubble, slag and railroad ballast and native soils. This additional material does not pose a problem for treating the waste following procedures established under the Adjusted Standard. The waste at the New SWMU can be treated under the same treatment and verification testing protocols established by the Board's Adjusted Standard Order, and described in Keystone's Petition for Delisting.

6. As detailed in the ERM Report, the contaminated wastes in the New SWMU are dredging spoils from the South Ditch area undergoing remediation under the Adjusted Standard. The waste was excavated from the South Ditch during construction activities that took place approximately 20 to 25 years ago. The contaminated South Ditch sediments, along with construction debris, were then deposited in the area of the New SWMU. The contaminated sediments in the South Ditch were included as K062 hazardous waste within the scope of the

RCRA Adjusted Standard originally issued by the Board. Therefore, ERM and Keystone have concluded that the source of the waste at the New SWMU is the same as the source of the waste covered by the Adjusted Standard.

7. A copy of this motion has been served on the Illinois EPA for their review and comment. Illinois EPA informed the Board on October 31, 1994 that it had no objection to, and in fact supported, Keystone's motion.

Wherefore, Keystone respectfully renews its request that the Board grant Keystone's motion for modification of the Board's March 17, 1994 Order to include the New SWMU within the scope of the RCRA Adjusted Standard.

Respectfully submitted,

KEYSTONE STEEL & WIRE COMPANY

By: Karen Prena
One of Its Attorneys

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive, Suite 6100
Chicago, Illinois 60601

Of Counsel:

Ralph P. End, Esq.
General Counsel
Keystone Consolidated Industries
Three Lincoln Centre
5430 LBJ Freeway, Suite 1740
Dallas, Texas 75240

DATED: November 21, 1994

CHARACTERISTICS OF NEW SWMU
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

NOVEMBER 1994

JAMES W. POLICH, P.E.

18 November 1994
DATE

PREPARED BY:

ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
540 LAKE COOK ROAD, SUITE 300
DEERFIELD, ILLINOIS 60015

PROJECT NO. 92136

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1.0 INTRODUCTION

Keystone is in the process of implementing an IEPA-approved closure plan at its Bartonville, Illinois facility. The closure plan includes remediation of seven Hazardous Waste Management Units and one Solid Waste Management Unit containing K-062 listed contaminated sediments (collectively, the "Adjusted Standard Units"). Treatment of these sediments is covered under the RCRA Adjusted Standard. In the course of constructing a staging pad for this remediation, Keystone discovered an additional area of suspected contamination near the southeast corner of the planned staging pad area, also known as the Temporary Container Storage Area ("TCSA"). See Figure 1. The staging pad was relocated and the area of suspected contamination was evaluated. Based on the results of that evaluation, ERM-North Central, Inc. ("ERM") has concluded that the waste materials located at the Staging Area Waste Pile represent a Solid Waste Management Unit ("SWMU") subject to remediation along with the other Adjusted Standard Units on-site. Therefore, that area is hereinafter referred to as the "New SWMU."

The purpose of this report is to summarize the results of ERM's investigation of the contaminated wastes located in the New SWMU. As part of its review of Keystone's motion to include this contaminated material under the RCRA Adjusted Standard, the Illinois Pollution Control Board has requested additional information concerning the nature, source and treatability of the contaminated wastes. Specifically, the Board requested information on the following issues:

(1) The similarities between the waste at the New SWMU, and the waste covered by the Adjusted Standard;

(2) The differences between the waste at the New SWMU and the waste covered by the Adjusted Standard;

(3) The source of the waste and the similarities and differences between the source of the waste at the New SWMU and the waste covered by the Adjusted Standard; and

(4) The amenability of the waste from the New SWMU to the treatment described in the Adjusted Standard.

Wastes in the New SWMU are physically and chemically similar in color, texture, and total and Toxicity Characteristic Leachate Procedure ("TCLP") metals concentrations to the K-062 sediments covered by the Adjusted Standard. The relative concentrations of cadmium, chromium, lead and zinc are also similar. Therefore, it is ERM's opinion that the wastes contained within the New SWMU exhibit a contaminant fingerprint matching the K-062 sediments covered by the Adjusted Standard. The composition of the waste differs only in the amount of slag, rubble, railroad ballast, and native soils mixed within the K-062 sediments. However, this additional waste will not preclude successful treatment of the contaminated material under the same treatment method and standards provided under the Adjusted Standard. To provide assurance of adequate treatment, treated wastes will be subject to the same verification sampling outlined in the Adjusted Standard. Treated wastes not meeting the delisting criteria would be retreated in accordance with the Adjusted Standard and IEPA-approved closure plan.

ERM and Keystone have concluded that the contaminated wastes in the New SWMU were transferred from the South Ditch area during the course of construction conducted around 1970. The composition of wastes in the New SWMU supports this conclusion, as the contaminated sediments at the New SWMU are mixed with rubble, railroad ballast and native soils obviously excavated during construction activities. Total lead levels detected in the New SWMU wastes are similar to those detected in the North and South Dredge Piles and in the South Ditch. This conclusion is also supported by volume calculations showing that the amount of material excavated from the South Ditch approximately equals the estimated amount of contaminated waste found at the New SWMU, as well as by a review of historic aerial photographs of the Keystone site.

2.0 SIMILARITIES BETWEEN THE WASTE WITHIN THE NEW SWMU AND THE WASTES SUBJECT TO THE ADJUSTED STANDARD

As an initial matter, the contaminated wastes found within the New SWMU are similar to the K-062 sediments covered by the Adjusted Standard in physical characteristics such as color and texture, as well as chemical composition as shown by total and TCLP metals concentrations. This evaluation is based on field observations and a comparison of the analytical results from the 1987, 1990 and 1993 sediment sampling events for the wastes covered under the Adjusted Standard, and the 1994 sampling of the New SWMU.[1] The K-

[1] ERM's quantitative analysis is based upon the data in the following ERM reports: (1) TCSA Baseline and Waste Pile Soil Sampling Report dated May 24, 1994; (2) the RCRA (continued...)

062 sediments typically have an orange tint and a granular texture when exposed to the air and allowed to dry. The contaminated wastes in the New SWMU have a similar color and texture. Photographs 1 through 3 show the stained soils that were discovered during Keystone's construction of the Temporary Container Storage Area. See Appendix A. The visual similarities in color and texture between the stained soils found at the New SWMU and sediments in the Retention Reservoir (that are covered under the Adjusted Standard) can be noted by comparing Photographs 1 through 3 to Photograph 4.

ERM has evaluated the total and TCLP metals concentrations of the contaminated wastes within the New SWMU and has found that these concentrations are within the same family of values as the K062 contaminated sediments covered under the Adjusted Standard. See Table 1, Appendix B, which provides a comparison of the total cadmium, chromium, lead, and zinc concentrations detected during the 1987 sediment sampling of the North Ditch, Mid-Mill Ditch, South Ditch-North Half, South Ditch-South Half, North Dredge Pile, South Dredge Pile, Surface Drainage Ditch, and the Retention Reservoir (i.e., the "Tested Units").[2] A graphical representation of the Table 1 data is provided in Figure 1. This data indicates that the concentrations of the contaminants of concern (i.e., cadmium, chromium, lead, and zinc) are either below or within the range of values detected in the K-062 sediments covered by the Adjusted Standard.

1(...continued)
Delisting Adjusted Standard Petition, and Amendments, dated August 2, 1993 and August 25, 1993, respectively; and (3) the Revised Phase II Closure Plan, dated June 15, 1992.

[2]Note that samples were not collected from the Lower South Ditch during this sampling event.

The following chart, excerpted from Table 1, compares the maximum concentrations of contaminants of concern detected in the New SWMU samples with the levels found within the Tested Units.

Comparison of Maximum Concentrations				
Unit	**Cadmium**	**Chromium**	**Lead**	**Zinc**
Tested Units	86.0	2,420	44,900	3,640
New SWMU	2.2	270	19,000	570

Note: Results expressed in mg/kg.

As shown, the maximum values detected within the New SWMU do not exceed those of the Tested Units. Therefore, the treatment technology utilized to successfully solidify and stabilize the contaminants of concern within the K-062 sediment will also be suitable for the wastes within the New SWMU.

In general, sample results for the New SWMU indicate that the average cadmium and zinc concentrations were detected at essentially background levels. Chromium and lead concentrations were detected at slightly elevated levels, indicating that the materials contained within the New SWMU are characteristic of the K-062 sediments. As with the K-062 sediments, lead is the predominant contaminant in the waste at the New SWMU, as shown in the following table.

Comparison of Average Total Concentrations at New SWMU with Background of Native Soil Conditions				
Data Set	**Cadmium**	**Chromium**	**Lead**	**Zinc**
Background	2.7	23	795	258
New SWMU	1.5	129	4,123	364

Notes: (1) Results expressed in mg/kg.

(2) Information excerpted from Table 1 and Table A-7 attached.

Data presented in Table 2 , Appendix B, indicates that minimum, maximum, and average total lead concentrations found at the New SWMU are comparable to those found in the Adjusted Standard Units. A comparison of TCLP lead results, provided in Table 3, Appendix B, also demonstrates that the range of values detected within the New SWMU (0.053 to 30.0 mg/l) are typical of those detected in the Adjusted Standard Units (<0.001 to 28.0 mg/l). (Supporting data for the tables referenced in this section have been provided in Appendix C of this report).

In summary, the contaminated wastes located at the New SWMU are physically and chemically similar in color, texture, and total and TCLP metals concentrations to the sediments covered by the Adjusted Standard. Relative concentrations of cadmium, chromium, lead, and zinc are also similar. The wastes within the New SWMU exhibit a contaminant fingerprint that matches the sediments originally covered by the Adjusted Standard.

3.0 DIFFERENCES BETWEEN THE WASTE AT THE NEW SWMU AND THE WASTE COVERED UNDER THE ADJUSTED STANDARD

The waste within the New SWMU is a mixture of K-062 listed hazardous waste sediments and nonhazardous constituents such as slag, rubble, railroad ballast, and native soils. The additional nonhazardous constituents represent the basic difference between the wastes at the New SWMU and the Adjusted Standard Units. However, this additional non-hazardous material will not affect the treatment technology required to successfully achieve the delisting criteria for the contaminants of concern.

4.0 A COMPARISON OF THE SOURCE OF THE WASTE AT THE NEW SWMU WITH THE SOURCE OF THE WASTE COVERED UNDER THE ADJUSTED STANDARD

ERM and Keystone have concluded that the wastes within the New SWMU came from the South Ditch during the construction of the Divider Dike south of Pump Station No. 1. The following sequence of events, based on aerial photographs and recollections of employees at the plant, supports that conclusion.

In 1968, construction of the Retention Reservoir began. During construction, the area immediately north of the reservoir was cleared and the soils used to construct the dikes and

berms around the Retention Reservoir. These activities proceeded until approximately 1969. The area north of the Retention Reservoir is formally known as the South Borrow Area.[3]

Later that year, construction of a Divider Dike south of Pump Station No. 1 began. This dike was constructed to allow the South Ditch to act as a pump well for Pump House No. 1. The materials dredged from the South Ditch during this construction could have been placed either south of the Divider Dike or along the east edge of the South Borrow Area (i.e., the New SWMU). The facts set forth in the following paragraphs establish that those dredge spoils were in fact placed within the New SWMU, rather than south of the Divider Dike.

An engineering estimate was conducted to determine the approximate quantity of material that would have been dredged from the South Ditch. A total of approximately 2,220 cubic yards was calculated. If it is assumed that contamination has migrated six inches into the native soils below the New SWMU, then an additional 540 cubic yards would be contaminated and also need to be removed. This assumption is supported by the data used to determine the extent of migration into the native soils below the Adjusted Standard units. Therefore, the total quantity of wastes to be excavated and treated would equal 2,760 cubic yards. Supporting calculations are provided in Appendix D. In the "TCSA Baseline and Waste Pile Soil Sampling" report, ERM-North Central estimated the quantity of wastes contained within the New SWMU as 2,560 cubic yards. This estimate is based upon probe

[3]It is important to note that the trees were cleared in this area which allowed access to the east edge of the South Borrow Area. Therefore, the materials within the New SWMU could not have been relocated prior to 1969, due to access limitations. Figure 3 provides a site map of this area.

depths taken during the 1994 sediment sampling used to delineate the extent of contamination. Figure 4 provides a plot of the analytical results and the corresponding depths. In addition, Figure 5 provides an isopach of this data. The amount of material excavated from the South Ditch and the amount of waste present in the New SWMU thus match with only a negligible 10% variation.

During construction, the contractor was required to key the dike into the side embankments. The east embankment is covered with railroad ballast from the Chicago and Northwestern Railroad, and the west embankment is covered with slag and fill material (i.e., rubble). These materials would have been excavated and mixed with the sediments during these activities. This would explain the high slag, rubble, railroad ballast, and native soil content present within the wastes in the New SWMU.

Furthermore, the total lead levels detected in the New SWMU are similar to those detected in the North and South Dredge Pile. The materials within these dredge piles were dredged from the South Ditch in the mid-1970s to improve flow to Pump House No. 1. In addition, these materials also are physically similar to those in the New SWMU which further supports the conclusion that the wastes in the New SWUM were dredged from the South Ditch.

As shown on Photograph 6, the New SWMU consists of several small mounds along the east edge of the South Borrow Area. This hummocky terrain is not noted on aerial photographs prior to 1969. Furthermore, as shown in Photographs 5 and 6, the size of the

trees growing along and in the New SWMU also suggest that these wastes were relocated approximately 20 to 25 years ago. This further links the construction of the Divider Dike to the New SWMU.

Based on the data and observations given above, ERM-North-Central and Keystone have concluded that the wastes within the New SWMU came from the South Ditch. Furthermore, there is no supporting evidence, based on aerial photographs or on-site visual observations, that these wastes were deposited south of the Divider Dike.

5.0 TREATABILITY OF THE WASTE

Based on the characteristics of the contaminated wastes within the New SWMU, ERM had determined that treatment of the waste following the Adjusted Standard would be effective and appropriate. As discussed in Section 2.0, the materials physically and chemically behave similar to the K-062 sediments and, therefore, would be amenable to the same treatment. As shown on the table below, the maximum cadmium, chromium, and zinc TCLP values detected in waste samples from the New SWMU do <u>not</u> exceed the delisting criteria. Lead is the only contaminant of concern in the waste in the New SWMU.

Comparison of Maximum TCLP Contaminant Levels at New SWMU With Delisting Criteria				
Data Set	**Cadmium**	**Chromium**	**Lead**	**Zinc**
Delisting Criteria	0.092	1.64	0.246	115
New SWMU	0.02	<0.010	30	2.5

Note: (1) Results expressed in mg/l.

(2) Data is obtained from Table A-2 and delisting criteria from the Board's Adjusted Standard Order

The lead concentration of the waste in the New SWMU is within the same range of concentration of the K-062 wastes to be treated under the Adjusted Standard. Keystone's Adjusted Standard Petition therefore demonstrates that the treatment technology used to treat the K-062 sediments within the Retention Reservoir can successfully solidify and stabilize the waste in the New SWMU.

To provide further assurance of adequate treatment, the waste in the New SWMU will be subject to verification sampling as outlined in the Adjusted Standard. Materials that do not meet the delisting criteria will be retreated following the criteria set forth in the Board's Adjusted Standard Order.

6.0 CONCLUSION

The contaminated wastes within the New SWMU are similar to the sediments covered by the Adjusted Standard, differing only in the amount of slag, rubble, railroad ballast, and native soils mixed within the K-062 sediments. ERM-North Central and Keystone are confident that the wastes were excavated from the South Ditch and, therefore, are the same material as covered by the Board's Adjusted Standard Order. Furthermore, the relative proportions of nonhazardous constituents to K-062 sediments are not anticipated to affect the treatment method used to accomplish the delisting requirements. Therefore, the treatment technology provided under the Board Order is appropriate.

Keystone is requesting that the IPCB grant the October 24, 1994 motion to modify the March 17, 1994 Board Order to include the New SWMU. If this motion is granted, then these materials will be incorporated into Keystone's multi-year closure plan and subject to the conditions stipulated in the Adjusted Standard and the July 2, 1993 Consent Order with the Attorney General of the State of Illinois. The soils that underlay the New SWMU will also be subject to clean closure.

Photograph 1 Looking south at the new SWMU. The stakes on the left-hand side of the photograph are approximately 30 feet apart and represent sample locations. Note the orange tint to the soils, which is typical of the sediments covered by the adjusted standard.

Photograph 2 Looking north away from the new SWMU. The stakes in the center of the photograph are approximately 30 feet apart and represent sample locations.

Photograph 3 Close-up of the stained soils. The orange tint and granular texture is typical of the sediments covered by the adjusted standard.

Photograph 4 Comparison photograph of the untreated sediments that were contained in the Retention Reservoir and covered by the adjusted standard after treatment. Note the orange tint and the granular texture.

Photograph 5 Looking southeast towards the new SWMU. Note the size of the trees in the background. These trees are growing along and within the new SWMU and, therefore, the contaminated materials were dumped prior to revegetation of this area.

Photograph 6 Looking north along the new SWMU. Note the size and location of the trees and hummocky terrain. This type of terrain is typical of an area where multiple loads have been dumped. As can be expected, the maximum total lead levels were detected in the center of these mounds.

APPENDIX B

TABLES AND FIGURES

TABLE 1

TOTAL METALS ANALYTICAL RESULTS[1]
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Unit	Total Cadmium[2]			Total Chromium[2]			Total Lead[2]			Total Zinc		
	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.	Min.	Avg.	Max.
North Ditch	1.7	2.6	3.5	35	88	178	137	418	900	--	--	--
Mid-Mill Ditch	2.2	6.3	14.0	280	880	2,420	879	3,092	5,050	--	--	--
South Ditch-North Half[3]	5.4	7.3	14.0	387	469	535	12,000	12,667	13,600	--	--	--
South Ditch-South Half	2.8	8.5	22.0	400	523	613	6,040	12,710	17,800	--	--	--
North Dredge Pile	5.1	8.6	11.0	143	193	249	1,660	5,643	7,980	--	--	--
South Dredge Pile	4.6	6.7	8.7	211	265	311	3,940	6,063	7,250	--	--	--
Surface Drainage Ditch	0.98	17.0	86.0	47	97	152	2,330	22,435	44,900	--	--	--
Retention Reservoir[4]	0.7	1.3	2.3	810	1,115	1,290	9,510	11,769	13,200	--	--	--
Retention Reservoir[5]	0.94	1.7	4.9	67.6	675	870	4,650	7,148	8,880	1,640	2,528	3,640
Lower South Ditch[6]	--	--	--	--	--	--	--	--	--	--	--	--
New SWMU	0.38	1.5	2.2	41	129	270	100	4,123	19,000	130	364	570

Notes:

(1) Results expressed in mg/kg.
(2) The total results for the above units, excluding the new SWMU, were included in Appendix A of the July 15, 1992 Revised Phase II Closure Plan.
(3) The total lead results of 106,000 mg/kg was considered a data outlier and not included in this evaluation.
(4) 1987 data reported in Appendix A of the July 15, 1992 Revised Phase II Closure Plan.
(5) 1993 data reported in the August 2, 1993 RCRA Delisting Adjusted Standard Petition.
(6) Total metals analysis are not available for this unit.

TABLE 2

TOTAL LEAD ANALYTICAL RESULTS[1]
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Unit	Total Lead[2]		
	Min.	Avg.	Max.
North Ditch	137	418	900
Mid-Mill Ditch	879	3,092	5,050
South Ditch-North Half[3]	12,000	12,667	13,600
South Ditch-South Half	6,040	12,710	17,800
North Dredge Pile	1,660	5,643	7,980
South Dredge Pile	3,940	6,063	7,250
Surface Drainage Ditch	2,330	22,435	44,900
Retention Reservoir[4]	9,510	11,769	13,200
Retention Reservoir[5]	4,650	7,035	8,880
Lower South Ditch[6]	--	--	--
New SWMU	100	4,123	19,000

Notes:

(1) Results are expressed in mg/kg.
(2) The total lead results for the above units, excluding the new SWMU, were included in Appendix A of the June 15, 1992 Revised Phase II Closure Plan.
(3) The analytical result of 106,000 mg/kg was considered a data outlier and not included in this evaluation.
(4) 1987 data reported in Appendix A of the July 15, 1992 Revised Phase II Closure Plan.
(5) 1993 data reported in the August 2, 1993 RCRA Delisting Adjusted Standard Petition.
(6) Total lead data is not available for this unit.

TABLE 3

TCLP LEAD ANALYTICAL RESULTS[1]
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Unit	TCLP Lead[2]		
	Min.	Avg.	Max.
North Ditch	0.720	0.775	0.830
Mid-Mill Ditch	0.075	1.904	4.900
South Ditch-North Half	0.400	14.200	28.000
South Ditch-South Half	0.120	0.230	0.340
North Dredge Pile	0.080	2.327	5.800
South Dredge Pile	3.900	3.900	3.900
Surface Drainage Ditch	4.500	6.350	8.200
Retention Reservoir	0.130	11.838	28.000
Lower South Ditch	<0.001	1.858	7.000
New SWMU[3]	0.053	10.522	49.900
New SWMU[4]	0.053	6.584	30.000

Notes:

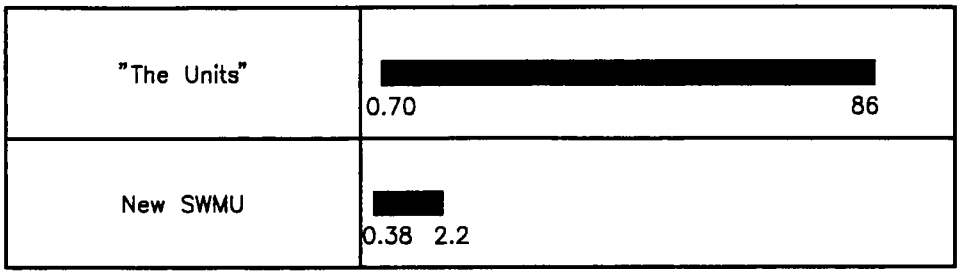
(1) Results are expressed in mg/l.

(2) The TCLP lead results for the above units, excluding the new SWMU, were included in Appendix B of the June 15, 1992 Revised Phase II Closure Plan.

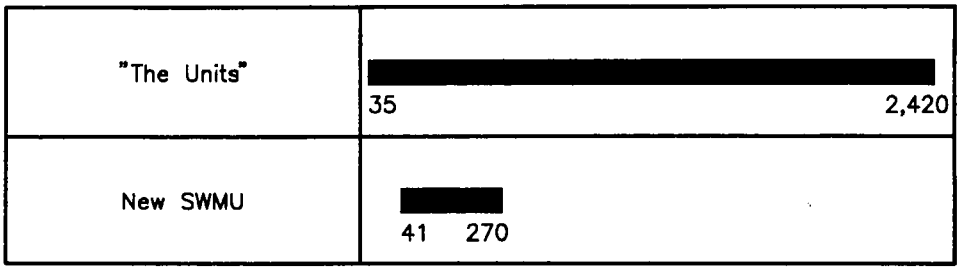
(3) Evaluation based on the complete data set.

(4) Evaluation based on eliminating the maximum value (i.e., 49.9 mg/l). This point is considered to be a data outlier and, therefore, not representative of the soils within the new SWMU.

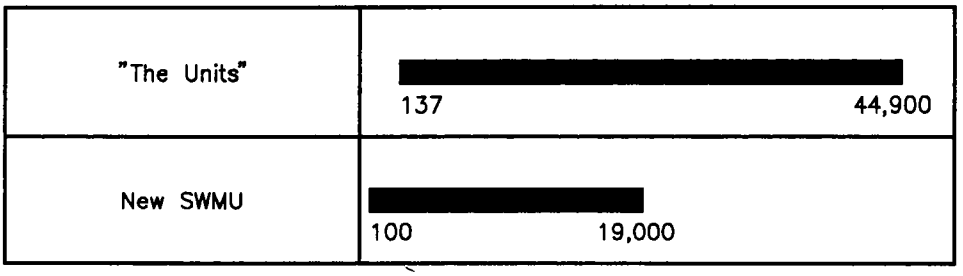
TOTAL CADMIUM (mg/kg)



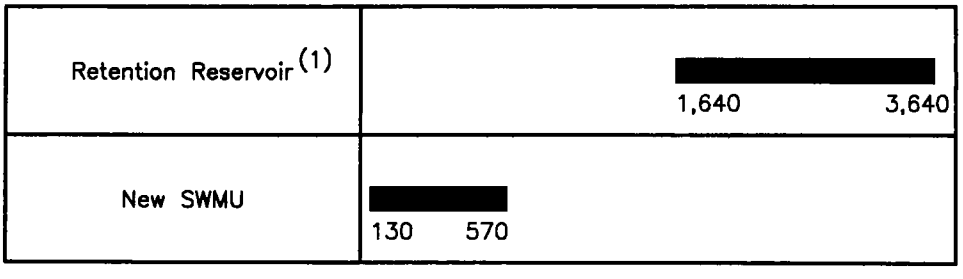
TOTAL CHROMIUM (mg/kg)



TOTAL LEAD (mg/kg)



TOTAL ZINC (mg/kg)



NOTE: (1) Analysis not available for the other units.

FIGURE 1

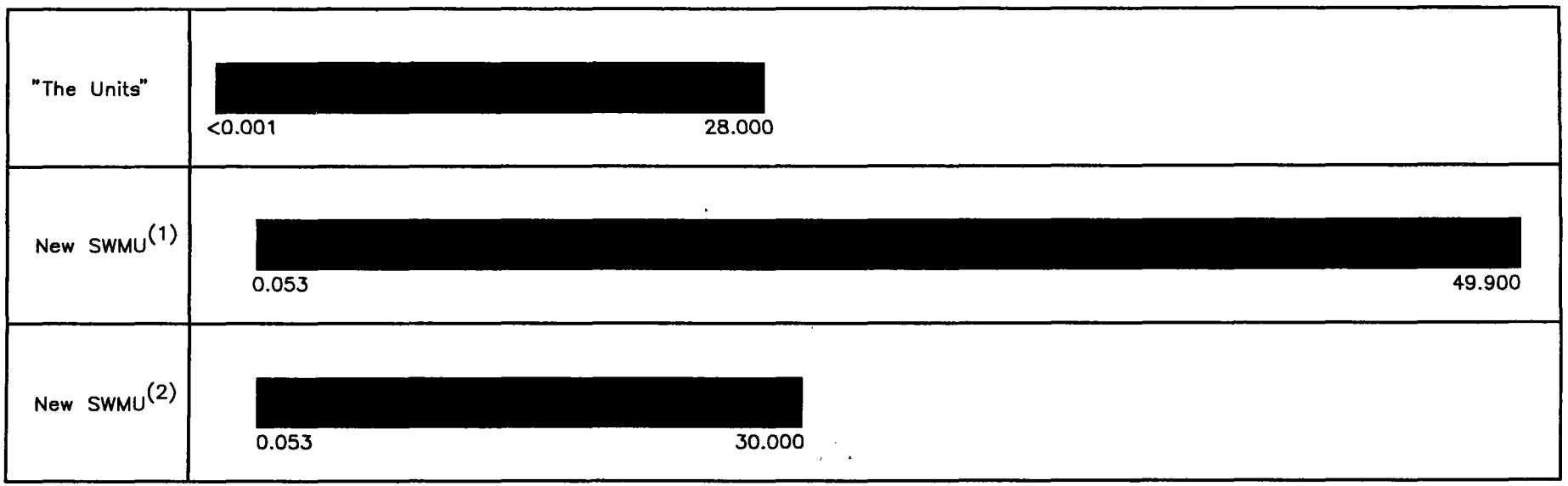
PLOT OF 1987 TOTAL METALS DATA
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

ERM

PROJECT: 94186EB | REPORT: | DRAWN: SNA | CHECKED: EDB | DATE: 11/14/94 | FILE NAME: | CLIENT NAME: KEYSTONE STEEL & WIRE

PROJECT:	REPORT:	DRAWN:	CHECKED:	DATE:	FILE NAME:	CLIENT NAME:
94186EB		SNA	EDB	11/14/94		KEYSTONE STEEL & WIRE COMPANY

TCLP LEAD (mg/l)



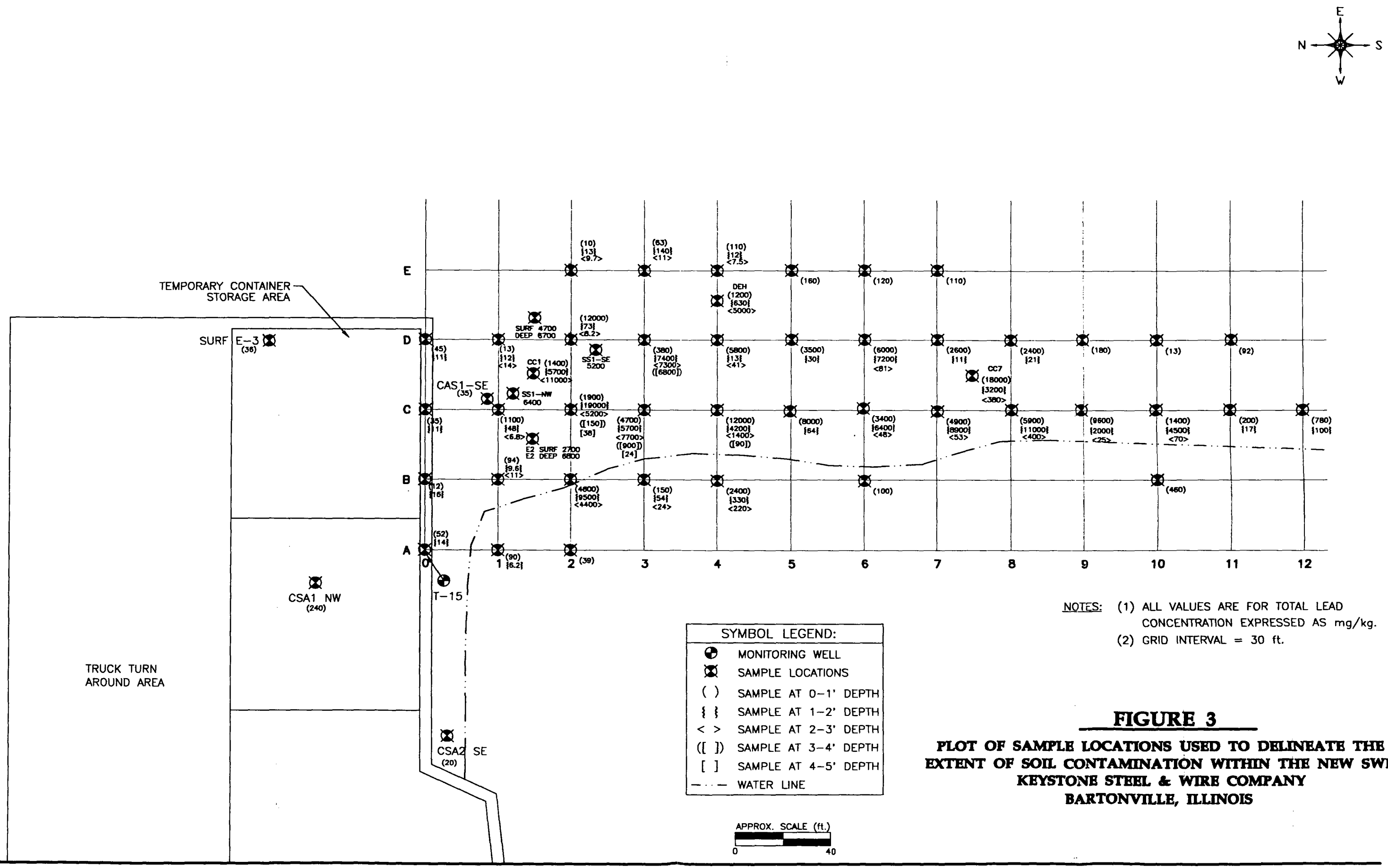
NOTES:

(1) Evaluation based on complete data set.
(2) Evaluation based on eliminating the maximum value (i.e., 49.900 mg/l). This point is considered to be a data outlier and, therefore not representative of the soils within the New SWMU.

FIGURE 2

PLOT OF TCLP LEAD CONCENTRATION
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

ERM



NOTES: (1) ALL VALUES ARE FOR TOTAL LEAD CONCENTRATION EXPRESSED AS mg/kg.
(2) GRID INTERVAL = 30 ft.

FIGURE 3

PLOT OF SAMPLE LOCATIONS USED TO DELINEATE THE EXTENT OF SOIL CONTAMINATION WITHIN THE NEW SWMU KEYSTONE STEEL & WIRE COMPANY BARTONVILLE, ILLINOIS

ERM

CLIENT NAME: KEYSTONE STEEL & WIRE COMPANY
FILE NAME:
DATE: 11/14/94
CHECKED: EDB
DRAWN: SNA
REPORT: 2
PROJECT: 94188EBE

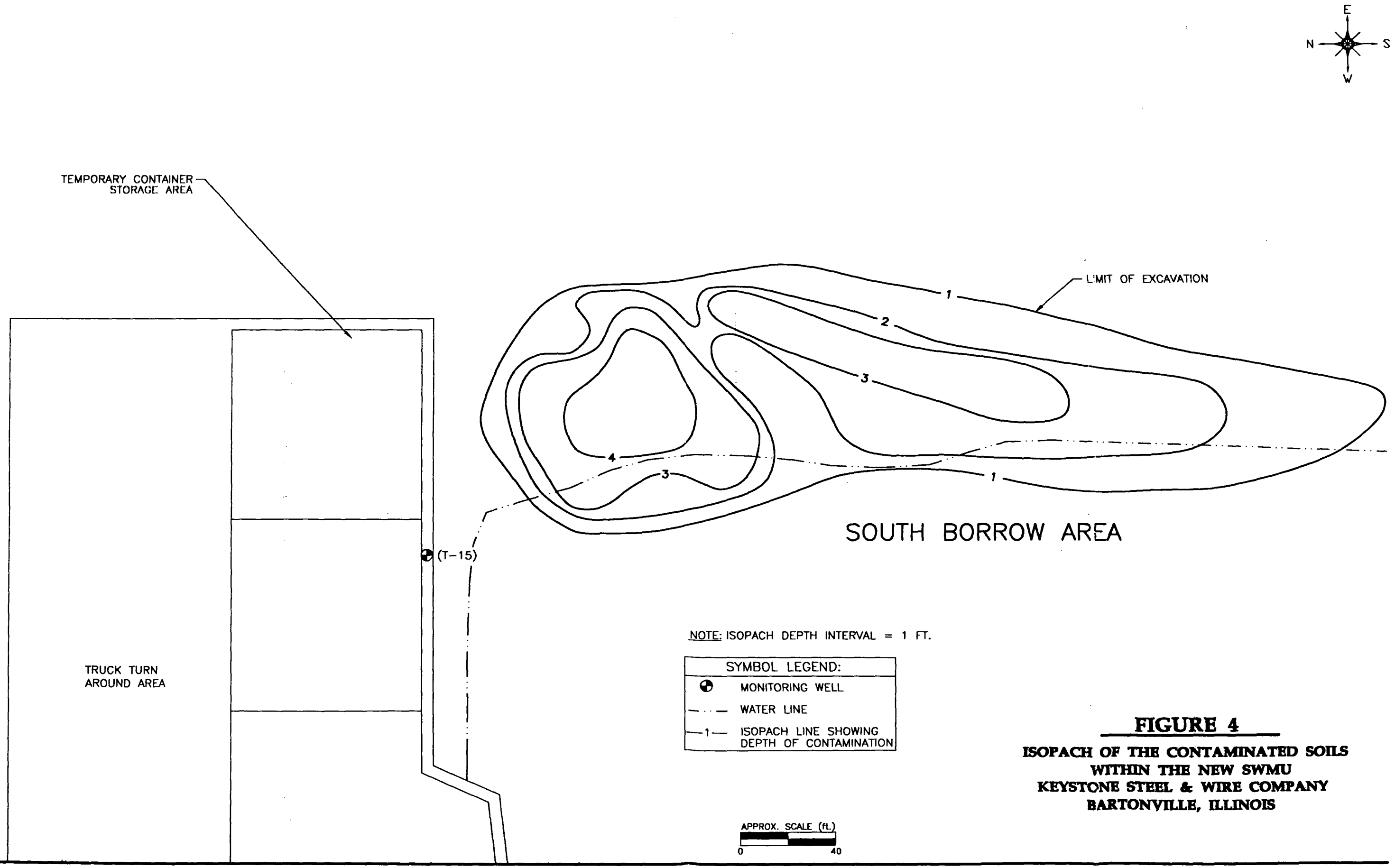
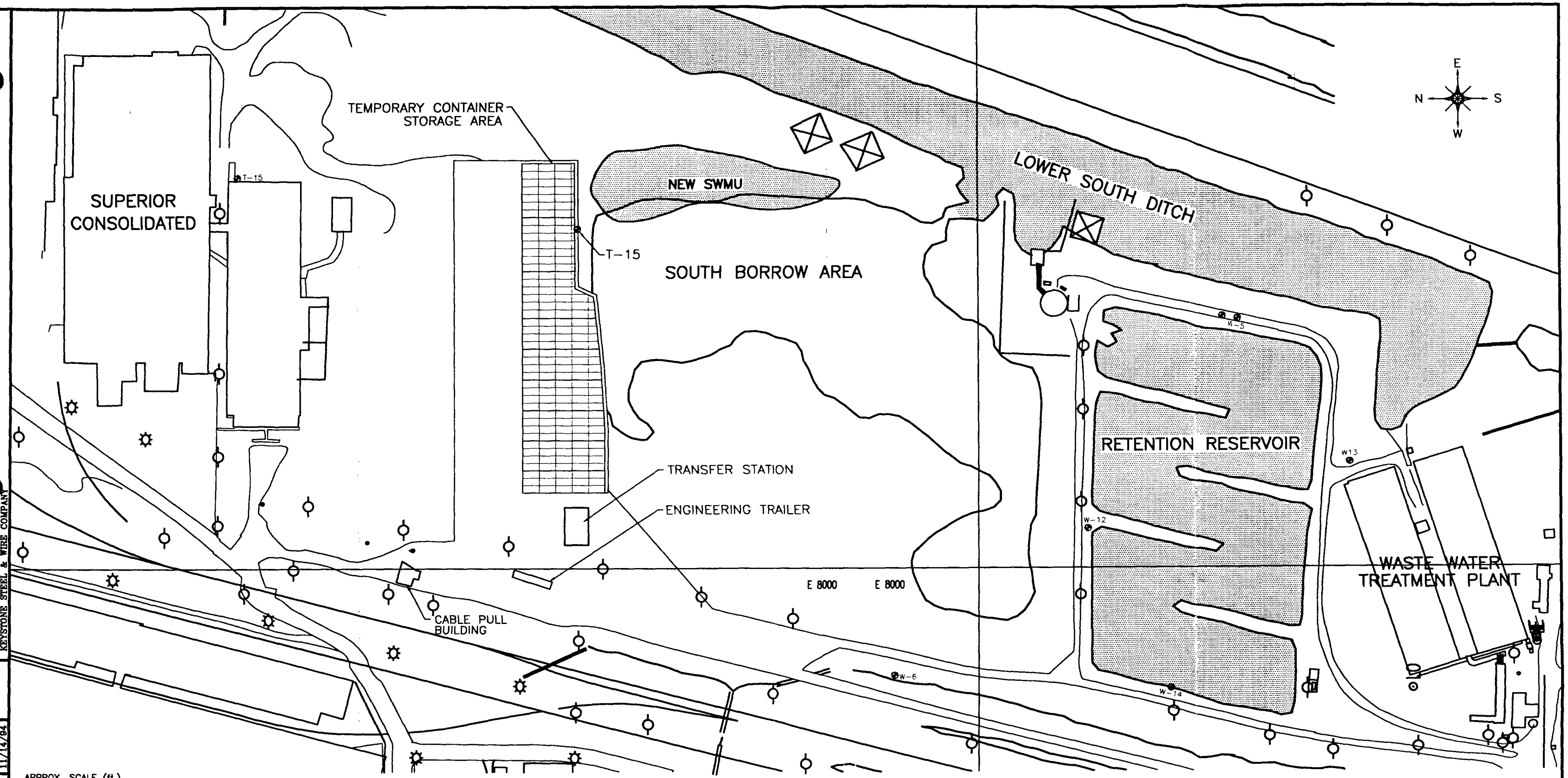


FIGURE 4

ISOPACH OF THE CONTAMINATED SOILS WITHIN THE NEW SWMU KEYSTONE STEEL & WIRE COMPANY BARTONVILLE, ILLINOIS

ERM

PROJECT: 94188EB | DRAWN: SNA | CHECKED: EDB | DATE: 11/14/94 | FILE NAME: | CLIENT NAME: KEYSTONE STEEL & WIRE COMPANY



SYMBOL LEGEND:

- MONITORING WELLS
- REMEDIATION UNITS

CLIENT NAME: KEYSTONE STEEL & WIRE COMPANY
FILE NAME:
DATE: 11/14/94
CHECKED: EDB
DRAWN: SNA
REV:
PROJECT: 94186KB

FIGURE 5

SITE MAP THAT PROVIDES THE RELATIVE LOCATION OF THE NEW SWMU KEYSTONE STEEL & WIRE COMPANY BARTONVILLE, ILLINOIS

ERM

APPENDIX C

ANALYTICAL RESULTS

TABLE C-1

1987 TOTAL METALS ANALYTICAL RESULTS
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 1 of 4)

Location and Sample Numbers	Total Metals[1]		
	Cadmium	Chromium	Lead
North Ditch			
ND-1	1.7	35	137
ND-2	2.2	55	216
ND-3	2.3	74	333
ND-4	3.0	73	306
ND-5	2.3	49	267
ND-6	2.7	86	426
ND-7	3.5	100	521
ND-8	3.2	146	678
ND-9	2.8	172	878
Average	2.6	88	418
Mid-Mill Ditch			
MM-1	14	2,420	4,570
MM-2	9.7	812	5,050
MM-3	2.3	345	2,800
MM-4	2.2	280	879
MM-5	3.3	544	2,160
Average	6.3	880	3,092
South Ditch - North Half			
SDN-1	4.8	474	12,000
SDN-2	4.8	535	12,400
SDN-3	14	480	106,000

TABLE C-1

1987 TOTAL METALS ANALYTICAL RESULTS
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 2 of 4)

Location and Sample Numbers	Total Metals[1]		
	Cadmium	Chromium	Lead
SDN-4	5.4	387	13,600
Average	7.3	469	36,000
South Ditch - South Half			
SDS-1	22	598	17,800
SDS-2	4.1	613	13,900
SDS-3	2.8	480	13,100
SDS-4	5.0	400	6,040
Average	8.5	523	12,710
North Dredge Pile			
NDP-1	5.1	212	1,660
NDP-2	5.9	163	3,190
NDP-3	11	213	7,980
NDP-4	11	143	4,980
NDP-5	11	176	8,160
NDP-6	7.4	249	7,890
Average	8.6	193	5,643
South Dredge Pile			
SDP-1	6.6	266	5,450
SDP-2	6.7	311	6,930
SDP-3	6.8	302	7,250
SDP-4	6.9	249	6,280
SDP-5	8.7	249	6,530

TABLE C-1

1987 TOTAL METALS ANALYTICAL RESULTS
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 3 of 4)

Location and Sample Numbers	Total Metals[1]		
	Cadmium	Chromium	Lead
SDP-6	4.6	211	3,940
Average	6.7	265	6,063
Surface Drainage Ditch			
SDD-1	86	152	40,100
SDD-2	1.6	47	6,050
SDD-3	0.98	51	2,330
SDD-4	2.0	59	6,430
SDD-5	7.1	151	44,900
SDD-6	4.4	122	34,800
Average	17.0	97	22,435
Retention Reservoir			
RR-1	1.4	1,170	12,800
RR-2	1.2	1,250	12,800
RR-3	1.5	1,180	12,400
RR-4	1.0	1,170	13,200
RR-5	1.7	1,140	11,200
RR-6	1.4	1,230	11,300
RR-7	1.3	1,090	11,500
RR-8	1.7	1,150	10,050
RR-9	1.6	1,290	12,600
RR-10	1.5	1,120	11,600
RR-11	0.96	1,070	11,100

TABLE C-1

1987 TOTAL METALS ANALYTICAL RESULTS
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 4 of 4)

Location and Sample Numbers	Total Metals[1]		
	Cadmium	Chromium	Lead
RR-12	0.70	1,260	12,800
RR-13	0.72	968	10,900
RR-14	1.5	1,040	12,500
RR-15	1.0	1,120	12,000
RR-16	1.0	1,130	12,000
RR-17	2.3	833	10,100
RR-18	1.3	861	11,000
Average	1.3	1,115	11,769

Notes: [1] Results reported in mg/kg.

TABLE C-2

TOTAL/TCLP ANALYTICAL RESULTS FOR THE NEW SWMU[1]
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Sample Location	Total (mg/kg)				TCLP (mg/l)			
	Cadmium	Chromium	Lead	Zinc	Cadmium	Chromium	Lead	Zinc
SS1 NW	0.98	270	6,400	520	0.013	<0.010	0.053	0.94
SS1 SE	0.38	41	5,200	150	<0.005	<0.010	7.26	0.38
SURF E-1	2.7	120	4,700	570	0.03	<0.010	0.64	1.5
DEEP E-1	0.33	61	6,700	220	<0.005	<0.010	30	0.04
SURF E-2	2.1	120	2,700	400	0.01	<0.010	1.3	2.5
DEEP E-2	2.1	250	6,800	560	0.02	<0.010	0.47	2.2
SURF E-3	2.2	41	36	130	NA	NA	NA	NA

Notes: [1] The above data was collected on January 13, 1993 by ERM-North Central.

Key: NA = Not analyzed.

TABLE C-3

SUMMARY OF ANALYTICAL RESULTS USED TO DELINEATE
EXTENT OF SOIL CONTAMINATION
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
AO(0-1) 1/26D	52	NA
AO(1-2) 1/26D	14	NA
A1(0-1) 1/26D	90	NA
A1(1-2) 1/26D	6.2	NA
A2(0-1) 2/11D	39	NA
BO(0-1) 1/26D	12	NA
BO(1-2) 1/26D	16	NA
B1(0-1) 1/26D	94	NA
B1(1-2) 1/26D	9.6	NA
B1(2-3) 1/26D	11	NA
B2(0-1) 1/27D	4600	7.75
B2(1-2) 1/27D	9500	NA
B2(2-3) 1/27D	4400	NA
B3(0-1) 1/27D	150	NA
B3(1-2) 1/27D	54	NA
B3(2-3) 1/27D	24	NA
B4(0-1) 2/11D	2400	NA
B4(1-2) 2/11D	330	NA
B4(2-3) 2/11D	220	NA

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
CO(1-2) 1/26D	11	NA
C1(0-1) 1/26D	1100	0.50
C1(1-2) 1/26D	48	NA
C1(2-3) 1/26D	6.8	NA
C2(0-1) 1/27D	1900	NA
C2(1-2) 1/27D	19000	NA
C2(2-3) 1/27D	5200	NA
C2(3-4) 1/27D	150	NA
C2(4-5) 1/27D	38	NA
C3(0-1) 1/27D	4700	NA
C3(1-2) 1/27D	5700	NA
C3(2-3) 1/27D	7700	NA
C3(3-4) 1/27D	900	NA
C3(4-5) 1/27D	24	NA
C4(0-1) 1/27D	12000	49.9
C4(1-2) 1/27D	4200	NA
C4(2-3) 1/27D	1400	NA
C4(3-4) 1/27D	90	NA
C5(0-1) 2/10D	8000	NA

TABLE C-3

SUMMARY OF ANALYTICAL RESULTS USED TO DELINEATE EXTENT OF SOIL CONTAMINATION KEYSTONE STEEL & WIRE COMPANY BARTONVILLE, ILLINOIS

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
B6(0-1) 2/11D	100	NA
B10(0-1) 2/11D	460	NA
CC1(0-1) 1/27D	1400	NA
CC1(1-2) 1/27D	5700	NA
CC1(2-3) 1/27D	11000	NA
CC7(0-1) 2/11D	18000	NA
CC7(1-2) 2/11D	3200	NA
CC7(2-3) 2/11D	380	NA
CO(0-1) 1/26D	35	NA
C8(2-3) 2/10D	400	NA
C9(0-1) 2/10D	9600	NA
C9(1-2) 2/10D	2000	NA
C9(2-3) 2/10D	25	NA
C10(0-1) 2/11D	1400	NA
C10(1-2) 2/11D	4500	NA
C10(2-3) 2/11D	70	NA
C11(0-1) 2/11D	200	NA
C11(1-2) 2/11D	17	NA
C12(0-1) 2/11D	780	NA

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
C5(1-2) 2/10D	64	NA
C6(0-1) 2/10D	3400	NA
C6(1-2) 2/10D	6400	NA
C6(2-3) 2/10D	48	NA
C7(0-1) 2/10D	4900	NA
C7(1-2) 2/10D	8900	NA
C7(2-3) 2/10D	53	NA
C8(0-1) 2/10D	5900	NA
C8(1-2) 2/10D	11000	NA
D5(1-2) 2/10D	30	NA
D6(0-1) 2/10D	6000	NA
D6(1-2) 2/10D	7200	NA
D6(2-3) 2/10D	81	NA
D7(0-1) 2/10D	2600	NA
D7(1-2) 2/10D	11	NA
D8(0-1) 2/10D	2400	NA
D8(1-2) 2/10D	21	NA
D9(0-1) 2/11D	180	NA
D10(0-1) 2/11D	13	NA

TABLE C-3

SUMMARY OF ANALYTICAL RESULTS USED TO DELINEATE
EXTENT OF SOIL CONTAMINATION
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
C12(1-2) 2/11D	100	NA
DO(0-1) 1/26D	45	NA
DO(1-2) 1/26D	11	NA
D1(0-1) 1/26D	13	NA
D1(1-2) 1/26D	12	NA
D1(2-3) 1/26D	14	NA
D2(0-1) 1/27D	12000	14.40
D2(1-2) 1/27D	73	NA
D2(2-3) 1/27D	8.2	NA
D3(0-1) 1/27D	380	NA
D3(1-2) 1/27D	7400	3.47
D3(2-3) 1/27D	7300	NA
D3(3-4) 1/27D	6800	NA
D4(0-1) 1/27D	5800	NA
D4(1-2) 1/27D	13	NA
D4(2-3) 1/27D	41	NA
D5(0-1) 2/10D	3500	NA

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
D11(0-1) 2/11D	92	NA
DE4(0-1) 1/27D	1200	NA
DE4(1-2) 1/27D	630	NA
DE4(2-3) 1/27D	5000	NA
E2(0-1) 1/27D	10	NA
E2(1-2) 1/27D	13	NA
E2(2-3) 1/27D	9.7	NA
E3(0-1) 1/27D	63	NA
E3(1-2) 1/27D	140	NA
E3(2-3) 1/27D	11	NA
E4(0-1) 1/27D	110	NA
E4(1-2) 1/27D	12	NA
E4(2-3) 1/27D	7.5	NA
E5(0-1) 2/10D	160	NA
E6(0-1) 2/10D	120	NA
E7(0-1) 2/10D	110	NA

Key: NA = Not analyzed.

TABLE C-4

TOTAL/TCLP LEAD ANALYTICAL RESULTS FOR THE NEW SWMU[1]
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 1 of 3)

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
B2(0-1) 1/27D	4,600	7.75
B2(1-2) 1/27D	9,500	NA
B2(2-3) 1/27D	4,400	NA
B3(0-1) 1/27D	150	NA
B4(0-1) 2/11/D	2,400	NA
B4(1-2) 2/11D	330	NA
B4(2-3) 2/11D	220	NA
B6(0-1) 2/11D	100	NA
B10(0-1) 2/11D	460	NA
C1(0-1) 1/26D	1,100	0.50
CC1(0-1) 1/27D	1,400	NA
CC1(1-2) 1/27D	5,700	NA
CC1(2-3) 1/27D	11,000	NA
C2(0-1) 1/27D	1,900	NA
C2(1-2) 1/27D	19,000	NA
C2(2-3) 1/27D	5,200	NA
C2(3-4) 1/27D	150	NA
C3(0-1) 1/27D	4,700	NA
C3(1-2) 1/27D	5,700	NA
C3(2-3) 1/27D	7,700	NA
C3(3-4) 1/27D	900	NA
C4(0-1) 1/27D	12,000	49.9
C4(1-2) 1/27D	4,200	NA
C4(2-3) 1/27D	1,400	NA
C5(0-1) 2/10D	8,000	NA

TABLE C-4

TOTAL/TCLP LEAD ANALYTICAL RESULTS FOR THE NEW SWMU[1]
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 2 of 3)

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
C6(0-1) 2/10D	3,400	NA
C6(1-2) 2/10D	6,400	NA
C7(0-1) 2/10D	4,900	NA
C7(1-2) 2/10D	8,900	NA
CC7(0-1) 2/11D	18,000	NA
CC7(1-2) 2/11D	3,200	NA
CC7 (2-3) 2/11D	380	NA
C8(0-1) 2/10D	5,900	NA
C8(1-2) 2/10D	11,000	NA
C8(2-3) 2/10D	400	NA
C9(0-1) 2/10D	9,600	NA
C9(1-2) 2/10D	2,000	NA
C10(0-1) 2/11D	1,400	NA
C10(1-2) 2/11D	4,500	NA
C11(0-1) 2/11D	200	NA
C12(0-1) 2/11D	780	NA
C12(1-2) 2/11D	100	NA
D2(0-1) 1/27D	12,000	14.40
D3(0-1) 1/27D	380	NA
D3(1-2) 1/27/D	7,400	3.47
D3(2-3) 1/27D	7,300	NA
D3(3-4) 1/27	6,800	NA
D4(0-1) 1/27D	5,800	NA
DE4(0-1) 1/27D	1,200	NA
DE4(1-2) 1/27D	630	NA

TABLE C-4

TOTAL/TCLP LEAD ANALYTICAL RESULTS FOR THE NEW SWMU[1]
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 3 of 3)

Sample Number	Total Lead (mg/kg)	TCLP Lead (mg/l)
DE4(2-3) 1/27D	5,000	NA
D5(0-1) 2/10D	3,500	NA
D6(0-1) 2/10D	6,000	NA
D6(1-2) 2/10D	7,200	NA
D7(0-1) 2/10D	2,600	NA
D8(0-1) 2/10D	2,400	NA
D9(0-1) 2/11D	180	NA
E3(1-2) 1/27D	140	NA
E4(0-1) 1/27D	110	NA
E5(0-1) 2/10D	160	NA
E6(0-1) 2/10D	120	NA
E7(0-1) 2/10D	110	NA

Notes: [1] Analytical samples were collected on January 26-27, 1994 and February 10-11, 1994 by ERM-North Central.

Key: NA = Not analyzed.

TABLE C-5

1990 TCLP METALS ANALYTICAL RESULTS
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 1 of 3)

Location and Sample Numbers	TCLP Metals[1]		
	Cadmium	Chromium	Lead
North Ditch			
KS-2	0.033	0.014	0.720
KS-4	0.011	0.021	0.830
Average	0.022	0.018	0.775
Mid-Mill Ditch			
KS-5	<0.002	<0.005	0.075
KS-6	0.008	0.044	4.900
KS-7	<0.002	0.019	2.200
KS-8	<0.002	0.006	0.440
Average	0.004	0.019	1.904
South Ditch - North Half			
KS-9	0.0035	<0.005	0.400
KS-10	0.006	0.052	28.000
Average	0.005	0.029	14.200
South Ditch - South Half			
KS-11	0.003	<0.005	0.340
KS-12	0.017	<0.005	0.120
Average	0.010	0.005	0.230
North Dredge Pile			
KS-23 (U)	0.096	<0.005	0.080
KS-23 (L)	0.264	<0.005	5.800
KS-24	0.051	0.005	1.100
Average	0.137	0.005	2.327

TABLE C-5

1990 TCLP METALS ANALYTICAL RESULTS
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
(Page 2 of 3)

Location and Sample Numbers	TCLP Metals[1]		
	Cadmium	Chromium	Lead
South Dredge Pile			
KS-30	0.015	<0.005	3.900
Average	0.015	0.005	3.900
Surface Drainage Ditch			
KS-31	0.005	<0.005	4.500
KS-32	0.006	<0.005	8.200
Average	0.006	0.005	6.350
Retention Reservoir			
KS-13	0.008	0.022	12.450
KS-14	0.013	<0.005	0.130
KS-15	0.005	0.040	1.400
KS-16	0.008	0.071	6.200
KS-17	0.002	0.017	11.000
KS-18	0.003	0.022	14.000
KS-19	0.006	0.063	6.200
KS-20	0.005	0.008	28.000
KS-21	0.005	0.028	18.000
KS-22	<0.002	0.015	21.000
Average	0.006	0.029	11.838
Lower South Ditch			
KS-35	0.004	0.003	0.040
KS-38	0.049	0.480	1.000
KS-39	0.041	0.002	1.150

TABLE C-5

1990 TCLP METALS ANALYTICAL RESULTS
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Location and Sample Numbers	TCLP Metals[1]		
	Cadmium	Chromium	Lead
KS-40	0.058	0.004	4.200
KS-41	0.019	0.004	4.600
KS-42	0.059	0.007	7.000
KS-43	0.020	0.003	1.900
KS-44	0.022	<0.001	0.019
KS-45	0.027	<0.001	0.213
KS-46	0.029	<0.001	0.316
KS-47	0.052	0.003	<0.001
Average	0.035	0.046	1.858

Notes: [1] Results reported in mg/l.

TABLE C-6

1993 TOTAL METALS ANALYTICAL RESULTS FOR THE RETENTION RESERVOIR[1] KEYSTONE STEEL & WIRE COMPANY BARTONVILLE, ILLINOIS

Sample Number	Total Metals[2]			
	Cadmium	Chromium	Lead	Zinc
C(01) 5/13B	1.3	717	7,570	2,670
C(02) 5/13B	1.1	600	6,270	2,450
C(03) 5/13B	1.5	719	7,810	3,230
C(04) 5/13B	1.1	542	5,660	2,250
C(05) 5/13B	0.94	585	6,060	2,340
C(06) 5/13B	1.4	738	7,070	2,830
C(07) 5/13B	1.4	674	7,040	2,540
C(08) 5/13B	1.1	674	4,650	1,770
C(09) 5/12B	1.4	7.6	6,960	2,120
C(10) 5/11B	1.5	868	8,860	2,890
C(11) 5/11B	1.3	758	7,560	2,280
C(12) 5/11B	4.9	707	6,860	2,050
C(13) 5/6B	2.1	843	8,880	3,180
C(14) 5/6B	1.2	629	5,560	1,690
C(15) 5/5B	1.7	752	7,960	2,070
C(16) 5/5B	2.2	828	8,870	3,140
C(17) 5/4B	1.93	870	7,650	2,370
C(18) 5/3B	2.2	647	7,380	3,640
Average	1.68	675	7,148	2,528

Notes:

[1] This data was included as part of the August 2, 1993 RCRA Delisting Adjusted Standard petition.

[2] Results are reported in mg/kg.

TABLE C-7

1993 BACKGROUND TOTAL METALS ANALYTICAL RESULTS FOR THE RETENTION RESERVOIR KEYSTONE STEEL & WIRE COMPANY BARTONVILLE, ILLINOIS

Sample Number	Total Metals[1][2]			
	Cadmium	Chromium	Lead	Zinc
BG(01) 4/28B	3.9	11.0	55.3	362
BG(02) 4/28B	1.2	18.2	39.0	196
BG(03) 4/28B	2.6	20.1	138.0	372
BG(04) 4/28B	3.9	11.0	55.3	362
BG(05) 4/28B	0.96	19.2	53.4	162
BG(06) 4/28B	3.5	66.5	148.0	369
BG(07) 4/27B	2.4	25.6	118.0	271
BG(08) 4/27B	0.4	19.6	19.0	78.5
BG(09) 4/27B	24.0	24.5	36.3	574
BG(10) 4/27B	1.6	26.3	64.0	206
BG(01A) 4/28B	1.0	26.4	38.2	138
BG(02A) 4/28B	1.1	22.4	38.8	136
BG(03A) 4/28B	1.5	14.3	32.0	130
BG(04A) 4/28B	0.79	27.9	33.0	144
BG(05A) 4/28B	0.34	12.9	13.4	61
BG(06A) 4/28B	4.2	19.2	548.0	892
BG(07A) 4/28B	3.8	14.1	105.0	413
BG(08A) 4/28B	3.7	27.8	146.0	545
BG(09A) 4/27B	1.3	26.4	57.0	195
BG(10A) 4/28B	0.61	20.2	15.7	71.5

TABLE C-7

1993 BACKGROUND TOTAL METALS ANALYTICAL RESULTS FOR THE RETENTION RESERVOIR KEYSTONE STEEL & WIRE COMPANY BARTONVILLE, ILLINOIS

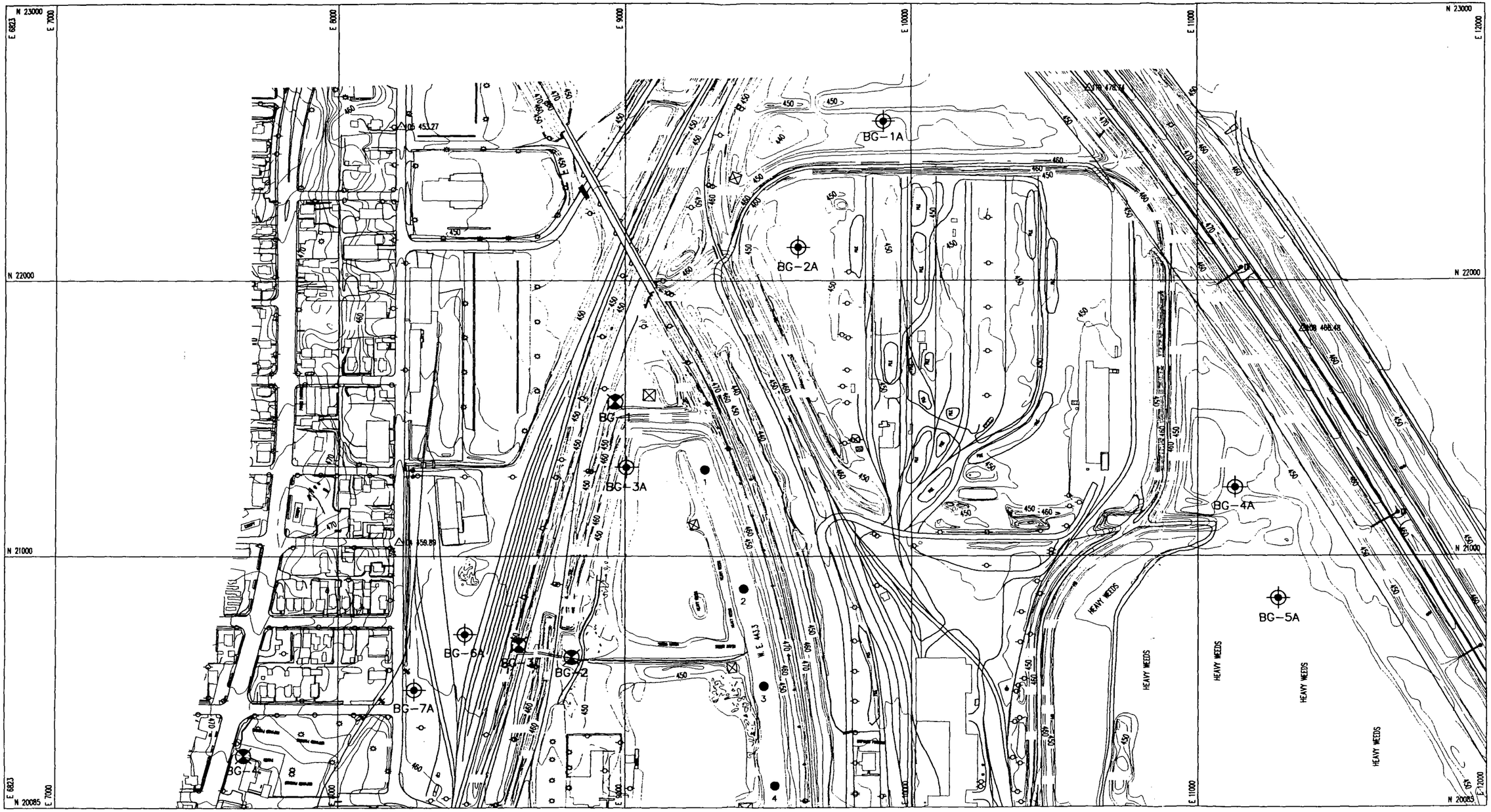
(Page 2 of 2)

Sample Number	Total Metals[1][2]			
	Cadmium	Chromium	Lead	Zinc
BG(11A) 4/27B	0.28	26.9	22.6	89.1
BG(12A) 4/28B	0.59	23.5	25.5	104
BG(13A) 4/28B	1.1	25.4	42.6	162
BG(14A) 4/27B	1.6	16.0	80.4	226
BG(15A) 4/27B	1.1	28.9	38.3	181
Average	2.70	23.0	78.5	257.6

Notes:

[1] Results are reported in mg/kg.

[2] This data was reported in the August 2, 1993 RCRA Delisting Adjusted Standard petition.



SYMBOL LEGEND:

- 1990 SAMPLE LOCATIONS
- BACKGROUND SAMPLE LOCATIONS IDENTIFIED IN THE FIELD WITH ILLINOIS ENVIRONMENTAL PROTECTION AGENCY PERSONNEL
- ADDITIONAL BACKGROUND SOIL SAMPLE LOCATIONS

N
W E
S

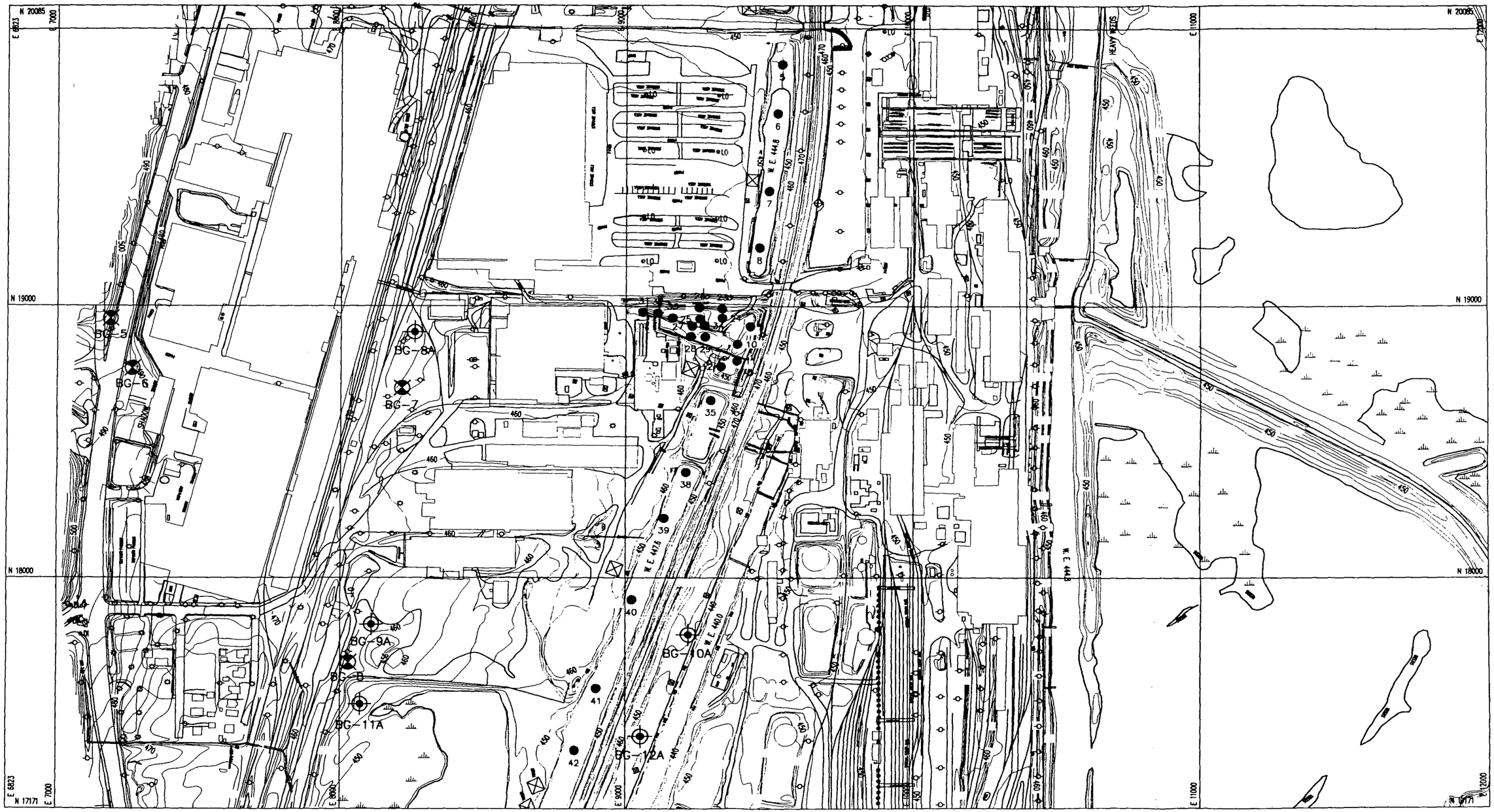
APPROX. SCALE (ft.)
0 350

FIGURE C-1

SAMPLE LOCATION MAP
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
1 OF 3

ERM

PROJECT: 92136EB | DRAWN: SNA | CHECKED: JEG | DATE: 11/14/94 | FILE NAME: | CLIENT NAME: KEYSTONE STEEL & WIRE COMPANY



SYMBOL LEGEND:

- ● 1990 SAMPLE LOCATIONS
- BACKGROUND SAMPLE LOCATIONS IDENTIFIED IN THE FIELD WITH ILLINOIS ENVIRONMENTAL PROTECTION AGENCY PERSONNEL
- ADDITIONAL BACKGROUND SOIL SAMPLE LOCATIONS

N
W E
S

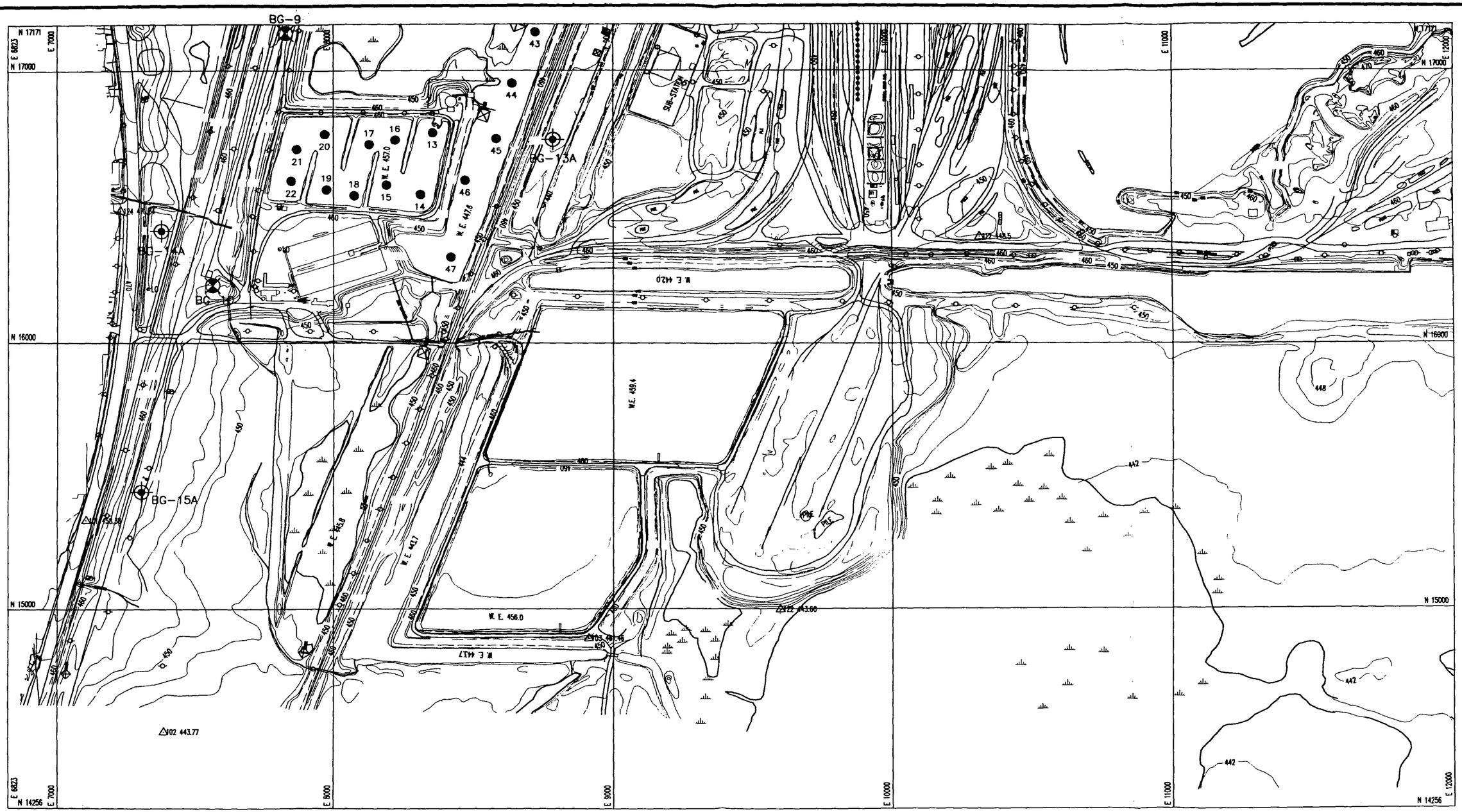
APPROX. SCALE (ft.)
0 350

FIGURE C-1

SAMPLE LOCATION MAP
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
2 OF 3

ERM

PROJECT	REPORT	DRAWN	CHECKED	DATE	FILE NAME	CLIENT NAME
92138B2B		SNA	JEG	11/14/94		KEYSTONE STEEL & WIRE COMPANY



SYMBOL LEGEND:

- 1990 SAMPLE LOCATIONS
- BACKGROUND SAMPLE LOCATIONS IDENTIFIED IN THE FIELD WITH ILLINOIS ENVIRONMENTAL PROTECTION AGENCY PERSONNEL
- ADDITIONAL BACKGROUND SOIL SAMPLE LOCATIONS

N
W E
S

APPROX. SCALE (ft.)
0 350

FIGURE C-1

SAMPLE LOCATION MAP
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS
3 OF 3

ERM

PROJECT: 92136EB | REV: | DRAWN: SNA | CHECKED: JEG | DATE: 11/14/94 | FILE NAME: | CLIENT NAME: KEYSTONE STEEL & WIRE COMPANY

WW ENGINEERING & SCIENCE, INC.
627 NORTH MORTON STREET · BLOOMINGTON, INDIANA 47404 · (812)336-0972

SAMPLING DIAGRAM

PROJECT: Keystone Steel & Wire

PROJECT NO.: 07029.03

BORING NO.: KS-12

SAMPLE LOCATION: South Ditch

N 18,784 ft.; E 9,358 ft.

DRILLER: H. Boyd

INSPECTED BY: M. Lytle

TIME & DATE

STARTED: 11:27am 10/10/90

FINISHED: 1:30pm 10/10/90

REFERENCE PT. 445.88 FT. (msl)

Water Surface

SAMPLING METHOD: SS

w/stainless steel liner tubes

WATER SURFACE 0.00 FT. 445.88 FT. (msl)

TOP OF SEDIMENT 2.00 FT. 443.88 FT. (msl)

TOP OF NATURAL SOIL 9.80 FT. 436.08 FT. (msl)

BEARINGS

	STATION ID	BEARING
(1)	KS-12A	38.9'
(2)	KS-12B	42.7'
(3)		

SAMPLES COLLECTED

	SAMPLE ID	INTERVAL
(1)	KS-12SG-1	2.0-3.5'
(2)	KS-12NS-1	9.8-10.5'
(3)		
(4)		

WW ENGINEERING & SCIENCE, INC.
627 NORTH MORTON STREET · BLOOMINGTON, INDIANA 47404 · (812)336-0972

SAMPLING DIAGRAM

PROJECT: Keystone Steel & Wire

PROJECT NO.: 07029.03

BORING NO.: KS-35

SAMPLE LOCATION: Lower South Ditch
N 18,656 ft.; E 9,300 ft.

DRILLER: K. Yockey

INSPECTED BY: M. B. Lytle/ J. D. Bryan

TIME & DATE

STARTED: 11:50 2/19/91

FINISHED: _____

REFERENCE PT. _____ FT. (msl)

SAMPLING METHOD: Stainless Steel Lined Split Spoon

WATER SURFACE 0 FT. _____ FT. (msl)

TOP OF SEDIMENT 1.5 FT. _____ FT. (msl)

TOP OF NATURAL SOIL 14.0 FT. _____ FT. (msl)

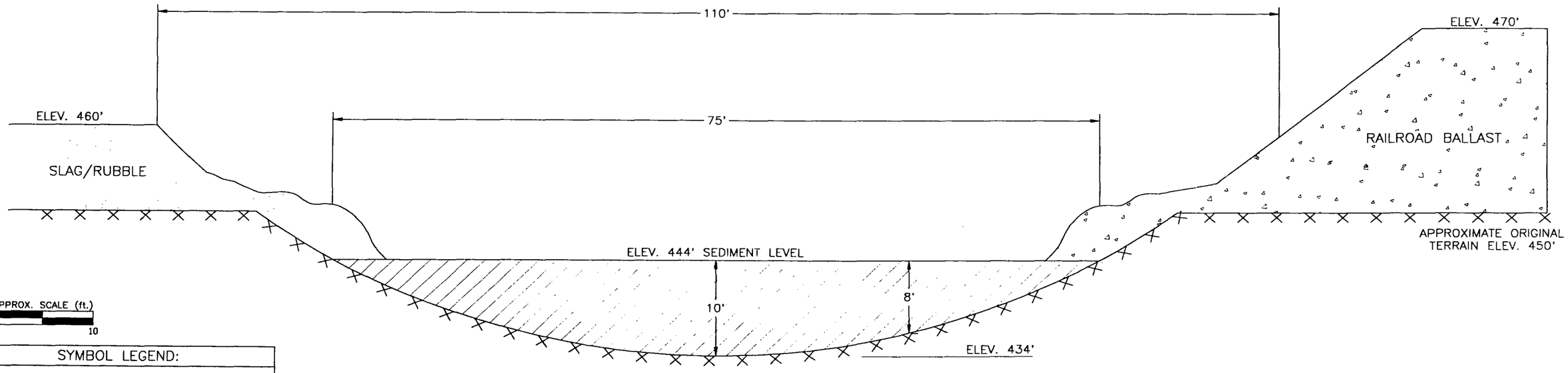
BEARINGS

	STATION ID	DISTANCE
(1)	KS-35A	35.12'
(2)	KS-35B	37.65'
(3)		

SAMPLES COLLECTED

	SAMPLE ID	INTERVAL
(1)	KS-35SG-I	7' - 9'
(2)	KS-35NS-I	14' - 15'
(3)	KS-35SG-I REP	7' - 9'
(4)		

TYPICAL DITCH PROFILE



LOOKING NORTH

APPROX. SCALE (ft.)
0 10

SYMBOL LEGEND:

- SLAG/RUBBLE
- RAILROAD BLLAST
- SEDIMENT THAT WERE REMOVED BEFORE CONSTRUCTION OF THE FLOOD PROTECTION DIKE.

NOTE: The dike profile provided as Figure B-2 was taken from the 8 foot sediment depth.

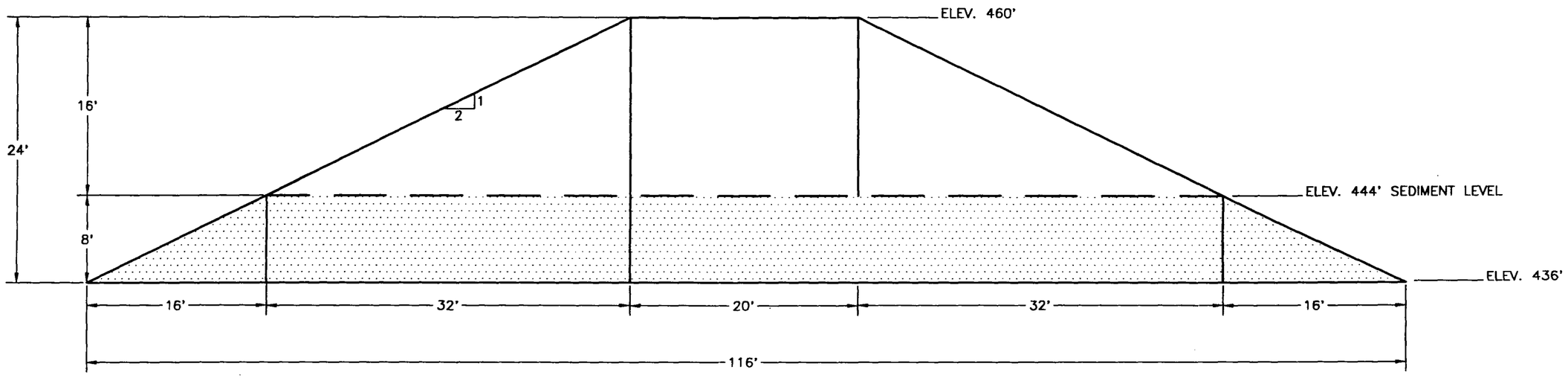
FIGURE D-1

TYPICAL DITCH PROFILE
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

ERM

CLIENT NAME: KEYSTONE STEEL & WIRE COMPANY
FILE NAME:
DATE: 11/14/94
CHECKED: EDB
DRAWN: SNA
REPORT:
PROJECT: 94186RB

DIKE PROFILE



SEDIMENT VOLUME CALCULATIONS:

1) AREA = 2[1/2(8 FT.)(16 FT.)+(84 FT.)(8 FT.)] = 800 FT^2.

2) LENGTH = 75 FT. AT SEDIMENT LEVEL AS SHOWN ON FIGURE B-1.

3) VOLUME = (800 FT^2.)(75 FT.) / 27 FT^3/ 1YD^3 = **2,222 YD^3**

APPROX. SCALE (ft.)

0 10

SYMBOL LEGEND:

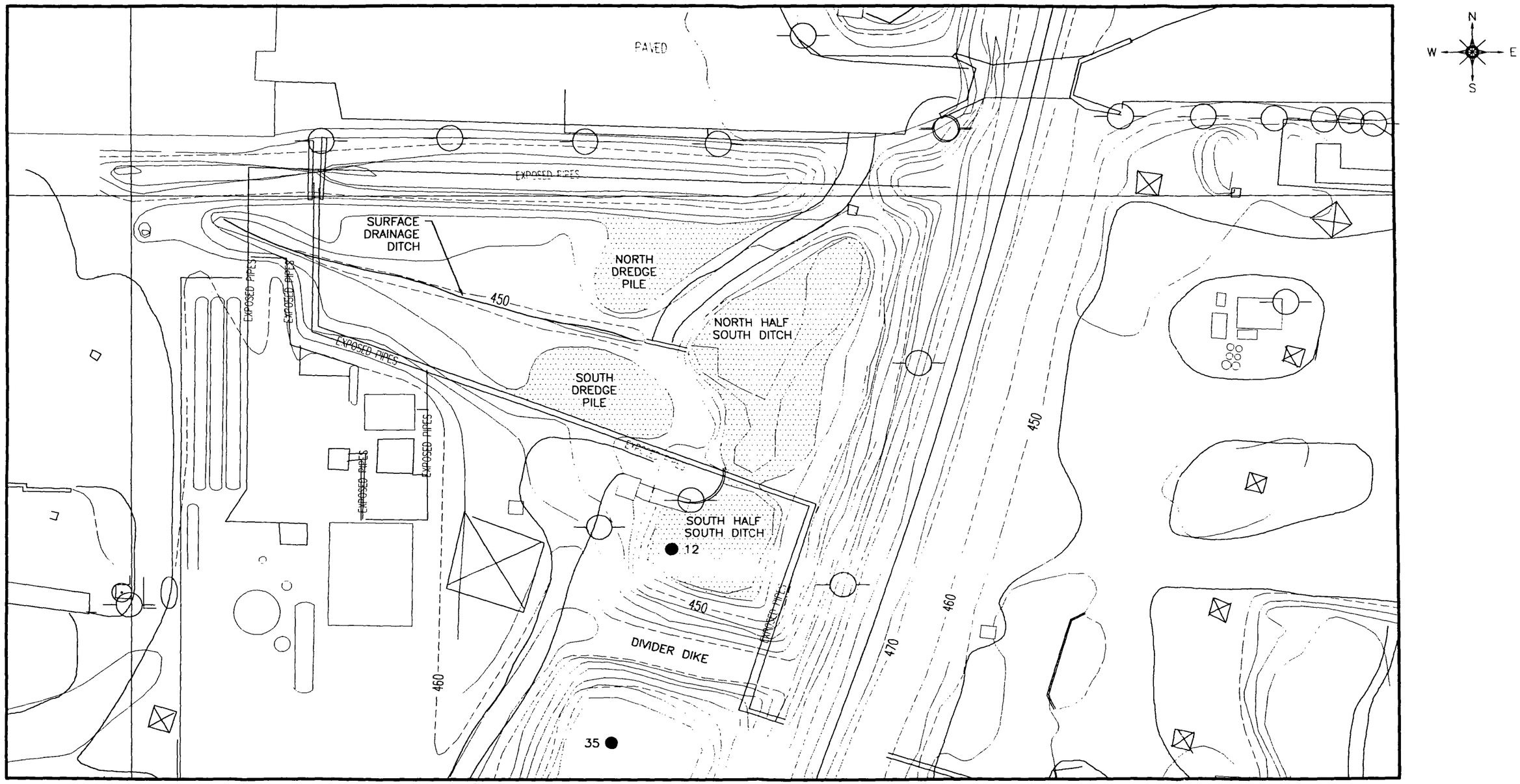
SEDIMENTS THAT WERE REMOVED BEFORE CONSTRUCTION OF THE FLOOD PROTECTION DIKE.

FIGURE D-2

TYPICAL SECTION OF EAST-WEST DIKE
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

ERM

PROJECT: 94186EB | DRAWN: SNA | CHECKED: EDB | DATE: 11/12/94 | FILE NAME: | CLIENT NAME: KEYSTONE STEEL & WIRE COMPANY



SYMBOL LEGEND:

● 1990 SAMPLE LOCATIONS

—— CONTOUR LINE

APPROX. SCALE (ft.)
0 60

NOTE: CONTOUR INTERVAL = 2 FEET

FIGURE D-3

LOCATION OF THE DIVIDER DIKE
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

ERM

RECEIVED
OCT 28 1994
OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR	)	(RCRA Delisting
ADJUSTED STANDARD FROM	)	Adjusted Standard)
35 Ill. Adm. Code §721.132	)	

KEYSTONE'S MOTION FOR MODIFICATION OF ADJUSTED STANDARD ORDER

Petitioner, Keystone Steel and Wire Company ("Keystone"), by its attorneys, respectfully requests that the Pollution Control Board grant the following motion to modify the Board's Order of March 17, 1994.

In support of this motion, Keystone states as follows:

1. On February 17, 1994, the Board issued an order granting to Keystone a RCRA delisting adjusted standard for certain K-062 listed hazardous waste sediments treated by lime-stabilization and Portland Cement solidification. The treated sediments are located in certain areas of Keystone's Bartonville facility known as the North Ditch, Mid-Mill Ditch, South Ditch-North Half, South Ditch-South Half, Surface Drainage Ditch, North Dredge Pile, South Dredge Pile, and the Lower South Ditch areas.

2. On March 17, 1994, the Board corrected the February 17, 1994 order to eliminate certain typographical errors. The March 17, 1994 order is the Board's final order ("Order").

3. During the construction phase of Keystone's remediation project for the sediments (which is part of an IEPA-approved RCRA closure plan), Keystone discovered discolored soils near the southeast corner of the planned staging pad area ("Staging Area Waste Pile").

4. Keystone directed ERM, its environmental consultant, to analyze the soils in the Staging Area Waste Pile. A copy of ERM's report, "TCSA Baseline and Waste Pile Soil Sampling, Retention Reservoir Remediation, Keystone Steel and Wire Company" ("ERM Report") is attached as Appendix 1.

5. Analytical results discussed in the ERM Report indicate that the contaminated soils in the Staging Area Waste Pile have total metal concentrations similar to the K062-listed hazardous waste sediments currently undergoing treatment and delisting under the Adjusted Standard.

6. ERM estimates the amount of contaminated soils in the Staging Area Waste Pile to be approximately 2,560 cubic yards covering an area of approximately 29,200 square feet and extending to a depth of approximately four feet. Figure 4 of the ERM Report provides a site map that indicates the location of these materials.

7. Keystone seeks to treat these contaminated sediments in the Staging Area Waste Pile under the identical treatment and test methods outlined in Keystone's Adjusted Standard Petition and the Board's Order.

8. Keystone's counsel has discussed this issue with the Illinois EPA. Illinois EPA has read and has no objection to this motion.

9. Therefore, Keystone seeks an amendment or modification of the Board's Order to include the sediments located in the Staging Area Waste Pile within the scope of the RCRA Adjusted Standard set forth in the Order.

WHEREFORE, Keystone respectfully requests that the Board amend the March 17, 1994 Order accordingly.

Respectfully submitted,

KEYSTONE STEEL & WIRE COMPANY

By: Karen Prena
One Of Its Attorneys

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

Of Counsel:

Ralph P. End, Esq.
General Counsel
Keystone Consolidated Industries
Three Lincoln Center
5430 LBJ Freeway, Suite 1740
Dallas, Texas 75240
(214) 450-4297

Dated: October 24, 1994

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the matter of:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR ADJUSTED	)	(RCRA DeListing
STANDARD FROM 35 ILL. ADM.	)	Adjusted Standard)
CODE 721.132	)	

NOTICE OF FILING

To: See Attached Service List

PLEASE TAKE NOTICE that on October 24, 1994, we filed with the Office of the Clerk of the Pollution Control Board, Keystone's Motion for Modification of Board Order, copies of which are hereby served upon you.

KEYSTONE STEEL AND WIRE COMPANY

By: Karen Prena
One of its attorneys

CERTIFICATE OF SERVICE

I, Karen L. Prena, certify that I have served the attached Keystone's Motion for Modification of Board Order by regular mail to parties on the attached service list on October 24, 1994.

Karen Prena
Karen L. Prena

DATED: October 24, 1994

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

THIS FILING IS SUBMITTED ON RECYCLED PAPER

SERVICE LIST

Matthew J. Dunn, Esq.
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Robert Sherschligt
Assistant Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
77 West Jackson Boulevard
Chicago, IL 60604

RECEIVED
NOV 17 1993
OFFICE OF RCRA
WASTE MANAGEMENT DIV
EPA, REGION V

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD
OF THE STATE OF ILLINOIS

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL AND WIRE COMPANY FOR ADJUSTED STANDARD FROM 35 ILL. ADM. CODE 721.132	)	AS 93-7 (RCRA DeListing Adjusted Standard)

RECEIVED
WMD RECORD CENTER
APR 19 1994

NOTICE

TO:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
Suite 11-500
100 West Randolph St.
Chicago, Illinois 60601

William Denham
Illinois Department of Energy
and Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Andrew Running
Karen L. Prena
KIRKLAND & ELLIS
233 South Wacker Drive
8300 Sears Tower
Chicago, Illinois 60606

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Pollution Control Board the RESPONSE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY TO KEYSTONE STEEL AND WIRE'S PETITION FOR RCRA ADJUSTED STANDARD of the Illinois Environmental Protection Agency, a copy of which is herewith served upon you.

ENVIRONMENTAL PROTECTION AGENCY
OF THE STATE OF ILLINOIS

By: Mark V. Gurnik
Mark V. Gurnik
Assistant Counsel
Division of Legal Counsel

Date: November 10, 1993
Agency File # 570-93-AS

2200 Churchill Road, P.O. Box 19276
Springfield, Illinois 62794-9276
217/782-5544

THIS FILING IS SUBMITTED
ON RECYCLED PAPER

BEFORE THE POLLUTION CONTROL
BOARD OF THE STATE OF ILLINOIS

IN THE MATTER OF:

PETITION OF KEYSTONE STEEL AND WIRE COMPANY FOR ADJUSTED STANDARD FROM 35 ILL. ADM. CODE §721.132	))))	AS 93-7 (RCRA DELISTING ADJUSTED STANDARD)

RESPONSE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY TO KEYSTONE STEEL AND WIRE'S PETITION FOR RCRA ADJUSTED STANDARD

Now comes the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY ("IEPA"), by and through its attorney Mark V. Gurnik, and pursuant to 35 Ill. Adm. Code 106.414(a) and 106.714(a), files this response to the Resource Conservation and Recovery Act ("RCRA") adjusted standard petition filed by Keystone Steel and Wire Company ("Keystone").

1. The original petition was received by the IEPA on August 4, 1993. The amended petition was received by the IEPA on August 30, 1993. The amended petition incorporates data validation results and findings into the petition, and makes small changes to the text of the petition. Because most of the original petition is not affected by the changes made by the amended petition, the original petition and the amended petition are referred to as the "Petition."

2. The IEPA has reviewed the Petition and its accompanying attachments and believes that the Petition is in conformance with the criteria and USEPA guidance for a RCRA delisting petition.

3. The IEPA offers the following comments, pursuant to 35 Ill. Adm. Code 106.714(b), on the Petition. (Please note that the order of the comments corresponds with the order of the subsections of 35 Ill. Adm. Code 106.705(a) through (j)).

(a) IEPA is in agreement with Part II of the Petition which describes the standard from which the adjusted standard is sought.

(b) IEPA is in agreement with Part III of the Petition which states that the regulations of general applicability at issue were adopted to implement the requirements of RCRA, 42 U.S.C. §6901-6992k.

(c) IEPA is in agreement with Part IV of the Petition as it relates to the level of justification required of Keystone to qualify for an adjusted standard from 35 Ill. Adm. Code 721.132.

(d) IEPA is in agreement with Part V of the Petition, and Sections B and C of the United States Environmental Protection Agency ("USEPA") Delisting Petition at Appendix A of the Petition. However, 35 Ill. Adm. Code 106.705(d) requires the Petition to include the number of persons employed by the petitioner's facility. Keystone's Petition states that it is the second largest industrial employer in the Peoria area, but it does not give the number of employees. It should be a simple matter for Keystone to provide this information if the Pollution Control Board ("Board") deems it necessary.

(e) IEPA is in agreement with Part VI of the Petition

as it relates to the efforts which would be necessary if Keystone were to comply with the regulation of general applicability. However, the IEPA has not conducted an independent cost analysis to determine the costs of compliance alternatives.

(f) Regarding the proposed language of the RCRA adjusted standard, the IEPA offers the following comments on Part VIII of the Petition which contains Keystone's proposal.

Keystone's proposed conditions to the adjusted standard include performance testing of the lime stabilization/Portland cement solidification process used on the K062 wastes in the surface impoundments. As part of the performance testing program, samples from each "treatment cell" will be collected and tested for alkalinity to assure that treatment process is being conducted properly. However, Keystone does not define the size of a treatment cell.

The performance tests and trial program used during the treatment of the wastes in the 24 Hour Retention Reservoir used a treatment cell size of 100 cubic yards. See Attachment 1, Appendix A of the Petition at page 3. The IEPA believes that the treatment cells in the surface impoundments yet to be treated should be no larger than the cells used at the 24 Hour Retention Reservoir. The proposed language for the adjusted standard should define the size of a treatment cell, and the IEPA suggests that the treatment cell size should be no larger than the cell size used at the 24 Hour Retention Reservoir.

Keystone's proposed conditions to the adjusted standard also

include verification testing. The IEPA supports verification testing of the roll-off boxes of treated K062 wastes prior to shipment off-site for disposal. However, the IEPA believes that part of the proposed condition for verification testing contains a potential weakness.

Condition 2.a on page 32 of the Petition states that every roll-off container will be sampled on Day 1. Condition 2.b states that after Day 1, every tenth roll-off container will be sampled. Condition 2.a does not specify whether a minimum number of roll-off containers will be sampled on day 1. Therefore, if some unforeseen circumstances occur on day 1 to delay the excavation of the treated wastes, it is possible that only a small number of roll-off containers will be sampled. The IEPA recommends that a minimum number of roll-off containers be sampled before the sample frequency is reduced to every tenth container after day 1.

In order to address the comments above, the IEPA offers the following revision to Keystone's proposed language for the conditions to the RCRA adjusted standard on page 31 of the Petition:

> 1. Performance testing of the lime stabilization/Portland cement solidification process of the sediments located in the North Ditch, Mid-Mill Ditch, South Ditch-North Half, South Ditch-South Half,Surface Drainage Ditch, North Dredge Pile, South Dredge Pile, and the Lower South Ditch. (Performance testing of the Retention Reservoir treatment project has already been documented.) The alkalinity of the sediment will be tested in each treatment cell following the initial mixing of quicklime and portland cement. A treatment cell shall be no larger than 100 cubic yards in volume. Treatment will be considered acceptable if the alkalinity is within the range of 130,000

mg/kg to 192,000 mg/kg. Where the measured alkalinity is within the range of 115,000 mg/kg to 130,000 mg/kg or 192,000 mg/kg to 215,000 mg/kg, the sample also will be analyzed for TCLP lead. Samples where TCLP analysis is performed will be considered passing if the TCLP value for lead does not exceed 0.246 mg/l.

2. Verification testing of the treated sediments located in the Retention Reservoir and all of the other waste management units. Verification testing will consist of sampling roll-off containers of the treated sediment during the removal of the sediments from the waste management units. The sampling frequency and analytical protocols will be as follows:

a. For Day 1 of treated sediment excavation and removal, every roll-off container will be sampled with a minimum of sixty (60) roll-off containers being sampled. If sixty (60) roll-off containers are not sampled on Day 1, the Day 1 sampling frequency shall carry over into succeeding days until sixty (60) roll-off containers have been sampled. Each sample will be analyzed for alkalinity. Every third sample in addition will be analyzed for TCLP cadmium, chromium, lead and zinc.

b. After Day 1, but not before sixty (60) roll-off container have been sampled, every tenth roll-off container will be sampled. Each sample will be analyzed for alkalinity. Every second sample in addition will be analyzed for TCLP cadmium, chromium, lead and zinc.

c. Samples where only alkalinity is measured will be considered passing if the alkalinity is within the range of 130,000 mg/kg to 192,000 mg/kg. Samples where only alkalinity is measured and where the alkalinity is within the range of 115,000 mg/kg to 130,000 mg/kg or 192,000 mg/kg to 215,000 mg/kg will then be subject to TCLP analysis for cadmium, chromium, lead and zinc. Samples where TCLP analysis is performed will be considered passing if the TCLP values are less than the delisting values as follows:

Analyte	**TCLP Level**
Cadmium	0.092 mg/kg
Chromium	1.64 mg/kg
Lead	0.246 mg/kg
Zinc	115 mg/kg

d. The sediments in all containers where the alkalinity lies outside the range of 115, 000 mg/kg to 215,000 mg/kg, and the TCLP values exceed the levels given in Item (c) will be retreated and sampled.

e. Following Day 1, if any sample fails to meet the criteria outlined in (c), the subsequent sampling frequency for roll-off containers will revert to the Day 1 sampling schedule.

(g) The IEPA is in general agreement with Part IX of the Petition which relates to the quantitative and qualitative impacts of Keystone's activities on the environment. However, the IEPA does not agree with a statement by Keystone in section D of Part IX. Keystone states that "...in the State of Illinois, there is little difference in the construction requirements for hazardous waste and special waste landfills."

Under Illinois law, hazardous waste landfills must be designed, developed and maintained to meet more stringent liner, cover, and groundwater monitoring requirements than special waste landfills. Despite these differences in the design and construction of hazardous waste landfills and special waste landfills in Illinois, Keystone's Petition should be unaffected. The transport model used to evaluate the impact of the treated K062 wastes upon human health and the environment, the USEPA Composite Model for Landfills ("EPACML"), assumes that the treated K062 wastes are being placed in a municipal solid waste landfill. The design criteria for a municipal solid waste landfill are similar to the design criteria for a special waste landfill.

(h) The IEPA is in agreement with Part X of the

Petition which explains how Keystone seeks to justify the proposed RCRA adjusted standard.

(i) The IEPA is in agreement with Part XI of the Petition which states that the Board may grant the proposed RCRA adjusted standard consistent with federal law.

(j) Keystone has requested a hearing in this proceeding and the IEPA will be in attendance.

4. A person seeking a RCRA delisting to exclude a particular hazardous waste from a facility from the lists of hazardous wastes in 35 Ill. Adm. Code 721, subpart D must satisfy the requirements of 35 Ill. Adm. Code 720.122 in order for the Board to grant the delisting.

Keystone has explained that the hazardous waste at issue in this adjusted standard Petition is K062 waste. Section A of Part VII of the Petition more fully explains why K062 wastes are listed as toxic wastes. Because the K062 wastes are a toxic waste, Keystone must satisfy the requirements of 35 Ill. Adm. Code 720.122(d). The IEPA offers the following comments, pursuant to 35 Ill. Adm. Code 106.714(b) and 35 Ill. Adm. Code 722.122(d), on the Petition.

(a) The IEPA is in agreement with Section A.2 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(A) and states the nature of the toxicity presented by the constituents in the K062 waste.

(b) The IEPA is in agreement with Section A.3 of Part

VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(B) and describes the concentrations of the constituents in the K062 waste.

(c) The IEPA is in agreement with Section A.4 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(C) and describes the potential for the constituents in the K062 waste to migrate from the waste into the environment if the treated waste is improperly managed.

(d) The IEPA is in agreement with Section A.5 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(D) and describes the persistence and degradation products of the constituents.

(e) The IEPA is in agreement with Section A.6 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(E) and describes the potential for the constituents to degrade into nonharmful constituents.

(f) The IEPA is in agreement with Section A.7 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111 (a)(3)(F) and describes the degree of bioaccumulation of the constituents or degradation products in the ecosystem.

(g) The IEPA is in agreement with Section A.8 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(G) and describes the plausible types of improper management of the treated K062 waste.

(h) The IEPA is in agreement with Section A.9 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code

721.111(a)(3)(H) and states the quantity of the treated K062 waste generated by Keystone.

(i) The IEPA is in general agreement with Section A.10 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(I) and describes the impacts of the improper management of the treated K062 wastes upon human health and the environment.

(j) The IEPA is in agreement with Section A.11 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(J) and describes other governmental actions taken regarding K062 wastes.

(k) The IEPA is in agreement with Section A.12 of Part VII of the Petition which corresponds to 35 Ill. Adm. Code 721.111(a)(3)(K) in that the IEPA is not aware of any other appropriate factors to consider under 35 Ill. Adm. Code 721.111(a)(3).

Keystone must also satisfy subsection (d)(3) of 35 Ill. Adm. Code 720.122 which requires a demonstration that the waste in question does not exhibit any of the characteristics of a hazardous waste defined in 35 Ill. Adm. Code 721.121, 721.122, 721.123, or 721.124. The IEPA is in agreement with Section C of Part VII of the Petition which addresses the requirements of Section 720.122(d)(3).

5. Keystone has included a copy of its USEPA delisting petition for this RCRA adjusted standard at appendix A in the Petition. The IEPA has reviewed the USEPA delisting petition and

has the following comments.

a. Keystone states in Part II of the Petition that it is seeking an adjusted standard from 35 Ill. Adm. Code 721.132. More specifically, Keystone is seeking a delisting of treated K062 listed hazardous wastes in certain surface impoundments at its facility in Bartonville, Peoria County, Illinois.

The USEPA delisting petition, although a part of the Petition, is not consistent with the Petition in its description of the proposed adjusted standard. Section A.5 of the USEPA delisting petition states that the delisting petition "...is being submitted by Keystone for the purpose of obtaining a 'one-time' Standard Exclusion from the regulations under 35 IAC Parts 720-728 for the lime stabilized sediments present in the Retention Reservoir." See Petition, Appendix A at A-2. Keystone's statement above can be interpreted as seeking much broader relief than the relief sought in the Petition itself. Keystone should clarify this point by amending the USEPA delisting petition so that it is consistent with the relief requested in the Petition. Both the Petition and the USEPA delisting petition should seek relief from 35 Ill. Adm. Code 721.132 for the treated K062 wastes.

b. Section A.6 of the USEPA delisting petition and Section B of Part VIII of the Petition contain virtually identical language describing the steps Keystone will take to verify that the treated K062 wastes do not exceed the delisting criteria prior to shipment off-site for disposal.

After submitting the original adjusted standard petition to the Board on August 2, 1993, Keystone realized that paragraph (e) of Section B.2 contained a typographical error. Paragraph (e) made reference to paragraph (d) when it should have referred to paragraph (c). This error was corrected by the amended petition filed on August 25, 1993. See Errata Sheet in the amended RCRA delisting adjusted standard petition.

Keystone's USEPA delisting petition contains the same error at Page B-6 as the error in Section B.2 of the Petition, but Keystone has not corrected the error. The USEPA delisting petition numbers the paragraphs rather than using alphabetic characters, but the error is the same. Paragraph 5 makes reference to paragraph 4 when it should refer to paragraph 3. Keystone should correct this error in the USEPA delisting petition.

6. The IEPA reserves the right to amend its response until the closure of the record in this proceeding.

WHEREFORE, the IEPA recommends approval of the Keystone RCRA adjusted standard. The IEPA believes that the approval of Keystone's request for a RCRA adjusted standard from 35 Ill. Adm. Code 721.132 to delist certain treated K062 listed hazardous wastes will not have a detrimental impact upon human health or the environment. If the Board grants Keystone's Petition, the IEPA requests the Board to impose conditions upon the adjusted standard consistent with the IEPA's proposed language for

conditions to the RCRA adjusted standard set forth in Section 3(f) of this recommendation. Using the IEPA's proposed language will address the IEPA's concerns about the treatment cell size for the performance tests during the treatment process, and the sampling frequency for the verification testing of the treated wastes.

Respectfully submitted,

Illinois Environmental Protection Agency

By: Mark V. Gurnik
Assistant Counsel

Dated: 11-10-93

2200 Churchill Road
Post Office Box 19276
Springfield, ILL 62794-9276
217/782-5544

STATE OF ILLINOIS)
) SS
COUNTY OF SANGAMON)

PROOF OF SERVICE

I, the undersigned, on oath state that I have served the attached RESPONSE OF ILLINOIS ENVIRONMENTAL PROTECTION AGENCY TO KEYSTONE STEEL AND WIRE'S PETITION FOR RCRA ADJUSTED STANDARD upon the person to whom it is directed, by placing a copy in an envelope addressed to:

Dorothy Gunn, Clerk
Illinois Pollution Control Board
Suite 11-500
100 West Randolph St.
Chicago, Illinois 60601

William Denham
Illinois Department of Energy
and Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Andrew Running
Karen L. Prena
KIRKLAND & ELLIS
233 South Wacker Drive
8300 Sears Tower
Chicago, Illinois 60606

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

and mailing it from Springfield, Illinois on November 10, 1993, with sufficient postage affixed, first class mail.

Kimberly O'Connor

SUBSCRIBED AND SWORN TO BEFORE ME
this 10th day of November, 1993.

Barbara K. McGee
Notary Public

OFFICIAL SEAL
BARBARA K. McGEE
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 4-13-95

THIS FILING IS SUBMITTED ON RECYCLED PAPER

RECEIVED
DEC 8 1993
OFFICE OF RCRA
WASTE MANAGEMENT DIV.
EPA, REGION

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the matter of:	)	
	)	
PETITION OF KEYSTONE STEEL AND WIRE COMPANY FOR ADJUSTED STANDARD FROM 35 ILL. ADM. CODE 721.132	)	AS 93-7 (RCRA DeListing Adjusted Standard)

NOTICE OF FILING

To: See Attached Service List

PLEASE TAKE NOTICE that on December 6, 1993, we filed with the Office of the Clerk of the Pollution Control Board, Keystone's Reply to Illinois Environmental Protection Agency Response to Petition for RCRA Adjusted Standard and Second Amendment to Keystone's RCRA Delisting Adjusted Standard Petition copies of which are hereby served upon you.

KEYSTONE STEEL AND WIRE COMPANY

By: Karen Prena
One of its attorneys

DATED: December 6, 1993

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

Of Counsel:
Ralph P. End, Esq.
General Counsel
Keystone Consolidated Industries
Three Lincoln Center
5430 LBJ Freeway, Suite 1740
Dallas, Texas 75240
(214) 450-4297

CERTIFICATE OF SERVICE

I, Karen L. Prena, certify that I have served the above described documents upon the attached service list by first class mail delivery on December 6, 1993.

Karen Prena
Karen L. Prena

THIS FILING IS SUBMITTED ON RECYCLED PAPER

SERVICE LIST

Matthew J. Dunn, Esq.
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Mark V. Gurnik
Assistant Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
77 West Jackson Boulevard
Chicago, IL 60604

RECEIVED
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OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the matter of:	)	
	)	
PETITION OF KEYSTONE STEEL AND WIRE COMPANY FOR ADJUSTED STANDARD FROM 35 ILL. ADM. CODE 721.132	)	AS 93-7 (RCRA DeListing Adjusted Standard)

NOTICE OF FILING

To: See Attached Service List

PLEASE TAKE NOTICE that on November 24, 1993, we filed with the Office of the Clerk of the Pollution Control Board, Keystone's Motion For an Extension to File Reply a copy of which is hereby served upon you.

KEYSTONE STEEL AND WIRE COMPANY

By: Karen Prena
One of its attorneys

DATED: November 24, 1993

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

CERTIFICATE OF SERVICE

I, Karen L. Prena, certify that I have served the attached Keystone's Motion for Extension to File Reply until December 6, 1993, upon the attached service list by first class mail delivery on November 24, 1993.

Karen Prena
Karen L. Prena

THIS FILING IS SUBMITTED ON RECYCLED PAPER

SERVICE LIST

Matthew J. Dunn, Esq.
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Mark V. Gurnik
Assistant Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
77 West Jackson Boulevard
Chicago, IL 60604

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the matter of:	)	
	)	
PETITION OF KEYSTONE STEEL AND WIRE COMPANY FOR ADJUSTED STANDARD FROM 35 ILL. ADM. CODE 721.132	)	AS 93-7 (RCRA DeListing Adjusted Standard)

NOTICE OF FILING

To: See Attached Service List

PLEASE TAKE NOTICE that on August 30, 1993, we filed with the Office of the Clerk of the Pollution Control Board, Keystone's Notice of Publication a copy of which is hereby served upon you.

KEYSTONE STEEL AND WIRE COMPANY

By: Karen Prena
One of its attorneys

"THIS FILING IS SUBMITTED ON RECYCLED PAPER"

Of Counsel:

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

RECEIVED
SEP 2 1993
OFFICE OF RCRA
WASTE MANAGEMENT DIV
EPA, REGION V

SERVICE LIST

Matthew J. Dunn, Esq.
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Joseph E. Svoboda
General Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

In the matter of:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR ADJUSTED	)	(RCRA DeListing
STANDARD FROM 35 ILL. ADM.	)	Adjusted Standard)
CODE 721.132	)	

NOTICE OF FILING

To: See Attached Service List

PLEASE TAKE NOTICE that on August 25, 1993, we filed with the Office of the Clerk of the Pollution Control Board, an Amended Petition for Adjusted Standard of Keystone Steel and Wire Company, and Keystone's Motion for Leave to file an Amended Petition, copies of which are hereby served upon you.

KEYSTONE STEEL AND WIRE COMPANY

By: Karen Prena
One of its attorneys

"THIS FILING IS SUBMITTED ON RECYCLED PAPER"

Of Counsel:

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

RECEIVED
AUG 26 1993
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EPA, REGIO

SERVICE LIST

Matthew J. Dunn, Esq.
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

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General Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

CERTIFICATE OF SERVICE

I, Karen L. Prena, certify that I have served the attached Amended Petition of Keystone Steel & Wire Company for Adjusted Standard and Motion by Certified Mail Return Receipt Requested, upon the following persons on August 25, 1993:

To: Matthew J. Dunn, Esq.
Chief, Environmental Control Division
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Joseph E. Svoboda
General Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

Karen Prena

Karen L. Prena

CERTIFICATE OF SERVICE

I, Karen L. Prena, certify that I have served the attached RCRA Delisting Adjusted Standard Petition, and Keystone's Motion for Stay of the Board's Proceedings, by Certified Mail Return Receipt Requested, upon the following persons on August 2, 1993:

To: Matthew J. Dunn, Esq.
Chief, Environmental Control Division
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

RECEIVED
AUG 05 1993
OFFICE OF RCRA
WASTE MANAGEMENT DIV
EPA, REGION V

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Joseph E. Svoboda
General Counsel
Division of Legal Counsel
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

William Denham
Illinois Department of Energy and
Natural Resources
325 West Adams, Room 300
Springfield, IL 62704

Jim Kent
U.S. EPA
Office of Solid Waste and
Emergency Response
OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

Karen Prena

Karen L. Prena

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR	)	(RCRA Delisting
ADJUSTED STANDARD FROM	)	Adjusted Standard)
35 Ill. Adm. Code §721.132	)	

KEYSTONE'S NOTICE OF PUBLICATION

Petitioner, Keystone Steel and Wire Company ("Keystone"), by its attorneys, hereby files an original and nine copies of the attached Certificate of Publication of a Legal Notice entitled "Notice of Petition By Keystone Steel and Wire Company For An Adjusted Standard Before The Illinois Pollution Control Board," which appeared in the Peoria Journal Star on August 13, 1993.

Pursuant to 35 Ill. Adm. Code §106.712, Keystone was required to file proof of publication on or before September 1, 1993, 30 days after the filing of the petition. This filing satisfies that requirement.

Respectfully submitted,

KEYSTONE STEEL & WIRE COMPANY

By: Karen Prena
One Of Its Attorneys

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

Of Counsel:

Ralph P. End, Esq.
General Counsel
Keystone Consolidated Industries
Three Lincoln Center
5430 LBJ Freeway, Suite 1740
Dallas, Texas 75240
(214) 450-4297

Dated: August 30, 1993

Certificate of Publication

STATE OF ILLINOIS, }
County of Peoria. } ss

The Peoria Journal Star, Inc. (which is incorporated and doing business under and by virtue of the Laws of the State of Illinois) HEREBY CERTIFIES That it is the printer and publisher of the Journal Star, which is a public secular newspaper of general circulation printed and published daily in the City of Peoria, County of Peoria and State of Illinois, and that said newspaper has been regularly published in said City for at least one (1) year prior to the first publication of the notice hereto attached.

Said Corporation further certifies that the said notice entitled "Legal Notice" hereto attached has been published ..... different times and for ..... successive ..... in Peoria Journal Star, on the following respective dates:

First publication, The 12 day of August, 19 93

Second publication, The ..... day of ....., 19 .....

Third publication, The ..... day of ....., 19 .....

Fourth publication, The ..... day of ....., 19 .....

Fifth publication, The ..... day of ....., 19 .....

Sixth publication, The ..... day of ....., 19 .....

Seventh publication, The ..... day of ....., 19 .....

Eighth publication, The ..... day of ....., 19 .....

Ninth publication, The ..... day of ....., 19 .....

Tenth publication, The ..... day of ....., 19 .....

IN WITNESS WHEREOF, the said Corporation has caused this Certificate to be signed in its name and on its behalf by Joseph A. Dunlap, this 13 day of August, its duly authorized agent, A. D., 19 93

The Peoria Journal Star, Inc.

By Joseph A. Dunlap

Legal Notice

LEGAL NOTICE

"Notice of Petition by Keystone Steel & Wire Company For An Adjusted Standard Before The Illinois Pollution Control Board."

Keystone Steel & Wire Company has filed with the Illinois Pollution Control Board, a petition for an adjusted standard on August 2, 1993, docketed as AS 93-7. Keystone operates a steel and wire facility located at 7000 S.W. Adams Street, Bartonville, Illinois 61641.

Keystone proposes to delist treated sediments from nine Resource Conversation and Recovery Act (RCRA) management units located at this facility. The sediments in these units have been in contact with K062-listed hazardous waste, generated during steel finishing operations at the site and are therefore classified as a hazardous waste under the "mixture rule" following 35 IAC §721.103. As such, Keystone is required to dispose of this material at a hazardous waste landfill. Keystone desires to treat these sediments on-site using a lime-stabilization and Portland cement solification process to stabilize the material. The treated sediments then can be disposed of as a special waste in accordance with applicable State regulations. Keystone has presented data to demonstrate that such disposal can be accomplished without posing a threat to human health or the environment. The adjusted standard petition requests a determination by the Board authorizing such disposal.

Any person may cause a public hearing to be held in the above-described adjusted standard proceeding by filing a hearing request with the Board within 21 days after the date of publication of this notice. The hearing request should clearly indicate the docket number of the adjusted standard proceeding, as found in this notice, and shall be mailed to the Clerk of the Board, Illinois Pollution Control Board, 100 West Randolph Street, Suite 11-500, Chicago, Illinois 60601.

CERTIFICATE OF SERVICE

I, Karen L. Prena, certify that I have served the attached Notice of Publication, upon the following persons by first class mail delivery on August 30, 1993:

To: Matthew J. Dunn, Esq.
Chief, Environmental Control Division
Attorney General, State of Illinois
Environmental Control Division
State of Illinois Center
100 W. Randolph Street, 12th Floor
Chicago, Illinois 60601

Lawrence W. Eastep, P.E.
Manager, Permit Section
Division of Land Pollution Control, #33
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

Joseph E. Svoboda
General Counsel
Division of Legal Counsel
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2200 Churchill Road
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Springfield, Illinois 62794-9276

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OS-333 DeListing Section
401 M Street, S.W.
Washington, D.C. 20460

U.S. EPA
Region V
230 South Dearborn Street
Chicago, IL 60604

Karen L. Prena

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR	)	(RCRA Delisting
ADJUSTED STANDARD FROM	)	Adjusted Standard)
35 Ill. Adm. Code §721.132	)	

KEYSTONE'S MOTION FOR LEAVE TO FILE AN AMENDED PETITION

Petitioner, Keystone Steel and Wire Company ("Keystone"), by its attorneys, respectfully requests leave to file the attached amended petition in the above referenced proceeding.

In support of this motion, Keystone states as follows:

1. Keystone filed a RCRA delisting adjusted standard petition with the Board for certain K062-listed sediments and contaminated soils on August 2, 1993.

2. On that same day, Keystone also filed a Motion for Stay of the Board's Proceedings, explaining inter alia, that Keystone needed to amend its petition in order to include necessary quality assurance/quality control (QA/QC) documentation pending from an independent testing laboratory. Keystone advised the Board that it would seek to amend its petition about the third week of August to incorporate the results of this information and provide a certification that all of the information presented in its petition is complete.

3. On August 12, 1993, Keystone submitted a comprehensive validation package to the IEPA prepared by ERM-North Central and its independent validator, Environmental Standards, Inc. (ESI). The conclusion of this evaluation is that there are no significant inconsistencies or deviations in the data which affect the validity and/or usability of the data; therefore, conclusions drawn from the initial laboratory data remain unchanged.

4. Keystone has amended the relevant sections and tables of the adjusted standard petition to incorporate the validated data results in the attached amended petition.

WHEREFORE, Keystone moves the Board for leave to file its amended petition.

Respectfully submitted,

KEYSTONE STEEL & WIRE COMPANY

By: Karen Prena
One Of Its Attorneys

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

Of Counsel:

Ralph P. End, Esq.
General Counsel
Keystone Consolidated Industries
Three Lincoln Center
5430 LBJ Freeway, Suite 1740
Dallas, Texas 75240
(214) 450-4297

Dated: August 25, 1993

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS 93-7
AND WIRE COMPANY FOR	)	(RCRA Delisting
ADJUSTED STANDARD FROM	)	Adjusted Standard)
35 Ill. Adm. Code §721.132	)	

AMENDED RCRA DELISTING ADJUSTED STANDARD PETITION

TABLE OF CONTENTS

I. Introduction

A. Appendices

1. Certification

2. Affidavit

3. Adjusted Standard Petition

- Errata Sheet

4. Appendix A to Adjusted Standard Petition

- Section E - insert with revised Tables E-7A, E-8A, E-9A
- Section G - revised with revised Tables G-1A through G-6A

Note: Pursuant to 35 Ill. Adm. Code §106.715, only those portions of the petition affected by the Amended Petition are included herein. See, petition filed August 2, 1993.

AMENDED RCRA DELISTING ADJUSTED STANDARD PETITION

Petitioner, Keystone Steel and Wire Company ("Keystone"), through its attorneys, hereby submits this amended petition for an adjusted standard pursuant to 35 Ill. Adm. Code (IAC) §106 Subpart G and 35 IAC §720.122. Keystone seeks delisting, via an adjusted standard, of certain K-062 listed hazardous waste sediments treated by lime-stabilization and Portland cement solidification.

I. Introduction

Keystone previously filed its petition for adjusted standard on August 2, 1993. On that day, Keystone also filed a Motion for Stay of the Board's Proceedings, requesting, inter alia, time to amend Keystone's petition in order to incorporate pending data validation results. Keystone submitted complete validated data and a detailed discussion of quality assurance to Illinois EPA on August 12, 1993.

In this amended petition, Keystone incorporates the results and findings from the data validation. The data validation concludes that inconsistencies or deviations found in the reported analytical results are not significant and do not effect the validity or usability of the data. None of the validated data varied significantly from the initial laboratory data; therefore, Keystone's conclusions remain unchanged. The petitioned waste is neither a listed hazardous waste nor a characteristically hazardous waste in accordance with the level of justification criteria. Therefore, Keystone requests that the

petitioned waste be delisted under the proposed adjusted standard.

Since most of the adjusted standard petition is not affected by the validation results, only the revised sections of the petition are being filed with the Board. See 35 Ill. Adm. Code §106.715. Amended sections include errata revisions to the adjusted standard petition and revisions to Appendix A, Sections E and G. Revisions and comments from the data validation have been incorporated into Tables E-7A, E-8A and E-9A and also Tables G-1A and G-6A. These tables supersede Tables E-7, E-8, E-9, and G-1 through G-6.

Respectfully submitted,

KEYSTONE STEEL AND WIRE COMPANY

By: Karen Prena
One of its Attorneys

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

Of Counsel:

Ralph P. End, Esq.
General Counsel
Keystone Consolidated Industries
Three Lincoln Center
5430 LBJ Freeway, Suite 1740
Dallas, Texas 75240
(214) 450-4297

Dated: August 25, 1993

STATE OF ILLINOIS)
) S.S.
COUNTY OF PEORIA)

CERTIFICATION OF ACCURACY AND RESPONSIBILITY

I certify under penalty of law that I have personally examined and am familiar with the information submitted in the petition and amended petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signed by Authorized Representative

Leslie W. Phillips 8/24/93
Leslie W. Phillips
Vice President
Keystone Steel & Wire Company

Subscribed to and sworn before me this 24 day of August, 1993.

Wilbur C. Bahr, Jr.
Notary Public

OFFICIAL SEAL
WILBUR C. BAHR, JR.
PEORIA COUNTY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 3-16-95

STATE OF ILLINOIS)
) S.S.
COUNTY OF PEORIA)

AFFIDAVIT

Affidavit Required Under
35 Ill. Adm. Code §106.706

I, Leslie W. Phillips, being duly sworn, depose and state that I am a Vice President representing Keystone Steel and Wire Company and that all material facts set forth in the petition, together with the amended petition, are true and correct to the best of my knowledge and belief.

Leslie W. Phillips 8/24/93
Leslie W. Phillips

Subscribed to and sworn before me this 24 day of August, 1993.

Wilbur C. Bahr, Jr.
Notary Public

OFFICIAL SEAL
WILBUR C. BAHR, JR.
PEORIA COUNTY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 3-16-95

Adjusted Standard Petition Errata Sheet
to petition filed August 2, 1993

p. 13. Second table with TCLP concentration for chromium, should read Max. 0.0031 average 0.0058. Note: This change decreases the maximum and average chromium concentration and therefore does not affect the analysis.

p. 33. Section X.B.d. Proposed Adjusted Standard. Should read as follows:

d. The sediments in all containers where the alkalinity lies outside the range of 115,000 mg/kg to 215,000 mg/kg, and the TCLP values exceed the levels given in Item 3 will be retreated and sampled.

e. Following Day 1, if any sample fails to meet the criteria outlined in (c), the subsequent sampling frequency for roll-off containers will revert to the Day 1 sampling schedule.

Note: These changes to page 33 correct typographical errors in the original petition.

Appendix A to Adjusted Standard Petition

- Section E - insert with revised Tables E-7A, E-8A, E-9A
- Section G - revised with revised Tables G-1A through G-6A

28. Inconsistencies or deviations found in the reported analytical results.

During the quality assurance review, ESI determined that inconsistencies or deviations found in the reported analytical results are not significant and do not affect the validity and/or usability of the data. None of the validated data varied significantly from the initial laboratory data; therefore, the conclusions drawn from the initial laboratory data remain valid. Revisions and comments from the data validation have been incorporated into Tables E-7A, E-8A, and E-9A, and also into Tables G-1A through G-6A. These tables supersede Tables E-7, E-8, E-9, and Tables G-1 through G-6, respectively. A detailed discussion of the quality assurance review prepared by ESI, including validated data summary tables and narrative explanations for data qualifications, were submitted to the IEPA on August 12, 1993.

TABLE E-7A
RETENTION RESERVOIR REMEDIATION
VALIDATED BACKGROUND CONCENTRATIONS USED FOR
DELISTING STUDY
(SUPERSEDES TABLE E-7)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number [2]							
		BG(01)4/28B		BG(02)4/28B		BG(03)4/28B		BG(04)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	<0.82	<0.0011	<0.36	<0.00077	<0.74	<0.00077	<0.43	<0.0015
Arsenic	0.82	8.4	0.0059	8.7	<0.0021	12	<0.0021	6.1	<0.0021
Barium	32.8	88.7	0.205	121	0.363	108	0.24	103	0.817
Beryllium	0.082	1.5	<0.00026	1.6	<0.00026	<0.98	<0.00026	<0.59	<0.00026
Cadmium	1.64	3.9	0.0132	<1.2	<0.0042	2.6	<0.0036	<0.52	<0.004
Chromium	3.28	11	<0.0027	18.2	<0.0027	20.1	<0.0027	56.9	<0.0119
Lead	0.246	55.3	<0.0115	39	<0.0039	138	0.005	36.1	<0.0078
Mercury	0.0328	<0.12	<0.0002	<0.12	<0.0002	<0.14	<0.0002	<0.11	<0.0002
Nickel	1.64	<15.1	0.0155	<20.9	0.0188	<44.9	0.0185	<16.3	0.0294
Selenium	0.82	<0.96	<0.0022	<1.1	<0.0022	<1.9	<0.0022	<0.89	<0.0022
Silver	3.28	<0.076	<0.00015	<0.081	<0.00015	<0.19	<0.00015	<0.074	<0.00015
Thallium	0.0328	<0.25	<0.0016	<0.17	<0.0016	<0.26	<0.0016	<0.18	<0.0016
Vanadium	3.28	14.8	<0.0028	20.7	<0.0028	20.5	<0.0028	30.5	0.0044
Zinc	115	362	0.932	196	0.537	372	0.419	92.1	0.125
Additional Parameters									
% Solids		77.8		78.7		70.3		77.8	

TABLE E-7A

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number [2]							
		BG(05)4/28B		BG(32)4/28B		BG(06)4/28B		BG(06)FB4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/l)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	<0.37	<0.00077	<0.31	<0.0012	<0.46	<0.00077	0.00053	-
Arsenic	0.82	10.9	<0.0021	10.2	0.0021	17.6	0.0055	0.00059	-
Barium	32.8	101	0.459	92.7	0.629	141	0.787	0.0025	-
Beryllium	0.082	<1.1	<0.00026	<0.85	<0.00038	1.0	<0.00026	0.00044	-
Cadmium	1.64	<0.96	<0.002	<0.82	<0.0047	3.5	0.0172	0.0004	-
Chromium	3.28	19.2	<0.0027	15.6	<0.0027	66.5	<0.0027	0.0044	-
Lead	0.246	53.4	<0.0067	53	<0.0099	148	<0.0107	0.005	-
Mercury	0.0328	<0.12	<0.0002	<0.11	<0.0002	1.3	<0.0002	<0.0002	-
Nickel	1.64	<27.3	0.0102	<22.3	0.0158	<24.6	0.0369	0.058	-
Selenium	0.82	<1.8	<0.0022	<1.1	<0.0022	<1.5	<0.0022	0.00073	-
Silver	3.28	<0.093	<0.00015	<0.076	<0.00023	0.4	<0.00015	0.000082	-
Thallium	0.0328	<0.41	<0.0016	<0.23	<0.0016	<0.23	<0.0016	0.00087	-
Vanadium	3.28	22.1	<0.0028	19.5	<0.0028	22.6	<0.0028	<0.0007	-
Zinc	115	162	0.196	129	0.261	369	0.494	0.0255	-
Additional Parameters									
% Solids		79.0		80.0		81.1		-	

TABLE E-7A

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(07)4/27B		BG(08)4/27B		BG(08)FB4/27B		BG(09)4/27B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/l)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	<0.33	<0.00077	<0.22	<0.00082	0.00059	-	<0.18	<0.00077
Arsenic	0.82	13.5	<0.0021	10	<0.0021	<0.00053	-	8.6	<0.0027
Barium	32.8	156	0.621	114	0.368	0.0011	-	86.7	0.571
Beryllium	0.0656	0.92	<0.00026	0.77	<0.00042	0.00031	-	0.59	<0.00026
Cadmium	0.082	2.4	0.0159	0.4	<0.0017	0.00032	-	24	0.0108
Chromium	1.64	25.6	<0.0027	19.6	<0.0027	0.0024	-	24.5	0.0043
Lead	0.246	118	0.0199	19	<0.0024	0.0038	-	36.3	<0.0047
Mercury	0.0328	0.1	<0.0002	<0.12	<0.0002	<0.0002	-	<0.10	<0.0002
Nickel	1.64	<29.6	0.0148	<25.9	0.0116	0.0627	-	<24.9	0.0432
Selenium	0.82	<1.4	<0.0022	<1.1	<0.0022	<0.00056	-	<1.3	<0.0035
Silver	3.28	<0.1	<0.00015	<0.061	<0.00015	0.000045	-	<0.032	<0.0015
Thallium	0.0328	<0.17	<0.0016	<0.16	<0.0016	0.0011	-	<0.11	<0.0016
Vanadium	3.28	27.8	<0.0028	23.3	<0.0028	<0.0007	-	17.1	<0.0028
Zinc	115	271	0.368	78.5	0.0527	0.0237	-	574	6530
Additional Parameters									
% Solids		84.0		80.5		-		83.2	

TABLE E-7A

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(10)4/27B		BG(01A)4/28B		BG(01A)FB4/28B		BG(02A)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/l)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	<0.43	<0.00077	<0.3	<0.0012	<0.00019	-	<0.21	<0.00077
Arsenic	0.82	12.5	<0.005	8.1	<0.0027	<0.00053	-	8	<0.0035
Barium	32.8	137	0.372	127	0.763	0.0011	-	143	0.795
Beryllium	0.0656	0.96	<0.00026	0.97	<0.00027	<0.000066	-	0.79	<0.00026
Cadmium	0.082	1.6	<0.0022	1.0	<0.0029	<0.00017	-	1.1	0.004
Chromium	1.62	26.3	<0.0027	26.4	<0.0027	0.0074	-	22.4	<0.0027
Lead	0.246	64	<0.0024	38.2	<0.0072	0.0039	-	38.8	<0.0064
Mercury	0.0328	<0.09	<0.0002	<0.12	<0.0002	<0.0002	-	<0.11	<0.0002
Nickel	1.64	<27	0.0099	<26.1	0.0161	0.126	-	<25.8	<0.0131
Selenium	0.82	<1.3	<0.0022	<1.1	<0.0022	<0.00057	-	<1.1	<0.0022
Silver	3.28	<0.11	<0.00015	<0.14	<0.00015	<0.000039	-	<0.09	<0.00015
Thallium	0.0328	<0.2	<0.0016	<0.76	<0.0016	<0.0004	-	<0.45	<0.0016
Vanadium	3.28	28.4	<0.0028	29.2	<0.0028	<0.0007	-	30.4	<0.0028
Zinc	115	206	0.153	138	0.151	0.0246	-	136	0.143
Additional Parameters									
% Solids		82.3		69.3		-		77.3	

TABLE E-7A

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(03A)4/28B		BG(04A)4/28B		BG(33)4/28B		BG(05A)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	<0.26	<0.00077	<0.14	<0.00077	<0.24	<0.00077	<0.11	<0.0019
Arsenic	0.82	6.9	<0.0021	9.3	<0.0031	7.2	<0.0021	5.4	<0.0021
Barium	32.8	106	0.3	180	0.846	138	0.902	71.2	0.318
Beryllium	0.0656	<0.72	<0.00026	0.92	<0.00026	0.72	<0.00026	<0.65	<0.0006
Cadmium	0.082	1.5	<0.0029	0.79	0.0064	1.3	0.0043	<0.34	<0.0016
Chromium	1.64	14.3	<0.0027	27.9	<0.0027	29.2	<0.0027	12.9	<0.0027
Lead	0.246	32	<0.0062	33	0.0123	58.6	0.015	13.4	<0.0024
Mercury	0.0328	<0.12	<0.0002	<0.13	<0.00020	<0.11	<0.0002	<0.1	<0.0002
Nickel	1.64	<22.6	0.0094	<32.9	0.0244	<24.8	0.0208	<21.2	<0.008
Selenium	0.82	<1.4	<0.0022	<1.2	<0.0022	<1	<0.0022	<0.74	<0.0022
Silver	3.28	<0.084	<0.00015	<0.12	<0.00015	<0.16	<0.00015	<0.032	<0.00015
Thallium	0.0328	<0.17	<0.0016	<0.29	<0.0016	<0.23	<0.0016	<0.16	<0.0016
Vanadium	3.28	17.3	<0.0028	36.7	<0.0028	29.1	<0.0028	16.3	<0.0028
Zinc	115	130	0.134	144	0.935	390	0.463	61	<0.0074
Additional Parameters									
% Solids		79.0		78.6		77.6		84.7	

TABLE E-7A

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(06A)4/28B		BG(07A)4/28B		BG(08A)4/27B		BG(09A)4/27B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	5.5	<0.0054	<1.9	<0.0059	<0.67	<0.0023	<0.41	<0.00077
Arsenic	0.82	14.1	<0.0021	5.8	<0.0021	15.8	<0.0040	8.2	<0.0021
Barium	32.8	411	2.15	71.2	0.181	169	0.461	118	0.576
Beryllium	0.0656	<0.46	<0.00026	2.4	<0.00026	1.1	<0.0013	0.8	<0.00038
Cadmium	0.082	4.2	0.031	3.8	0.0122	3.7	0.0079	1.3	<0.0045
Chromium	1.64	19.2	<0.0027	14.1	<0.0027	27.8	0.0042	26.4	<0.0027
Lead	0.246	548	0.23	105	<0.0196	146	0.0114	57	<0.0078
Mercury	0.0328	<0.33	<0.0002	<0.12	<0.0002	<0.12	<0.0002	<0.12	<0.0002
Nickel	1.64	<30.4	0.104	<17.7	0.0311	<38.2	0.0137	<28.2	0.0251
Selenium	0.82	<1.3	<0.0024	<1.1	<0.0023	<1.4	<0.004	<1.2	<0.0022
Silver	3.28	2.9	<0.00015	<0.083	<0.00015	<0.11	<0.00017	<0.1	<0.00015
Thallium	0.0328	<0.34	<0.0016	<0.18	<0.0016	<0.2	<0.0041	<0.39	<0.0016
Vanadium	3.28	10.7	<0.0028	16.8	<0.0028	31.1	<0.0028	20.4	<0.0028
Zinc	115	892	4.2	413	1.56	545	0.554	195	0.235
Additional Parameters									
% Solids		85.4		82.0		82.3		82.0	

TABLE E-7A

Analyte	Method Detection Limit (mg/l)	Background Sample Identification Number[2]							
		BG(31)4/27B		BG(10A)4/28B		BG(11A)4/27B		BG(12A)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	<0.22	<0.00077	<0.19	<0.00077	<0.21	<0.00077	<0.13	<0.00077
Arsenic	0.82	8.5	<0.0021	4.6	<0.0021	8.6	<0.0021	8	<0.0021
Barium	32.8	125	0.479	112	0.726	111	0.373	129	0.887
Beryllium	0.0656	0.79	<0.00031	0.57	<0.00026	0.84	<0.00036	0.73	<0.00026
Cadmium	0.082	1.2	<0.0035	0.61	<0.0019	<0.28	<0.00068	0.59	0.0044
Chromium	1.64	24.3	0.0029	20.2	<0.0027	26.9	0.0043	23.5	<0.0027
Lead	0.246	51.7	<0.0038	15.7	<0.0033	22.6	<0.0078	25.5	<0.0061
Mercury	0.0328	<0.10	<0.0002	<0.13	<0.0002	<0.10	<0.0002	<0.12	<0.0002
Nickel	1.64	<24.3	0.0234	<31.6	0.0162	<25.1	0.012	<27.2	0.0142
Selenium	0.82	<0.96	<0.0022	<0.84	<0.0022	<0.66	<0.0022	<1	<0.0022
Silver	3.28	<0.075	<0.00015	<0.066	<0.00015	<0.049	<0.00015	<0.07	<0.00015
Thallium	0.0328	<0.17	<0.0016	<0.18	<0.0016	<0.21	<0.0016	<0.18	<0.0016
Vanadium	3.28	22.8	<0.0028	28.6	<0.0028	40.9	<0.0028	32.7	<0.0028
Zinc	115	158	0.214	71.5	<0.0164	89.1	<0.0123	104	0.0767
Additional Parameters									
% Solids		82.7		79.4		79.5		80.3	

TABLE E-7A

(Page 8 of 8)

Analyte	Method Detection Limit (mg/l)	Background Sample Identification Number[2]					
		BG(13A)4/28B		BG(14A)4/27B		BG(15A)4/27B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals							
Antimony	0.0984	<0.072	<0.00077	<0.3	<0.00086	<0.24	<.00077
Arsenic	0.82	7.6	<0.0026	8.4	<0.0021	15	<0.0021
Barium	32.8	151	0.358	143	0.895	146	0.40
Beryllium	0.0656	0.88	<0.00026	0.86	<.00026	1	<.00026
Cadmium	0.082	1.1	<0.0025	1.6	0.0061	1.1	<0.0027
Chromium	1.64	25.4	<0.0027	16	0.003	28.9	0.0031
Lead	0.246	42.6	0.022	80.4	0.0155	38.3	<0.0059
Mercury	0.0328	<0.13	<0.00020	<0.10	<0.0002	<0.13	<0.0002
Nickel	1.64	<26.9	0.0093	<20.1	0.0209	<36.1	0.0113
Selenium	0.82	<1.2	<0.0022	<0.92	<0.0022	<1.3	<0.0022
Silver	3.28	<0.088	<0.00015	<0.074	<.00015	<0.082	<.00015
Thallium	0.0328	<0.15	<0.0016	<0.18	<0.0016	<0.2	<0.0016
Vanadium	3.28	30.1	<0.0028	18.8	<0.0028	30.6	<0.0028
Zinc	115	162	0.113	226	0.308	181	0.158
Additional Parameters							
% Solids		76.4		85.1		79.5	

Notes:

(1) Background sampling began on 4/27/93 and was completed on 4/30/93.

(2) Sample Number Designation:
BG(01)4/28B = BG-Background, (01)-Location Modifier, 4/28-Date, B-Delisting Modifier

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 1
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(01)5/13B			E06(10) [2]	E07(05)	F05(11)	F05(12)	F07(11)	F07(11)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	5.3	<0.00077	0.0114	- (5)	-	-	-	-	-
Arsenic	0.82	23.2	0.0038	0.0032	-	-	-	-	-	-
Barium	32.8	93.9	0.178	0.027	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	0.0012	-	-	-	-	-	-
Cadmium	0.082	1.3	0.005	0.004	-	-	-	-	-	-
Chromium	1.64	717	<0.0027	0.0351	-	-	-	-	-	-
Lead	0.246	7,570	<0.0024	0.0308	-	-	-	-	-	-
Mercury	0.0328	0.31	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	34.4	0.0828	0.0282	-	-	-	-	-	-
Selenium	0.82	<2.2	<0.0022	0.004	-	-	-	-	-	-
Silver	3.28	0.74	<0.00015	0.00019	-	-	-	-	-	-
Thallium	0.0328	<0.29	<0.0016	<0.0022	-	-	-	-	-	-
Vanadium	3.28	31.3	<0.0028	0.0035	-	-	-	-	-	-
Zinc	115	2,670	0.0075	<0.0126	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 1
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(01)5/13B			E06(10) [2]	E07(05)	F05(11)	F05(12)	F07(11)	F07(11)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.19	<0.056	0.26	0.32	0.16	<0.005
Carbon Disulfide	65.6	-	-	-	0.052	<0.056	<0.05	0.065	<0.051	<0.005
Acetone	65.6	-	-	-	2.2	1.8	3.2	3.2	2.7	<0.01
2-Butanone	32.8	-	-	-	0.45	0.32	0.68	0.71	0.57	<0.01
Semivolatile Organics										
Phenol	328	3.6	0.099	-	-	-	-	-	-	-
Pyrene	0.73	<0.01	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	230	-	-	-	-	-	-	-	-
TOC	(7)	40,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<2.2	-	-	-	-	-	-	-	-
Sulfide	(7)	44	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.4, 11.8	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	161,000	-	-	-	-	-	-	-	-
% Solids	(7)	45.7	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 2
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(02)5/13B			H03(07) [2]	H06(13)	I06(09)	I08(04)	I08(04) Dup.	I08(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	8.6	<0.00077	<0.0066	- (5)	-	-	-	-	-
Arsenic	0.82	20.6	<0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	103	0.134	0.0373	-	-	-	-	-	-
Beryllium	0.0656	0.48	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	<0.0021	<0.0011	-	-	-	-	-	-
Chromium	1.64	600	<0.0027	0.021	-	-	-	-	-	-
Lead	0.246	6,270	<0.0024	0.0498	-	-	-	-	-	-
Mercury	0.0328	<0.19	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31.7	0.0481	0.0182	-	-	-	-	-	-
Selenium	0.82	<2.1	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.58	<0.00015	0.00064	-	-	-	-	-	-
Thallium	0.0328	<0.23	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	32.2	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,450	0.0023	0.0528	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 2
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(02)5/13B			H03(07) [2]	H06(13)	I06(09)	I08(04)	I08(04) Dup.	I08(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	<0.04	0.41	0.24	0.11	0.22	0.18
Carbon Disulfide	65.6	-	-	-	<0.04	<0.048	0.09	<0.049	0.15	0.16
Acetone	65.6	-	-	-	0.88	4.6	4.1	2.4	3.8	2.9
2-Butanone	32.8	-	-	-	0.16	0.7	0.75	0.36	0.69	0.53
Semivolatile Organics										
Phenol	328	1.6	0.042	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	330	-	-	-	-	-	-	-	-
TOC	(7)	31,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	38	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.4, 12.3	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	178,000	-	-	-	-	-	-	-	-
% Solids	(7)	53.0	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 3
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(03)5/13B			JJ07(08) [2]	K08(01)	K08(08)	M08(06)	M09(01)	M09(01)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	2.4	<0.00077	<0.009	- (5)	-	-	-	-	-
Arsenic	0.82	23.9	<0.0021	0.0021	-	-	-	-	-	-
Barium	32.8	80.5	0.0883	0.0202	-	-	-	-	-	-
Beryllium	0.0656	0.41	<0.00026	0.00037	-	-	-	-	-	-
Cadmium	0.082	1.5	<0.0027	0.0049	-	-	-	-	-	-
Chromium	1.64	719	<0.0027	0.0436	-	-	-	-	-	-
Lead	0.246	7,810	<0.0024	0.135	-	-	-	-	-	-
Mercury	0.0328	0.38	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	33.1	0.0436	0.0234	-	-	-	-	-	-
Selenium	0.82	<2.4	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.72	<0.00015	0.00036	-	-	-	-	-	-
Thallium	0.0328	<0.26	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	20.7	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	3,230	0.0015	0.354	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 3
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(03)5/13B			JJ07(08) [2]	K08(01)	K08(08)	M08(06)	M09(01)	M09(01)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.14	0.1	0.24	0.27	0.26	<0.005
Carbon Disulfide	65.6	-	-	-	<0.06	<0.061	<0.061	0.057	0.17	<0.005
Acetone	65.6	-	-	-	3.1	3.0	4.8	4.4	6.1	<0.01
2-Butanone	32.8	-	-	-	0.51	0.49	0.66	0.74	1.0 (8)	<0.01
Semivolatile Organics										
Phenol	328	3.4	0.031	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	470	-	-	-	-	-	-	-	-
TOC	(7)	43,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<2.2	-	-	-	-	-	-	-	-
Sulfide	(7)	<22	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.5, 11.8	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	157,000	-	-	-	-	-	-	-	-
% Solids	(7)	44.6	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 4
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(04)5/13B			N05(12) [2]	O06(05)	O09(07)	O09(07) Dup.	P06(07)	P09(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.6	<0.00077	<0.0072	- (5)	-	-	-	-	-
Arsenic	0.82	21.7	<0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	108	0.168	0.0258	-	-	-	-	-	-
Beryllium	0.0656	0.54	<0.00026	<0.0008	-	-	-	-	-	-
Cadmium	0.082	1.1	<0.0035	<0.0008	-	-	-	-	-	-
Chromium	1.64	542	<0.0027	0.0272	-	-	-	-	-	-
Lead	0.246	5,660	0.0069	0.0857	-	-	-	-	-	-
Mercury	0.0328	0.25	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	32.9	0.0607	0.0167	-	-	-	-	-	-
Selenium	0.82	<2.0	<0.0022	<0.0027	-	-	-	-	-	-
Silver	3.28	0.61	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.29	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	35.5	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,250	<0.0011	0.0564	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentations Used For Delisting Study
for Section 4
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(04)5/13B			N05(12) [2]	O06(05)	O09(07)	O09(07) Dup.	P06(07)	P09(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.11	0.12	0.17	0.16	<0.047	0.12
Carbon Disulfide	65.6	-	-	-	0.073	0.13	0.16	0.14	<0.047	0.06
Acetone	65.6	-	-	-	3.4	3.4	5.8	5.2	2.9	4.6
2-Butanone	32.8	-	-	-	0.58	0.55	0.88	0.84	0.44	0.7
Semivolatile Organics										
Phenol	328	<1.2	0.07	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	490	-	-	-	-	-	-	-	-
TOC	(7)	27,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	38	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.4, 12.0	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	148,000	-	-	-	-	-	-	-	-
% Solids	(7)	53.2	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 5
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(05)5/13B			N11(06) [2]	N11(06)FB	N13(05)	O10(05)	O14(10)	P13(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	4.8	<0.00077	<0.0072	- (5)	-	-	-	-	-
Arsenic	0.82	13.9	0.0038	<0.0021	-	-	-	-	-	-
Barium	32.8	77.9	0.13	0.0259	-	-	-	-	-	-
Beryllium	0.0656	0.38	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	0.94	0.004	0.0018	-	-	-	-	-	-
Chromium	1.64	585	<0.0027	0.0366	-	-	-	-	-	-
Lead	0.246	6,060	<0.0024	0.217	-	-	-	-	-	-
Mercury	0.0328	0.31	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	29.8	0.0587	0.0184	-	-	-	-	-	-
Selenium	0.82	<1.6	<0.0022	<0.0023	-	-	-	-	-	-
Silver	3.28	0.61	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.23	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	18.7	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,340	0.004	0.172	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 5
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(05)5/13B			N11(06) [2]	N11(06)FB	N13(05)	O10(05)	O14(10)	P13(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Methylene Chloride	0.082	-	-	-	<0.06	<0.005	0.072	<0.057	0.073	<0.056
Toluene	16.4	-	-	-	0.13	<0.005	<0.057	0.071	0.11	<0.056
Acetone	65.6	-	-	-	4.0	<0.01	2.4	3.4	2.6	3.0
2-Butanone	32.8	-	-	-	0.64	<0.01	0.34	0.52	0.49	0.44
Semivolatile Organics										
Phenol	328	3.2	0.075	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	450	-	-	-	-	-	-	-	-
TOC	(7)	31,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	37	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.5, 11.7	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	153,000	-	-	-	-	-	-	-	-
% Solids	(7)	53.6	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 5
(Reanalysis of TCLP and MEP Metals)
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(05)5/13B			N11(06) [2]	N11(06)FB	N13(05)	O10(05)	O14(10)	P13(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	4.8	<0.0019	<0.0061	- (5)	-	-	-	-	-
Arsenic	0.82	13.9	0.0064	<0.003	-	-	-	-	-	-
Barium	32.8	77.9	0.159	0.0325	-	-	-	-	-	-
Beryllium	0.0656	0.38	<0.00026	<0.0005	-	-	-	-	-	-
Cadmium	0.082	0.94	0.005	0.0029	-	-	-	-	-	-
Chromium	1.64	585	<0.0031	0.0328	-	-	-	-	-	-
Lead	0.246	6,060	<0.0162	0.0294	-	-	-	-	-	-
Mercury	0.0328	0.31	-	-	-	-	-	-	-	-
Nickel	1.64	29.8	0.0697	0.0208	-	-	-	-	-	-
Selenium	0.82	<1.6	<0.0022	0.0046	-	-	-	-	-	-
Silver	3.28	0.61	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.23	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	18.7	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,340	<0.006	0.0143	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 5
(Reanalysis of TCLP and MEP Metals)
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(05)5/13B			N11(06) [2]	N11(06)FB	N13(05)	O10(05)	O14(10)	P13(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Methylene Chloride	0.082	-	-	-	<0.06	<0.005	0.072	<0.057	0.073	<0.056
Toluene	16.4	-	-	-	0.13	<0.005	<0.057	0.071	0.11	<0.056
Acetone	65.6	-	-	-	4.0	<0.01	2.4	3.4	2.6	3.0
2-Butanone	32.8	-	-	-	0.64	<0.01	0.34	0.52	0.49	0.44
Semivolatile Organics										
Phenol	328	3.2	0.075	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	450	-	-	-	-	-	-	-	-
TOC	(7)	31,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	37	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.5, 11.7	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	153,000	-	-	-	-	-	-	-	-
% Solids	(7)	53.6	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 6
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(06)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	2.5	<0.00077	<0.0074	- (5)	-	-	-	-	-
Arsenic	0.82	21.1	0.0047	<0.0021	-	-	-	-	-	-
Barium	32.8	121	0.15	0.0206	-	-	-	-	-	-
Beryllium	0.0656	0.78	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	0.005	<0.00089	-	-	-	-	-	-
Chromium	1.64	738	<0.0027	0.0449	-	-	-	-	-	-
Lead	0.246	7,070	<0.0024	0.192	-	-	-	-	-	-
Mercury	0.0328	0.35	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	30.8	0.0762	0.0167	-	-	-	-	-	-
Selenium	0.82	5.2	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.74	<0.00015	0.00017	-	-	-	-	-	-
Thallium	0.0328	<0.11	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	30.5	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,830	<0.0011	0.393	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 6
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(06)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.084	0.088	0.074	0.21	0.33	0.12
Carbon Disulfide	65.6	-	-	-	0.01	0.087	<0.05	0.2	0.2	0.16
Acetone	65.6	-	-	-	2.2	2.0	2.2	1.4	2.6	2.2
2-Butanone	32.8	-	-	-	0.39	0.41	0.36	0.33	0.54	0.46
Semivolatile Organics										
Phenol	328	1.8	0.074	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	300	-	-	-	-	-	-	-	-
TOC	(7)	32,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	22	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.4, 12.0	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	157,000	-	-	-	-	-	-	-	-
% Solids	(7)	53.4	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 6 (Duplicate)
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(22)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	7.2	<0.00077	<0.0078	- (5)	-	-	-	-	-
Arsenic	0.82	21.2	0.0042	<0.0021	-	-	-	-	-	-
Barium	32.8	103	0.141	0.0251	-	-	-	-	-	-
Beryllium	0.0656	0.32	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	0.0053	0.00094	-	-	-	-	-	-
Chromium	1.64	712	<0.0027	0.042	-	-	-	-	-	-
Lead	0.246	6,410	<0.0024	0.116	-	-	-	-	-	-
Mercury	0.0328	0.22	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31	0.0804	0.015	-	-	-	-	-	-
Selenium	0.82	<2.0	<0.0022	0.0039	-	-	-	-	-	-
Silver	3.28	0.84	<0.00015	<0.00056	-	-	-	-	-	-
Thallium	0.0328	<0.11	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	28.6	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,420	<0.0011	0.0941	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 6 (Duplicate)
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(22)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.084	0.088	0.074	0.21	0.33	0.12
Carbon Disulfide	65.6	-	-	-	0.01	0.087	<0.05	0.2	0.2	0.16
Acetone	65.6	-	-	-	2.2	2.0	2.2	1.4	2.6	2.2
2-Butanone	32.8	-	-	-	0.39	0.41	0.36	0.33	0.54	0.46
Semivolatile Organics										
Phenol	328	3.0		0.065	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	460	-	-	-	-	-	-	-	-
TOC	(7)	29,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	38	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.5, 12.4	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	-	-	-	-	-	-	-	-	-
% Solids	(7)	53.1	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 7
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(07)5/13B			E14(13) [2]	E14(13)FB	F12(15)	F14(02)	F15(16)	G13(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.5	<0.00077	<0.0062	- (5)	-	-	-	-	-
Arsenic	0.82	25.3	0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	90.8	0.133	0.0238	-	-	-	-	-	-
Beryllium	0.0656	0.39	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.4	<0.0024	0.0012	-	-	-	-	-	-
Chromium	1.64	674	<0.0027	0.0339	-	-	-	-	-	-
Lead	0.246	7,040	<0.0024	0.106	-	-	-	-	-	-
Mercury	0.0328	0.38	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31.4	0.0573	0.0189	-	-	-	-	-	-
Selenium	0.82	<2.2	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.84	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.23	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	25.9	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,540	0.0036	0.253	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 7
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(07)5/13B			E14(13) [2]	E14(13)FB	F12(15)	F14(02)	F15(16)	G13(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.16	<0.005	0.12	0.07	0.14	.01
Carbon Disulfide	65.6	-	-	-	0.12	<0.005	<0.044	<0.056	0.066	<0.05
Acetone	65.6	-	-	-	2.0	<0.01	3.6	2.6	4.2	3.7
2-Butanone	32.8	-	-	-	0.42	<0.01	0.57	0.53	0.61	0.53
Semivolatile Organics										
Phenol	328	3.3	0.063	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	360	-	-	-	-	-	-	-	-
TOC	(7)	36,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<2.0	-	-	-	-	-	-	-	-
Sulfide	(7)	41	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.5, 12.0	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	155,000	-	-	-	-	-	-	-	-
% Solids	(7)	48.9	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 8
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(08)5/13B			B16(03) [2]	C11(03)	C11(07)	D15(10)	D19(02)	D19(02) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.4	<0.00077	<0.0055	- (5)	-	-	-	-	-
Arsenic	0.82	20.0	0.0036	<0.0021	-	-	-	-	-	-
Barium	32.8	134	0.32	0.0299	-	-	-	-	-	-
Beryllium	0.0656	0.55	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	<0.002	<0.00068	-	-	-	-	-	-
Chromium	1.64	674	<0.0116	0.0196	-	-	-	-	-	-
Lead	0.246	4,650	0.336	0.0734	-	-	-	-	-	-
Mercury	0.0328	0.19	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	34	0.0802	0.0178	-	-	-	-	-	-
Selenium	0.82	<1.7	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.51	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.11	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	52.2	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	1,770	0.0091	<0.0365	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 8
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(08)5/13B			B16(03) [2]	C11(03)	C11(07)	D15(10)	D19(02)	D19(02) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	<0.045	<0.044	<0.043	0.097	0.097	0.047
Benzene	0.082	-	-	-	<0.045	<0.044	<0.043	0.049	<0.043	<0.047
Acetone	65.6	-	-	-	1.8	1.2	1.2	1.5	3.6	1.0
1,1-Dichloroethane	65.6	-	-	-	<0.045	<0.044	<0.043	0.051	<0.043	<0.047
2-Butanone	32.8	-	-	-	0.32	0.23	0.24	0.21	0.58	0.16
Semivolatile Organics										
Phenol	328	<0.74	0.044	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	130	-	-	-	-	-	-	-	-
TOC	(7)	30,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<2.1	-	-	-	-	-	-	-	-
Sulfide	(7)	33	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.5, 12.2	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	175,000	-	-	-	-	-	-	-	-
% Solids	(7)	48.3	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 9
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(09)5/12B			E18(04) [2]	E18(04)FB	G17(06)	G19(09)	G19(14)	H19(07)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	10.3	<0.00077	<0.0073	- (5)	-	-	-	-	-
Arsenic	0.82	26.3	0.0049	<0.0021	-	-	-	-	-	-
Barium	32.8	98.2	0.0997	0.0184	-	-	-	-	-	-
Beryllium	0.0656	0.40	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.4	<0.0034	0.00089	-	-	-	-	-	-
Chromium	1.64	716	<0.0028	0.0462	-	-	-	-	-	-
Lead	0.246	6,960	<0.0024	0.117	-	-	-	-	-	-
Mercury	0.0328	0.29	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	30.8	0.075	0.0177	-	-	-	-	-	-
Selenium	0.82	<1.9	<0.0022	<0.0025	-	-	-	-	-	-
Silver	3.28	0.67	<0.00015	0.0004	-	-	-	-	-	-
Thallium	0.0328	<0.12	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	29.6	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,120	<0.0011	0.0781	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 9
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(09)5/12B			E18(04) [2]	E18(04)FB	G17(06)	G19(09)	G19(14)	H19(07)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.12	<0.005	0.16	0.16	0.16	0.35
Carbon Disulfide	65.6	-	-	-	<0.045	<0.005	0.1	<0.05	0.047	0.12
Acetone	65.6	-	-	-	5.2	<0.01	9.6	6.6	7.0	15.0
2-Butanone	32.8	-	-	-	0.6	<0.01	1.1	0.83	0.79	1.8
Semivolatile Organics										
Phenol	328	2.6	0.06	-	-	-	-	-	-	-
Pyrene	16.4	0.076	<0.01	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	130	-	-	-	-	-	-	-	-
TOC	(7)	38,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	31	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.4, 11.9	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	142,000	-	-	-	-	-	-	-	-
% Solids	(7)	51.5	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 10
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(10)5/11B			O19(09) [2]	O19(09) Dup.	K18(13)	M20(14)	N21(01)	N21(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	12.1	<0.00077	<0.0081	- (5)	-	-	-	-	-
Arsenic	0.82	29.4	0.0072	<0.0021	-	-	-	-	-	-
Barium	32.8	111	0.0911	0.0209	-	-	-	-	-	-
Beryllium	0.0656	0.47	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.5	0.0077	0.0014	-	-	-	-	-	-
Chromium	1.64	868	0.0031	0.0287	-	-	-	-	-	-
Lead	0.246	8,860	<0.0024	0.0947	-	-	-	-	-	-
Mercury	0.0328	0.33	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	35.3	0.12	0.0197	-	-	-	-	-	-
Selenium	0.82	<2.5	<0.0022	<0.0024	-	-	-	-	-	-
Silver	3.28	0.89	<0.00015	0.00027	-	-	-	-	-	-
Thallium	0.0328	<0.17	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	33.2	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,890	<0.0011	0.233	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 10
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(10)5/11B			O19(09) [2]	O19(09) Dup.	K18(13)	M20(14)	N21(01)	N21(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.14	0.2	0.092	<0.047	0.087	0.046
Acetone	65.6	-	-	-	10.0	17.0	8.4	1.4	3.2	1.7
2-Butanone	32.8	-	-	-	1.1	1.9	1.1	0.18	0.44	0.23
Semivolatile Organics										
Phenol	328	3.3	0.088	-	-	-	-	-	-	-
Pyrene	16.4	0.09	<0.01	-	-	-	-	-	-	-
4-Nitroaniline	(6)	4.9	0.088	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	350	-	-	-	-	-	-	-	-
TOC	(7)	42,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	<19	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.3, 11.7	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	151,000	-	-	-	-	-	-	-	-
% Solids	(7)	53.3	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 11
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(11)5/11B			P19(09) [2]	P19(09)FB	Q19(15)	Q23(12)	Q25(12)	R25(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	7.4	<0.00077	<0.0064	- (5)	-	-	-	-	-
Arsenic	0.82	25.3	<0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	90.0	0.688	0.0441	-	-	-	-	-	-
Beryllium	0.0656	0.40	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.3	<0.00068	0.0013	-	-	-	-	-	-
Chromium	1.64	758	<0.0027	0.0342	-	-	-	-	-	-
Lead	0.246	7,560	<0.0024	0.0618	-	-	-	-	-	-
Mercury	0.0328	0.43	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	32.2	0.0321	0.0244	-	-	-	-	-	-
Selenium	0.82	<1.9	<0.0022	<0.025	-	-	-	-	-	-
Silver	3.28	0.85	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.12	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	27.9	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,280	0.0044	<0.0229	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 11
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(11)5/11B			P19(09) [2]	P19(09)FB	Q19(15)	Q23(12)	Q25(12)	R25(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.083	<0.005	0.11	0.12	0.12	0.66
Acetone	65.6	-	-	-	4.6	<0.01	4.0	4.8	3.0	9.3
2-Butanone	32.8	-	-	-	0.58	<0.01	0.67	0.65	0.46	1.3
Semivolatile Organics										
Phenol	328	<1.5	0.046	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	200	-	-	-	-	-	-	-	-
TOC	(7)	39,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	26	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.3, 11.8	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	193,000	-	-	-	-	-	-	-	-
% Solids	(8)	52.9	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 12
(Supersedes E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(12)5/11B			J23(01) [2]	N23(03)	O25(05)	O26(07)	P25(14)	P25(14) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	8.8	<0.00077	<0.0073	- (5)	-	-	-	-	-
Arsenic	0.82	25.2	0.0055	<0.0021	-	-	-	-	-	-
Barium	32.8	80.1	0.108	0.0273	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	<0.00046	-	-	-	-	-	-
Cadmium	0.082	4.9	0.005	0.0035	-	-	-	-	-	-
Chromium	1.64	707	<0.0027	0.0451	-	-	-	-	-	-
Lead	0.246	6,860	<0.0024	0.086	-	-	-	-	-	-
Mercury	0.0328	0.50	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31.3	0.1	0.028	-	-	-	-	-	-
Selenium	0.82	<1.5	<0.0022	0.0034	-	-	-	-	-	-
Silver	3.28	0.97	<0.00015	0.00023	-	-	-	-	-	-
Thallium	0.0328	<0.13	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	24.8	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,050	0.0026	<0.046	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 12
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(12)5/11B			J23(01) [2]	N23(03)	O25(05)	O26(07)	P25(14)	P25(14) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.11	0.13	0.16	0.2	0.19	0.26
Acetone	65.6	-	-	-	2.5	1.8	5.2	3.7	4.9	6.0
2-Butanone	32.8	-	-	-	0.36	0.26	0.61	0.58	0.7	0.9
Semivolatile Organics										
Phenol	328	2.0	0.089	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	320	-	-	-	-	-	-	-	-
TOC	(7)	47,000	-	-	-	-	-	-	-	-
Cyanide	3.28	2.2	-	-	-	-	-	-	-	-
Sulfide	(7)	<20	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.2, 12.0	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	155,000	-	-	-	-	-	-	-	-
% Solids	(8)	51.0	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 13
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(13)5/6B			F24(16) [2]	F24(16)FB	G22(04)	G24(04)	G26(08)	J23(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	13.8	<0.0019	<0.012	- (5)	-	-	-	-	-
Arsenic	0.82	33	0.0093	<0.0034	-	-	-	-	-	-
Barium	32.8	95.8	0.204	<0.0102	-	-	-	-	-	-
Beryllium	0.0656	0.45	<0.00026	<0.00074	-	-	-	-	-	-
Cadmium	0.082	2.1	0.0085	0.0023	-	-	-	-	-	-
Chromium	1.64	843	<0.0027	0.0347	-	-	-	-	-	-
Lead	0.246	8,880	<0.0024	0.155	-	-	-	-	-	-
Mercury	0.0328	0.74	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	<42.1	0.156	0.032	-	-	-	-	-	-
Selenium	0.82	4.1	<0.0031	<0.0034	-	-	-	-	-	-
Silver	3.28	1.1	<0.00015	0.0002	-	-	-	-	-	-
Thallium	0.0328	<0.28	<0.0016	<0.0017	-	-	-	-	-	-
Vanadium	3.28	28.9	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	3,180	<0.0093	0.0817	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 13
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(13)5/6B			F24(16) [2]	F24(16)FB	G22(04)	G24(04)	G26(08)	J23(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.17	<0.005	0.14	<0.097	<0.058	0.15
Acetone	65.6	-	-	-	3.7	<0.01	2.7	2.0	1.4	3.8
2-Butanone	32.8	-	-	-	0.72	<0.01	0.46	0.35	0.2	0.61
Methylene Chloride	.082	-	0.1	-	0.17	<0.005	<0.048	<0.049	<0.052	<0.05
Semivolatile Organics										
Phenol	328	4.7	0.1	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	260	-	-	-	-	-	-	-	-
TOC	(7)	52000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-	-
Sulfide	(7)	35.5	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.2, 12.4	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	162,000	-	-	-	-	-	-	-	-
% Solids	(7)	47.2	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 14
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	7.1	<0.0033	<0.0106	- (5)	-	-	-	-	-
Arsenic	0.82	23.5	0.0043	<0.0022	-	-	-	-	-	-
Barium	32.8	111	0.245	0.0294	-	-	-	-	-	-
Beryllium	0.0656	0.53	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.2	0.0065	0.00096	-	-	-	-	-	-
Chromium	1.64	629	0.0028	0.0143	-	-	-	-	-	-
Lead	0.246	5,560	0.0141	0.138	-	-	-	-	-	-
Mercury	0.0328	0.48	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	<33.9	0.144	0.0268	-	-	-	-	-	-
Selenium	0.82	2.1	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.73	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.21	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	31.1	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	1,690	<0.0107	0.190	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 14
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Methylene Chloride	0.082	-	-	-	0.13	0.1	<0.043	<0.045	<0.049	<0.048
Toluene	16.4	-	-	-	<0.066	0.05	0.12	0.18	0.19	0.17
Acetone	65.6	-	-	-	1.5	1.1	2.5	3.6	5.4	4.9
2-Butanone	32.8	-	-	-	0.28	0.26	0.44	0.67	0.94	0.7
Semivolatile Organics										
Phenol	328	<2.8	0.054	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	220	-	-	-	-	-	-	-	-
TOC	(7)	31,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.7	-	-	-	-	-	-	-	-
Sulfide	(7)	24	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.1, 12.1	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	148,000	-	-	-	-	-	-	-	-
% Solids	(7)	56.4	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 14 (Duplicate)
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.5	0.0043	<0.0089	- (5)	-	-	-	-	-
Arsenic	0.82	24	0.0055	0.0036	-	-	-	-	-	-
Barium	32.8	114	0.241	<0.0105	-	-	-	-	-	-
Beryllium	0.0656	0.52	<0.00026	<0.00027	-	-	-	-	-	-
Cadmium	0.082	1.3	0.0071	0.001	-	-	-	-	-	-
Chromium	1.64	565	<0.0027	0.0166	-	-	-	-	-	-
Lead	0.246	5,610	<0.0024	0.0328	-	-	-	-	-	-
Mercury	0.0328	0.4	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	<34	0.15	0.0265	-	-	-	-	-	-
Selenium	0.82	2.4	<0.0022	0.0033	-	-	-	-	-	-
Silver	3.28	0.72	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.22	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	29.2	<0.0028	0.0033	-	-	-	-	-	-
Zinc	115	1,640	<0.0049	0.0083	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 14 (Duplicate)
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Methylene Chloride	0.082	-	-	-	0.13	0.1	<0.043	<0.045	<0.049	<0.048
Toluene	16.4	-	-	-	<0.066	0.05	0.12	0.18	0.19	0.17
Acetone	65.6	-	-	-	1.5	1.1	2.5	3.6	5.4	4.9
2-Butanone	32.8	-	-	-	0.28	0.26	0.44	0.67	0.94	0.7
Semivolatile Organics										
Phenol	328	<2.7	0.058	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	180	-	-	-	-	-	-	-	-
TOC	(7)	36,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.7	-	-	-	-	-	-	-	-
Sulfide	(7)	21	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.1, 12.0	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	153,000	-	-	-	-	-	-	-	-
% Solids	(7)	55.3	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 15
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(15)5/5B			D28(05) [2]	D28(05) Dup.	D29(06)	E29(06)	E30(03)	F27(15)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	10.7	<0.0024	<0.012	- (5)	-	-	-	-	-
Arsenic	0.82	31	0.0082	<0.0029	-	-	-	-	-	-
Barium	32.8	96.2	0.216	0.0121	-	-	-	-	-	-
Beryllium	0.0656	0.48	<0.00026	<0.0019	-	-	-	-	-	-
Cadmium	0.082	1.7	0.0073	0.0028	-	-	-	-	-	-
Chromium	1.64	752	<0.0027	0.0243	-	-	-	-	-	-
Lead	0.246	7,960	<0.0024	0.0939	-	-	-	-	-	-
Mercury	0.0328	0.56	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	<36.5	0.151	0.0415	-	-	-	-	-	-
Selenium	0.82	2.8	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.97	<0.00015	0.00037	-	-	-	-	-	-
Thallium	0.0328	<0.29	<0.0016	<0.0028	-	-	-	-	-	-
Vanadium	3.28	28.5	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,070	<0.009	0.045	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 15
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(15)5/5B			D28(05) [2]	D28(05) Dup.	D29(06)	E29(06)	E30(03)	F27(15)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics										
Toluene	16.4	-	-	-	0.24	0.8	0.6	0.24	0.16	0.1
Acetone	65.6	-	-	-	5.3	9.2	9.3	3.7	3.5	1.8
2-Butanone	32.8	-	-	-	1.2	1.6	1.4	0.66	0.46	0.26
Semivolatile Organics										
Phenol	328	<3.0	0.1	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	490	-	-	-	-	-	-	-	-
TOC	(7)	55,000	-	-	-	-	-	-	-	-
Cyanide	3.28	2.1	-	-	-	-	-	-	-	-
Sulfide	(7)	22	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.2, 12.4	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	160,000	-	-	-	-	-	-	-	-
% Solids	(7)	53.9	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 16
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]						
		C(16)5/5B			G27(12) [2]	G29(14)	G29(14) Dup.	I29(01)	I30(04)	I30(12)	I30(12)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals											
Antimony	0.0984	12.2	<0.0022	<0.0143	- (5)	-	-	-	-	-	-
Arsenic	0.82	33	0.0073	0.0029	-	-	-	-	-	-	-
Barium	32.8	108	0.206	0.0161	-	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	<0.00026	-	-	-	-	-	-	-
Cadmium	0.082	2.2	0.0088	0.003	-	-	-	-	-	-	-
Chromium	1.64	828	<0.0027	0.0137	-	-	-	-	-	-	-
Lead	0.246	8,870	<0.0024	0.0804	-	-	-	-	-	-	-
Mercury	0.0328	0.7	<0.0002	<0.0002	-	-	-	-	-	-	-
Nickel	1.64	<42.1	0.152	0.0424	-	-	-	-	-	-	-
Selenium	0.82	3	<0.0022	<0.0022	-	-	-	-	-	-	-
Silver	3.28	1.2	<0.00015	<0.00015	-	-	-	-	-	-	-
Thallium	0.0328	<0.27	<0.0016	<0.0016	-	-	-	-	-	-	-
Vanadium	3.28	32.5	<0.0028	<0.0028	-	-	-	-	-	-	-
Zinc	115	3,140	<0.011	0.0477	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 16
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]						
		C(16)5/5B			G27(12) [2]	G29(14)	G29(14) Dup.	I29(01)	I30(04)	I30(12)	I30(12)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics											
Methylene Chloride	0.082	-	-	-	<0.048	<0.05	0.029	<0.049	0.18	<0.041	<0.005
Toluene	16.4	-	-	-	0.3	0.17	0.01	0.24	0.31	0.08	<0.005
Acetone	65.6	-	-	-	3.6	3.2	0.25	3.9	4.3	2.0	<0.01
2-Butanone	32.8	-	-	-	0.57	0.53	0.024	0.63	0.99	0.3	<0.01
Semivolatile Organics											
Phenol	328	<3.3	0.092	-	-	-	-	-	-	-	-
Additional Parameters											
Oil and Grease	(7)	560	-	-	-	-	-	-	-		-
TOC	(7)	46,000	-	-	-	-	-	-	-		-
Cyanide	3.28	<2.0	-	-	-	-	-	-	-		-
Sulfide	(7)	24	-	-	-	-	-	-	-		-
Reactivity	(7)	NO	-	-	-	-	-	-	-		-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.1, 12.4	-	-	-	-	-	-	-		-
Ignitability	(7)	NO	-	-	-	-	-	-	-		-
Alkalinity	(7)	164,000	-	-	-	-	-	-	-		-
% Solids	(7)	49.6	-	-	-	-	-	-	-		-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 17
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]				
		C(17)5/4B			K32(14) [2]	L31(09)	L32(04)	N29(11)	N30(10)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals									
Antimony	0.0984	12	0.0019	<0.0113	- (5)	-	-	-	-
Arsenic	0.82	25.2	0.0079	<0.0074	-	-	-	-	-
Barium	32.8	114	0.18	0.0148	-	-	-	-	-
Beryllium	0.0656	0.53	<0.00026	<0.00063	-	-	-	-	-
Cadmium	0.082	1.93	0.0066	<0.0021	-	-	-	-	-
Chromium	1.64	870	<0.0027	0.0254	-	-	-	-	-
Lead	0.246	7,650	<0.0024	0.0314	-	-	-	-	-
Mercury	0.0328	0.61	<0.0002	<0.0002	-	-	-	-	-
Nickel	1.64	<42.6	0.136	0.0276	-	-	-	-	-
Selenium	0.82	3.16	<0.0022	<0.0061	-	-	-	-	-
Silver	3.28	0.88	<0.00015	0.00025	-	-	-	-	-
Thallium	0.0328	<0.31	<0.0016	<0.0072	-	-	-	-	-
Vanadium	3.28	51.8	<0.0028	0.0051	-	-	-	-	-
Zinc	115	2,370	<0.0065	0.0373	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 17
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]				
		C(17)5/4B			K32(14) [2]	L31(09)	L32(04)	N29(11)	N30(10)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Volatile Organics									
Toluene	16.4	-	-	-	0.055	0.13	0.09	0.32	0.13
Acetone	65.6	-	-	-	1.0	1.9	1.4	5.0	1.7
2-Butanone	32.8	-	-	-	0.15	0.31	0.22	0.87	0.3
Semivolatile Organics									
Phenol	328	<3.1	0.092	-	-	-	-	-	-
Additional Parameters									
Oil and Grease	(7)	820	-	-	-	-	-	-	-
TOC	(7)	37,000	-	-	-	-	-	-	-
Cyanide	3.28	<1.9	-	-	-	-	-	-	-
Sulfide	(7)	34	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.1, 12.3	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-
Alkalinity	(7)	168,000	-	-	-	-	-	-	-
% Solids	(7)	51.0	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 18
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(18)5/3B			O30(03) [2]	O31(13)	O33(14)	O33(14)FB	P31(13)	Q30(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	11.3	<0.0028	<0.0125	- (5)	-	-	-	-	-
Arsenic	0.82	26.5	0.0073	0.0046	-	-	-	-	-	-
Barium	32.8	94.8	0.168	0.168	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	0.0024	-	-	-	-	-	-
Cadmium	0.082	2.2	0.0048	0.0056	-	-	-	-	-	-
Chromium	1.64	647	<0.0027	0.0227	-	-	-	-	-	-
Lead	0.246	7,380	0.0056	0.083	-	-	-	-	-	-
Mercury	0.0328	0.77	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	<43	0.144	0.0411	-	-	-	-	-	-
Selenium	0.82	3.3	<0.0022	0.0036	-	-	-	-	-	-
Silver	3.28	1	<0.00015	0.00029	-	-	-	-	-	-
Thallium	0.0328	<0.24	<0.0016	<0.0048	-	-	-	-	-	-
Vanadium	3.28	32.6	<0.0028	0.0038	-	-	-	-	-	-
Zinc	115	3,640	<0.028	0.0827	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.26	0.14	<0.041	<0.005	0.1	0.26
Total Xylenes	164	-	-	-	<0.047	<0.053	<0.041	<0.005	<0.049	0.1
Acetone	65.6	-	-	-	4.2	2.7	1.1	<0.01	1.1	4.8
2-Butanone	32.8	-	-	-	0.64	0.45	0.18	<0.01	0.18	0.79
Semivolatile Organics										
Phenol	328	<3.3	0.11	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(7)	900	-	-	-	-	-	-	-	-
TOC	(7)	46,000	-	-	-	-	-	-	-	-
Cyanide	3.28	2.2	-	-	-	-	-	-	-	-

Table E-8A
Retention Reservoir Remediation
Validated Concentrations Used For Delisting Study
for Section 18
(Supersedes Table E-8)
Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(18)5/3B			O30(03) [2]	O31(13)	O33(14)	O33(14)FB	P31(13)	Q30(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Sulfide	(7)	33	-	-	-	-	-	-	-	-
Reactivity	(7)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(7)	NO, 12.0, 11.7	-	-	-	-	-	-	-	-
Ignitability	(7)	NO	-	-	-	-	-	-	-	-
Alkalinity	(7)	163,000	-	-	-	-	-	-	-	-
% Solids	(7)	51.7	-	-	-	-	-	-	-	-

Notes:

(1) Sample Number Designation:
C(01)5/13B = C-Composite, (01)-Section Number, 5/13-Date, B-Delisting Modifier
G(01)E06(10)5/20B = G-Grab, (01)-Section, E06-Cell Number, (10)-Subcell Number, 5/20-Date, B-Delisting Modifier
FB = Field Blank

(2) Sample identification number has been shortened. The sample type, section number, date, and delisting modifier have been dropped.
Example = G(01)E06(10)5/20B = E06(10)

(3) These values represent the maximum concentration of the nine MEP dilutions analyzed for the corresponding sections.

(4) Only detected analytes are listed.

(5) A "-" indicates the analysis was not performed for that sample.

(6) There is not an established health-based level (HBL) for 4-nitroanaline as of July 1992.

(7) Delisting threshold not required.

(8) The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 30 times less than the 2-butanone delisting threshold.

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 1
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0028	<0.0037	0.0045	<0.0056	<0.007	<0.0078	<0.0088	<0.0092	0.0114
Arsenic	0.820	0.0038	0.0025	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	0.003	0.0032	0.003
Barium	32.8	0.178	0.027	0.0145	0.0092	<0.0092	<0.0089	<0.011	<0.0068	<0.0071	<0.0066
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00045	<0.00057	<0.00026	0.0003	<0.00026	0.0012
Cadmium	0.082	0.005	0.004	<0.0013	<0.00068	<0.00068	<0.00091	0.0014	0.0013	0.0013	0.0018
Chromium	1.64	<0.0027	0.0351	0.0321	0.0312	0.0253	0.0238	0.019	0.0154	0.013	0.0109
Lead	0.246	<0.0024	0.0308	<0.0191	<0.0091	<0.0033	<0.0025	<0.004	<0.0024	<0.0115	<0.0185
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0828	0.0282	0.0132	<0.0096	<0.0082	<0.0067	<0.0059	<0.0059	<0.0055	0.0056
Selenium	0.82	<0.0022	0.004	<0.0026	<0.0022	<0.0038	<0.0022	<0.003	<0.0032	<0.0039	<0.003
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00031	<0.00015	<0.00015	<0.0002	<0.00015	<0.00015	0.00019
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.002	<0.0017	<0.0019	<0.0022
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	0.0035
Zinc	115	0.0075	<0.007	<0.0082	<0.006	<0.0058	<0.0059	<0.007	<0.0034	<0.0103	<0.0126

Key:

- **Maximum TCLP/MEP Extraction Concentration**

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 2
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0024	<0.003	<0.0035	<0.0039	<0.0046	<0.0059	<0.006	<0.0062	<0.0066
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.134	0.0373	0.0224	0.0162	0.0135	0.0122	<0.0117	<0.0087	<0.0085	<0.0125
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	<0.0021	<0.00087	<0.00068	<0.00068	<0.00068	<0.0011	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0155	0.0184	0.021	0.0159	0.0145	<0.0128	0.0116	0.0097	0.0075
Lead	0.246	<0.0024	0.0498	0.03	<0.0459	<0.024	<0.0447	0.0366	0.0407	<0.0513	0.038
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0481	0.0182	0.0124	<0.011	<0.008	0.0072	<0.0049	<0.0047	<0.0043	0.0044
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00064	<0.00015	<0.00026	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0023	<0.0126	<0.0219	<0.0312	<0.0162	<0.0402	0.0528	<0.0182	<0.0272	0.0599[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 3
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0026	<0.003	<0.0042	<0.005	<0.007	<0.0072	<0.009	<0.0087	<0.0085
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	0.0021	<0.0021
Barium	32.8	0.0883	0.0202	0.0118	0.0092	<0.007	<0.0084	<0.0057	0.0125	<0.0084	0.015
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	0.00037
Cadmium	0.082	<0.0027	0.0049	<0.00068	<0.00068	<0.00068	<0.00087	0.00074	0.001	0.0012	0.0011
Chromium	1.64	<0.0027	0.0244	0.0436	0.0377	0.0348	0.0281	<0.00179	0.0175	0.0145	0.0163
Lead	0.246	<0.0024	0.0897	0.0548	<0.069	0.0417	<0.0546	<0.0208	0.065	<0.045	0.135
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0436	0.0234	0.0108	<0.0091	<0.0082	<0.0068	<0.0046	<0.0062	<0.0049	0.0065
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00036	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0015	<0.006	0.0242	<0.0302	<0.025	<0.0334	<0.022	0.0718	<0.0276	0.354

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 4
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0019	<0.003	<0.0035	<0.0051	<0.0054	<0.0066	<0.0072	<0.0062	<0.0063
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.168	0.0258	0.0183	0.0123	<0.0113	0.01	0.0131	<0.0071	0.0121	0.0157
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00028	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	<0.0035	<0.00068	<0.00068	<0.00068	<0.00068	<0.0008	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0164	0.0272	0.0252	0.0215	0.0193	<0.017	0.0142	0.0105	0.0112
Lead	0.246	0.0069	0.0299	0.0302	<0.0383	0.0343	<0.0651	0.0856	0.0622	<0.0584	0.0857
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0607	0.0167	0.0118	<0.0088	<0.0076	<0.0063	<0.0047	<0.0056	<0.0046	0.0049
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0027	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	<0.0038	<0.0145	<0.0141	<0.0185	<0.0378	0.0564	<0.0378	<0.0324	0.0808[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATION USED FOR DELISTING STUDY
FOR SECTION 5
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0025	<0.003	<0.0029	<0.0038	<0.0036	<0.006	<0.0064	<0.0067	<0.0072
Arsenic	0.820	0.0038	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.13	0.0259	0.017	0.0113	<0.0109	<0.0058	<0.0102	<0.0076	0.0157	<0.014
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.004	0.0018	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0268	0.0366	0.0361	0.0351	0.0197	0.0241	0.0099	0.0182	0.018
Lead	0.246	<0.0024	0.0377	0.0279	<0.0238	0.0442	<0.0239	0.0379	0.032	0.173	0.217
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0587	0.0184	0.0113	<0.0081	<0.0081	<0.0045	<0.0055	<0.0037	<0.005	0.0056
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0023	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.004	<0.0071	<0.011	<0.0113	<0.0284	<0.0207	<0.0317	<0.0204	<0.0939	0.172

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 5 (REANALYSIS)
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0019	<0.0026	<0.003	<0.0029	<0.0028	<0.0032	<0.0039	<0.0048	<0.0055	<0.0061
Arsenic	0.820	<0.0064	<0.003	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.159	0.0325	<0.0188	<0.0177	<0.013	<0.0102	<0.0087	<0.0071	<0.0054	<0.0059
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.0005	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.005	<0.0029	<0.00082	<0.0011	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.0011
Chromium	1.64	<0.0031	<0.0193	0.0289	0.0324	0.0328	0.0292	0.0284	<0.0191	<0.0157	0.0215
Lead	0.246	<0.0162	0.0294	<0.0285	<0.0158	<0.0099	<0.0043	<0.0052	<0.0039	0.0024	<0.0028
Mercury	0.0328	--NOT ANALYZED--									
Nickel	1.64	0.0697	0.0208	0.0127	0.0122	<0.0085	<0.0074	<0.0072	<0.006	<0.0057	<0.0065
Selenium	0.82	<0.0022	<0.0046	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.006	<0.0096	<0.0078	<0.0143	<0.0089	<0.0022	<0.0064	<0.0044	<0.0028	<0.0049

Key:

- **Maximum TCLP/MEP Extraction Concentration**

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 6
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0027	<0.0045	<0.0052	<0.0063	<0.0071	<0.0062	<0.0073	<0.0074	<0.0062
Arsenic	0.820	0.0047	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.15	0.0206	0.0127	<0.0072	<0.0115	<0.0096	0.0142	0.0114	0.0133	0.018
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.005	0.00089	<0.00068	<0.00068	<0.00068	<0.00092	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0303	0.0449	0.0369	0.0272	0.0229	<0.0175	0.0165	0.0152	0.0136
Lead	0.246	<0.0024	0.0188	0.0467	<0.0294	0.0603	<0.0422	0.0434	0.0512	0.192	0.141
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0762	0.0167	0.0106	<0.0093	<0.0064	<0.006	<0.004	<0.0052	<0.0036	0.0048
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00017	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	<0.0035	0.0246	<0.0195	<0.024	<0.0227	0.0374	0.0393	<0.076	0.179[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- **Maximum TCLP/MEP Extraction Concentration**

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 6 (DUPLICATE)
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0029	<0.0055	0.0065	<0.0078	<0.0074	<0.0073	<0.0076	<0.0068	<0.0065
Arsenic	0.820	0.0042	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.141	0.0251	0.0181	0.01	0.0163	0.0201	0.0178	0.015	0.017	0.0145
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0053	<0.00068	<0.00092	<0.001	0.00094	<0.00097	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0259	0.042	0.0406	0.0223	0.0219	0.0184	0.0167	0.0169	0.0132
Lead	0.246	<0.0024	<0.0128	0.062	0.0945	0.674	0.116	0.0652	0.0605	<0.0571	0.0647
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0804	0.015	0.0111	<0.0114	<0.0066	<0.0056	<0.0047	<0.004	<0.0044	0.0041
Selenium	0.82	<0.0022	<0.0022	<0.0045	0.0039	<0.0024	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00056	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	<0.0067	0.0311	0.0672	0.0481	0.0941	0.0803	<0.0304	<0.0448	0.0567[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 8
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0013	<0.0019	<0.0021	<0.0033	<0.0037	<0.005	<0.0054	<0.0055	<0.0055
Arsenic	0.820	0.0036	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.32	0.0299	0.0174	0.0143	0.0135	0.0115	<0.0102	0.0098	0.0113	<0.01
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	<0.002	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0116	0.01	0.0152	0.0196	0.0173	0.0162	<0.0141	0.0126	0.0123	0.0092
Lead	0.246	0.336	0.0296	0.0317	<0.0809	0.0383	<0.0652	0.0431	0.0644	0.0734	0.0729
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0802	0.0178	0.0111	<0.0089	<0.0083	<0.0065	<0.0051	<0.0053	<0.0047	0.0043
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0091	<0.0145	<0.0162	<0.0277	<0.0217	<0.0347	<0.0315	<0.0296	<0.0365	<0.0319

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 7
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0017	<0.0025	<0.003	<0.0042	<0.0053	<0.0056	<0.0054	<0.0062	<0.006
Arsenic	0.820	0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.133	0.0238	0.017	0.0104	<0.0103	0.0118	0.021	0.0199	0.0136	<0.0111
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	<0.0024	0.0012	<0.00068	<0.00068	<0.00068	<0.00088	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0262	0.0339	0.028	0.0268	0.0237	0.0219	0.0231	0.0175	0.0147
Lead	0.246	<0.0024	0.0284	0.0351	<0.0304	0.066	<0.07	0.0907	0.106	<0.0573	0.06
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0573	0.0189	0.0111	<0.0089	<0.0077	<0.0064	<0.0058	<0.0062	<0.0049	0.0051
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0036	<0.0047	<0.0218	<0.0139	0.0298	<0.0435	0.0571	0.253	<0.0565	0.109[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- **Maximum TCLP/MEP Extraction Concentration**

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 9
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0028	<0.0048	<0.0048	<0.0067	<0.006	<0.0062	<0.0073	<0.0069	<0.0067
Arsenic	0.820	0.0049	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.0997	0.0184	0.0125	<0.0069	<0.012	0.0177	<0.0071	0.013	0.0122	<0.0122
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	<0.0034	0.00089	<0.00068	<0.00068	<0.00068	<0.00068	0.00071	<0.00068	0.00078	0.00088
Chromium	1.64	<0.0028	0.0347	0.0462	0.0401	0.0323	0.0251	0.0231	0.021	0.0206	0.0179
Lead	0.246	<0.0024	<0.0146	<0.0221	<0.0325	0.0453	0.117	<0.0112	0.0581	0.0621	0.0814
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.075	0.0177	0.0116	<0.0093	<0.0071	<0.0053	<0.0041	<0.0047	<0.0049	0.0056
Selenium	0.82	<0.0022	<0.0025	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.0004	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	<0.004	<0.0149	<0.0166	0.031	0.0781	<0.0106	0.0551	<0.0425	0.0457[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- **Maximum TCLP/MEP Extraction Concentration**

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 10
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.005	<0.0081	<0.0074	<0.0073	<0.0069	<0.0062	<0.0066	<0.0061	<0.0062
Arsenic	0.820	0.0072	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.0911	0.0091	0.011	0.0081	<0.0121	0.0168	0.0209	0.0167	0.0167	0.0156
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0077	0.0014	<0.00071	<0.00068	<0.00068	<0.00068	0.00088	0.0012	0.001	0.00097
Chromium	1.64	<0.0031	0.0213	0.0287	0.0232	0.0204	0.0187	0.0221	0.0173	0.0157	0.0131
Lead	0.246	<0.0024	<0.0066	0.0696	<0.0553	0.0399	0.0947	0.0817	0.0489	0.0599	0.0721
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.12	0.0197	0.0111	<0.0085	<0.007	<0.0053	<0.0052	<0.0056	<0.0046	0.0051
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0024	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00027	<0.00015	<0.00063	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	<0.0077	0.0361	<0.0286	0.0554	<0.058	0.233	0.0604	<0.0526	0.0614[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 11
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0018	<0.0028	<0.0028	<0.0038	<0.004	<0.0048	<0.0064	<0.0062	<0.0061
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.688	0.0441	0.0315	0.0181	0.0162	0.0128	<0.0109	0.014	0.0144	<0.0127
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.0026	<0.00026	<0.00026
Cadmium	0.082	<0.00068	0.0013	<0.001	<0.00068	<0.00068	<0.00068	<0.00068	<0.0007	<0.00068	0.001
Chromium	1.64	<0.0027	0.027	0.0342	0.0299	0.0258	0.0205	0.0186	0.0182	0.0169	0.0147
Lead	0.246	<0.0024	0.0618	0.0484	<0.0515	<0.0249	<0.0216	<0.0239	<0.0233	<0.033	0.045
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0321	0.0244	0.0151	<0.0109	<0.0102	0.0072	<0.0054	<0.0062	<0.008	0.0056
Selenium	0.82	<0.0022	<0.0022	<0.0037	<0.0022	<0.0033	<0.0022	<0.025	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0044	<0.0088	<0.0148	<0.0174	<0.022	<0.0132	<0.0184	<0.0179	<0.0229	0.0537[1]

Key:

[1] = **The data validation review has identified this value as being an unreliable result; therefore, it has not been considered during evaluation of the delisting sampling data. Further, had this value been considered, it would have had no effect on the conclusions of the data evaluation because it is more than 500 times less than the zinc delisting threshold.**

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 12
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	<0.0033	<0.0042	<0.0044	<0.0053	<0.0059	<0.0058	<0.0073	<0.0068	<0.007
Arsenic	0.820	0.0055	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.108	0.0273	0.0115	<0.006	<0.0076	<0.007	<0.0104	<0.0086	<0.0073	<0.0078
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00046	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.005	0.0035	<0.0011	<0.00068	<0.00068	<0.0014	0.00071	0.001	0.001	0.001
Chromium	1.64	<0.0027	0.0345	0.0451	0.0415	0.0363	0.0345	0.029	0.0309	0.026	0.0203
Lead	0.246	<0.0024	0.0305	<0.0102	<0.0112	<0.0138	<0.0221	0.0342	0.0362	0.086	0.0728
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.1	0.028	0.0151	<0.0108	<0.0094	0.0072	<0.0048	<0.0059	<0.0051	0.0051
Selenium	0.82	<0.0022	0.0034	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00023	<0.00015	<0.00051	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.00028
Zinc	115	0.0026	<0.0078	<0.0113	<0.0135	<0.0112	<0.0128	<0.0209	<0.0198	<0.046	<0.0392

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 13
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0019	<0.0071	<0.0108	<0.012	<0.0105	<0.0099	<0.0089	<0.009	<0.006	<0.0086
Arsenic	0.820	0.0093	<0.0021	<0.0032	<0.0034	<0.0028	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.204	<0.0102	<0.0028	<0.0054	<0.0057	<0.01	<0.008	<0.009	<0.0047	<0.0094
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00074	<0.00066	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0085	0.0023	0.0011	0.0009	<0.00098	<0.00096	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0136	0.0244	0.0347	0.00227	0.0176	0.0216	0.0176	0.0174	<0.0155
Lead	0.246	<0.0024	0.0097	<0.0067	0.155	0.0581	<0.0259	<0.0291	<0.0252	<0.0423	<0.0393
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.156	0.032	0.0169	0.0106	0.0059	0.0044	0.006	0.0051	0.0028	<0.0046
Selenium	0.820	<0.0031	<0.0022	<0.0022	<0.0034	<0.0029	<0.0022	<0.0022	<0.0022	<0.0023	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.0002	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0017	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0093	<0.0158	<0.0155	0.0496	0.0282	0.0817	<0.019	<0.0452	0.052	<0.0266

Key:

- **Maximum TCLP/MEP Extraction Concentration**

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 14
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0033	<0.0096	<0.0106	<0.0089	<0.008	<0.007	<0.0062	<0.005	<0.0049	<0.0048
Arsenic	0.820	0.0043	<0.0021	<0.0022	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.245	0.0177	<0.0059	0.0108	<0.008	<0.0112	0.014	0.0265	<0.0096	0.0294
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0065	0.00096	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	0.0028	0.0109	0.013	0.0143	0.0094	0.0088	0.0092	0.0102	<0.0068	<0.007
Lead	0.246	0.0141	0.0074	<0.009	0.072	0.0399	0.0429	0.0504	0.138	<0.0189	<0.0838
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.144	0.0268	0.014	0.0123	0.0083	0.0044	0.0051	0.0053	0.0036	0.0048
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0107	<0.0172	<0.0101	0.0427	0.0188	0.0271	<0.0319	0.190	0.0378	0.139

Key:

- **Maximum TCLP/MEP Extraction Concentration**

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 14 (DUPLICATE)
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0043	<0.008	<0.0089	<0.0083	<0.0071	<0.0064	<0.0065	<0.0058	<0.0045	<0.0053
Arsenic	0.820	0.0055	0.0036	<0.0039	<0.0027	<0.0027	0.0028	0.0031	<0.0021	<0.0028	<0.0021
Barium	32.8	0.241	<0.00105	<0.003	<0.0047	<0.0055	<0.0048	<0.0057	<0.0105	<0.0058	<0.0051
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00027	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0071	0.001	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.0068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0137	0.0166	0.0123	0.0126	0.0124	0.0108	0.0114	<0.0116	<0.0082
Lead	0.246	<0.0024	<0.0024	<0.0024	<0.0024	<0.0122	<0.0053	<0.0048	0.0328	<0.0087	<0.0027
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.15	0.0265	0.0113	0.006	0.0051	0.0028	0.0046	0.0048	0.0037	<0.003
Selenium	0.82	<0.0022	0.0033	<0.0024	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	0.003	<0.0028	0.003	<0.0028	0.0033	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0049	<0.005	<0.0011	<0.0011	0.0083	<0.0048	<0.0043	<0.0351	<0.0121	<0.0035

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 15
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0024	<0.0104	<0.012	<0.0112	<0.0106	<0.0105	<0.0084	<0.0077	<0.007	<0.0077
Arsenic	0.820	0.0082	<0.0021	<0.0029	<0.0021	<0.0021	0.0026	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.216	0.0121	<0.0039	<0.0059	<0.0045	<0.0067	<0.0084	<0.0108	<0.007	0.0111
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.0019	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0073	0.0028	<0.00068	<0.00068	<0.00068	<0.0019	<0.00068	<0.00068	0.00082	<0.00068
Chromium	1.64	<0.0027	0.0111	0.0193	0.0243	0.0168	0.0179	0.0181	0.0152	0.0174	<0.0139
Lead	0.246	<0.0024	0.007	<0.008	0.0939	0.0361	<0.0359	0.0449	0.0444	<0.0478	<0.0733
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.151	0.0415	0.0198	0.0123	0.0073	0.0081	0.0057	0.0058	0.0044	<0.0046
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.00037	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0028	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.009	<0.0217	<0.0084	0.045	0.0201	<0.0203	<0.0255	<0.0432	0.0443	<0.0368

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 16
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0022	<0.0112	<0.0143	<0.0128	<0.0112	<0.0099	<0.0088	<0.0082	<0.0068	<0.0075
Arsenic	0.820	0.0073	0.0029	<0.003	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.206	0.0161	<0.0032	0.0101	<0.0065	<0.0071	0.0155	<0.0127	<0.0068	0.0141
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0088	0.003	0.00084	<0.00068	<0.00068	<0.00068	0.0021	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.007	0.0136	0.0132	0.0137	0.012	0.0137	0.0099	<0.0095	<0.0099
Lead	0.246	<0.0024	0.0028	<0.0048	0.0512	0.0727	0.051	0.0804	0.0452	<0.0163	<0.119
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.152	0.0424	0.0203	0.0108	0.0095	0.0051	0.006	0.0049	0.0038	<0.0045
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.011	<0.0198	<0.0114	0.036	0.0475	0.0348	<0.0333	<0.0513	0.0477	<0.0648

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 17
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0019	<0.0077	<0.0113	<0.0094	<0.0096	<0.0093	<0.0082	<0.0086	<0.007	<0.0083
Arsenic	0.820	0.0079	<0.0021	<0.0074	<0.0026	<0.0023	<0.0021	<0.0021	<0.0021	<0.0024	<0.0021
Barium	32.8	0.18	0.0148	0.0148	<0.0048	<0.0046	<0.0087	<0.0071	<0.0095	<0.0057	0.0123
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00063	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0066	0.0021	0.0008	<0.00068	<0.0068	<0.00087	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0226	0.0254	0.0157	0.0143	0.0139	0.013	0.0111	<0.0123	<0.0101
Lead	0.246	<0.0024	0.0114	<0.0072	<0.0024	0.0314	<0.0257	<0.0348	<0.0225	<0.0209	<0.0516
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.136	0.0276	0.0171	0.0068	0.0111	0.0044	0.0052	0.0055	0.0039	0.0055
Selenium	0.82	<0.0022	<0.0022	<0.0061	<0.0022	<0.0028	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.00025	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0072	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	0.0051	0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0065	<0.0257	<0.019	<0.0011	0.0373	0.036	<0.0225	<0.029	0.0228	<0.043

Key:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9A
RETENTION RESERVOIR REMEDIATION
VALIDATED MEP CONCENTRATIONS USED FOR DELISTING STUDY
FOR SECTION 18
(SUPERSEDES TABLE E-9)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.0028	<0.0121	<0.0125	<0.009	<0.009	<0.0105	<0.0085	<0.0074	<0.0064	<0.0081
Arsenic	0.820	0.0073	0.0046	<0.0053	<0.0023	<0.0021	0.0039	<0.0021	<0.0021	<0.0023	<0.0021
Barium	32.8	0.168	0.0168	<0.0062	<0.0036	<0.0034	<0.0057	<0.0074	0.0172	<0.007	0.0155
Beryllium	0.0656	<0.00026	0.0017	0.0024	<0.00026	<0.00026	<0.0025	<0.00037	<0.0003	0.00036	<0.00052
Cadmium	0.082	0.0048	0.0056	0.0031	<0.00068	<0.00068	<0.0023	<0.00068	0.00076	0.00081	0.00082
Chromium	1.64	<0.0027	0.0185	0.0227	0.0152	0.0142	0.015	0.0145	0.0149	<0.0131	<0.0121
Lead	0.246	0.0056	0.0421	<0.0049	<0.0024	<0.0024	<0.0057	<0.0136	0.083	<0.0198	<0.0638
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.144	0.0411	0.0203	0.0084	0.011	0.0061	0.0071	0.0069	0.0046	0.0054
Selenium	0.82	<0.0022	0.0036	<0.005	<0.0022	<0.0022	<0.0036	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	0.00022	0.00026	<0.00015	<0.00015	0.00029	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0018	<0.0035	<0.0016	<0.0016	<0.0048	<0.0016	<0.0016	<0.0017	<0.0016
Vanadium	3.28	<0.0028	<0.0028	0.0038	<0.0028	<0.0028	0.0029	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.028	0.0827	<0.0094	<0.0011	0.0056	<0.005	<0.0155	0.0789	0.0262	<0.0683

Key:

- Maximum TCLP/MEP Extraction Concentration

SECTION G: SUMMARY AND CONCLUSIONS

The purpose of this Delisting Petition is to demonstrate that the treated sediments are non-hazardous in accordance with the level of justification given in 35 IAC 720.122 (see Section C of the Adjusted Standard Petition) by meeting the following criteria:

1. The treated sediments do not contain toxic levels of chromium and lead.

2. The treated sediments exhibit no factors, in addition to those for which the waste was listed, that would cause the waste to be considered hazardous, including: (1) containing hazardous constituents that could leach from the waste in concentrations exceeding HBLs, and/or (2) exhibiting a tendency to destabilize with time.

3. The treated sediments do not exhibit the characteristics of ignitability, corrosivity, reactivity, or toxicity.

This section presents a summary of the results of the delisting sampling presented previously in Section E. Also included is an evaluation of the results relative to the delisting criteria listed above using the methodology outlined in Section D.5. See Tables E-7A, E-8A, and E-9A. The summary data tables G-1A through G-6A contain validated data and supersede the original tables G-1 through G-6. The conclusions presented in the original petition (dated August 2, 1993), which were based on evaluation of the raw data, remain unchanged given the data validation results. The following discussion demonstrates that the delisting sampling data support the conclusion that the petitioned waste is not hazardous in accordance with the level of justification.

1.0 LEAD AND CHROMIUM TOXICITY

The treated sediments do not contain toxic levels of chromium and lead (i.e., defined as exceeding delisting HBLs) when subjected to either TCLP or MEP analysis. The TCLP and MEP delisting sampling results are summarized on Table G-1A.

The chromium results were evaluated by comparing the higher of the maximum TCLP and MEP values to the chromium delisting threshold. The higher of these two values (0.0462 mg/l) was chosen because this is the general approach used by the USEPA when applying fate and transport models to evaluate delisting petitions. An example of this can be found at 54 Federal Register (FR) 30411. The delisting threshold for chromium (derived from delisting HBLs) is 1.64 mg/l. The maximum chromium leachate level of 0.0462 mg/l, measured in the Section 9 composite sample, is approximately 35 times lower than the chromium delisting threshold.

The lead results could not be evaluated in the same manner as the chromium results, because the higher of the maximum TCLP and MEP lead values was found to be a statistical data outlier which exceeds the delisting threshold. The TCLP lead value of 0.336 mg/l measured in the Section 8 composite sample is believed to be a data outlier for the following reasons:

1. Out of a total of 530 treated sediment samples which were analyzed during performance and delisting sampling for TCLP and/or MEP lead, only the composite sample collected from Section 8 during the delisting sampling exceeds the lead delisting threshold. Of the 31 performance samples collected in Section 8 during the performance sampling, TCLP lead was not detected (i.e., <0.020 mg/l) in 28 of the samples, and the maximum detected TCLP lead value was 0.174 mg/l. These observations are supported by the delisting sampling results presented in Table G-1A and the performance sampling results presented in Table 2 of the Annual Report (see Attachment 1). The fact that the Section 8 composite is the only sample out of 530 total samples analyzed for TCLP lead which exceeds the delisting criteria indicates that it is a data outlier.

2. The Section 8 composite sample alkalinity level of 175,000 mg/kg (see Table E-8A) falls within the optimum treatment range. As noted in Section C.14, during performance sampling, it was determined that the probability of achieving acceptable treatment is essentially 100 percent within an alkalinity range of 125,000 mg/kg to 185,000 mg/kg. The fact that the TCLP lead level for Section 8 is above the delisting threshold despite the achieved optimum alkalinity result (supported by rigorous performance sampling) indicates that it is a data outlier.

3. The Section 8 composite sample TCLP lead value is significantly higher than TCLP lead levels in the other sections. As shown in Table G-1A, TCLP lead was not detected (i.e., <0.0024 mg/l) in 16 of the 20 sections, and of the 4 sections in which it was detected, the Section 8 value is almost 24 times higher than the next highest value (0.0141 mg/l from Section 14). The fact that the Section 8 TCLP lead level is significantly higher than levels measured in other sections indicates that it is a data outlier.

4. The MEP lead concentration in all sections other than Section 8 is greater than the TCLP lead concentration. This condition is due to the much more aggressive leaching procedure (nine extractions versus one) that is used in the MEP test. The fact that the TCLP lead in Section 8 was nearly four times higher than the MEP lead and the only section where TCLP lead exceeded MEP lead indicates that it is a data outlier.

In summary, the above items clearly demonstrate that the Section 8 TCLP lead result is a statistical data outlier. Therefore, this data point is inappropriate as input to the fate and transport model (i.e., comparison to the delisting threshold) to evaluate the treated sediment's lead toxicity.

Keystone used the results of a statistical analysis of the data to evaluate the lead toxicity of the treated sediments using the delisting sampling data. The USEPA in its evaluation of delisting petitions has indicated that this approach is acceptable when data outliers are encountered. For example, in 51 FR 26421 (July 23, 1986), USEPA states:

> *An upper limit to a computed confidence interval may be used as the [fate and transport model] input in cases where the demonstrated maximum may be shown to be . . . a statistical outlier . . .*

An approved federal delisting based in part on a statistical analysis of sampling data can be found at 51 FR 7822 (March 6, 1986). Keystone performed a statistical analysis of the delisting sampling data for TCLP lead using the methodology outlined in Chapter 9 of the USEPA Manual SW-846. The statistical data set includes the higher of the maximum TCLP and MEP lead results from each section of the Retention Reservoir, including the Section 8 TCLP lead result. The purpose of the analysis was to determine the interval or range within which the true mean lead level occurs so that the upper bound of that range can be compared with the delisting threshold. Keystone chose a 95 percent confidence interval (CI) for the statistical analysis of the lead data, consistent with petition reviews conducted previously by USEPA. See, 51 FR 7823 (March 6, 1986) and 51 FR 26427 (July 23, 1986). The mean and 95 percent CI for the lead data are given in the following table:

Data Set	No. of Samples	Mean (mg/l)	95% CI Range (mg/l)
Delisting Sampling	20	0.112	0.0781[1] - 0.146

(1) This value was originally reported as 0.0784 mg/l. The value has changed slightly due to some revisions of the maximum TCLP lead data shown in Table G-1A resulting from the data validation. The resulting change to the lower bound of the 95% confidence interval range is insignificant and does not affect the original conclusion based upon evaluation of the raw data.

The statistical analysis demonstrates that, given a 95 percent confidence level, the upper limit of the true mean of the lead level in the treated sediments is significantly less than the delisting threshold. To further demonstrate this, Keystone calculated the 99 percent CI range of the delisting sampling lead results to be 0.066 mg/l to 0.159 mg/l. This conclusively shows that when considering a very high level of confidence, the upper limit of the true mean of the leachable lead level in the petitioned waste is less than the delisting threshold.

In conclusion, the levels of leachable lead and chromium in the petitioned waste do not exceed their respective delisting thresholds. Therefore, the petitioned waste, although containing measurable levels of lead and chromium, should not be listed as a hazardous waste for lead and chromium toxicity.

2.0 ADDITIONAL HAZARDOUS FACTORS

2.1 Other Hazardous Constituents

Samples of the treated sediments were analyzed for other constituents, in addition to lead and chromium, found in 35 IAC 721, Appendix H which could cause the waste to be hazardous. The complete list of the analytes and the methodology used to perform the analysis are presented in Sections D.1 and D.6 Table G-2A provides a summary of the TCLP and MEP metals results. Table G-3A provides a summary of the detected volatile and semivolatile organics results. Both tables also include the delisting threshold for each of the constituents analyzed.

None of the maximum TCLP and MEP metals values exceeds the corresponding delisting threshold. The evaluation of the leachable metals results was made by comparing the higher of the maximum TCLP and MEP values to the corresponding delisting thresholds. The higher of these values was chosen for the same reasoning presented in Section 1.0 when evaluating the lead and chromium data.

None of the total constituent concentrations, with the exception of methylene chloride, exceeded the delisting thresholds. The evaluation of the volatile and semivolatile results was made by comparing the maximum total concentrations of the detected constituents in the petitioned waste to the corresponding delisting thresholds. TCLP analyses of

these constituents was not performed in accordance with the methodology outlined in Section D.6. The level of total methylene chloride is approximately 2.2[2] times higher than the delisting threshold. As discussed in Section D.6, the maximum leachate level of methylene chloride, assuming all of the constituent leached into the extract during analysis, would be 20 times less than the total level or 0.009 mg/l[3]. Comparison of this calculated maximum methylene chloride leachate concentration to the delisting threshold of 0.082 mg/l, clearly demonstrates that methylene chloride meets the criteria for delisting.

In summary, leachable levels of all other hazardous constituents (in addition to lead and chromium) do not exceed health-based levels (i.e., delisting thresholds). Therefore, the petitioned waste should not be classified as a hazardous waste because it contains trace levels of hazardous constituents.

2.2 Long-Term Stability

None of the maximum MEP leachate values exceed the delisting thresholds for the metals analyzed. The results of the MEP tests performed on the delisting composite samples are shown in Table E-9A. The quantitative evaluation of the MEP data was previously discussed in Sections G.1 and G.2. Qualitatively, the leachate values show no tendency to significantly increase with each sequential extraction for all of the metals analyzed. Therefore, the petitioned waste exhibits long-term stability and will not leach levels of hazardous constituents over time which exceed health-based levels.

3.0 HAZARDOUS CHARACTERISTICS

3.1 Ignitability

The treated sediments are not characteristically hazardous for ignitability. The results of the ignitability testing are presented in Table E-8A. None of the delisting composite samples were flashed below 140°F.

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(2) This value was originally reported as 1.6 based on a maximum total methylene chloride value of 0.13 mg/kg. The value has changed slightly due to a revision of the maximum methylene chloride level shown in Table G-3A resulting from the data validation. The change is insignificant and does not affect the original conclusion based upon evaluation of the raw data.

(3) This value was originally reported as 0.0065 mg/l based on a maximum methylene chloride value of 0.13 mg/kg. The value has changed slightly for the same reason as outlined above in Footnote 2 and also represents no significant change.

3.2 Corrosivity

The treated sediments are not characteristically hazardous for corrosivity. The treated sediments were analyzed for pH immediately after compositing in the field by Daily Laboratories and again at the laboratory by IEA. The pH results are summarized on Table G-4A. In addition, Daily analyzed over 1,900 samples for pH during the performance sampling. A summary of this data is provided on Table 4 of the Annual Report (see Attachment 1).

The procedure used to analyze for pH Method SW-846 9045 calls for a 50 percent solution of deionized water and solids to be analyzed. IEA followed the method exactly, whereas Daily modified the method and analyzed a 10 percent solution. To determine the correlation of results between a 10 percent and 50 percent solution, Keystone instructed IEA to reanalyze four samples first using a 50 percent solution and then at a 10 percent solution. In addition, to determine the precision which IEA can realistically achieve, Keystone instructed IEA to reanalyze the same four samples again at a 50 percent solution. The results of the reanalysis is provided on Table G-5A. The 10 percent and 50 percent results only vary within an average of $\pm$ 0.2 units, which is no greater than the variation between the duplicate quality control samples. This demonstrates that there is essentially a 1:1 correlation between the 10 percent and 50 percent results, and therefore, justifies the use of the 10 percent results determined in the field by Daily.
Keystone performed a statistical analysis of the pH data using the same methodology outlined previously in Section 1.0. The mean and 95 percent CI for the pH data are given in the following table:

Data Set	Laboratory	No. of Samples	Mean (mg/l)	95% CI Range (mg/l)
Field Delisting	Daily	19	12.0	11.9 - 12.2
Lab Delisting	IEA	20	12.3	12.2 - 12.4
Performance Sampling	Daily	1,963	12.3	12.3 - 12.3

None of the samples analyzed immediately after compositing were equal to or exceeded 12.5, thus supporting the conclusion that the treated sediments are non-corrosive. However, four of the same samples analyzed by IEA were equal to 12.5. Although these four sample results were right at the limit for the corrosivity characteristic, the statistical range and average is below 12.5. In addition, these four samples are the samples which were reanalyzed (two at a 50 percent solution and one at a 10 percent solution) and all of these additional pH readings were less than 12.5. The statistical range, average, and sample

reanalysis all support the conclusion that the sediments are non-corrosive. Furthermore, the statistical range and average of the 1,963 performance samples support the validity and representativeness of the delisting sample results and the uniformity of the pH throughout the Retention Reservoir. In conclusion, the results of the delisting and performance sampling pH analyses demonstrate that the treated sediments are non-corrosive in accordance with 35 IAC 721.122.

3.3 Reactivity

The treated sediments are not characteristically hazardous for reactivity. This is based on the results of the total cyanide and sulfide analyses presented in Table E-11. Total cyanide ranged from <1.9 mg/kg to 2.2 mg/kg and total sulfide range from <19 mg/kg to 44 mg/kg[4]. Because these values are significantly less than the regulatory thresholds for reactive cyanide (250 mg HCN/kg) and sulfide (500 mg H_2S/kg), it was determined that the petitioned is not reactive without actually performing reactivity analyses. See Section D.6.

3.4 Toxicity Characteristic

The treated sediments are not characteristically hazardous for toxic constituents. The results of the toxicity characteristics (TC) constituents TCLP analyses are summarized in Table G-6A. None of the TC toxic constituents detected in the petitioned waste exceed the regulatory levels given in 35 IAC 721.124.

4.0 DATA VALIDATION

Data validation was performed to confirm that the results provided by IEA are reliable and usable. During the quality assurance review, ESI determined that inconsistencies or deviations found in the reported analytical results are not significant and do not affect the validity and/or usability of the data. None of the validated data varied significantly from the initial laboratory data; therefore, the conclusions drawn from the initial laboratory data remain valid. The revisions and comments from the data validation have been incorporated into Tables E-7A, E-8A, and E-9A, and also into Tables G-1A through G-6A. These tables

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(4) These ranges of values were originally reported to be <1.0 mg/kg to 1.1 mg/kg for total cyanide and 10 mg/kg to 16 mg/kg for total sulfide. The values have changed based upon the results of the data validation. Because the revised values are still well below the regulatory thresholds for reactive cyanide and sulfide, the changes are insignificant and do not affect the original conclusions based upon evaluation of the raw data.

supersede Tables E-7, E-8, E-9, and Tables G-1 through G-6, respectively. A detailed discussion of the quality assurance review prepared by ESI, including validated data summary tables and narrative explanations for data qualifications, were submitted to the IEPA on August 12, 1993.

5.0 CONCLUSIONS

Keystone has performed sampling of the petitioned waste in accordance with a plan designed to provide analytical data necessary to demonstrate that the previously listed waste is no longer hazardous. A summary of the results of this sampling and analysis were presented in this section, along with an evaluation of the results. The conclusion of this evaluation is that the petitioned waste is neither a listed hazardous waste nor a characteristically hazardous waste in accordance with the level of justification criteria given in 35 IAC 720.122.

TABLE G-1A
SUMMARY OF VALIDATED DELISTING SAMPLING LEAD AND CHROMIUM LEACHATE CONCENTRATIONS
(SUPERSEDES TABLE G-1)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Section	TCLP Lead (mg/l)	MEP Lead[1] (mg/l)	TCLP Chromium (mg/l)	MEP Chromium[1] (mg/l)
1	<0.0024	0.0308	<0.0027	0.0351
2	<0.0024	0.0498	<0.0027	0.021
3	<0.0024	0.135	<0.0027	0.0436
4	0.0069	0.0857	<0.0027	0.0272
5	<0.0024	0.217	<0.0027	0.0366
5 Reanalysis	<0.0162	0.0294	<0.0031	0.0328
6	<0.0024	0.192	<0.0027	0.0449
6 Duplicate	<0.0024	0.116	<0.0027	0.042
7	<0.0024	0.106	<0.0027	0.0339
8	0.336	0.0734	<0.0116	0.0196
9	<0.0024	0.117	<0.0028	0.0462
10	<0.0024	0.0947	0.0031	0.0287
11	<0.0024	0.0618	<0.0027	0.0342
12	<0.0024	0.086	<0.0027	0.0451
13	<0.0024	0.155	<0.0027	0.0347
14	0.0141	0.138	0.0028	0.0143
14 Duplicate	<0.0024	0.0328	<0.0027	0.0166
15	<0.0024	0.0939	<0.0027	0.0243
16	<0.0024	0.0804	<0.0027	0.0137
17	<0.0024	0.0314	<0.0027	0.0254
18	0.0056	0.083	<0.0027	0.0227

Notes:

[1] Maximum concentration of the 9 MEP dilutions analyzed for the corresponding section.

Key:

TCLP = Toxicity Characteristic Leaching Procedure.
MEP = Multiple Extraction Procedure.

TABLE G-2A
SUMMARY OF VALIDATED DELISTING SAMPLING
TCLP/MEP METALS CONCENTRATIONS
(SUPERSEDES TABLE G-2)

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	TCLP Max.[1] (mg/l)	MEP Max.[1] (mg/l)	Delisting Threshold [2] (mg/l)
Antimony	<0.0043	<0.0143	0.0984
Arsenic	0.0093	0.0046	0.820
Barium	0.688	0.0441	32.8
Beryllium	<0.00026	0.0024	0.0656
Cadmium	0.0088	0.0056	0.082
Mercury	<0.0002	<0.0002	0.0328
Nickel	0.156	0.0424	1.64
Selenium	<0.0031	0.004	0.82
Silver	<0.00015	0.00064	3.28
Thallium	<0.0016	<0.0072	0.0328
Vanadium	<0.0028	0.0051	3.28
Zinc	0.0091	0.354	115

Notes:

(1) These values represent the maximum TCLP or MEP levels of the constituent that were detected in the 20 delisting composite samples analyzed.

(2) Delisting thresholds are derived from delisting HBLs as discussed in Section D.

Key:

TCLP = Toxicity Characteristic Leachate Procedure

MEP = Multiple Extraction Procedure

TABLE G-3A
SUMMARY OF VALIDATED DELISTING SAMPLING
VOLATILE AND SEMIVOLATILE ORGANICS CONCENTRATIONS
(SUPERSEDES TABLE G-3)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	Max. Total [1] (mg/kg)	Delisting Threshold [2] (mg/l)
Volatiles		
Methylene Chloride	0.18 [3]	0.082
Toluene	0.8	16.4
Carbon Disulfide	0.2	65.6
Benzene	0.049	0.082
Total Xylenes	0.1	164
Acetone	17.0	65.6
1,1-Dichloroethane	0.051	65.6
2-Butanone	1.9	32.8
Semivolatiles		
Phenol	4.7	32.8
Pyrene	0.98	16.4
4-Nitroaniline	4.9	—[4]

Notes:

(1) These values represent the maximum total levels of the constituent that were detected in the 20 delisting composite samples (for semivolatiles) and the 108 delisting grab samples (for volatiles).

(2) Delisting thresholds are derived from delisting HBLs as discussed in Section D.

(3) While the total exceeds the delisting threshold, the maximum possible leachate level for methylene chloride will not. For further explanation, see Section 2.1.

(4) No delisting threshold can be determined because no delisting HBLs exist for this constituent.

TABLE G-4A
SUMMARY OF VALIDATED DELISTING SAMPLING
FIELD AND LABORATORY pH DATA
(SUPERSEDES TABLE G-4)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Section	Field pH [1] (pH Units)	Laboratory pH [2] (pH Units)
1	11.8	12.4
2	12.3	12.4
3	11.8	12.5
4	12.0	12.4
5	11.7	12.5
6	12.0	12.4
6D	--	12.4
7	12.0	12.5
8	12.2	12.5
9	11.9	12.4
10	11.7	12.3
11	11.8	12.3
12	12.0	12.2
13	12.4	12.2
14	12.1	12.1
14D	12.0	12.3
15	12.4	12.2
16	12.4	12.1
17	12.3	12.1
18	11.7	12.0

Notes:

(1) Analysis performed by Daily.
(2) Analysis performed by IEA.

Key:

-- = No analysis performed.

TABLE G-5A
DELISTING SAMPLING pH REANALYSIS DATA
CONFIRMED BY QUALITY ASSURANCE REVIEW
(SUPERSEDES TABLE G-5)

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Section	50% Slurry pH		10% Slurry pH (pH Units)
	Test 1 pH (pH Units)	Test 2 pH (pH Units)	
3	11.0	11.4	11.4
5	11.0	10.9	11.4
7	11.3	11.0	11.2
8	11.4	11.4	11.4

TABLE G-6A
SUMMARY OF DELISTING SAMPLING
TOXICITY CHARACTERISTIC CONSTITUENTS
(SUPERSEDES TABLE G-6)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	TCLP Level (mg/l)	TC Toxic Regulatory Level (mg/l) [3]
Arsenic	0.0093	5.0
Barium	0.688	100.0
Benzene	0.049[1]	0.5
Cadmium	0.0088	1.0
Carbon Tetrachloride	ND	0.5
Chlordane	NA[2]	0.03
Chlorobenzene	ND	100.0
Chloroform	ND	6.0
Chromium	0.0031	5.0
o-Cresol	ND	200.0
m-Cresol	ND	200.0
p-Cresol	ND	200.0
Cresol	ND	200.0
2,4-D	NA[2]	10.0
1,4-Dichlorobenzene	ND	7.5
1,2-Dichloroethane	ND	0.5
1,1-Dichloroethylene	ND	0.7
2,4-Dinitrotoluene	ND	0.13
Endrin	NA[2]	0.02
Heptachlor	NA[2]	0.008
Hexachlorobenzene	ND	0.13
Hexachlorobutadiene	ND	0.5
Hexachloroethane	ND	3.0
Lead	0.336	5.0
Lindane	NA	0.4

TABLE G-6A
SUMMARY OF DELISTING SAMPLING
TOXICITY CHARACTERISTIC CONSTITUENTS
(SUPERSEDES TABLE G-6)
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	TCLP Level (mg/l)	TC Toxic Regulatory Level (mg/l) [3]
Mercury	ND	0.2
Methoxychlor	NA[2]	10.0
Methyl Ethyl Ketone	1.9[1]	200.0
Nitrobenzene	ND	2.0
Pentachlorophenol	ND	100.0
Pyridine	ND	5.0
Selenium	ND	1.0
Silver	ND	5.0
Tetrachloroethylene	ND	0.7
Toxaphene	NA[2]	0.5
Trichloroethylene	ND	0.5
2,4,5-Trichlorophenol	ND	400.0
2,4,6-Trichlorophenol	ND	2.0
2,4,5-TP	NA[2]	1.0
Vinyl Chloride	ND	0.2

Notes:

(1) The values are total constituent levels in mg/kg. As explained in Section D.6, the TCLP levels for these constituents would be at least 10 times less than the total level.

(2) These constituents are all pesticides, herbicides, or PCBs. Based upon prior agreements with IEPA, these constituents are not required to be included in the delisting analysis since they were never used at the Keystone facility.

(3) Regulatory levels are taken from 35 IAC 721.124.

Key:

ND = Not Detected.
NA = Not Analyzed.

C. 2. a

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DEC 28 1993
RCRA PERMITTING BRANCH
OR/WMD
EPA REGION V

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD
December 16, 1993

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL AND WIRE COMPANY FOR ADJUSTED STANDARD FROM 35 ILL. ADM. CODE 721.132	)	AS 93-7 (RCRA Delisting Adjusted Standard)

ORDER OF THE BOARD (by E. Dunham II):

On December 2, 1993, the Board adopted an order in this matter granting petitioner Keystone Steel and Wire Company (Keystone) until December 6, 1993, to file a reply to the Environmental Protection Agency's (Agency) response to Keystone's petition for an adjusted standard. The Board also observed that the RCRA adjusted standard procedural rules (at 35 Ill. Adm. Code 106.415) require this matter proceed to hearing, and accordingly authorized the matter for hearing.

On December 6, 1993, Keystone filed its "Reply to the Illinois Environmental Protection Agency Response to Petition for RCRA Adjusted Standard" (reply). The reply was accompanied by the "Second Amendment to Keystone's RCRA Delisting Adjusted Standard Petition".

In the reply, Keystone states that it is in "general agreement with the revisions to the proposed adjusted standard as set forth in Illinois EPA's response and incorporates these changes in the attached Second Amendment to Keystone's RCRA Delisting Adjusted Standard Petition...with minor additional changes." It further withdraws its request for a hearing in this matter and requests the Board to waive the hearing under the authority of Section 28.1 of the Act (415 ILCS 5/28.1), citing In the matter of: The Petition of Cabot Corp. for an Adjusted Standard, AS 91-10, fn. 1, March 26, 1992. In support of its request, Keystone suggests that "there is little need for a hearing...since both the Illinois EPA and Keystone support the delisting petition and Illinois EPA counsel informally has advised Keystone's counsel, that it would support withdrawal of the hearing request". Finally, Keystone notes that it is attempting to expeditiously comply with a Consent Order timetable for site remediation which includes delisting of the K062-listed wastes.

The Board will construe Keystone's request as a motion for waiver of hearing. Consistent with its prior action in Cabot, and since no request for hearing has been received from the Agency or any other person, the Board will grant Keystone's request for waiver of hearing and will rescind its December 2, 1993 order to the extent that it authorized this matter for hearing.

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
PETITION OF KEYSTONE STEEL	)	AS
AND WIRE COMPANY FOR	)	(RCRA Delisting
ADJUSTED STANDARD FROM	)	Adjusted Standard)
35 Ill. Adm. Code §721.132	)	

RCRA DELISTING ADJUSTED STANDARD PETITION

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Appendix A	-	U.S. EPA Delisting Petition
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Attachment 2	-	Professional Profiles
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Cross-reference to
35 Ill. Adm. Code §720.122

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(i)	Each petition must include, in addition to the information required by subsection (n).	
1.	The name and address of the laboratory facility performing the sampling or tests of the waste.	App. A, Pg. E-1
2.	The names and qualifications of the persons sampling and testing the waste.	App. A, Pg. E-2
3.	The dates of sampling and testing . . .	App. A, Table E-1
4.	The location of the generating facility.	App. A, Pg. A-2
5.	A description of the manufacturing processes or other operations and feed materials producing the waste and an assessment of whether such processes, operations or feed materials can or might produce a waste which is not covered by the demonstration	App. A, Sec. B
6.	A description of the waste and an estimate of the average and maximum monthly and annual quantities of waste covered by the demonstration	App. A, Pg. B-4
7.	Pertinent data on and discussion of the factors delineated in the respective criterion for listing a hazardous waste, where the demonstration is based on the factors in 35 Ill. Adm. Code §721.111(a)(3)	Sec. VII & App. A, Sec. E & G
8.	A description of the methodologies and equipment used to obtain the representative samples	App. A, Sec. E
9.	A description of the sample handling and preparation techniques, including techniques used for extraction, containerization and preservation of the samples	App. A, Sec. E
10.	A description of the tests performed (including results).	App. A, Sec. E

11.	The names and model numbers of the instruments used in performing the tests.	App. A, Pg. E-19 & Attchm. 4
12.	The certification statement signed by the generator or the generator's authorized representative	Pg. (i)

STATE OF ILLINOIS)
) S.S.
COUNTY OF PEORIA)

CERTIFICATION OF ACCURACY AND RESPONSIBILITY

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this petition and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete although subject to amendment by the amended petition to be filed.

Signed by Authorized Representative

Leslie W. Phillips

Leslie W. Phillips
Vice President, Manufacturing
Keystone Steel & Wire Company

Subscribed to and sworn before me this 30 day of July, 1993.

OFFICIAL SEAL
WILBUR C. BAHR, JR.
PEORIA COUNTY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 3-10-95

Wilbur C. Bahr, Jr.

Notary Public

STATE OF ILLINOIS)
) S.S.
COUNTY OF PEORIA)

AFFIDAVIT

Affidavit Required Under
35 Ill. Adm. Code $106.706

I, Leslie W. Phillips, being duly sworn, deposes and states that I am a Vice President representing Keystone Steel and Wire Company and that all material facts set forth in this petition are true and correct to the best of my knowledge and belief, subject to amendment by the amended petition to be filed.

Leslie W. Phillips
Leslie W. Phillips

Subscribed to and sworn before me this 30 day of July, 1993.

OFFICIAL SEAL
WILBUR C. BAHR, JR.
PEORIA COUNTY
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES 3-16-95

Wilbur C. Bahr, Jr.
Notary Public

RCRA DELISTING ADJUSTED STANDARD PETITION

Petitioner, Keystone Steel and Wire Company ("Keystone"), through its attorneys, hereby petitions the Board to delist certain K062-listed hazardous wastes at its facility in Peoria County pursuant to 35 Illinois Administrative Code (IAC) § 106 Subpart G and 35 IAC §720.122.

I. INTRODUCTION.

Keystone's steel and wire mill in Bartonville, Illinois has been in operation since the 1890s, and is currently the second largest industrial employer in the Peoria area. Before the steel "rod" produced in the adjacent steel mill can be drawn and fabricated in the wire mill, oxidation on the surface of the rod (referred to as "rod scale") must be removed by immersing the steel in "pickle liquor," a sulfuric acid cleaning solution. After the cleaning effectiveness of the sulfuric acid is exhausted, the liquor is considered to be "spent" and it becomes a waste. Spent pickle liquor has been classified as a listed hazardous waste (K062) under the Resource Conservation and Recovery Act (RCRA) because it is corrosive and contains toxic levels of lead and chromium.

Prior to October 1, 1986, Keystone mixed its spent pickle liquor wastes in its plant sewer system with approximately 5,000,000 gallons per day of nonhazardous wastewater, and conveyed the combined wastewater flow to its NPDES-approved

wastewater treatment plant through a chain of surface impoundments, which under the RCRA programs are classified as hazardous waste management units (HWMUs). Before the wastewater treatment plant was constructed in 1969, an additional surface impoundment was used to manage the plant's wastewater. Because that impoundment has been inactive since 1969, Keystone considers it to be a solid waste management unit (SWMU) under the RCRA program, but has nevertheless committed in its IEPA-approved closure plan to close the SWMU in the same manner as the other HWMUs.

The seven HWMUs and one SWMU that received Keystone's spent pickle liquor wastes also receive a large volume of surface water run-off, which since 1969 has been conveyed through the surface impoundments to the wastewater treatment plant for treatment prior to release to the Illinois River. Natural sedimentation has therefore occurred in the impoundments over time. These natural sediments have come into contact with the diluted spent pickle liquor wastes from the Keystone wire mill, and under the RCRA "mixture rule" are themselves classified as K062 listed hazardous wastes. 35 IAC §721.103. After conducting an extensive sampling program under U.S. EPA and IEPA supervision, Keystone has determined that the sediments have been contaminated with significant levels of lead and chromium, but that the natural clay soil underlying the sedimentation has not been affected. Keystone's IEPA-approved closure plan therefore calls for the treatment and off-site disposal of all of the

contaminated sediment, as well as the top six inches of the underlying clay soil.

After a thorough literature review, consultations with IEPA and U.S. EPA, and extensive bench scale testing, Keystone determined that lime stabilization and Portland cement solidification is the most effective treatment method for the contaminated sediment. To prove the effectiveness of this method in the field, Keystone treated 34,690 cubic yards of this waste in the "Retention Reservoir" (the largest impoundment and the unit with the highest levels of leachable lead) during a full-scale demonstration project conducted from July 1992 to February 1993. The selection of the treatment contractor, sampling and testing protocols, and all other substantive aspects of the demonstration project were reviewed and approved by IEPA. The demonstration project has established that the treatment process consistently achieves all applicable standards for the delisting of this waste. After treatment, the sediment does not meet the criteria for hazardous waste listing and exhibits no hazardous waste characteristics. The treated waste does not pose a substantial present or potential hazard to human health or the environment even if improperly stored, transported, or disposed of, or otherwise mismanaged.

For the reasons set forth in this Petition, the treated sediments should be delisted and reclassified as a special waste. The delisted sediments would be treated, excavated from the surface impoundments in question, manifested, transported off

site, and disposed as a special waste in accordance with applicable State regulations. There is no credible risk that the delisted materials would be subjected to improper management during these phases of the remediation because the entire Keystone RCRA closure activities are being closely regulated and monitored by Keystone, Keystone's project engineer and the IEPA, pursuant to the approved RCRA closure plan.

If managed as special waste, the petitioned waste would be disposed of in a manner that provides essentially equal environmental protection as that for hazardous waste. Managing the sediments as a delisted special waste would require Keystone to meet delisting criteria for a wide variety of analytical parameters prior to disposing the waste in a special waste landfill. The required delisting treatment standards would cover a broader range of constituents and would require more rigorous treatment than the standard RCRA land disposal restrictions for K062 hazardous waste. While land restriction standards are technology-based, delisting thresholds are derived from constituent-specific HBLs, and are more protective of human health and the environment.

Managing these sediments as hazardous waste would result in a total estimated RCRA closure cost for all on-site remediation units of $26,668,000, in contrast to the estimated cost of $8,046,000 for managing the treated sediments as special waste. The cost savings resulting from approval of this petition would be substantial, and of vital importance to Keystone and its

employees. As demonstrated in this Petition, the cost savings would be achieved without in any way compromising or threatening human health or the environment.

This Adjusted Standard Petition is organized following 35 IAC §106.705 Sections A through L. Legal requirements under 35 IAC §720.122(d) are addressed in section VII herein, considering the factors for toxic waste found in §721.111(a)(3)(A) through (K). Appendix A of this petition follows U.S. EPA's delisting petition format as found in Petitions to Delist Hazardous Wastes: A Guidance Manual (2nd edition, March 1993). Enclosed as an attachment to Appendix A is the 1993 Annual Report for the Retention Reservoir Remediation Project. This document provides critical information in support of the delisting petition. Copies of all test reports have not been included with this petition, but have been provided to IEPA for their review and consideration. However, a complete summary of the field sampling data is provided in Appendix A. As discussed in the accompanying motion for a stay of the Board proceedings, the remaining independent validation reports will be sent to IEPA within three weeks of the filing of this petition.

II. STANDARD FROM WHICH ADJUSTED STANDARD IS SOUGHT

Keystone seeks an Adjusted Standard from 35 IAC §721.132, Hazardous Waste From Specific Sources (effective May

17, 1982, as noted in 35 IAC §700.106 and, amended at 15 Ill. Reg. 14473, effective September 30, 1991).

III. REGULATION OF GENERAL APPLICABILITY IMPLEMENTS RCRA

The regulation of general applicability, 35 IAC §721.132, was adopted as a rule identical in substance to 40 Code of Federal Regulations (CFR) §261.32, in order to implement the State program concerning the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq.

IV. LEVEL OF JUSTIFICATION

The regulation of general applicability for listed wastes from specific sources, 35 IAC §721.132, does not specify a level of justification. However, pursuant to 35 IAC §720.122(n), the level of justification for the Adjusted Standard for waste delisting is specified in 35 IAC §720.122(a) et seq. as applicable to the waste in question. The level of justification specific to the delisting of the K062-listed lime-stabilized sediments at the Keystone site is found in 35 IAC §720.122(d) (effective May 17, 1982, 35 IAC §700.106) since the untreated K062-listed sediments are considered code "T" toxic waste.

V. NATURE OF THE PETITIONER'S ACTIVITY WHICH IS THE SUBJECT OF THE PROPOSED ADJUSTED STANDARD

Keystone generates spent pickle liquor, a listed hazardous waste (K062), during steel-finishing operations at its

facility in Bartonville, Illinois. K062-listed hazardous waste was in contact with sediments in nine RCRA management units present on site, and, therefore, these sediments are classified as K062-listed hazardous waste under the "mixture" rule (35 IAC §721.103).

A detailed description of Keystone's manufacturing and waste generation/management operations can be found in Section B (Waste and Waste Management History Information) and Section C (Process and Waste Management Information) of the U.S. EPA Delisting Petition, Appendix A to this document.

VI. COMPLIANCE ALTERNATIVES

As a K062-listed waste under 35 IAC §721.132, the regulation of general applicability, the petitioned waste must meet land restriction requirements under 35 IAC §728, Subpart E. The waste must be manifested and transported as hazardous waste to a permitted hazardous waste landfill. The total estimated cost for remediation of all K062-listed hazardous sediments present in the nine on-site remediation units is $26,668,000, after adjustment for inflation. Delisting, which would allow for the treated sediments to be disposed of at an off-site special waste landfill, reduces the estimated total cost of the RCRA closure of the units to $8,046,000. Delisting would thus reduce the cost of the closure at the nine impoundments in question by $18,622,000. A summary of the closure cost estimate is provided in Appendix E of the 1993 Annual Report For The Retention

Reservoir Remediation Project, at Appendix A, Attachment 1.

Due to storm water control and on-site space restrictions, treatment and off-site disposal of the petitioned waste is the only technically and economically feasible means of complying with the regulations of general applicability. Disposal of the sediments as a hazardous waste is cost prohibitive, given the company's financial resources. At a minimum, requiring Keystone to dispose of the treated sediments at a hazardous waste landfill would substantially delay the completion of the closure work.

VII. DEMONSTRATION REQUIRED BY 35 IAC §720.122(d)

Keystone' treated sediment does not meet the criterion for listing as a hazardous waste. Listing is based on the factors set forth in 35 IAC §721.111. Pursuant to 35 IAC §720.122, Keystone demonstrates in this petition that (1) after considering factors set forth in 35 IAC §721.111(a)(3)(A)-(K), the treated sediments do not meet the criterion to be listed as hazardous waste and do not pose a substantial present or potential hazard to human health or the environment when improperly stored, transported or disposed of, or otherwise managed; and (2) the treated sediments do not exhibit any of the characteristics of hazardous waste, e.g., ignitability, corrosivity, reactivity or toxicity, as defined in 35 IAC §§721.121, 721.122, 721.123 or 721.124. The sampling and testing procedures specified in the IEPA-approved closure plan assure

that the wastes will not be removed from the units until they are properly treated.

A. The Treated Sediment Does Not Meet The Criteria For Listing

1. Hazardous Constituents Causing K-062 Listing

In accordance with 35 IAC §721, Appendix G, the untreated K062 sediments have been listed as a Code "T" hazardous waste because the leachate from these sediments may contain toxic levels of hexavalent chromium and lead when subjected to the Toxicity Characteristic Leaching Procedure (TCLP) as specified in 35 IAC §721.124. Based on the analytical data, trace levels of TCLP chromium and lead are present in the lime-stabilized sediments (i.e., the petitioned waste). See Appendix A, Section E. However, the concentrations of leachable chromium and lead found in the delisting samples obtained from the Retention Reservoir are lower than the corresponding delisting thresholds, as calculated by the EPA Composite Model for Landfills (EPACML). See Appendix A, Section D-5 for a discussion of this fate and transport model.

The following sections discuss each of the factors considered for hazardous waste listing, following 35 IAC §721.111(a)(3)(A) through (K) to demonstrate that the lead and chromium present in the treated sediments do not pose a substantial present or potential hazard to human health or the environment that caused the U.S. EPA to list K062 spent pickle

liquor as a hazardous waste in accordance with 35 IAC §721.111(a)(3).

2. **Nature Of The Toxicity [35 IAC §721.111(a)(3)(A)]**

The nature of the toxicity presented by the lead and chromium in the treated sediment is discussed in this section.

a. **Hexavalent Chromium** - Hexavalent chromium is a corrosive substance. It may be absorbed via ingestion, absorption through the skin, and by inhalation. Short-term exposures of hexavalent chromium at high levels can result in adverse effects, such as ulcers of the skin, irritation and perforation of the nasal mucous membranes, and irritation of the gastrointestinal tract. Hexavalent chromium may also cause adverse effects in the kidney and liver. Long-term dermal and inhalation exposure to hexavalent chromium may cause health effects similar to those caused by short-term exposure such as dermatitis, ulceration of the skin, ulceration and perforation of the nasal septum, and inflammation of the nasal mucous membrane and pharynx. Long-term inhalation exposure of workers to low-level chromium compounds has been associated with lung cancer. The U.S. Environmental Protection Agency (U.S. EPA) has deemed the carcinogenic evidence to be sufficient to classify hexavalent chromium as a known human carcinogen by the inhalation route of

exposure. There is no evidence that hexavalent chromium is carcinogenic via ingestion.

b. **Lead** - Lead may enter the body via inhalation or ingestion, and it is also minimally absorbed through the skin. After it enters the body, lead travels through the bloodstream to the soft tissues, including the brain and kidneys. It is then deposited into bone where it has an estimated half-life of 20 years. Changes in physiological conditions, such as pregnancy and osteoporosis, can result in the mobilization of lead from the bone into other parts of the body. Adults tend to be less susceptible to lead poisoning than children, and their exposures to lead tend to come from occupational sources. Lead encephalopathy is the most serious effect of lead poisoning. Symptoms of encephalopathy include dullness, irritability, poor attention span, headaches, muscular tremors and weakness, loss of memory, convulsions, paralysis, coma, and death. High levels of lead may also cause gastrointestinal effects and kidney damage. Exposure of a fetus to low levels of lead has been associated with minor anomalies, neurobehavioral disabilities, shortened gestation period, low birth weight, and growth deficits after birth. Low levels of lead also exert toxic effects on adults, including causing reproductive problems and elevated blood pressure. The U.S. EPA has classified lead as a probable human carcinogen based upon evidence of carcinogenicity in animals.

3. Concentrations Of Constituents In Waste [35 IAC §721.111(a)(3)(B)]

Treated sediment samples were collected from the Retention Reservoir as part of the delisting sampling program and analyzed for both total and TCLP lead and chromium. Although the waste is listed for TCLP hexavalent chromium rather than total chromium or TCLP total chromium, the samples were not analyzed for total hexavalent chromium or TCLP hexavalent chromium. The reasons for not analyzing for total or TCLP hexavalent chromium are:

- In accordance with Exhibit 6-2 of the U.S. EPA publication Petitions to Delist Hazardous Wastes: A Guidance Document, second edition, March 1993, the analysis for hexavalent chromium is not needed if the levels of total chromium are less than 1 percent. Total chromium levels did not exceed 1 percent for any of the delisting samples.

- All TCLP analytical results for total chromium are substantially below the delisting threshold for hexavalent chromium; and

- Any TCLP analytical results for hexavalent chromium would be less than the TCLP total chromium levels and,

therefore, less than the delisting threshold requirements.

The total chromium values detected in the samples are assumed to be "worst-case" because they will always exceed the hexavalent chromium levels. The total metals analyses for all samples taken during delisting sampling in the Retention Reservoir indicate that the concentrations of total lead and total chromium are as follows:

Constituent	Total Concentration (mg/kg)		
	Min.	Max.	Average
Lead	4650	8880	6765
Chromium	542	870	706

The TCLP analyses indicate that the concentrations of lead and chromium in the leachate are as follows:

Constituent	TCLP Concentration (mg/l)		
	Min.	Max.	Average
Lead	<0.0024	0.336[1]	0.169
Chromium	<0.0027	0.0116	0.0072

A complete summary of the delisting sampling metals results is presented in Appendix A, Section E, Tables E-7, E-8,

[1] This value has been identified as a statistical data outlier as explained in Appendix A, Section G-1.

and E-9.

4. Migration Potential [35 IAC 721.111(a)(3)(C)]

Keystone has solidified and stabilized the Retention Reservoir sediments through the addition of quicklime and Portland cement. These treated sediments will be disposed in a properly permitted off-site landfill as a nonhazardous special waste. Stabilization/solidification reduces the leaching potential of the hazardous waste and consistently achieves leachate concentrations below the delisting criteria. Although leachable lead and chromium may have a potential to migrate, the solidification/stabilization process physically and chemically binds these two metals, among others, thereby reducing their leachable quantities below concentrations which could cause harm to human health or the environment. This has been demonstrated by using the EPACML to evaluate the impact of the petitioned waste (i.e., treated sediment) on human health and the environment. The application of the EPACML for evaluating the treated Keystone sediment is explained in Appendix A, Section D.

The U.S. EPA generally evaluates delisting petitions by using fate and transport models to predict the concentrations of hazardous waste constituents that may be released from the petitioned waste after disposal. This information is then used to determine the potential impact of the waste on human health and the environment. The U.S. EPA'S approach assumes a reasonable worst-case scenario: disposal of waste in a Subtitle

D (i.e., municipal solid waste) waste management unit. The EPACML simulates the movement of contaminants from the waste management unit and the migration of contaminants through the subsurface environment to a potential drinking water well. The EPACML is applied in the same manner to all delisting petitions, and because it assumes a generic worst-case scenario, the only site-specific inputs are the type of waste disposal facility (i.e., landfill or surface impoundment) and the total volume of waste. The total volume of waste to be treated at the Keystone site is approximately 85,860 cubic yards and, as stated previously, all of the treated waste will be disposed of in a landfill permitted to accept special waste.

Delisting thresholds for lead, chromium and other contaminants can be determined by using the EPACML and the delisting health-based levels (HBLs) for these constituents. The HBLs represent the concentrations of constituents in the hypothetical well water, below which there is no adverse impact to human health and the environment. The EPACML also produces a dilution/attenuation factor (DAF) that is based on the total volume of treated waste.

The method for determining the delisting thresholds is outlined in Appendix A, Section D. The delisting thresholds for lead and chromium resulting from the use of the EPACML are 0.246 mg/l and 1.64 mg/l, respectively. The complete results of the delisting sampling are presented in Appendix A, Tables E-7, E-8 and E-9. See also, discussion at Appendix A, Section G. These

results show that the TCLP lead and chromium values for the delisting samples are less than the allowable delisting thresholds. Therefore, the solidification/stabilization of the sediments at the Keystone site reduces the amount of lead and chromium available to migrate from the landfill (under worst-case conditions) to a level at which the petitioned waste no longer represents a hazard to human health or the environment.

5. Persistence And Degradation [35 IAC 721.111(a)(3)(D)]

The solidification/stabilization mechanisms responsible for reducing the lead and chromium concentrations in the leachate of the treated waste include, but are not limited to:

- Formation of less soluble lead hydroxide and chromium hydroxide and/or silicate compounds;
- Physical entrapment of lead and chromium compounds in the cement matrix; and
- Reduction in the amount of waste particle surfaces subject to acidic leachate contact.

Following treatment, lead and chromium will persist in the waste predominantly in the form of insoluble hydroxide and/or silicate complexes. As the multiple extraction procedure (MEP)

results show (see Appendix A, Table E-9), the treated material does not exhibit any tendency to destabilize (i.e., degrade) under repeated exposures to a synthetic acid rain solution. Further, the overall MEP and TCLP leachate concentrations for lead and chromium do not exceed the delisting thresholds determined for these constituents. In addition, considering that the petitioned waste will be disposed of in a licensed special waste landfill with an extremely low permeability cap and liner, the TCLP and MEP tests predict leachate values much higher than those actually expected to occur. Thus, the metal complexes in the petitioned waste will not leach significant levels of metal ions, even under assumed worst-case conditions. Therefore, the persistence and degradation of lead in the petitioned waste pose no risk to human health or to the environment, especially under the secure disposal conditions planned for this waste.

6. Degradation Into Nonharmful Constituents [35 IAC 721.111(a)(3)(E)]

As stated in the previous section, rather than degrade, the lead and chromium in the waste will persist as insoluble metal hydroxide and silicate compounds. The only significant degradation into nonharmful constituents that may occur is that of hexavalent chromium to trivalent chromium. However, based on the analytical results of the delisting sampling, the expected levels of hexavalent chromium in the leachate from the lime-stabilized sediments are small and will not significantly affect

the waste characteristics. Appendix A, Tables E-8 and E-9.

7. Degree Of Bioaccumulation [35 IAC 721.111(a)(3)(F)]

This section addresses the bioaccumulation of hexavalent chromium and lead in humans.

a. Hexavalent Chromium - In the body, hexavalent chromium is readily reduced to trivalent chromium in the skin. Trivalent chromium, which is regarded as the form of chromium essential to man, has no established toxicity. The concentration of hexavalent chromium in the lungs typically increases up to age 40 primarily because of the accumulation of insoluble particles. Moreover, there is usually a strong attraction between metal ions and organic liquids. As a result, metals bind strongly to tissues and are only slowly excreted. With a continuing intake, these metals tend to accumulate to a high degree. Under normal conditions, the body contains stores of hexavalent chromium in the skin, lungs, muscle, and fat. Hexavalent chromium is also transported across the placenta and concentrated in the fetus. The concentrations of hexavalent chromium in the tissues tend to decline rapidly with age except for lung concentrations, which tend to increase.

b. Lead - The major characteristics of lead distribution are: (1) rapid and profound transfer to bones, and

(2) progressively decreasing rate of excretion. A single dose of lead becomes progressively more deeply buried in the bone matrix with the passage of time, and consequently, becomes progressively less accessible to the circulating body fluids (blood, lymph). Continued exposure to lead will result in continued accumulation, even over very long periods of time. Lead tends to undergo bioaccumulation in bones throughout life, and about 90 percent of the body burden of lead is in bones after long-term exposure. The return of blood lead to normal levels following cessation of long-term exposure does occur, however, the rate of return varies and cannot be predicted.

8. Plausible Improper Management [35 IAC 721.111 (a)(3)(G)]

Keystone believes that the treated sediments should be delisted from their current status as a hazardous waste under the RCRA mixture rule and reclassify them as a special waste. Under a special waste classification, the delisted sediments will be removed from the HWMUs and the SWMU at the Keystone site, manifested, transported off site, and disposed of in accordance with applicable State regulations. Short-term concerns regarding the improper management of the treated sediments relate to the treatment and handling of the waste on site and the subsequent transport of the waste off site to a disposal facility. There is no credible risk that the delisted materials will be subjected to improper management during these phases of the remediation

because the entire Keystone RCRA closure activities are being closely regulated and monitored by Keystone, Keystone's representative and the Illinois Environmental Protection Agency (IEPA).

As noted, the treated waste will be disposed at an approved off-site special waste landfill. This landfill will be designed and operated in accordance with the applicable sections of the Illinois Solid and Special Waste Management Regulations (35 IAC §§807-815). Because Keystone has committed in the approved closure plan to use a special waste landfill for the disposal of all of the delisted waste, and because the closure is being closely regulated and monitored by Keystone, and the IEPA, there is no chance that the waste will be disposed of at any location other than a permitted special waste landfill.

However, in accordance with the U.S. EPA guidelines for evaluating delisting petitions, a worst-case management scenario that does not assume disposal in an Illinois special waste landfill must be addressed. The worst-case scenario used by the U.S. EPA assumes that the waste is disposed of in a Subtitle D (i.e., municipal solid waste) waste management unit. This assumption is built into the EPACML, the fate and transport model used by the U.S. EPA to determine delisting thresholds (Section 4.0) above. Although not plausible, the worst-case improper management scenario whereby the delisted material is disposed of in a Subtitle D municipal solid waste landfill has been accounted

for in the development of the delisting thresholds used as a guideline in establishing acceptable treatment levels for the Retention Reservoir sediments. As previously detailed, even under the incredible assumption that the treated waste is disposed in a municipal rather than a special waste landfill, the TCLP results for the treated waste are so low that no threat to human health or the environment would result.

9. Quantity Of Waste [35 IAC 721.111 (a)(3)(H)]

The total estimated quantity of petitioned waste for all of the HWMUs and the SWMU at the Keystone site is 85,860 cubic yards. See Appendix A, Section B.

10. Improper Management Environmental Impacts [35 IAC 721.111(a)(3)(I)]

There have been numerous soil, sediment, and ground water samples taken from the Keystone site and subjected to chemical analysis prior to the commencement of the closure activities. Generally, the results show that lead and sometimes chromium exist in the contaminated sediments on the Keystone site at levels exceeding the RCRA closure clean-up objectives and hazardous waste toxic characteristic levels. However, Keystone believes there has been no human health or significant environmental damage for the following reasons:

- Sediments contaminated with lead and chromium have been restricted to the surface impoundments and dredge piles at the site;

- The contaminated sediments have been present in the surface impoundments, for almost all of the 20th Century and there have been no recorded or observed instances of adverse impact on human health or environmental damage to fauna or flora.

- Sampling results from 1990 confirmed that soils beneath the HWMUs and the SWMU are only minimally affected by the sediments in the surface impoundments, and only to a depth of six inches.

- The Quarterly groundwater monitoring results, summarized in Appendix A, Section F, show that no significant elevation in levels of inorganics or organics have been detected in the groundwater located beneath the ditches. These results, therefore, prove that the groundwater has not been adversely affected by the wastes in the surface impoundments.

Aside from the mixing of the K062 wastes with the natural sediments in the units, there has been no adverse

environmental impact caused by the disposal of the K062 wastes. Even this environmental impact will be eliminated through closure activities planned for the site. Following the completion of the closure work, there should be no long-term environmental impacts.

11. Other Governmental Actions [35 IAC 721.111 (a)(3)(J)]

The U.S. EPA classified spent pickle liquor as a listed hazardous waste (K062) based on the potential hazard to human health and the environment when improperly transported, treated, stored, or disposed of, and the following considerations:

1. Spent pickle liquor is corrosive, with a pH of less than 2, and contains significant concentrations of lead and chromium; and

2. The metals in spent pickle liquor are present in highly mobile form, primarily due to the acidic nature of the liquor.

The standard industry-wide method used to neutralize and treat spent pickle liquor is lime neutralization (for pH adjustment), followed by flocculation, clarification, and typically, dewatering of the resultant sludge. The use of excess lime to raise the pH to approximately 9.5 also changes the metals

to insoluble hydroxides, thereby eliminating the concern for mobile metals. The sludge generated by the above treatment process was initially classified by the U.S. EPA as a listed hazardous waste, K063, due to the U.S. EPA's belief that high levels of lead and chromium in the sludge could migrate from the wastes.

On March 16, 1981, the American Iron and Steel Institute, on behalf of its member companies, submitted a rulemaking petition requesting an industry-wide exclusion of lime-stabilized waste pickle liquor sludge (LSWPLS). The data included in this petition clearly showed that lead and chromium, although present in the LSWPLS, are essentially immobile due to the alkaline nature of the sludge; EP Toxicity Leaching tests were used to document the immobile nature of the metals. The U.S. EPA, as part of their review, investigated additional leaching data, to include data from a total of 57 facilities, and concluded such data were representative of the lime stabilization process and the resultant sludge. Based on that expanded data base, the U.S. EPA on June 5, 1984 promulgated a final rule excluding LSWPLS generated by plants in the iron and steel industry from the "derived-from" or "mixture" rule in 40 CFR 261.3. Federal Register, Vol. 49, No. 109, pages 23284 to 23287. Keystone operates a permitted wastewater treatment system for waste pickle liquor and generates LSWPLS, which sludge is classified as K063.

The sediments present in the hazardous waste management units at the Keystone sites have also been classified as a listed hazardous waste under the "mixture" rule solely because they have been in contact with spent pickle liquor. Extensive sampling of these sediments have shown characteristics similar to spent pickle liquor, particularly significant concentrations of total lead and chromium within the sediment. The sediment, however, does have a relatively neutral to slightly alkaline pH. The addition of lime to these sediments to raise the pH and produce insoluble metal hydroxides, resulting in very low levels of leachable lead and chromium, is essentially identical to the wastewater treatment process used to generate the delisted LSWPLS.

Keystone is aware of no other State or Federal petitions seeking to delist a similar K062/sediment hazardous waste mixture through the use of a comparable stabilization/solidification treatment process.

12. Other Factors [35 IAC 721.111 (a)(3)(K)]

None.

B. Additional Hazardous Factors Considered Under U.S. EPA Delisting Guidance Manual Demonstrate That The Treated Sediment Does Not Exhibit Any Additional Factors That Would Cause The Waste To Be Considered Hazardous.

Keystone considered all of the factors that could cause the petitioned waste to be considered hazardous as outlined in

the U.S. EPA Publication, Petitions to Delist Hazardous Waste: A Guidance Manual, Second Edition, dated March 1993 (the "Delisting Guidance Manual"). These hazardous factors include the following:

1. The Treated Sediment Does Not Contain Hazardous Constituents That Could Leach From The Waste In Concentrations Exceeding Health-Based Levels (HBLs).

A detailed discussion of the procedure for selecting the analytical parameters and constituents used to evaluate the petitioned waste is given in Appendix A, Section D. Keystone analyzed the treated sediment in the Retention Reservoir for all of the known hazardous metal constituents that potentially could be present in the treated sediment at the site to determine whether their leachate concentrations exceeded the delisting HBLs. The analytical results of this testing are presented in Appendix A, Section E. The analytical results were compared to the delisting thresholds concentrations developed by using the EPACML fate and transport model. Based on this comparison, all 12 metals analyzed (in addition to chromium and lead) have leachate concentrations less than their respective delisting HBLs. The treated sediment in the Retention Reservoir was also sampled and analyzed for volatile and semivolatile organics that potentially could be present in the treated sediment at the site to determine whether their total or leachate concentrations exceeded the delisting HBLs. Of the 40 volatile organic and 69

semivolatile organic analytes considered, only six volatile and two semivolatile organics were detected in the delisting samples obtained from the Retention Reservoir. None of the calculated TCLP concentrations for all of the organics detected exceeded their respective delisting HBLs.

2. The Waste Does Not Destabilize Over Time.

In addition, in accordance with the Delisting Guidance Manual, metal levels in the treated sediments were analyzed using the multiple extraction procedure (MEP). This test evaluates the long-term stability of the waste by simulating acid rain weathering. The analytical results of this testing are presented in Appendix A, Section E. None of the samples analyzed showed any tendency to destabilize over time.

Although the delisting samples collected from the Retention Reservoir contained metals in addition to chromium and lead, volatile organics and semivolatile organics, these analytes were all detected at concentrations below their corresponding delisting HBLs. Also, the treated sediments show no tendency to destabilize over time. Therefore, the petitioned waste should not be considered hazardous for factors other than those for which the K062 sediments were listed.

C. The Treated Sediment Does Not Exhibit Any Of The Characteristics Of Hazardous Waste, e.g., Ignitability, Corrosivity, Reactivity Or Toxicity As Defined In 35 IAC §§721.121, 721.122, 721.123 or 721.124.

Keystone analyzed the petitioned waste in the Retention Reservoir for other characteristically hazardous waste criteria including ignitability, corrosivity, reactivity, and toxicity characteristic, as outlined in 35 IAC §721.124. These analytical results are presented in Appendix A, Section E, and discussed in Section G. These results demonstrate that the lime-stabilized sediment is not corrosive, ignitable, or reactive. Further, the TCLP leachate concentrations of the delisting samples (included in Appendix A, Section E) are lower than the TCLP levels provided in 35 IAC §721.124 for all of the detected analytes. These results, therefore, demonstrate that the treated sediment does not exhibit the characteristic of toxicity.

D. Conclusion.

As set forth in this petition, the treated sediments and the sediments that will be treated at the Keystone site do not and will not demonstrate any hazardous characteristics. The treated waste does not pose a substantial present or potential hazard to human health or the environment if improperly stored, transported, or disposed of, or otherwise managed. The lime stabilization/Portland cement solidification treatment process reduces the leachable chromium and lead levels to the extent that they are unavailable at levels harmful to human health or the

environment, even when considering a worst-case scenario where the petitioned waste is disposed of in a Subtitle D (i.e., municipal solid waste) landfill.

Therefore, Keystone believes the petitioned waste should be reclassified as a special waste and managed as such during its removal, transport, and disposal.

VIII. PROPOSED ADJUSTED STANDARD

A. Discussion

Keystone conducted delisting sampling following the treatment of the Retention Reservoir sediments which demonstrates that lime stabilization and Portland cement solidification produces a waste that meets the delisting criteria. During the treatment of the Retention Reservoir sediments, Keystone conducted performance sampling to evaluate the effectiveness of the treatment. See, the Annual Report, Attachment 1 to Appendix A, for a complete discussion of the performance sampling. During the performance trials, it was found that the controlling delisting criterion to ensure successful treatment was lead toxicity, as measured by TCLP lead analysis. Alkalinity was selected as an indicator parameter for TCLP lead. By comparing alkalinity and TCLP lead data, alkalinity ranges were established in which there was an assurance that the lead TCLP was reduced to below the delisting threshold. The treatment variables, such as proper chemical dosage and adequate mixing, were controlled in

such a way as to insure the proper alkalinity range was met. Therefore, the lime stabilization and Portland cement solidification treatment of the sediments at Keystone is defined as meeting a specific alkalinity range in the treated materials.

Consequently, various mixing and/or blending processes can be used to achieve the required treatment, as long as appropriate operating parameters are established and used to control the character of the final product. This mixing/blending process can be achieved by either *ex situ* or *in situ* mixing processes. *Ex situ* mixing equipment include pug mills, ribbon blenders, or screw conveyors, while *in situ* equipment include the traditional earth moving equipment (e.g., backhoe), augers, or modified equipment as was used by ITEX. Keystone therefore requests a generic delisting of the treated sediments, defined by the proposed verification testing procedures, regardless of the equipment or specific process used to mix and add the lime and Portland cement to the waste.

B. **Description of Proposed Adjusted Standard**

Keystone proposes that the Board make the following determination concerning the treated sediments in the RCRA waste management units at its Bartonville, Illinois facility:

Sediments located in the eight HWMUs and the one SWMU at the Keystone Steel and Wire Facility at 7000 S.W. Adams Street in Bartonville, Illinois are nonhazardous following treatment

employing lime stabilization and Portland cement solidification and should be excluded from 35 IAC §721.132.

This exclusion is subject to the following:

1. Performance testing of the lime stabilization/Portland cement solidification process of the sediments located in the North Ditch, Mid-Mill Ditch, South Ditch-North Half, South Ditch-South Half, Surface Drainage Ditch, North Dredge Pile, South Dredge Pile, and the Lower South Ditch. (Performance testing of the Retention Reservoir treatment project has already been documented.) The alkalinity of the sediment will be tested in each treatment cell following the initial mixing of quicklime and Portland cement. Treatment will be considered acceptable if the alkalinity is within the range of 130,000 mg/kg to 192,000 mg/kg. Where the measured alkalinity is within the range of 115,000 mg/kg to 130,000 mg/kg or 192,000 mg/kg to 215,000 mg/kg, the sample also will be analyzed for TCLP lead. Samples where TCLP analysis is performed will be considered passing if the TCLP value for lead does not exceed 0.246 mg/l.

2. Verification testing of the treated sediments located in the Retention Reservoir and all of the other waste management units. Verification testing will consist of sampling roll-off containers of the treated sediment during the removal of the sediments from the waste management units. The sampling frequency and analytical protocols will be as follows:

a. For Day 1 of treated sediment excavation and removal, every roll-off container will be sampled. Each sample will be analyzed for alkalinity. Every third sample in addition will be analyzed for TCLP cadmium, chromium, lead and zinc.

b. After Day 1, every tenth roll-off container will be sampled. Each sample will be analyzed for alkalinity. Every second sample in addition will be analyzed for TCLP cadmium, chromium, lead and zinc.

c. Samples where only alkalinity is measured will be considered passing if the alkalinity is within the range of 130,000 mg/kg to 192,000 mg/kg. Samples where only alkalinity is measured and where the alkalinity is within the range of 115,000 mg/kg to 130,000 mg/kg or 192,000 mg/kg to 215,000 mg/kg will then be subject to TCLP analysis for cadmium, chromium, lead and zinc. Samples where TCLP analysis is performed will be considered passing if the TCLP values are less than the delisting values as follows:

Analyte	TCLP Level
Cadmium	0.092 mg/kg
Chromium	1.64 mg/kg
Lead	0.246 mg/kg
Zinc	115 mg/kg

d. The sediments in all containers where the alkalinity lies outside the range of 115,000 mg/kg, and the TCLP values exceed the levels given in Item 3 will be retreated and sampled.

e. Following Day 1, if any sample fails to meet the criteria outlined in (d), the subsequent sampling frequency for roll-off containers will revert to the Day 1 sampling schedule.

C. Compliance Costs

A summary of the closure cost estimate is provided in Appendix E of the Annual Report, included as Attachment 1 to Appendix A of this document.

IX. COMPARATIVE ENVIRONMENTAL IMPACT

This section presents a comparative environmental impact analysis of the activities involved in complying with the regulation of general applicability (i.e., managing and disposing of the sediments as a K062-listed hazardous waste) versus complying only with the proposed standard (i.e., managing and disposing of the sediments as a non-hazardous special waste).

A. Cost

The cost for managing the sediments as a hazardous waste would result in a total estimated RCRA closure cost for all on-site remediation units of $26,668,000, in contrast to the

estimated cost of $8,046,000 for managing the treated sediments as a special waste.

B. **Sediment Handling Exposure Risk**

The handling exposure risk would not be altered by granting the requested delisting, because the delisting will not change the treatment already specified in the IEPA-approved closure plan.

C. **Land Restriction vs. Delisting Requirements**

Managing the sediments as hazardous waste would require Keystone to meet land restriction requirements for chromium and lead before disposing of the waste in a RCRA-permitted treatment, storage, and disposal facility. The land restriction requirements only address the constituents of chromium and lead.

Managing the sediments as a delisted special waste requires Keystone to meet delisting criteria for a wide variety of analytical parameters prior to disposing of the waste in a special waste landfill. The required treatment standards for delisting, therefore, cover a broader range of constituents and provide for more rigorous treatment requirements than those for land restrictions. In addition, while land restriction standards are technology-based, delisting thresholds are derived from constituent-specific HBLs, and are more protective of human health and the environment.

D. **Landfill Disposal**

Whether the treated sediments are managed as a hazardous or special waste, they will be disposed of in a permitted landfill with essentially the same construction since, in the State of Illinois, there is little difference in the construction requirements for hazardous waste and special waste landfills. The bottom of a hazardous waste landfill is required to have two synthetic liners underlain by three feet of clay with a permeability of 10^{-7} cm/sec (35 IAC §724). Special waste landfills have identical requirements with the exception that only one synthetic liner is required (35 IAC §811). The petitioned waste managed as special waste will be disposed of in a manner that provides essentially equal environmental protection as that for hazardous waste. In addition, disposal of the treated sediments in a hazardous waste landfill would needlessly consume scarce hazardous waste landfill capacity.

Based on the foregoing comparative analysis, Keystone believes that treatment and disposal of sediments as a special waste will be more protective of human health and the environment

than compliance with the RCRA regulation of general applicability.

X. STATEMENT OF JUSTIFICATION

Section VII of this petition, and Appendix A, Section D-5, provide a detailed discussion of the methodology used to demonstrate that the petitioned waste is not hazardous. Keystone has analyzed a substantial number of samples of the petitioned waste for a wide range of parameters and constituents. Keystone believes that the results of these analyses, presented in Appendix A, Section E, and discussed in Section VII, and Appendix A, Section G, show that lime-stabilization/Portland cement solidification of the K062-listed sediments renders the petitioned waste nonhazardous in accordance with the required level of justification following 35 IAC §720.122.

XI. GRANT OF PROPOSED ADJUSTED STANDARD WILL BE CONSISTENT WITH FEDERAL LAW

The Board's granting of this petition for an adjusted standard delisting Keystone's treated K062-listed sediments will be consistent with Federal Law because the action is taken pursuant to regulations and criteria identical in substance to federal law. See Opinion and Order, In the Matter of RCRA Delisting, R90-17, February 28, 1991.

XII. REQUEST FOR HEARING

Keystone requests a hearing on this petition.

XIII. SUPPORTING DOCUMENTS AND/OR LEGAL AUTHORITIES

Following 35 IAC §106.705(k), supporting documents used as a basis for proof in this Petition are attached in the Appendix.

Respectfully submitted,

KEYSTONE STEEL & WIRE COMPANY

By: _____
One Of Its Attorneys

Andrew R. Running, Esq.
Karen L. Prena, Esq.
KIRKLAND & ELLIS
200 East Randolph Drive
Chicago, Illinois 60601
(312) 861-2000

Of Counsel:

Ralph P. End, Esq.
General Counsel
Keystone Consolidated Industries
Three Lincoln Center
5430 LBJ Freeway, Suite 1740
Dallas, Texas 75240
(214) 450-4297

Dated: August 2, 1993

USEPA DELISTING PETITION
FOR
KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

APPENDIX A
TO
ADJUSTED STANDARD PETITION

August 2, 1993

PREPARED BY:

ENVIRONMENTAL RESOURCES MANAGEMENT-NORTH CENTRAL, INC.
1630 HERITAGE LANDING DRIVE, SUITE 100
ST. CHARLES, MISSOURI 63303
PROJECT NO. 92135

APPENDIX A
U.S. EPA DELISTING PETITION
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1	Annual Report Dated March 31, 1993
2	Professional Profiles
3	Delisting Field Log Forms
4	IEA Analytical Equipment List

SECTION A: ADMINISTRATIVE INFORMATION

1. Name of Petitioner.

   a. Name of individual or firm submitting petition:

      Keystone Steel & Wire Company

   b. Mailing address of individual or firm:

      Keystone Steel & Wire Company
      7000 S.W. Adams Street
      Bartonville, IL 61641
      Attn: Mr. Dale Bennington

2. People to contact for additional information pertaining to this Petition.

   a.

Name and Company	Title	Telephone No.
Andrew Running Kirkland & Ellis	Attorney at Law	(312) 861-2412
Elton D. Breland ERM-North Central, Inc.	Senior Project Manager	(314) 928-0300
Dale Bennington Keystone Steel & Wire Co.	Manager, Energy and Environmental Engineering	(309) 697-7552

   b. Mailing address of contact(s):

      Mr. Andrew Running (Legal)
      Kirkland & Ellis
      200 East Randolph Street, 61st Floor
      Chicago, IL 60601

      Elton D. Breland, P.E. (Technical)
      ERM-North Central, Inc.
      1630 Heritage Landing Drive, Suite 100
      St. Charles, MO 63303

Dale Bennington, P.E. (Plant Technical and Operations)
Keystone Steel & Wire Company
7000 S.W. Adams Street
Bartonville, IL 61641

3. Facility responsible for generating petitioned waste.

   a. Name of facility: **Keystone Steel & Wire Company**

   b. Location of facility: **7000 S.W. Adams Street, Bartonville, Illinois**

   c. RCRA ID number: **ILD000714881**

4. Location of petitioned waste.

   Same as facility name and address given in Item 3

5. Description of proposed delisting action.

   Keystone Steel & Wire Company (Keystone) proposes to delist lime-stabilized and Portland cement-solidified sediments from eight Resource Conservation and Recovery Act (RCRA) hazardous waste management units (HWMUs) and one solid waste management unit (SWMU) at its facility located in Bartonville, Illinois. The eight HWMUs at the Keystone facility consist of five surface ditches, two dredge piles, and a retention reservoir. The one SWMU is a surface ditch that has not been used since approximately 1969. The sediments in these units have been in contact with spent pickle liquor, a listed hazardous waste (K062), generated during steel-finishing operations at the site. Under the RCRA "mixture" rules, as indicated in 35 Illinois Administrative Code (IAC) 721.103, these sediments are classified as K062-listed hazardous waste.

   This Delisting Petition is being submitted by Keystone for the purpose of obtaining a "one-time" Standard Exclusion from the regulations under 35 IAC Parts 720-728 for the lime stabilized sediments present in the Retention Reservoir. In addition, Keystone is submitting this Delisting Petition for the purpose of obtaining an Upfront Exclusion from the regulations under 35 IAC Parts 720-728 for subsequently treated sediments in the following HWMU and SWMU units:

RCRA Status	Unit Name
HWMU	North Ditch
HWMU	Mid-Mill Ditch
HWMU	South Ditch - North Half
HWMU	South Ditch - South Half
HWMU	Surface Drainage Ditch
HWMU	North Dredge Pile
HWMU	South Dredge Pile
SWMU	Lower South Ditch

The Upfront Exclusion for the above units is based on the results of the treatment demonstration project in which the contents of the Retention Reservoir were lime-stabilized to meet delisting criteria.

6. Statement of Keystone's interest in the proposed action.

All of the RCRA HWMUs and the one SWMU at the Keystone site are in the process of being closed in accordance with the approved June 15, 1992 Revised Phase 2 Closure Plan. The activities discussed in the Closure Plan include: 1) treatment of the sediments by lime-stabilization and Portland cement-solidification and 2) off-site disposal of the treated material as a special waste. Due to the unreasonable cost of disposing of the sediments at an off-site hazardous waste landfill, delisting of these materials is essential if Keystone is to complete a RCRA closure of the units.

7. Need and justification for the proposed action.

This delisting action is requested because the economic feasibility of performing the RCRA closure activities is dependent upon reclassifying the sediments as a special waste following treatment. The total cost of RCRA closure activities for all remediation units, after adjustment for inflation, assuming the treated sediments

were to be disposed of in an off-site hazardous waste landfill is estimated to be $26,668,000. Delisting, which would allow for the treated sediments to be disposed of at an off-site special waste landfill, reduces the estimated total cost of all RCRA closure activities to an estimated $8,046,000. A summary of these closure cost estimates were submitted to the Illinois Environmental Protection Agency (IEPA) in Appendix E of the Annual Report prepared by Environmental Resources Management-North Central, Inc. (ERM-North Central, Inc.) dated March 31, 1993. The Annual Report is included as Attachment 1 to this document. Disposal of the sediments as a hazardous waste is cost prohibitive, and would not allow for the closure of the HWMUs and SWMU within a reasonable time period. Disposal of the treated sediments in a hazardous waste landfill would also needlessly consume scarce hazardous waste landfill capacity.

Following the treatment of the Retention Reservoir, representative samples of the sediments were taken and analyzed for all of the hazardous waste characteristics and constituents necessary to demonstrate that the petitioned waste is not hazardous in accordance with the level of justification given in 35 IAC 720.122 (see Section C of the Adjusted Standard Petition).

The analytical results demonstrate the following:

1. **The treated sediments no longer contain toxic levels of chromium and lead (i.e., defined as exceeding delisting health-based levels (HBLs)) when subjected to the Toxicity Characteristic Leaching Procedure (TCLP), (35 IAC 721.124).**

2. **The treated sediments exhibit no factors, in addition to those for which the waste was listed, that would cause the waste to be considered hazardous, including: (1) containing hazardous constituents that could leach from the waste in concentrations exceeding HBLs, and/or (2) exhibiting a tendency to destabilize with time.**

3. **The treated sediments do not exhibit the characteristics of ignitability (35 IAC 721.121), corrosivity (35 IAC 721.122), or reactivity (35 IAC 721.123). In addition, when subjected to TCLP, the treated sediments do not exceed the toxicity levels for regulated constituents (35 IAC 721.124).**

These analytical results prove the lime-stabilized and Portland cement solidified sediments are nonhazardous, and therefore, that this Delisting Petition should be approved.

8. Signed Certification Statement.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signed by Authorized Representative

Leslie W. Phillips
Vice President, Operations
Keystone Steel & Wire Company

See page (i) of Adjusted Standard Petition for signed certification.

SECTION B: WASTE AND WASTE MANAGEMENT HISTORY INFORMATION

Basis for the Waste Listing

1. The following scenario best describes the petitioned waste.

   The petitioned waste is a mixture of one or more solid nonhazardous wastes and one or more listed hazardous wastes, as described in 35 IAC 721.103(a)(2)(C).

   Common name of mixture: **K062-listed sediment**

   Currently, the petitioned waste at the site can be divided into two categories:

   1. **Lime-stabilized and Portland cement-solidified K062-listed sediments located in the Retention Reservoir, and**

   2. **Untreated K062-listed sediments located in the HWMU and SWMU units listed below:**

Unit Status	Unit Name
HWMU	North Ditch
HWMU	Mid-Mill Ditch
HWMU	South Ditch - North Half
HWMU	South Ditch - South Half
HWMU	Surface Drainage Ditch
HWMU	North Dredge Pile
HWMU	South Dredge Pile
SWMU	Lower South Ditch

Solid waste(s) common name(s):

Silt contributed by storm water runoff from the Keystone property and surrounding area.

Listed wastes:

EPA Hazardous Waste Number: **K062**

Hazardous waste description:

Spent pickle liquor generated during steel finishing operations by facilities within the iron and steel industry (i.e., SIC Codes 3315).

Common name: **Spent pickle liquor**

2. Description of the physical form of the petitioned waste.

As previously indicated, the petitioned waste at the site includes: (1) currently existing lime-stabilized and cement solidified K062-listed sediments in the Retention Reservoir and (2) K062-listed sediments in the remaining HWMUs and SWMU. The petitioned waste in the Retention Reservoir consists of lime-stabilized sediments that are chemically homogenous, are medium gray in color, and have a consistency ranging from a dry granular solid at the surface of the Retention Reservoir to a moderately gelatinous semisolid near the bottom of the treated material. The lime-stabilized K062-listed sediments have a solids content ranging from 47 to 56 percent by weight and a bulk density of approximately 85 pounds per cubic foot. The treated material in the Retention Reservoir contains no free water. Based on the results of the sampling that has been conducted in the HWMUs and the SWMU, it has been found that the sediments in the waste management units have similar physical and chemical characteristics. Therefore, it is anticipated that the characteristics of the sediments treated in future remediation steps will be similar to those described above for the Retention Reservoir.

3. If the physical form is sludge or liquid, estimate based on waste analysis the percentage of solids (e.g., provide a range).

This item is not applicable. The petitioned waste is not classified as a sludge or liquid.

History of Waste Generation

4. Generation of the petitioned waste:

   a. Waste has been generated in the past.

      Year when untreated waste was first generated: **1920**

      Although activities by Keystone started at the site about 1890, the generation of untreated K062 type wastes appears to have started around 1920 along with the use of the North Ditch, Mid-Mill Ditch, South Ditch-North Half, South Ditch-South Half, and the Lower South Ditch as treatment units providing neutralization and gravity separation. In 1969, the Retention Reservoir was designed and constructed as an integral component of the adjacent on-site wastewater treatment plant (WWTP), which was permitted and began operation that same year. The Retention Reservoir received a combination of wastewater discharged from the Wire Mill and Mid-Mill and storm water runoff. Starting on October 1, 1986, all process wastewaters from the Wire Mill and Mid-Mill were diverted from the ditches and Retention Reservoir and conveyed directly to the WWTP by pipeline. Storm water runoff, although still handled by the ditches, was also diverted from the Retention Reservoir directly to the WWTP in 1986. K062-listed wastewater is still being generated at Keystone, however, it has not been discharged to the ditches or Retention Reservoir since October 1, 1986.

      Year when untreated waste generation ended: **1986**

      K062 wastes were last disposed in the SWMU in 1969 and in the HWMUs on October 1, 1986. Since those dates, the units have only received storm water runoff.

      Year when treated waste was first generated: **1992**

      The lime-stabilized and Portland cement-solidified K062 sediments (delistable material subject to Standard Exclusions) in the Retention Reservoir were generated from July 1992 through February 1993.

   b. Waste is presently being generated.

      Year when waste was first generated: **Not applicable**

   c. Waste generated in the future.

Because spent pickle liquor is no longer discharged to the surface impoundments, no additional K062-listed sediments will be generated at the site. However, the lime-stabilized and Portland cement-solidified K062-listed sediments will be intermittently generated during subsequent remediation steps over the next six years. Treated sediments generated by these remediation actions will be subject to Upfront Exclusions from hazardous waste regulations.

Volume of Petitioned Waste

5. Is this petition for a waste of fixed quantity (e.g., a discrete volume of waste contained in a unit)?

☒ YES

a. Petitioned waste is/will be a fixed quantity.

Estimated Volume:

Quantity	Unit of Measurement	Exclusions
34,690	Cubic yards	Standard exclusions
51,170	Cubic yards	Upfront exclusions

Describe the method of volume estimation.

The thicknesses of the sediments in all of the HWMUs and the SWMU were determined during sampling conducted in 1987, 1990, and 1991. The sediment depths measured at each of the sampling points were averaged and multiplied by the area of the units to obtain the volume of sediment (see Table B-1).

The original estimate of the volume of sediment in the Retention Reservoir prior to treatment was 46,300 cubic yards including the bottom and sidewall materials. Additional depth measurements of sediments in the Retention Reservoir were taken before, during, and after the full-scale demonstration treatment program and used to calculate a post-treatment volume of 34,690 cubic yards. This reduction in volume (i.e., approximately 25 percent

reduction) is a result of shrinkage of the sediments during dewatering and consolidation during treatment. By applying this same 25 percent reduction to the estimated volumes of the remaining remediation units, the expected future quantity of treated sediments subject to the Upfront Exclusion is 51,170 cubic yards. Therefore, the total expected quantity of treated sediments to be disposed off site is 85,860 cubic yards.

b. Petitioned waste is/will be generated on a routine or continuous basis.

Not applicable.

History of Waste Management

6. Present, past, and proposed waste management methods for the petitioned waste.

a. Present waste management methods, and off-site facility or facilities used.

Presently, all process wastewaters at the Keystone facility that were previously discharged to the HWMUs and the SWMU are pumped directly to the on-site WWTP owned and operated by Keystone. The K062-listed sediments are currently contained within the HWMUs and the SWMU at the facility. The only treatment of these sediments occurred during the recent *in situ* lime-stabilization and Portland cement-solidification treatment demonstration project conducted from July 1992 through February 1993 on the Retention Reservoir sediments. All lime-stabilized and Portland cement-solidified sediments in the Retention Reservoir (subject to the Standard Exclusions) will remain in place until successful delisting is achieved. No off-site treatment, storage, or disposal facilities are being used. In addition, no sediments are being removed from the other HWMUs or the SWMU for treatment, storage, or disposal.

b. Past waste management methods and off-site facility or facilities.

Essentially, the past waste management of the petitioned waste does not differ from that conducted presently. The K062-listed sediments have always been contained in the HWMUs and the SWMU at the site, and there are no records of sediments being removed from the units for treatment, storage, or disposal.

c. Proposed waste management methods if delisting petition is granted, and off-site facility or facilities to be used.

Following the lime stabilization of the sediments and the approval of this Delisting Petition, the treated materials will be removed from the units,

loaded onto trucks, manifested, and transported off site for disposal as a special waste in a secure landfill. The off-site disposal location will be one of the landfills located in the Peoria, Illinois area. Although the actual disposal location has not yet been selected, the chosen facility will be fully permitted to handle the type of special waste generated. It is intended that all delisted materials be placed in one landfill, if possible.

After the delisted sediments have been removed from the units, the following sampling frequency and analytical protocol will be followed:

1. For Day 1 of treated sediment excavation and removal, every roll-off container will be sampled. Each sample will be analyzed for alkalinity. Every third sample in addition will be analyzed for TCLP cadmium, chromium, lead, and zinc.

2. After Day 1, every tenth roll-off container will be sampled. Each sample will be analyzed for alkalinity. Every second sample in addition will be analyzed for TCLP cadmium, chromium, lead, and zinc.

3. Samples where only alkalinity is measured will be considered passing if the alkalinity is within the range of 130,000 mg/kg to 192,000 mg/kg. Samples where only alkalinity is measured and where the alkalinity is within the range of 115,000 mg/kg to 130,000 mg/kg or 192,000 mg/kg to 215,000 mg/kg will then be subject to TCLP analysis for cadmium, chromium, lead, and zinc. Samples where TCLP analysis is performed will be considered passing if the TCLP values are less than the delisting values as follows:

Analyte	TCLP Level
Cadmium	0.082 mg/kg
Chromium	1.64 mg/kg
Lead	0.246 mg/kg
Zinc	115 mg/kg

4. The sediments in all containers where the alkalinity lies outside the range of 115,000 mg/kg to 215,000 mg/kg, and the TCLP values exceed the levels given in Item 3 will be retreated and sampled.

5. Following Day 1, if any sample fails to meet the criteria outlined in Item 4, the subsequent sampling frequency for roll-off containers will

revert to the Day 1 sampling schedule.

The loads of delisted sediments will be staged until analytical results are available. If a load is in compliance with all delisting requirements, it will be immediately disposed of in the landfill.

As part of the overall QA/QC program, treated materials will be initially removed from the Retention Reservoir to a level where a minimum of one foot of untreated materials remains over untreated bottom and side soil. Clean closure sampling for the untreated soils will be performed through the remaining one foot of treated material. After clean closure has been determined, the remaining treated material will be removed and subjected to verification sampling as described above. This procedure will ensure that inadequately treated or untreated contaminated bottom or side soil will not be entrained and removed with treated material.

TABLE B-1

BASIS FOR SEDIMENT AND BOTTOM SOIL VOLUME ESTIMATES

Unit	Length (feet)	Width (feet)	Average Sediment Depth (feet)	Sediment Volume (cubic yards)	Consolidated Sediment Volume[3] (cubic yards)	Bottom Soil Removed (feet)	Bottom Soil Volume (cubic yards)
North Ditch:							
North Half	840	80	2.5	6,200	4,740	0.5	1,200
South Half	540	80	4.0	6,400	4,900	0.5	800
	North Ditch Total:			12,600	9,640		2,000
Mid-Mill Ditch:							
North Half	420	70	4.0	4,400	3,370	0.5	540
South Half	420	70	3.0	3,300	2,520	0.5	540
	Mid-Mill Ditch Total:			7,700	5,890		1,080
South Ditch:							
North Half	120	80	5.5	2,000	1,280	0.5	180
South Half	75	80	5.5	1,200	760	0.5	110
	South Ditch Total:			3,200	2,040		290
Retention Reservoir:	340	580	6.0	43,800			
Subtract Baffle [1]	800	20	6.0	-3,600			
	Retention Reservoir Total:			40,200	27,130		6,100
North Dredge Pile	(3,525 ft^2)		4.0	520	520	0.5	60
South Dredge Pile:	(2,800 ft^2)		3.0	310	310	0.5	50
Surface Drainage Ditch	300	10	1	—	—	1.0	110
Lower South Ditch				35,600[2]	35,600	0.5	4,790[2]

Note:

(1) Calculation assumes that 1.5 feet of baffle slag face will be removed during closure.

(2) Lower South Ditch sediment and bottom soil volumes are based on field observations and planimetry calculations.

(3) See Table 4-1 for consolidation notes.

SECTION C: PROCESS & WASTE MANAGEMENT INFORMATION

General Operations at the Generating Facility

1. Description of facility business area(s) and operations, including SIC code(s).

SIC Code 3312	**Steel Mill Complex: Manufacture of low to medium carbon steel by using electric arc furnaces.**
SIC Code 3312	**Rod Mill Complex: Manufacture of rod stock from low to medium carbon steel.**
SIC Code 3315	**Wire Mill and Mid-Mill Complex: Manufacture of wire and wire products from low to medium carbon steel.**

2. Products manufactured at the facility.

The Steel Mill operations manufacture low to medium carbon steel billets by using electric arc furnaces to melt scrap steel. These billets are then hot rolled in the Rod Mill Complex into rod stock varying in size from 7/32 to 1/2 of an inch in diameter. Rod stock is both sold to outside customers and used by Keystone in additional manufacturing steps to produce wire and wire products in the Wire Mill and Mid-Mill. A production flow diagram for the wire and wire product produced at the Keystone facility is provided on Figure C-1 at the end of this section.

3. Wastes generated at the facility.

The primary wastes generated at the Keystone facility include:

- **Steel Mill**
  - **K061 electric furnace emission control dust.**
  - **Contact and noncontact cooling water.**
- **Rod Mill**

- **Contact and noncontact cooling water.**

- **<u>Wire Mill and Mid-Mill</u>**

  - **K062 listed spent pickle liquor.**

  - **Contact and noncontact cooling waters.**

- **<u>On-Site Waste Water Treatment Plant</u>**

  - **Delisted waste sludge (formally K063) generated during the Lime treatment of the combined Wire Mill and Mid-Mill K062 listed wastewater discharge.**

4. Description of manufacturing areas, waste treatment areas, and waste management units.

   Only the manufacturing activities of the Wire Mill and Mid-Mill have contributed to the generation of K062 wastewater which has come in contact with the sediments within the HWMUs and the SWMU. Since October 1, 1986, all process wastewater from the Wire Mill and Mid-Mill have been piped directly to the on-site WWTP. In addition, wastewater has not been discharged into the SWMU since 1969. The general arrangement of the manufacturing areas and waste management and treatment areas is provided on the Site Features Map included as Figure C-2. In addition, a schematic flow diagram of the current waste collection treatment system is included as Figure C-3.

5. Regulatory Status of On-Site Waste Treatment, Storage, and Disposal Units. Include a list of all hazardous waste permits and other permits issued under Federal and State environmental statues. Include the permit numbers in this list.

   Keystone has been granted the following permits:

Permit Number	Type of Permit	Operation Name
Air Permits		
72090155	Operating	Wire Galv Ops 2, 3A, 5, 6, 7, 8, 9, 11, 12, 13, 14
12090156	Operating	Muffle Annealing-Areas 1, 2, 3, and 4
72090157	Operating	Nail Galvanizing (Old Machines)
72090158	Operating	Fence Painting Operations
72090161	Operating	Rod and Wire Cleaning (2 areas operate)
72090162	Operating	Incorporated into No. 87040099
72090167	Operating	Continuous Billet Caster
73010482	Operating	Boilers 1, 2, and 3
75090080	Operating	Oil Storage Tanks
83100059	Operating	Nail Galvanizing - Units 4 and 5
86030033	Operating	4 Degreasers 3 Tanks a Boiler Afterweave
87020037	Operating	Two Vinyl Coaters - Wire Mill and South Comp
87040098	Operating	Electric Arc Shop
8704099	Operating	Rod and Bar Mill #2
92040112	Construction	EAP Shop-Control Modification
92040118	Construction	Reheat Furnace Burners and Control Upgrade
92040119	Construction	Caster Shop Baghouse
92110086	Operating	Air Stripper
Wastewater Permit		
IL 0002526	Operating	Modified NPDES (Discharge) Permit

Contributing Manufacturing Process

In 1986, USEPA Region V and the IEPA concluded that the sediments cannot be adequately characterized by an engineering analysis of the contributing manufacturing processes. Since 1986, the in-place waste in the HWMUs and the SWMU has been analyzed to sufficiently characterize the waste and to identify all constituents of concern. These sampling and analytical results are covered in Section D of this document. In 1992, the IEPA approved the list of constituents of concern, which was based upon: (1) the 1985 Delisting Guidance Manual, (2) the analytical results of the 1987 and 1990 testing, (3) requirements from the IEPA, and (4) requirements negotiated with the USEPA in 1986.

Therefore given the previous discussion, the remaining items in Section C are addressed only as they provide relevant and necessary information.

6. Description of all "pre-process" steps used to prepare materials for processing prior to primary manufacturing operations, including surface and equipment preparation operations. Identify all pre-process material inputs and outputs in your descriptions and schematics.

   No "pre-process" steps contribute to the generation of K062 wastewater. Rod cleaning is included as the first step of the manufacturing process which contribute to the generation of listed K062 wastewater.

7. Manufacturing processes contributing to the petitioned waste.

   The petitioned waste is lime-stabilized and Portland cement-solidified treated sediments, generated by mixing a 50/50 blend, by weight, of quicklime and Portland cement with the untreated sediments. The manufacturing processes which contributed to the generation of K062-listed wastewater which contacted the sediments within the HWMUs and the SWMU (i.e., the reason why the sediments are classified as K062-listed hazardous waste) are rod cleaning, rod drawing, wire annealing, wire galvanizing, nail etching, hot-dip nail galvanizing, transiflo nail galvanizing, galv-after-weave, and welded fabric. In addition, a small amount of chrome plating is conducted as a maintenance measure on parts for the Wire Mill machinery.

8. Description of where the petitioned waste is generated.

Lime-stabilized and Portland cement-solidified sediments within the Retention Reservoir being petitioned for a Standard Exclusion were generated as a result of a full-scale demonstration project conducted from July 1992 to February 1993. The remainder of the sediments being petitioned for an Upfront Exclusion will be treated by the same treatment technology (i.e., lime-stabilization and Portland cement-solidification) during future remediation steps.

9. List and description of all process equipment, including the function of each unit and the ranges of the operating parameters.

This information is not available or necessary for characterizing the petitioned waste.

10. Operating cycles (batch cycles, versus continuous operation, start-up, shut-down, maintenance, cleaning) on a daily, weekly, or other period basis, as appropriate. Identify periods when process wastes are not generated (e.g., plant shutdowns or routine equipment maintenance).

Because waste streams were generated by many processes for almost 100 years and are no longer discharged to the HWMUs and the SWMU at this site, this information is not necessary or relevant for characterizing the petitioned waste.

11. Extent to which contributing manufacturing processes, operations, process materials, or generated wastes have varied in the past or may vary in the future.

Future variation in the manufacturing process will have no effect on the sediments within the HWMU's or the SWMU because all wastewater since October 1, 1986 has been piped directly to the on-site WWTP. In addition, all wastewater has been diverted from the SWMU since 1969.

12. Periodic variation in the composition and generation rate of the petitioned waste due to any aspect of <u>manufacturing</u> process variability.

Variations in manufacturing processes will not affect the composition and generation of the petitioned waste because no manufacturing processes are or will be contributing to any of the HWMUs or the SWMU.

13. Does a waste treatment process contribute to the petitioned waste?

☒ YES **[Continue with Item 14]**

Contributing Waste Treatment Processes

All of the sediments in the Retention Reservoir were subjected to full-scale *in situ* treatment using simultaneous lime stabilization and Portland cement solidification. These treated sediments are the petitioned wastes for Standard Exclusion. Additional sediments in the remaining HWMUs and the SWMU will be treated by using the same treatment technology to generate petitioned waste for the Upfront Exclusion.

14. Step-by-step description of waste treatment process contributing to the petitioned waste.

The full-scale *in situ* treatment of the sediments within the Retention Reservoir consisted of the following steps.

1. **Preliminary *in situ* pilot study to determine the starting reagent dose level and to obtain initial information to determine the required ratio of quicklime to Portland cement.**

2. **Performance trials to optimize the chemical dosage levels and mixing techniques to achieve successful treatment. Furthermore, to develop a sufficient database to determine the effectiveness of the indicator parameters to control the treatment.**

3. **Treatment and testing to demonstrate that the treated sediments do not meet the delisting criteria, outlined on Table D-2.**

The following paragraphs provide a brief summary of the treatment process, development of the acceptable alkalinity range, and results. A complete summary is provided in the Annual Report dated March 31, 1993 Attachment 1 of this document.

From July 15 to July 30, 1992, ITEX conducted a preliminary *in situ* pilot study to determine the starting reagent dosage level and to obtain initial information on the required ratio of quicklime to Portland cement. ERM-North Central collected five samples per 100 cubic yards of treated sediments and transported the samples to the

on-site laboratory trailer. Daily Analytical was responsible for performing pH and alkalinity testing on all of the samples and for analyzing TCLP metals for cadmium, chromium, lead, and zinc one out of every five samples. The results were analyzed, and on July 31, 1992, ITEX started the performance trials. These trials were conducted to optimize chemical dosage levels and mixing techniques to achieve adequate treatment. The performance trials were concluded on September 3, 1992. The results of the performance trials were evaluated and the following conclusions were made.

1. ITEX had to adopt an additional Quality Assurance/Quality Control Procedure Plan to achieve the treatment goals.

2. pH is relatively insensitive to the quantity of added reagent or residual alkalinity and is not an effective indicator parameter.

3. The probability of achieving acceptable treatment is essentially 100 per cent within an alkalinity range from 125,000 to 185,000 mg/kg.

4. The probability of achieving acceptable treatment is 95 per cent or greater within an alkalinity range from 130,000 to 192,000 mg/kg.

5. The probability of achieving acceptable treatment is 70 per cent to 95 per cent within an alkalinity range from 115,000 to 130,000 mg/kg or 192,000 to 215,000 mg/kg.

Based upon these conclusions, three alkalinity ranges were developed, an acceptable range and two conditional ranges, to be used in establishing proper chemical dosage levels and determining the adequacy of chemical blending with sediments. The acceptable range was from 130,000 mg/kg to 192,000 mg/kg. In this range, sample analysis remained the same. ERM-North Central collected five samples per 100 cubic yards and Daily analyzed all five samples for pH and alkalinity, and one out of those five samples was analyzed for the TCLP metals cadmium, chromium, lead, and zinc. The two conditional ranges were from 115,000 to 130,000 mg/kg and 192,000 to 215,000 mg/kg. In these ranges, all of the samples were analyzed for pH, alkalinity, and TCLP metals (cadmium, chromium, lead, and zinc).

Any treated sediments outside of the conditional range (i.e., <115,000 mg/kg or >215,000 mg/kg) were retreated and resampled. Full-scale treatment began on September 22, 1992 and concluded on February 25, 1993. During the full-scale treatment, over 1,900 samples were collected and analyzed for one or more of the following indicator parameters (i.e., pH, alkalinity, TCLP, cadmium, chromium, lead, and zinc). The analytical results of the performance sampling are summarized in Table 2 of the Annual Report, included as Attachment 1 to this document. Ninety percent of the performance sampling results were within the acceptable range and

only 10 per cent in the conditional ranges. No alkalinity concentrations were outside the conditional ranges. In addition, none of the TCLP metal values exceeded the delisting requirements for any of the four indicator metals (i.e., 0.082 mg/l for cadmium, 1.6 mg/l for chromium, 0.246 mg/l for lead, and 115 mg/l for zinc). The maximum TCLP metals value for cadmium, chromium, lead, and zinc are 0.023 mg/l, 0.054 mg/l, 0.180 mg/l, and 2.209 mg/l, respectively.

In conclusion, the full-scale *in situ* treatment of the sediments of the Retention Reservoir demonstrates that lime-stabilization and Portland cement solidification is a reliable remediation technology and can be controlled within a relatively narrow alkalinity range.

15. Location of where the petitioned waste is generated.

All petitioned waste generated for Standard exclusions is located in the Retention Reservoir as shown in Figure C-2 at the end of this section. Future petitioned wastes for Upfront Exclusion generated through subsequent treatment of sediments in the remaining HWMUs and the SWMU are shown on Figure C-2.

16. Waste inputs to and outputs from waste treatment process and how each waste is managed.

All previously treated sediments and sediments to be treated in the future are currently stored in the HWMUs and the SWMU involved in the closure. There have been no hazardous waste inputs to or outputs from the HWMUs since 1986 and from the SWMU since 1969. Untreated and treated sediments will remain in these remediation units until achievement of the Standard and Upfront Exclusions from the hazardous waste regulations.

17. Non-process wastes entering the waste treatment.

Storm water is still handled by the ditches, but has been diverted from the Retention Reservoir since 1986. In addition, during the remaining remediation steps, the HWMUs or the SWMU undergoing treatment will be isolated from receiving any surface water runoff, contact and noncontact cooling waters, or other nonhazardous wastewater discharges from the Keystone operation. The treated remediation unit will remain isolated until delisting is achieved for the treated sediments, the treated sediments are then removed, and the clean closure of the unit is achieved.

18. List and describe all process equipment, including the function of each unit and the ranges of the operating parameters.

The *in situ* treatment process in the Retention Reservoir involved the mixing of a 50/50 blend, by weight, of quicklime and Portland cement with sediments present in the remediation unit. The chemical blend is pneumatically added through a mixing head, as described in Section 2.0 and Appendix A of the Annual Report included as Attachment 1 to this document.

19. Operating cycles (batch cycles versus continuous operation, start-up, shut-down, maintenance, cleaning) on a daily, weekly, or other period basis. Periods when treatment wastes are not generated (e.g., plant shutdowns or routine equipment maintenance).

The waste sediments to be treated currently exist in the HWMUs and the SWMU on the Keystone site. Treatment activities are, therefore, independent of Keystone's manufacturing operations, and daily and weekly treatment schedules are established by the remediation contractor. The contaminated sediments will be treated by the same remediation technology (i.e., lime stabilization and Portland cement solidification) by completing six major remediation steps, ending with the achievement of clean closure of the Lower South Ditch (Step VI) in the summer of 1999. Treatment has been and will continue to be intermittent. For example, Step I treatment activities were conducted from July 1992 to February 1993, and Step II treatment efforts are not scheduled to start until August 1994.

20. Assess the extent that all contributing treatment processes, operations, process materials, or generated wastes have varied in the past or may vary in the future.

A relatively detailed Quality Assurance/Quality Control (QA/QC) Procedure Plan was developed to minimize variability in treatment results. A discussion of the measures taken during *in situ* treatment and a copy of the plan are presented in Section 4.2 and Appendix C, respectively, of the Annual Report (included as Attachment 1 to this document). In general, the variability of contaminants within a remediation unit can be minimized by premixing large areas of sediment prior to treatment. The implementation of these QA/QC procedures during treatment resulted in the successful control of the variability in alkalinity during treatment. A summary of the indicator parameter data collected during performance sampling is presented in Table 2, Figure 8, and Appendix D of the Annual Report.

21. Describe how the composition and generation rate of the petitioned waste may periodically vary due to any aspect of <u>treatment</u> process variability.

Variability in the composition of the petitioned waste will be minimized by implementing the QA/QC procedures discussed in Item 20 above. The rate of

generation of the petitioned waste will depend on seasonal and weather conditions and the amount of equipment and personnel used by the remediation contractor, and will not have any effect on the composition of the petitioned waste. All the petitioned waste will be treated to within a relatively narrow alkalinity range (i.e., 115,000 mg/kg to 215,mg/kg) to ensure adequate blending and chemical dosage has been achieved.

22. Has the petitioned waste been managed in a land-based unit?

    ☒ YES **[Continue with Item 23]**

<u>Waste Management Operations</u>

23. Information on each unit that is used to manage the petitioned waste:

    a. Unit location/address:

    All of the HWMUs and the SWMU are located on the Keystone site in Bartonville, Illinois, at the address given in Section A. The location of each unit relative to the site is presented in Figure C-2 at the end of this section.

    b. Description of unit construction (current design and materials).

    The North Ditch, Mid-Mill Ditch, South Ditch-North Half, South Ditch-South Half, and Lower South Ditch were constructed as a by-product of grade construction for the current Chicago and Northwestern Railroad in the early 1900's.

    The Retention Reservoir was designed and constructed in 1969 as an integral part of the WWTP. The Retention Reservoir is approximately 360 feet long, 620 feet wide, and 10 feet deep. In addition, the Retention Reservoir has an engineered bottom (i.e., three feet of compacted clay).

The Surface Drainage Ditch is a narrow unlined channel approximately 300 feet long and variable width of 5 to 7 feet. The Surface Drainage Ditch was constructed as conduit for rinse water from the rod cleaning and galvanizing and storm water run-off to the South Ditch - North Half.

The North Dredge Pile and South Dredge Pile are bottom sediments dredged from the South Ditch - North Half and the South Ditch - South Half. The North Dredge Pile is approximately 90 feet long and 60 feet wide, and the South Dredge Pile is approximately 85 feet long and 40 feet wide.

c. History of unit design (e.g., chronological summary of any changes to original construction).

No significant changes have been made to the original unit construction.

d. Purpose and description of any unit design and operating modifications.

No significant design modifications to the units have been performed. However, two significant operating modifications have been performed. Prior to 1969, the Lower South Ditch received and discharged flows from the South Ditch-South Half. This practice was discontinued in 1969 when the WWTP was built. At that time, the discharge from the South Ditch-South Half was pumped to the Retention Reservoir prior to treatment in the WWTP. Also, since October of 1986, all hazardous wastewaters from the Wire Mill and Mid-Mill have been pumped directly to the WWTP through a pipeline that bypasses all of the HWMUs.

e. Estimated surface area.

Estimates of the surface area of the sediments within each of the HWMUs and the SWMU have been derived from information provided in Table B-1.

Unit	Surface Area (ft^2)
North Ditch:	
North Half	**67,200**
South Half	**43,200**
Mid-Mill Ditch:	
North Half	**29,400**
South Half	**29,400**
South Ditch:	
North Half	**9,600**
South Half	**6,000**
Retention Reservoir	**181,200**
North Dredge Pile	**3,525**
South Dredge Pile	**2,800**
Surface Drainage Ditch	**3,000**
Lower South Ditch	**9,580(1)**

(1) Surface area is based on field observation and planimetry calculation.

f. Estimated unit capacity volume.

The total capacities of the units are not relevant because there will not and has not been any additional input of spent pickle liquor into the HWMUs since October 1, 1986 and the SWMU since 1969. The original estimates of the *in situ* volumes of sediments in each HWMU and the SWMU are summarized in Table B-1.

g. Listing of waste and material inputs which have occurred throughout the life of the unit, if known.

The waste and material inputs that have occurred throughout the lives of the units are limited to discharges from the Wire Mill and Mid-Mill Complex. Because the Keystone site has been active since approximately 1890, the complete extent of waste streams is unknown. However, it is known that waste streams similar to those from current operations have existed since approximately 1920. Those wastes include:

- **Nonhazardous wastewater - contact and noncontact cooling waters;**

- **Surface water runoff from the Keystone property and surrounding off-site drainage areas, and**

- **Sources of waste similar to those currently generated by the Wire Mill and Rod Mill complex, as shown in Figure C-1 at the end of this section.**

24. Detailed schematic(s) of the waste unit(s) showing (as appropriate) unit dimensions, influent point(s), effluent point(s), and waste thickness.

The North Ditch, which is located northeast of the Mid-Mill facility (Figure C-2), is approximately 1,450 feet long and 110 feet wide at the ground surface. The Chicago and Northwestern Railroad grade runs along the north and east sides of the North Ditch. A truck trailer parking area and a large pond is located to the west. Surface runoff from off-site drainage areas enters the Ditches at this point. No wastewater was discharged directly to the North Ditch, but water from the Mid-Mill Ditch may have backed up into the North Ditch during extreme floods. At the south end of the North Ditch, a culvert leads into the Mid-Mill Ditch (Figure C-2).

The Mid-Mill Ditch, which is situated east of the Mid-Mill facility, is approximately 890 feet long and 110 feet wide. The same railroad grade runs along the east edge of the Mid-Mill Ditch, while the west bank is used to store coils of steel rod. At the south end, a culvert leads to the South Ditch (Figure C-2).

The South Ditch, located southeast of the Mid-Mill facility, is divided into two units, the North Half and the South Half. The South Ditch-North Half is approximately 170 feet long and 120 feet wide, and the South Ditch-South Half is approximately 85 feet long and 100 feet wide. The South Ditch-North Half receives discharges from the Mid-Mill Ditch and the Surface Drainage Ditch, and flows into the South Ditch-South Half, which acts as a sump.

The Surface Drainage Ditch is a narrow unlined channel approximately 300 feet long with a variable width of 5 to 7 feet. This ditch starts at the termination of a combined storm water/process wastewater sewer near the southeast corner of Rod Storage Building #192, runs east-southeast and discharges into the South Ditch-North Half. Under previous operations, the Surface Drainage Ditch received process wastewater from rod and wire cleaning in the galvanizing process, rinse waters from the rod cleaning and galvanizing lines, and surface water runoff from the Wire Mill and south complex. Presently, the Surface Drainage Ditch carries only a minor amount of process water and surface water runoff from a relatively small area.

All of the foregoing Ditches receive considerable amounts of surface water runoff from the Keystone property and the surrounding off-site drainage areas. Although

the general direction of flow is from the North Ditch to the Mid-Mill Ditch and then to the South Ditch, during heavy rains and flooding conditions the Mid-Mill Ditch may backflow into the North Ditch via the interconnecting culvert (Figure C-2).

As shown on Figure C-2, the Retention Reservoir, which is approximately 360 feet long, 620 feet wide, and 10 feet deep, is located just to the north of the WWTP and west of the Chicago and Northwestern Railroad grade. A gravel road to the WWTP is located on the west side of the Retention Reservoir. A ponded area on the north side of the Retention Reservoir was used as a borrow area for construction of the Retention Reservoir.

Prior to October 1, 1986, the influent to the Retention Reservoir was at the northeast corner, and the discharge from the Retention Reservoir to the WWTP was at the southeast corner. Since October 1, 1986, the Retention Reservoir has not been used as part of the normal WWTP operation. The Dredge Piles are adjacent to the west edge of the South Ditch-South Half (Figure C-2). The north dredge pile is approximately 90 feet long and 60 feet wide, and the south dredge pile is approximately 85 feet long and 40 feet wide.

The Lower South Ditch, which has been identified as a SWMU, is located southeast of the Mid-Mill facility and south of the South Ditch-South Half, and is approximately 2,600 feet long and 100 feet wide. The Chicago and Northwestern Railroad grade runs along the east edge of the Lower South Ditch. Prior to construction of the WWTP in 1969, the Lower South Ditch received and discharged flows from the South Ditch-South Half.

Process Materials

25. Materials used in the operations that contribute to the petitioned waste.

The materials used in the present manufacturing process can be found on the Production Flow Diagram, included as Figure C-1. However, as discussed in the Contributing Manufacturing Process discussion, the USEPA Region V and the IEPA concluded that the sediments could not be adequately characterized by an engineering analysis.

26. Material Safety Data Sheets (MSDSs) and any other compositional information for trade name and non-elemental materials.

The use of MSDSs to infer the characteristics of the sediments in the on-site HWMUs and the SWMU would not be reliable. In addition, MSDS, have not been included for the following specific reasons:

- **MSDSs would not be representative of all of the products purchased over the entire operation of the Wire Mill and Mid-Mill.**
- **The complexity of the entire Keystone operation is substantial. Current MSDSs consequently comprise several volumes of documentation. The amount of effort necessary for review and analysis by regulatory agencies would be prohibitive.**
- **It would be difficult to quantify the products currently used in the Wire Mill and Mid-Mill. If this could be done, it would only be applicable to current discharges which do not enter any of the remediation units.**

27. Specify the source, quality (i.e., recycled or virgin), and quantity of oil, grease, and hydraulic fluids entering the processes.

In accordance with Keystone Company Policy, all oils, greases and hydraulic fluids used on site are virgin products. This policy has been in effect for many years and current Keystone personnel have no recollection of recycled products being purchased. The quantity and sources of the oils, greases and hydraulic fluids used in the wire mill varied during the pre-1986 period in question, and Keystone is therefore unable to provide further quantification or identification.

Special Information

28. Are you requesting an up-front exclusion for a waste that is not currently generated but will be in the future?

☒ YES **[Continue with Item 29]**

In situ **treatment of the Retention Reservoir using lime stabilization and Portland cement-solidification was proposed and then conducted as a full-scale demonstration project to serve as a basis for obtaining Standard Exclusions for the treated materials in the Retention Reservoir and Upfront Exclusions for sediments to be treated in the remaining HWMUs and the SWMU.**

29. Explanation of how the bench-scale or pilot-scale process demonstration adequately models the proposed full-scale process.

The full-scale treatment demonstration project (i.e., bench-scale study) began in July 1992 and was completed in February 1993. The total quantity of sediments and bottom soils treated was 34,690 cubic yards, or approximately 40 percent of the total material (i.e., 85,860 cubic yards) to be treated by the summer of 1999. A description of the treatment activities and the analytical results from performance sampling are summarized in the Annual Report included as Attachment 1 to this document. These analytical results, along with subsequent delisting sampling results, show conclusively that the treatment technology of lime stabilization and solidification with Portland cement achieves all of the delisting requirements.

The proposed full-scale treatment for future remediation steps will involve the same remediation technology (i.e., lime-stabilization and solidification with Portland cement), but not necessarily the same methodology (i.e., remediation contractor or equipment). The full-scale demonstration project (i.e., bench-scale study) supports that as long as the sediments are thoroughly blended and the proper chemical dosage is added; that the sediments will meet the delisting criteria.

In addition, lime treatment has been used by industry for wastewater treatment, to improve waste handling and to reduce metal mobility from wastewater sludges. Lime treatment, for example, is the iron and steel industry-wide treatment technology for spent pickle liquor. Furthermore, on June 5, 1984, the USEPA promulgated in final form, a rule to remove lime-stabilized spent pickle liquor sludge from the "listed hazardous waste" classification, and granted a generic delisting of this material (K063 lime-stabilized spent pickle liquor sludge).

In conclusion, lime stabilization is proven as a reliable treatment technology for inorganic waste sludges and, specifically, the K062-listed sediments within the HWMUs and the SWMU. Therefore, Keystone is requesting a generic delisting of the treated sediments generated by the addition of the lime and Portland cement, regardless of the equipment used to produce the treated sediments.

30. Explanation of any real or potential differences between the two processes.

The remainder of the sediments located in the remaining HWMUs and the SWMU,

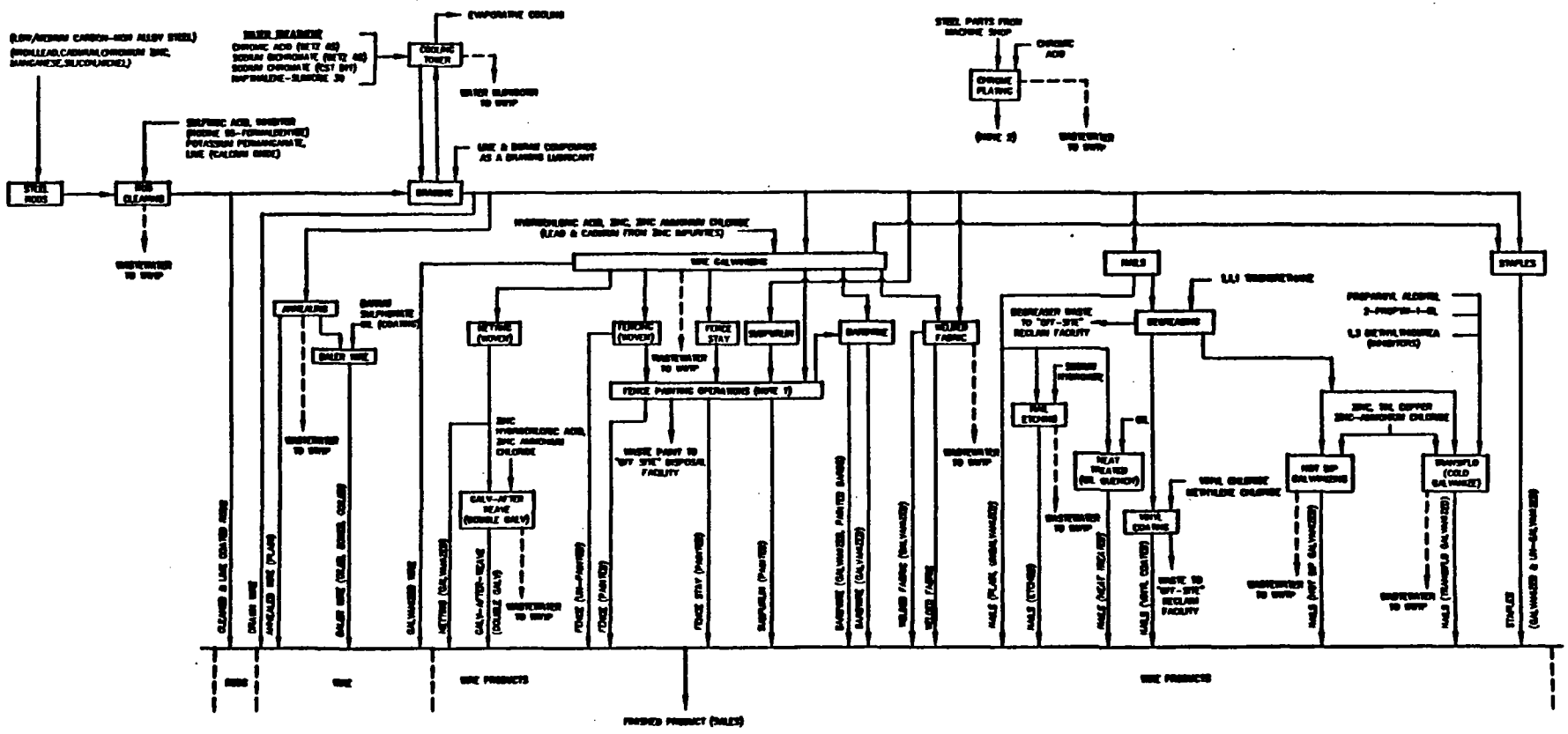
upon approval of this petition, will be treated by the same remediation technology.

31. Description of the impact of those differences on the character of the petitioned waste.

The characteristic of the petitioned waste is not affected by the mixing method or equipment used, but by the thoroughness of blending and amount of chemical added. The sediments in the remaining remediation steps will be treated to the same narrow alkalinity range (i.e., 115,000 mg/kg to 215,000 mg/kg) as the sediments within the Retention Reservoir; therefore, ensuring that the remaining sediments within the HWMUs and the SWMU also meet the delisting criteria.

32. Are you requesting an exclusion for a waste generated by a multiple waste treatment facility (MWTF)?

☒ NO **[Skip to Section D]**



NOTES:

1. FROM PAINTS: LEAD, METHYL, ETHYL, KETONE, TRICHLOROETHANE, NAPHALENE, TOLUENE, BARIUM METABORATE, VINYL CHLORIDE.
2. CHROME PLATING OPERATORS DO NOT RESULT IN A SOLD PRODUCT BUT USED INTERNALLY IN THE MANUFACTURE OF PRODUCTION EQUIPMENT. (FLUORINE & CHROMIUM)
3. SUSPURLIN OPERATORS HAVE BEEN DISCONTINUED SINCE 1984.

FIGURE C-1

PRODUCTION FLOW DIAGRAM
KEYSTONE STEEL AND WIRE
BARTONVILLE, ILLINOIS

ERM

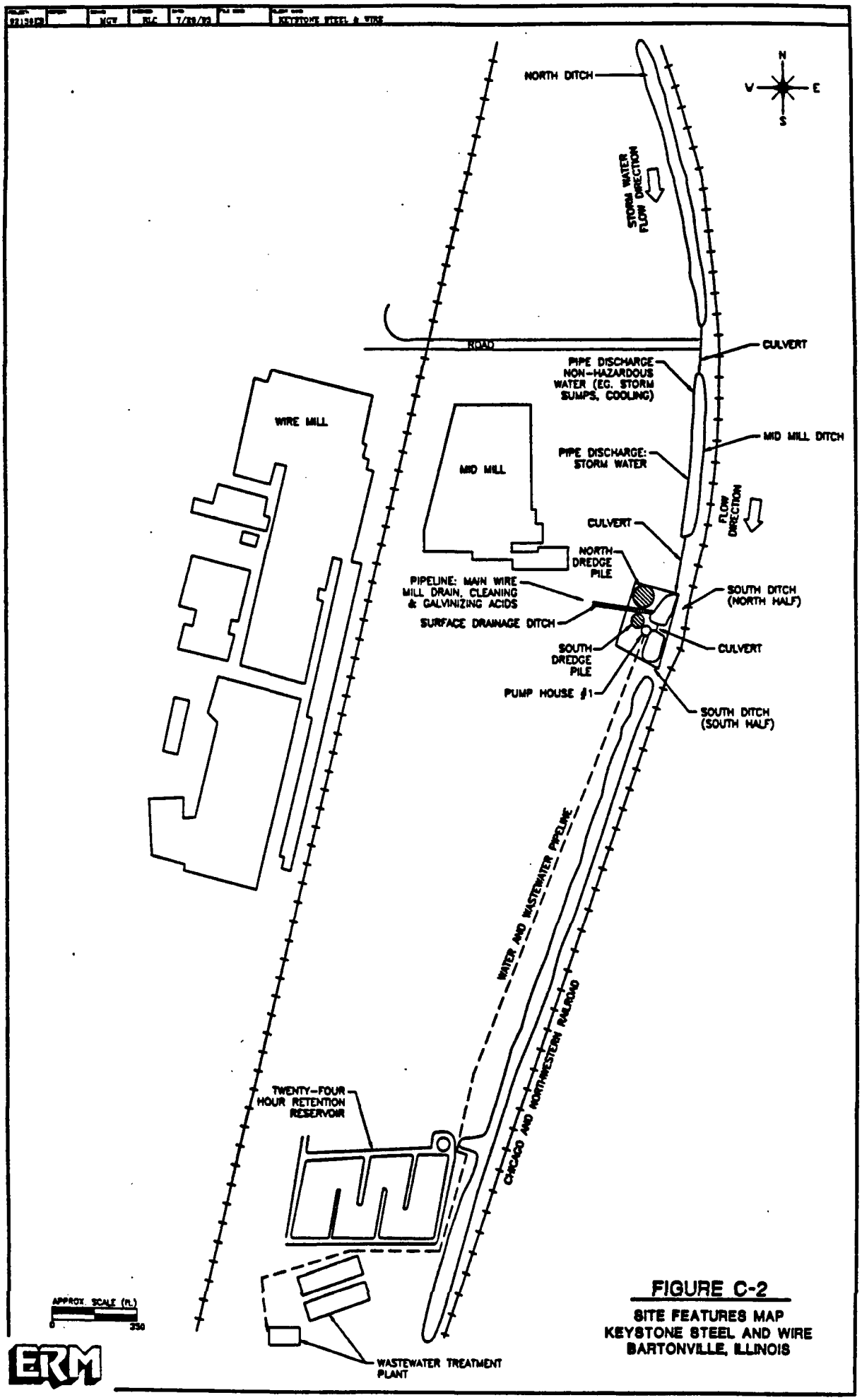
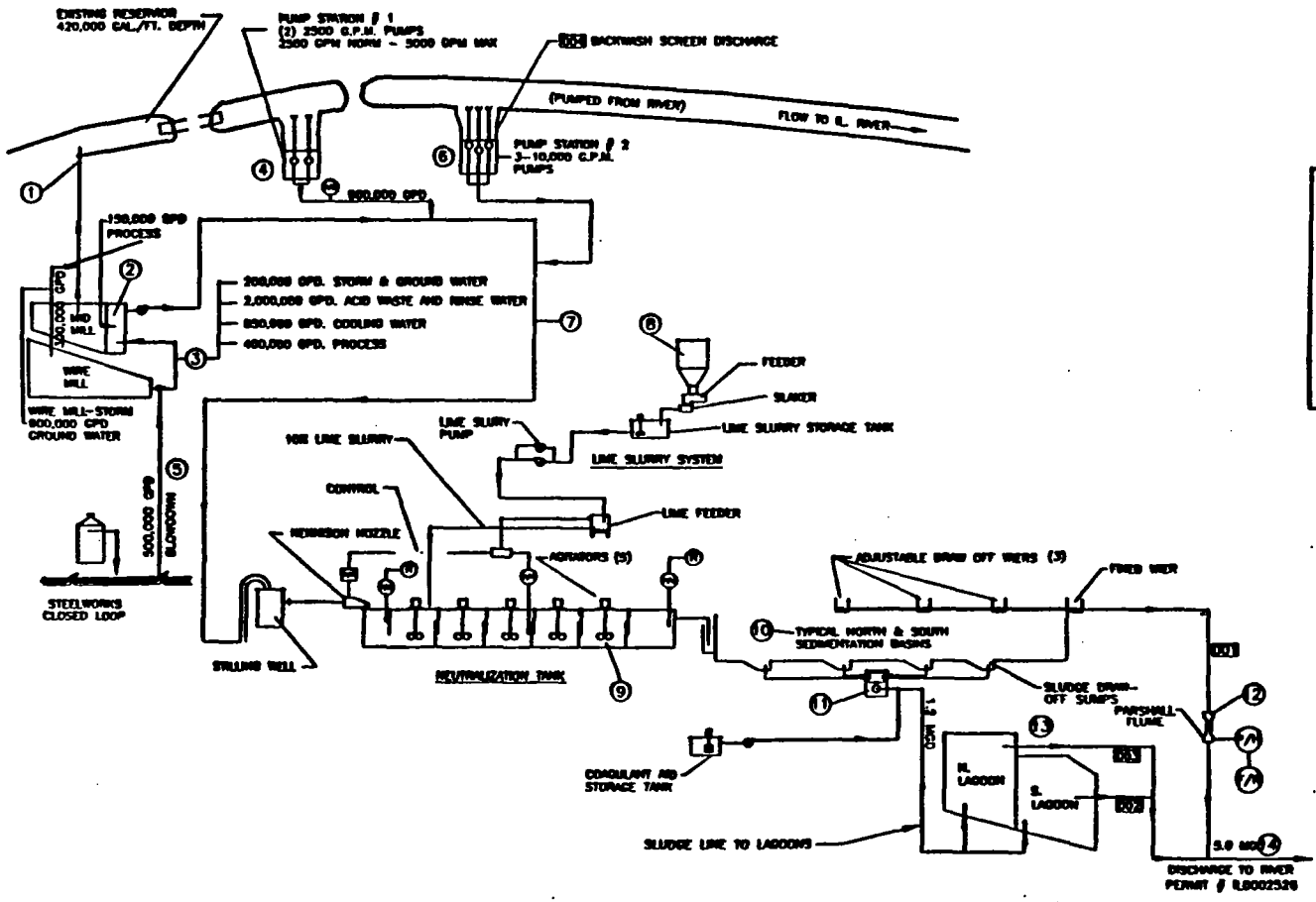


FIGURE C-2

SITE FEATURES MAP
KEYSTONE STEEL AND WIRE
BARTONVILLE, ILLINOIS



1	WIRE MILL STORM WATER
2	MILL WASTE WATER COLLECTION SUMP
3	WIRE MILL PROCESS WATER
4	PUMP STATION # 1
5	STEEL MILL CLOSED LOOP BLOW DOWN
6	PUMP STATION # 2
7	PIPE LINE
8	LIME USE BIN
9	NEUTRALIZATION SYSTEM
10	SEDIMENTATION BASINS
11	SLUDGE PUMPING STATION # 4
12	FINAL EFFLUENT FROM PLANT
13	SLUDGE LAGOONS
14	DISCHARGE TO RIVER

APPROX. SCALE (ft.)
0 20

FIGURE C-3

SCHEMATIC FLOW DIAGRAM
WASTE WATER TREATMENT SYSTEM
KEYSTONE STEEL AND WIRE
BARTONVILLE, ILLINOIS

ERM

SECTION D: ANALYTICAL PLAN DEVELOPMENT

1. List of the constituents and parameters of concern identified for Keystone's petitioned waste based on appropriate waste constituent analyses and the results of an engineering analysis.

   Tables E-5 and E-6 present a comprehensive listing of all of the analytical parameters and constituents analyzed as part of the delisting sampling. The analytical parameters for the delisting sampling were selected based on information provided in the draft and final versions of the Delisting Guidance Manual, previous negotiations conducted between Keystone and the USEPA and IEPA, and the results of previous sampling conducted at the site.

   Keystone has completed a number of steps leading up to the development of the final list of parameters and constituents of concern. In 1986, as part of an earlier negotiation to delist the sediments, Keystone performed an engineering analysis to determine the constituents of concern from process operations at the Wire Mill and Mid-Mill. The initial list of constituents, developed by Keystone through an engineering analysis of all known chemicals used at the plant, was significantly expanded through negotiations with USEPA Region V. Following the USEPA's approval of the delisting sampling approach, sampling and analysis of the sediments in the HWMUs was performed in 1987. During the period from 1987 to 1990, regulatory oversight of the Keystone HWMU closure and waste delisting was passed from the USEPA to the IEPA. In 1990, at the request of the IEPA, Keystone performed additional sampling of the sediments. Keystone later prepared the June 15, 1992 RCRA Closure Plan, which includes a plan for delisting the treated sediments. The delisting plan presents a selection of analytical parameters that is based upon: (1) the 1985 Delisting Guidance Manual, (2) the analytical results of the 1987 and 1990 testing, (3) requirements from the IEPA, and (4) requirements negotiated with the USEPA in 1986.

   The final selection of analytical parameters (see Tables E-5 and E-6) was made while preparing the Revised Delisting Field Sampling Plan. These analytical parameters were based upon the 1993 Delisting Guidance Manual and all of the previous lists developed by Keystone and negotiated with the USEPA and IEPA.

2. Mass balance demonstrations for those constituents of concern in list for which analyses were not conducted.

   All constituents of concern that were possibly involved in the manufacturing processes at the Keystone facility were included in the laboratory analyses. Therefore, no mass balance for such constituents is necessary.

3. Explanation of why any other delisting constituent of concern is not on the constituent of concern list for your petitioned waste.

   Certain constituents found in 35 IAC 721, Appendix H, were not included in the delisting analyses. By a thorough review of the Wire Mill and Mid-Mill manufacturing processes, it was determined that these constituents would not reasonably be expected to be in the waste from the facility. In addition, Keystone's decision to eliminate certain constituents of concern has been supported by the results of negotiations with the USEPA and IEPA concerning analytical parameters.

4. Why Keystone's petitioned waste does not exhibit any hazardous waste characteristic for which analysis was not conducted.

   The petitioned waste samples were analyzed for all of the hazardous waste characteristics outlined in 35 IAC 721.121 through 721.124. Therefore, this item is not applicable.

5. Methodology used to demonstrate that the petitioned waste is not hazardous.

   The final selection of analytical parameters noted in Section D.1. of this document provides the necessary data to demonstrate whether the treated sediments are hazardous in accordance with the level of justification criteria, previously presented in Section C of the Adjusted Standard and summarized in Table D-1. A discussion of how the Retention Reservoir delisting sampling results demonstrate that the treated sediments in the reservoir are not hazardous is presented in Section G of this document. The following subsections explain the criteria in further detail.

a. Hazardous Constituent Toxicity

The methodology for evaluating whether the treated material is hazardous for lead and chromium toxicity or for having leachate levels of other hazardous constituents in excess of HBLs (Criteria 1 and 2.a on Table D-1) involves comparing leachable levels of constituents to delisting thresholds. The following paragraphs give an explanation of how the thresholds were determined.

When the Closure Plan was prepared in June of 1992 delisting threshold concentrations were developed by calculating a total or leachate constituent concentration that did not exceed the USEPA-published delisting health-based levels (HBLs). The USEPA Composite Model for Landfills (EPACML) is used to determine the expected constituent concentration at a compliance point defined as a receptor located downgradient from a hypothetical landfill. The EPACML is described in the July 8, 1991 Federal Register (56 FR 32993), and is the current fate and transport model used by the USEPA to evaluate delisting petitions. This model assumes a worst-case scenarios of waste disposal in an unlined municipal solid waste landfill. Essentially, the EPACML was used to calculate a dilution/attenuation factor (DAF) to project compliance point concentrations from the waste leachate concentrations. The compliance point concentrations can then be compared to the delisting HBLs to determine whether the waste passes the delisting criteria.

The 35 IAC 721, Appendix H, constituents that were not originally analyzed by the TCLP test were converted to a leachate concentration. This was accomplished by using the USEPA's Organic Leachate Model (OLM), described in the November 27, 1985 Federal Register (50 FR 48943). This model was used to predict a leachate concentration based on the total concentration and solubility of a constituent in the waste. At the time the initial Delisting Plan was prepared, the OLM was used by the USEPA in the evaluation of delisting petitions to determine the mobility of certain organic compounds. Subsequent to the preparation of the initial Delisting Plan, it was found that TCLP analysis could be performed on all organic constituents and application of the OLM was, ultimately, not required (see last paragraph of Section D.5.b).

Delisting threshold concentrations were established for Keystone by: (1) determining the DAF for the calculated total volume of lime-stabilized sediment for all of the HWMUs and the SWMUs and (2) multiplying that DAF by the delisting HBL for each constituent covered by the delisting process. The estimated total volume of treated sediments was originally calculated to be approximately 110,140 cubic yards. DAFs for various waste volumes have been determined by the USEPA and are reported in the July 18, 1991 Federal Register, Table 1 (56 FR 33000). The column containing DAFs for landfills was used since Keystone will dispose of lime-stabilized sediments in a landfill. By interpolation, the corresponding DAF for Keystone's

lime-stabilized sediment volume (110,140 cubic yards) was 14.5. Table D-2 presents the delisting threshold concentrations for all of the constituents included within the laboratory analytical program described in the initial Delisting Plan (Appendix I of the Closure Plan). These values were used as treatment objectives for the performance sampling conducted during the Retention Reservoir full- scale treatment demonstration study.

Following the treatment of the Retention Reservoir sediments and prior to the performance of the delisting sampling, modifications to the initial delisting thresholds were made. First, it was determined in accordance with the 1993 Delisting Guidance Manual, that the TCLP could be performed on all of the organic constituents of concern. Therefore, all of the delisting thresholds originally calculated as total constituent concentrations were converted to leachate concentrations and application of the OLM to predict leachate concentrations was not required. Second, the treated sediments in the Retention Reservoir following treatment were significantly less than previously predicted. The total projected treated sediment was adjusted accordingly (See Section A.5 of this document) to a new total of 85,860 cubic yards, resulting in a new DAF of 16.4. The delisting thresholds corresponding to the new DAF are presented in Table D-2. Finally, the initial delisting thresholds were determined using HBLs published in the July 1991 USEPA docket report containing HBLs and solubilities used to evaluate delisting petitions. A revised docket report, published in July 1992, contains modifications to some of the HBLs. The revised delisting thresholds shown in Table D-2 reflect any modifications to the HBLs for the constituents of concern. These revised values were used as the basis for evaluating whether the treated sediments are hazardous with regard to Criteria 1 and 2.a in Table D-1.

b. Long-Term Stability

The methodology for evaluating whether the treated material is hazardous due to lack of stability (Criteria 2.b) involves performing MEP analyses. The MEP is designed to simulate the leaching that a waste will undergo from repetitive precipitation of acid rain on an improperly designed sanitary landfill. In the procedure, multiple sequential extractions of the waste are prepared using a synthetic acid rain solution. Each of the extractions was analyzed for a total of 14 metals, including lead and chromium.

There is both a quantitative and qualitative evaluation of the MEP data. The quantitative evaluation considers that the repetitive extractions reveal the highest concentration of each constituent that is likely to leach in the natural environment. The highest MEP concentration is compared to the delisting threshold in the same manner as described previously in Section D.5.a. Therefore, in the discussion of results, Section G, the quantitative data is appropriately evaluated when considering Criteria 1 and 2.a, rather than Criteria 2.b.

The qualitative evaluation involves observing trends in the MEP extract analyses. The waste is considered to be stable (i.e., not prone to degrade with repeated acidic washing) if the leachable levels of the metals do not significantly increase with each sequential extraction.

c. Hazardous Characteristics

The methodology for evaluating ignitability (Criteria 3.a) involves running a flammability test on the waste sample. If the sample is found to be nonflammable, then the waste is not characteristically hazardous for ignitability.

The methodology for evaluating corrosivity (Criteria 3.b) is to perform pH measurements on a waste slurry sample. If the slurry pH is between 2.0 and 12.5, then the waste is not characteristically hazardous for corrosivity.

The methodology for evaluating reactivity (Criteria 3.c) is to perform reactive cyanide and sulfide analyses on the waste sample. The waste is not characteristically reactive if it has a total releasable cyanide level less than 250 mg HCN/kg and a total releasable sulfide level less than 500 mg H_2S/kg. In certain circumstances, reactive cyanide and sulfide analyses do not need to be performed if total sulfide and cyanide levels are determined to be below the previously discussed regulatory thresholds (see Section D.6).

The methodology for evaluating characteristic toxicity (Criteria 3.d) involves performing a TCLP analysis on the waste sample. If the TCLP results are less than the regulatory levels given in 35 IAC 721.124, then the waste is not characteristically hazardous for toxicity.

6. Methodology for deciding which laboratory analyses must be performed.

A decision tree (see Figure D-1) was developed to aid in determining the specific analytical tests to be performed on each sample, based primarily on the results of total constituent analyses. The decision points shown in Figure D-1 are explained, as follows:

- **TCLP analyses for metals (including mercury), cyanide, semivolatile organics, and volatile organics do not need to be performed if the total levels of these constituents are less than 10 times the delisting thresholds. This is in accordance with a draft copy of the USEPA "Technical Assistance Document for Complying with the TC Rule and Implementing the Toxicity Characteristic Leaching Procedure (TCLP)." This technical assistance document states that "the maximum theoretical leachate concentration can be calculated by dividing the total concentration by 20", with the factor of 20 representing the liquid to solid ratio used in the TCLP extraction procedure. Keystone has applied a conservative approach to this rule by assuming that the leachate concentration would not exceed the total concentration on a 10 to 1 rather than 20 to 1 basis.**

- **Reactive cyanide and sulfide analyses do not need to be performed if the total cyanide (CN^-) and sulfide (SO^-_2) values are less than 250 ppm and 500 ppm, respectively. The threshold values for determining reactivity are 250 ppm for releasable (i.e., reactive) hydrogen cyanide (HCN) and 500 ppm for releasable hydrogen sulfide (H_2S). Analytical values for releasable H_2S and releasable HCN will not exceed total concentrations for SO^-_2 and CN^-, respectively. Also, the Delisting Guidance Manual requires reactive cyanide and sulfide testing only if the total cyanide and sulfide exceed the previously presented levels.**

- **According to the Delisting Guidance Manual, hexavalent chromium analysis does not need to be performed if the total chromium level is less than one percent. There are no other regulatory requirements to analyze for hexavalent chromium for delisting petitions.**

The purpose for implementing the delisting sampling analytical decision tree was to limit the total amount of laboratory analyses performed, thereby eliminating unnecessary costs and streamlining the sampling process. No analysis was eliminated that was necessary to fully demonstrate that the petitioned waste is nonhazardous according to the criteria outlined previously in Item 5 of Section D. As noted later in Table E-5, application of the decision tree resulted in no analyses being required for the following parameters:

- **Reactivity (CN^- and SO^-_2)**

- **TCLP Cyanide**
- **Total Hexavalent Chromium (soil, sludge, waste, and aqueous)**
- **TCLP Hexavalent Chromium**
- **TCLP Volatile Organics**
- **TCLP Semivolatile Organics**

TABLE D-1
CRITERIA AND ANALYTICAL PARAMETERS USED TO DEMONSTRATE TREATED SEDIMENTS ARE NOT HAZARDOUS

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Criteria	Demonstration of Nonhazardous	Analytical Parameter with Method Number
1. Lead and chromium toxicity	Constituent level in extract less than delisting threshold derived from HBLs	Metals in TCLP extracts[1] (ICP/MS EPA 200.8)
2.a - Leachate from treated sediments compared to health-based levels (HBLs)	- Constituent level in extract less than delisting threshold derived from HBLs	- Metals (ICP/MS EPA 200.8), Cyanide (SW-846 9010)[2], Chromium +6 (SW-846 7196)[2], Mercury (SW-846 7470/7471)[2], Volatile Organics (SW-846 8240)[2], and Semivolatile Organics (SW-846 8270) in TCLP Extracts[1]
2.b - Long-term waste stabilization	- Constituent level in individual extracts less than delisting thresholds derived from HBLs and results show no tendency to increase in concentration	- Multiple extraction procedure (MEP) (SW-846 1320), Metals in TCLP extracts (ICP/MS EPA 200.8)[1]
3.a - Characteristic of ignitability	- Nonflammable	- Ignitability (DOT Method 46 CFR, 25193)
3.b - Characteristic of corrosivity	- pH between 2.0 and 12.5	- Corrosivity (SW-846 9045)
3.c - Characteristic of reactivity	- Total S < 500 ppm and Total CN < 250 ppm[3]	- Reactivity (SW-846, Chapter 7.3)
3.d - Toxicity characteristic for regulated constituents	- Constituent level in extract less than TC toxic levels	- Metals (ICP/MS EPA 200.8), Chromium +6 (SW-846 7196)[2], Mercury (SW-846 7470/7471)[2], Volatile Organics (SW-846 8240)[2], and Semivolatile Organics (SW-846 8270) in TCLP Extracts[1]

Notes:

(1) All TCLP extracts prepared prior to analysis using SW-846 1311.

(2) Because total levels of these constituents did not exceed delisting threshold values, no TCLP extract analysis was performed. See Section D.6 for further discussion.

(3) The actual nonhazardous test for reactivity is to determine if total releasable H_2S is less than 500 ppm and if total releasable HCN is less than 250 ppm. However, if the total values for S and CN are less than the respective criteria, then the releasable levels of H_2S and HCN will also be less than the criteria. No analysis of releasable levels of H_2S of CN were performed since all total S and total CN levels were less than 500 ppm and 250 ppm, respectively.

TABLE D-2
DELISTING THRESHOLDS

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	Initial Delisting Values[1]			Final Delisting Values[1]	
	HBL's 1991 Docket Reports	Delisting Thresholds[2]		HBL's 1992 Docket Report	Delisting Thresholds TCLP[3]
		TCLP	TOTAL		
METALS					
Antimony	0.003[5]	0.0435	–	0.006	0.0984
Arsenic	0.05	0.725	–	0.05	0.820
Barium	1	14.5	–	2.0	32.8
Beryllium	LDL[5]	0.00435	–	0.004	0.0656
Cadmium	0.005	0.073	–	0.005	0.082
Chromium	0.1	1.45	–	0.1	1.64
Cyanide	0.2	2.90	–	0.2	3.28
Lead	0.015	0.218	–	0.015	0.246
Mercury	0.002	0.029	–	0.002	0.0328
Nickel	0.1	1.45	–	0.1	1.64
Selenium	0.05	0.725	–	0.05	0.82
Silver	0.05	0.725	–	0.2	3.28
Thallium	0.00007[5]	0.035	–	0.002	0.0328
Vanadium	0.049[5]	0.7105	–	0.2	3.28
Zinc	5.0[5]	72.5	–	7	115
VOLATILES					
Benzene	0.005	0.073	–	0.005	0.082
Carbon Tetrachloride	0.005	0.073	–	0.005	0.082
Chlorobenzene	0.1	1.45	–	0.1	1.64
Chloroform	0.006	0.087	–	0.006	0.0984
1,2-Dichloroethane	0.005	0.073	–	0.005	0.082
1,1-Dichloroethane	0.007	0.102	–	0.007	0.115
2-Butanone	2	29.0	–	2	32.8
Tetrachloroethane	0.005	0.073	–	0.005	0.082
Trichloroethane	0.005	0.073	–	0.005	0.082

TABLE D-2

(Page 2 of 3)

Constituent	Initial Delisting Values[1]			Final Delisting Values[1]	
	HBL's 1991 Docket Reports	Delisting Thresholds[2]		HBL's 1992 Docket Report	Delisting Thresholds TCLP[3]
		TCLP	TOTAL		
Vinyl Chloride	0.002	0.029	–	0.002	0.0328
Trans-1,2-Dichloroethylene	0.1	–	4.63	0.1	1.64
Methylene Chloride	0.005	–	0.169	0.005	0.082
Toluene	1	–	228	1	16.4
Carbon Disulfide	4	–	764	4	65.6
1,1,1-Trichloroethane	0.2	–	15.0	0.2	3.28
SEMIVOLATILES					
o-Cresol	2	29.0	–	2	32.8
m-Cresol	2	29.0	–	2	32.8
p-Cresol	2	29.0	–	2	32.8
1,4-Dichlorobenzene	0.075	1.09	–	0.075	1.23
2,4-Dinitrotoluene	0.0005	0.010[4]	–	0.00005	0.01[4]
Hexachlorobenzene	0.001	0.015	–	0.001	0.0164
Hexachlorobutadiene	0.0004	0.010[4]	–	0.0004	0.01[4]
Hexachloroethane	0.003	0.044	–	0.003	0.0492
Nitrobenzene	0.02	0.290	–	0.02	0.328
Pentachlorophenol	0.001	0.050[4]	–	0.001	0.05
Pyridine	0.04	0.580	–	0.04	0.656
2,4,5-Trichlorophenol	4	58.0	–	4	65.6
2,4,6-Trichlorophenol	0.003	0.044	–	0.003	0.0492
Phenol	20	–	16300	20	32.8
Naphthalene	0.1	–	29.6	1	16.4
Di-n-Octylphthalane	0.7	–	1330	0.7	11.5
Benzo(a)Anthracene	1E-05	–	1.03	0.0001	0.01[4]
Benzo(a)Pyrene	0.0002	–	1.93	0.0002	0.01[4]
Benzo(b)Fluoraethane	2E-05	–	1.04	0.0002	0.01[4]
Chrysene	0.0002	–	1.82	0.0002	0.01[4]
Dibenzo(a,b)Anthracene	7E-07	–	1.00	0.0003	0.01[4]

TABLE D-2

(Page 3 of 3)

Constituent	Initial Delisting Values[1]			Final Delisting Values[1]	
	HBL's 1991 Docket Reports	Delisting Thresholds[2]		HBL's 1992 Docket Report	Delisting Thresholds TCLP[3]
		TCLP	TOTAL		
Fluoranthene	1	–	7080	1	16.4
OTHER PARAMETERS					
Oil and Grease	–	–	–	–	–
Total Organic Carbon	–	–	–	–	–
Ignitability	–	–	–	–	–
pH	–	–	–	–	–
Reactive Sulfides	–	–	–	–	–
Reactive Cyanides	–	–	–	–	–

Notes:

(1) All values are presented in mg/l.
(2) Based on a dilution factor of 14.5.
(3) Based on a dilution factor of 16.4.
(4) Delisting threshold concentration changed to method detection limit.
(5) These values are not HBLs from the 1991 Docket Report. They represent preliminary treatment standards that were based upon a cursory review of constituent toxicity information different than that contained in the 1991 Docket Report.

Key:

HBL Health-Based Level
TCLP Toxicity Characteristic Leaching Procedure
– Not Applicable
LDL Laboratory Detection Limit

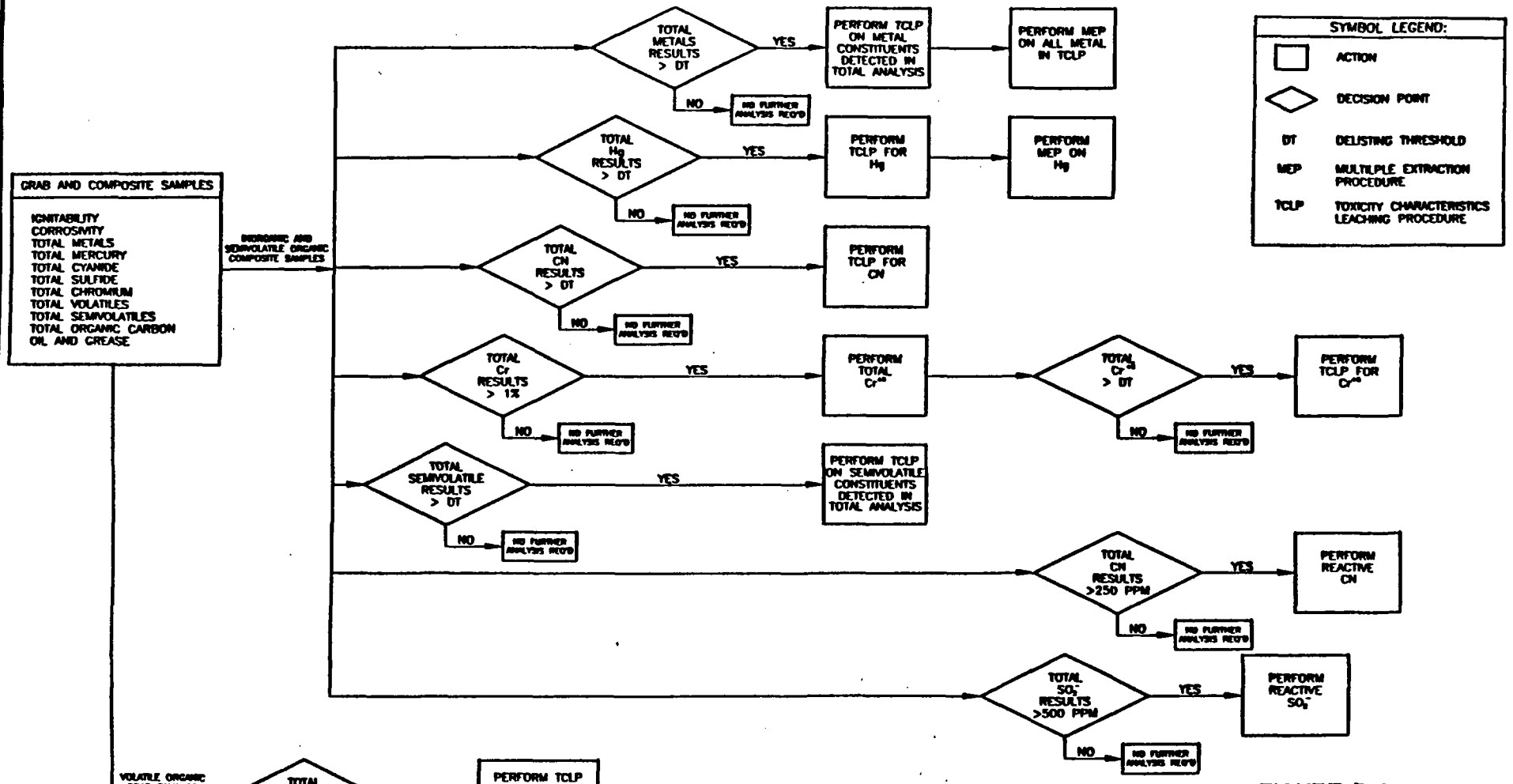


FIGURE D-1

DECISION TREE FOR DELISTING SAMPLING PLAN KEYSTONE STEEL AND WIRE COMPANY BARTONVILLE, ILLINOIS

ERM

SECTION E: SAMPLING AND ANALYSIS INFORMATION

1. Has a draft sampling and analysis plan been submitted to EPA for review prior to petition preparation?

   ☒ NO **[Skip to Item 2]**

   A draft sampling and analysis plan has not been submitted to USEPA Region V; however, Appendix I of the Closure Plan, which presents a general plan for performing the sediment delisting sampling at Keystone, has been submitted to and approved by IEPA. On April 15, 1993, Keystone submitted a Revised Delisting Field Sampling Plan to the IEPA. This plan was reviewed and verbally approved on April 26, 1993 by Mr. Mark Crites of the Permits Section of the Division of Land Pollution Control at the IEPA. The Revised Delisting Field Sampling Plan provides additional information on the sampling equipment and activities that was not available during the preparation of Appendix I of the Closure Plan in 1992.

Waste Sampling Information

2. Were all sampling-related activities performed by in-house staff?

   ☒ NO **[Answer Items 2a and 2b]**

   a. Name and address of the organization(s) or company(s) responsible for designing the sampling strategy and collecting the samples.

      ERM-North Central was retained by Keystone to design a sampling strategy and to coordinate field activities during the delisting phase of the Step I remediation. Peoria Disposal Company (PDC) of Peoria, Illinois was contracted to supply supplemental manpower as necessary. Daily Analytical Laboratories (Daily) of Peoria, Illinois was contracted to set up the on-site laboratory trailer and to provide the necessary personnel to composite and package the delisting samples. The addresses and telephone numbers of these three companies are listed below:

ERM-North Central, Inc.
1630 Heritage Landing Drive, Suite 100
St. Charles, MO 63303
(314) 928-0300

ERM-North Central, Inc.
540 Lake Cook Road, Suite 300
Deerfield, IL 60015
(708) 940-7200

Peoria Disposal Company
4700 North Sterling Avenue
Peoria, IL 61615
(309) 688-0760

Daily Analytical Laboratories
1621 West Candletree Drive
Peoria, IL 61614
(309) 692-5252

b. Resume of qualifications, title, and affiliation for each individual person (in-house and otherwise) who designed the sampling plan, the quality control plan, and/or participated in sample collection.

ERM-North Central was responsible for designing the sampling strategy and the quality control plan, collecting samples, and coordinating field activities for Keystone. The following professionals were utilized:

Jim Polich - President
Elton D. Breland - Senior Project Manager
Harry M. Ricketts - Project Geologist/Hydrogeologist
Randy L. Cooper - Project Engineer
John E. Greifzu - Project Engineer
Douglas M. Burge - Project Geologist

Professional profiles for these individuals are provided in Attachment 2 to this document.

PDC was responsible for supplying supplemental manpower to Keystone during the delisting sampling. PDC's assistance was not needed during the background sampling (April 27 to 30, 1993). The following technicians were utilized:

Mike N. Cameion - Technician
Brian G. Efnor - Technician
Rob C. Fredrick - Technician

Professional profiles for these individuals are provided in Attachment 2 to this document.

Daily Analytical Laboratories was responsible for setting up an on-site laboratory trailer in order to provide a clean environment to composite and package samples. The following personnel were utilized:

Kurt Stepping - Chief Chemist
Scott O. Schoenwetter - Laboratory Technician
Mike J. Quinland - Laboratory Technician

Professional profiles for these individuals are provided in Attachment 2 to this document.

<u>Sampling Strategy</u>

3. Information (Items 3a though 3f) on the sampling strategy followed to ensure that the samples were representative.

   a. Process point discharges, containment areas (e.g., lagoons), or other areas (e.g., soil) sampled and why these areas were selected for sample collection.

      The Retention Reservoir was selected to be sampled because of the success of the *in situ* treatment and confirmation by the performance sampling conducted July 15, 1992 to February 25, 1993. The delisting sampling was conducted as part of the RCRA closure activities. The results are being submitted as the basis for obtaining a "one-time" Standard Exclusion for the Retention Reservoir and an Upfront Exclusion for the remaining HWMUs and the SWMU.

   b. Describe the techniques and guidelines used to select waste sampling points (e.g., random sampling procedure or fixed transect and offset sampling procedure).

      Selection of locations for sampling treated sediments in the Retention Reservoir was determined using a two-dimensional random sampling technique that accounts for horizontal spatial variability of the sediments.

The procedure used to select the sampling points follows the guidance provided in the Delisting Guidance Manual. The Reservoir sampling locations are selected as follows:

1. **The Reservoir, which has an area of approximately 175,500 ft^2, was divided into 18 sections of not more than 10,000 ft^2 (see Figure E-1).**

2. **The 20-foot and 5-foot grid systems developed for performance sampling during *in situ* treatment were superimposed over the entire Reservoir so that there were at least 100 possible sampling locations for each section (see Figure E-2). The 20-foot grid system contains 735 cells, each having a distinct alpha-numeric designator. Each 20-foot cell contains sixteen 5-foot sampling blocks numbered sequentially from 1 to 16 (see Figure E-3). Each sampling block represents a potential sampling locations, and is designated by identifying the cell and the individual sampling block. As an example, Sample C12(7) is plotted on Figures E-2 and E-3. The delisting samples were collected from the approximate center of the sampling block.**

3. **Five sampling locations were randomly selected within each 10,000 ft^2 section. This was done by first numbering all of the possible sampling blocks in each section. The total number of possible blocks were entered into a spreadsheet which generated random numbers using a built-in function. The output includes three columns of 5 random numbers, one for each sampling point. The first column contains the primary random numbers, while the second and third columns provides back-up numbers in the event that a number is repeated in the first column.**

4. **The sampling locations selected for each 10,000 ft^2 section were plotted on a master plot shown on Figure E-4.**

c. Sampling and subsampling (i.e., transferring of sample aliquots into containers specific to certain analyses) procedures used during the sample collection process, including the particular days and times selected for sample collection, the number of grab samples collected for each composite sample, and why these procedures were used.

Composite samples were analyzed for all constituents except VOCs and were collected by the following procedure:

1. The JMC probe fitted with a plastic sleeve was advanced from the surface to the bottom of the previously treated sediments. If the depth of the boring was greater than 3 feet, consecutive plastic sleeves were advanced. The sampler retained the entire volume of sample from each core.

2. The first core collected was labelled and sample description and PID scanning were performed.

3. Complete cores from the treated sediment surface to the bottom of the Reservoir were collected until sufficient sample was collected for laboratory analysis of nonvolatile analytes.

4. Sample aliquots were mixed to form a vertical composite for each sampling location.

5. An equal quantity of the vertical composite sample from each of the five sampling locations was mixed to form the section composite sample.

Samples analyzed for VOCs were obtained in the following manner:

1. The continuous vertical core obtained from each sample location and used in the generation of the composite samples for inorganics and SVOCs analyses was field screened for volatile organic vapors at 12-inch intervals using a PID. PID measurements and sample descriptions were recorded on sampling forms.

2. A second, parallel boring was then advanced at each sampling location and a sample was obtained from the interval with the highest PID reading recorded. If no positive PID readings were measured, the interval was selected based on a visual survey of the first soil core.

3. Treated sediment samples from the 12-inch increment to be sampled were collected from the second parallel boring using a 2-foot long stainless steel sleeve following the IEPA procedures.

4. A waterproof marker was used to indicate on the tube the exact sample interval to be analyzed by the laboratory. The stainless steel sleeve was labelled according to the labeling protocols presented in Section 6.0.

A total of 25 background soil samples were also taken. These background soil samples were collected from ground surface to 1 foot below grade level (BGL) and analyzed for both Total and TCLP metals (14 metals).

The date and time of day a sample was collected has no bearing on the sample integrity because there are no activities that either add or remove material from the Retention Reservoir. The Retention Reservoir was separated from the production activities of Keystone on October 1, 1986. A list of the date and time each sample was collected is provided on Table E-1 at the end of this section.

d. Describe the sampling devices used for sample collection and the basis for selecting the devices.

The soil samples were collected using the JMC Environmentalist sub-soil probe (JMC probe). The JMC probe is a hand-operated stainless steel sampling probe capable of obtaining a 3-foot sample. The JMC probe is driven manually by operating a 12.5 pound slide hammer and is fitted with a stainless steel or plastic sleeve in which the soil sample is retained. The sampling probe and sleeve are retrieved by operating a foot-controlled jack. During the delisting sampling, the sediments were soft enough that the stainless steel sampling probe and sleeve was advanced and retrieved by hand. Sediment samples collected from the Retention Reservoir for VOC analyses were collected using a 2-foot long stainless steel sleeve, whereas, the nonvolatile analyses were collected using a 3-foot long plastic sleeve.

e. Deviations from original sampling plan and strategy and the impact of these deviations on waste characterization.

There were four minor changes made to the Revised Delisting Field Sampling Plan:

1. **The most significant deviation was made in Section 5.0 of the Revised Delisting Sampling Plan.**

   - **TCLP extracts were prepared for every volatile organic compound (VOC) and semivolatile organic compound and (SVOC) sample at the same time that totals analyses were conducted. This change was made to meet required holding times.**

- **Table 4 of the Field Sampling Plan provides a long and short list of VOCs and SVOCs. The samples were analyzed for the analytical parameters listed on the long list.**

- **Ignitability testing was performed according to the U.S. Department of Transportation (DOT) method listed in the Federal Register (46 CFR, No. 68), instead of the USEPA's SW-846 method 1010. This is because the SW-846 method is only applicable for liquids. The DOT method is more appropriate for analysis of the Keystone sediments (i.e., soil).**

- **TCLP metals analyses were performed according to USEPA 200.8, instead of the USEPA' SW-846 method 6020. Industrial and Environmental Analysts (IEA) requested this method change because SW-846 method 6020 does not list selenium as an approved analyte and USEPA 200.8 does. Furthermore, SW-846 method 6020 (per RCRA) was not yet promulgated as of 3/18/93.**

- **Total organic carbon (TOC) was analyzed in accordance with the USEPA Region II TOC method, instead of the modified USEPA 415.1. This change was made because studies have shown Method 415.1 to be biased low by several magnitudes.**

- **The contract required detection limits (CRDL) for arsenic, beryllium, chromium, and selenium were increased from 1.0 mg/kg to 5.0 mg/kg, 0.1 mg/kg to 0.5 mg/kg, 1.0 mg/kg to 2.4 mg/kg, and 1.0 mg/kg to 2.4 mg/kg, respectively. This change was made because IEA was unable to meet the initial CRDLs.**

2. **Section 6.0 of the Revised Delisting Sampling Plan calls for a three-part sample numbering system. This was changed to a five-part numbering system to include a date modifier and a delisting modifier. The five parts of the sample numbering system are discussed in detail below:**

- **Part 1 - Sample Matrix and Type Code - Each sample is identified by an alpha code corresponding to the sample matrix followed by an alpha code indicating sample type. The alpha codes are as follows: BG-background, C-composite, and G-grab sample.**

- **Part 2 - Location Code - Each sample is identified by an alpha-numeric code corresponding to the specific sample collection location. The volatile sample identification number contains a section, cell, and sub-cell location code. The particular depth interval from which the sample was collected is not designated in the sample numbering scheme, but is indicated on the sample log form. The composite sample identification number contains only a section location code because a section composite is not generated from one particular cell or block location but is a mixture of five different locations.**

- **Part 3 - Quality Control (QC) Modifier - Field QC samples are designated with an alpha code as follows: FB-field blank, TB-trip blank. Only field QC samples carry this alpha designation. Investigative samples were not assigned this alpha code.**

- **Part 4 - Delisting Modifier - The delisting modifier B has been assigned to all samples generated during delisting sampling to differentiate these samples from those taken during the other three sampling events involved in closure.**

Three examples of the site-specific sample numbering system are given below:

C(7)5/1B	**C-Composite, (7)-Section number, 5/1-Date, B-Delisting modifier**

G(7)F12(9)5/1B **G-Grab, (7)-Section, F12-Cell number, (9)-Subcell number, 5/1-Date, B-Delisting modifier**

G(7)F12(9)FB5/1B **G-Grab, (7)-Section, F12-Cell number, (9)-Subcell number), FB-Field Blank, 5/1-Date, B-Delisting modifier**

3. **The third change was made in Section 7.2 of the Revised Delisting Sampling Plan. The plastic sleeves used for the collection of the composite samples were not decontaminated and reused. ERM-North Central decided that reusing the plastic sleeves could be a potential source of cross-contamination from sample-to-sample or sample-to-field blank.**

4. **The fourth change was made in Section 7.3 of the Revised Delisting Sampling Plan. Double-bagged, crushed ice was used instead of freezer packs, because it conforms to the different size and shapes of the sample bottles. This modification made packing easier and sample refrigeration more effective.**

f. Why samples collected are non-biased and sufficiently represent the petitioned waste.

The samples collected are non-biased because the sample locations were selected using a two-dimensional random sampling technique that accounts for horizontal and spatial variability of the sediments. A more detailed discussion is given in E.3.b. In addition, to ensure that samples are sufficiently representative of the entire depth of the sediments, no sampling location was collected less than 9 feet from the treated sediment line around the perimeter of the Reservoir and none less than 3 feet from the treated sediment line around the finger levees. Since the bottom slopes are 3/1 around the perimeter of the Reservoir and 1/1 around the finger levees, any samples taken closer to the treated sediment line would not be representative of the bulk of the material being delisted due to the shallow depths.

Keystone believes that the sediments are uniform and have been successfully treated throughout the Retention Reservoir based upon the results of the performance sampling (July 15, 1992 through February 25, 1993). The sediments were treated to within a narrow alkalinity range (i.e., 115,000 mg/kg to 215,000 mg/kg). The purpose of the performance sample was to confirm the thoroughness of blending and the amount of chemical dosage. This was accomplished collecting over 1,900 samples and analyzing them for pH,

alkalinity, and one out of five for TCLP lead, cadmium, chromium, and zinc. If a sample collected had an alkalinity outside of the alkalinity range or a TCLP result above the delisting threshold, then the sediments for the corresponding lot of samples were retreated and resampled. A complete summary is provided in the Annual Report dated March 31, 1993, Attachment 1 of this document.

Sample Specific Information

4. Number of samples of the petitioned waste collected?

   The number and frequency of investigative and QA samples of the petitioned material are presented in Table E-2, included at the end of this section.

5. Sample specific information for each individual sample collected.

   a. Sample identification number (as it appears in your field logbook and other records), the date that the sample was taken, and indication as to what type of sample it is (waste sample versus quality control sample and whether or not it is a composite sample) for each sample included in Item 4.

      A complete list of the background, investigative, and QA/QC samples; the sampling/ shipping date; the date received by the laboratory; and the sample type is provided in Table E-3, included at the end of this section.

   b. Description of how each sample was collected, and its point of collection from the petitioned waste, number of grab samples collected for the composite sample, the sampling location for each grab sample, the volume of each grab sample, and the volume of the composite sample.

      A complete discussion of the sample collection procedures, sample locations, methods of compositing samples and number of grabs per composite is provided in Sections E.3.b and E.3.c.

c. Description of the general sampling location (e.g., which quadrant of a surface impoundment) and the specific sampling points (e.g., specific location in the quadrant).

Figure E-4 shows the sample location in relationship to the 18 sections.

d. Description of how each sample was composited (e.g., equipment used and a manner of mixing).

(See the response to Item E.5.b)

e. Physical description of each sample at time of collection (e.g., color, odor, whether phase separation occurred soon after collection).

The field log forms that provide a physical description of the samples, the photoionization detector (PID) readings, and the times of collection are provided as Attachment 3 to this document.

f. Time and date when grab samples were collected and time and date when the sample was composited for each composite sample.

Compositing occurred immediately after the last of the five grab samples was obtained and logged. A complete list of dates and times is provided in Table E-4, included at the end of this section.

g. Description of handling and preparation techniques used for each sample (including types of containers used and techniques employed for container preparation) and types and amounts of preservatives used.

Shipment of soil/sediment samples was accomplished in containers and packing materials designed to prevent breakage, spills, and contamination of samples. Soil samples collected for the analysis of VOCs were shipped in their respective sealed stainless steel sampling sleeves. All other samples were transferred to and shipped in the appropriate bottles. VOC samples were not shipped in the same cooler as the nonvolatile sample fractions.

All soil/sediment samples collected as part of this investigation require refrigeration as part of preservation. Sample bottles were sealed in waterproof plastic bags (Ziploc) and packed with ice. The chain-of-custody record accompanied the samples in the shipping container during shipment. All samples were shipped for overnight delivery to IEA, Inc. located in Research Triangle Park, North Carolina for chemical analysis.

The coolers were bound with strapping tape and the cooler drain ports sealed with tape. Custody seals were placed over lid openings (right front and left back) and covered with clean tape. An airbill with shipper's and consignee's addresses were affixed to the top of the coolers.

Other General Information

6. Description of weather conditions during sampling.

Delisting sampling at the Keystone facility began April 20, 1993 and ended May 20, 1993. The weather conditions were typical spring conditions for Peoria, Illinois. The temperatures averaged in the mid-70s, and the skies were partly cloudy during the majority of the sampling. There were no adverse weather conditions that would affect the quality of the samples.

7. Description of facility activities separate from sampling that occurred at the same time and might have affected sample representatives.

The Retention Reservoir has been separated from the production activities of Keystone since October 1, 1986. The Retention Reservoir was also isolated such that no storm water runoff could enter the unit during treatment and delisting sampling. Therefore, there are no present facility activities that could affect sample validity or representativeness.

8. Description of sampling device decontamination and when disposable devices were used for sample collection.

Prior to the collection of soil/sediment samples, all sampling equipment was decontaminated. The decontamination procedures is as follows:

1. **Potable water and alconox detergent wash;**
2. **Potable water rinse; and**
3. **Distilled or deionized water rinse.**

The lead sampling tube and the entire JMC probe was decontaminated between each sampling location. Plastic sleeves used for collecting composite samples were decontaminated and disposed of in the special waste refuse container.

Stainless steel sampling sleeves were decontaminated according to IEPA "Attachment 7, Soil Volatile Sampling Procedures," and IEPA "Instructions for the Preparation of Closure Plans for Interim Status RCRA Hazardous Waste Facilities" December 11, 1990. Hexane was used for the solvent rinse.

9. Were the chain-of-custody procedures specified in SW-846 followed?

☒ YES **[Skip to Item 11]**

<u>Localized Area of Contamination</u>

11. Have you collected samples to characterize a localized area of contamination (a "hot spot") within the petitioned waste?

☒ NO **[Skip to Item 16]**

The performance sampling results indicate that the Retention Reservoir is uniformly treated and is void of localized areas of contamination or untreated material.

<u>Multiple Waste Treatment Facility</u>

16. Have you collected samples to characterize a waste generated by a multiple waste treatment facility (MWTF)?

☒ NO **[Skip to Item 21]**

The sediments being petitioned for delisting were not generated by a MWTF.

Waste Analysis Information

21. Was the sample analyses done by in-house staff?

☒ NO **[Answer Items 21a and 21b]**

a. Name and address of the organization(s) or company(s) responsible for sample analyses.

Keystone selected Industrial & Environmental Analysts (IEA) of Research Triangle, North Carolina, to perform the analytical analysis of the delisting samples. IEA's mailing address is given below:

Industrial and Environmental Analysts
P.O. Box 12846
Research Triangle Park, NC 27709
(919) 677-0090

Daily was contracted to measure pH and alkalinity of each sample of treated sediments in the on-site laboratory trailer immediately after compositing. Daily's mailing address is given below:

Daily Analytical Laboratories
1621 West Candletree Drive
Peoria, IL 61614
(309) 692-5252

b. Resume of qualifications, title, and affiliation for each individual person (in-house and otherwise) who conducted analyses or was responsible for data reduction, validation, and laboratory quality control.

ERM-North Central was responsible for designing the analytical plan and performing data reduction. The following professionals were utilized:

Elton D. Breland - Senior Project Manager
Randy L. Cooper - Project Engineer
John E. Greifzu - Project Engineer
Douglas M. Burge - Project Geologist

Professional Profiles are provided in Attachment 2 to this document.

IEA was responsible for sample analysis and laboratory quality control. The following personnel were utilized:

Rebecca Teismann - Project Manager
William Drago - Laboratory Director
Linda Mitchell - Director, Technical Support Services
Edgar E. Folk - Technical Officer
Donald Stogner - Inorganic Laboratory Manager
Keith B. Scott - Gas Chromatography/Sample Preparation Lab Mgr.
Kerry Hinshaw - GC Department Supervisor
Laura Cox - GC Supervisor
William Springer - Sample Preparation Laboratory Supervisor
Dawn Alesia Casto - GC/MS Volatiles Laboratory Supervisor, Mass Spectral Interpretation Expert
Gregory A. Hrabec - Sample Management Department Manager

Professional profiles for these individuals are provided in Attachment 2 to this document.

Daily was responsible for field pH and alkalinity analysis. The following personnel were utilized:

Kurt Stepping - Chief Chemist
Scott O. Schoenwetter - Laboratory Technician
Mike J. Quinland - Laboratory Technician

Professional profiles for these individuals are provided in Attachment 2 to this document.

Environmental Standards, Inc. (ESI) of Valley Forge, Pennsylvania was responsible for oversight of laboratory quality control and data validation. The following professionals were utilized:

Rock J. Vitale - Quality Assurance Specialist/Principal
David R. Blye - Quality Assurance Specialist
Meg A. Clark - Senior Quality Assurance Chemist

Professional Profiles are provided in Attachment 2 to this document.

22. Signed laboratory data reporting forms from all analysis, including results from quality control analyses.

The Complete Sample Delivery Group (SDG) Files prepared by IEA include the signed laboratory reports, investigative sample results, QA/QC sample results, and additional information needed to interpret the test results.

23. Information on each sample and each analysis.

a. Sample identification numbers as logged during collection and as assigned by the laboratory.

A summary sheet comparing the sample number given by IEA and the sample number designated during sampling is provided on the lead sheet of each Complete SDG Files.

b. Type of sample (e.g, waste sample, waste sample replicate, equipment blank, field blank.)

The type of sample, the shipment date, the date received by IEA, and the volatile sample depth interval is provided on Table E-3 included at the end of this section.

c. Date of sample receipt by the laboratory.

The date of the sample receipt by the laboratory can be found on the analysis reports (Form I's) and laboratory signed Chains-of-Custody records included in the Complete SDG Files.

d. The sample workup or preparation method and reference for the method (e.g., SW-846 Method 3500).

Table E-5, included at the end of this section provides the sample preparation method, the test method, and the associated reference for the method.

e. The date of sample workup or preparation.

The date of extraction or preparation is included on the analysis reports (Form I's) for the volatile, semivolatile, and conventional analyses. The date of digestion for the metals is included on the Metals Digestion Log. The date of preparation for mercury is included on the Mercury Preparation and

Analysis Run Log. The date the TCLP leachates were prepared is included on the TCLP Preparation Log Form. This information can be found in the Complete SDG Files.

f. The name of the person conducting the analysis.

A list of IEA personnel that conducted the analyses on the Keystone project are listed below:

IEA Analyst	Analysis Performed
Don Stogner Mike Osbourne Frank Webber	ICP/MS Metals
Brian Johnson Randy Rousseau Daryl Krozoz	Mercury
Lee Gordon	Oil and Grease
Todd Crawford	Total Organic Carbon
Peggy Campbell	Total Sulfide and pH
Mike Mason	Ignitability
Todd Crawford Mike Mason	Cr + 6
Ray Porter Jeff Young Mike Larkins Steve Moore	GC/MS Volatile Organics
Mariah Murphy Sherry Gregory Dave Morse	GC/MS Semivolatile Organics

g. The date of extraction and analysis.

The dates of extraction on preparation and analysis are included on the analysis reports (Form I's) for the volatile, semivolatile, and conventional analyses. The date of digestion for the metals is included on the Metals Digestion Log. The date of analyses for the metals is included on the ICP/MS Run Log. The date of preparation and analysis for mercury is included on the Mercury Preparation Log and Analysis Run Log. This information can be found in the Complete SDG Files.

h. The test method used and the source of the test method (e.g., SW-846 Method 8020).

See response to Item E.23.d (Table E-5).

i. The specific constituent, parameter, or hazard for which analysis was conducted.

A complete list of the specific constituents for which analyses were conducted is provided on Table E-6, included at the end of this Section. Section D of this document provides a discussion of the process used to determine the list of analytical parameters.

j. The test results, expressed in appropriate units (e.g., mg/L, mg/kg).

Tables E-7, E-8, and E-9, included at the end of this Section, provide a complete summary of the background and delisting sampling results. This information can also be found on the sample analysis reports (Form I's) contained in the Complete SDG Files.

k. The basis for the analysis (e.g., wet weight, dry weight).

Analytical results are reported on a dry weight basis.

l. The quantitation limits.

The quantitation limits can be found on the sample analysis reports contained in the Complete SDG Files.

24. Names and model numbers of all equipment used during analysis.

A complete list and description of the equipment used during the analyses is provided in Attachment 4.

25. Other information necessary to fully interpret the test procedures or results.

The Complete SDG Files prepared by IEA, which contain the laboratory work-up sheets, raw data, investigative sample results, QA/QC sample results, and additional information needed to fully interpret the data has been submitted to the IEPA. In addition, the data package prepared by Daily has also been submitted to the IEPA, which provides supplementary information about laboratory quality and sample validity.

26. Information for each quality control analysis that involved a matrix or a surrogate spike and spike duplicate analysis.

a. The name of the spike analyte added.

The name of the spike analyte added for the volatile and semivolatile organic analyses can be found on the Form III, "Matrix Spike/Matrix Spike Duplicate Recovery." The name of the volatile and semivolatile organic surrogate spike analytes added can be found on the Form II's, "Volatile System Monitoring Compound Recovery" or "Semivolatile Surrogate Recovery." The name of the metal spike analytes added can be found on the Form VII-LCIN, "Low Concentration Spike Sample Recovery." The name of the conventional parameter spike analytes added can be found on the "Matrix Spike Report" (Oil and Grease) and the "Inorganic QC Summary Spike Results" (Total Cyanide and Total Organic Carbon). These forms can be found in the Complete SDG Files.

b. The concentration of the spike analyte in the unspiked sample.

The concentration of the spike analyte in the unspiked sample is provided on the forms referenced in E.26.a above.

c. The amount of the spike analyte added.

The amount of the spike analyte added is provided on the forms referenced in E.26.a above.

d. The measured amount of the spike in both spiked samples.

The measured amount of the spike in the spiked samples is provided on the forms referenced in E.26.a above.

e. The calculated percent recovery of the spike and method of calculation.

The calculated percent recovery of the spike is provided on the forms referenced in E.26.a. The method of calculation is as follows:

$$\% R = \frac{SSR - SR}{SA} \times 100$$

Where: **SSR = Spike sample result**
SR = Sample result
SA = Spike added

f. The acceptance criterion for recovery of each matrix spike.

The acceptance criteria for the analytes which have an established acceptance criteria can be found on the forms referenced in E.26.a.

g. The relative percent difference (RPD) between the duplicate results.

The relative percent difference (RPD) between duplicate results is provided on the forms referenced in E.26.a.

h. The acceptance criterion for the RPD.

The acceptance criteria for the RPD can be found on the forms referenced in E.26.a, if there is an established criteria.

27. Data correction based on quality control results (e.g., blank analysis) and how the correction was made.

No analytical data was corrected based on quality control results.

28. Inconsistencies or deviations found in the reported analytical results.

ESI is in the process of validating the analytical results provided by IEA. Data validation is expected to be completed on August 14, 1993. Any inconsistencies or deviations found in the reported analytical results will be noted in the case narratives of the validation reports. As of July 29, 1993, ERM-North Central has received 5 of the 17 validation reports and no sufficient inconsistencies or deviations have been found that would affect the validity and/or usability of the data.

TABLE E-1
RETENTION RESERVOIR REMEDIATION
SUMMARY OF SAMPLE COLLECTION DATES AND TIMES

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received By the Lab	Time of Collection
Background Samples				
	BG(01) 4/28 B	28-Apr-93	29-Apr-93	10:15
	BG(02) 4/28 B	28-Apr-93	29-Apr-93	10:40
	BG(03) 4/28 B	28-Apr-93	29-Apr-93	9:55
	BG(04) 4/28 B	28-Apr-93	29-Apr-93	9:10
	BG(05) 4/28 B	28-Apr-93	29-Apr-93	8:55
	BG(32) 4/28 B	28-Apr-93	29-Apr-93	9:00
	BG(06) 4/28 B	28-Apr-93	29-Apr-93	8:45
	BG(06)FB 4/28 B	28-Apr-93	29-Apr-93	8:20
	BG(07) 4/27 B	27-Apr-93	28-Apr-93	15:35
	BG(08) 4/27 B	27-Apr-93	28-Apr-93	13:20
	BG(08)FB 4/27 B	27-Apr-93	28-Apr-93	12:30
	BG(09) 4/27 B	27-Apr-93	28-Apr-93	14:25
	BG(10) 4/27 B	27-Apr-93	28-Apr-93	14:50
	BG(01A) 4/28 B	28-Apr-93	29-Apr-93	13:40
	BG(01A)FB 4/28 B	28-Apr-93	29-Apr-93	13:15
	BG(02A) 4/28 B	28-Apr-93	29-Apr-93	13:55
	BG(03A) 4/28 B	28-Apr-93	29-Apr-93	10:25
	BG(04A) 4/28 B	28-Apr-93	29-Apr-93	14:15
	BG(33) 4/28 B	28-Apr-93	29-Apr-93	14:20
	BG(05A) 4/28 B	28-Apr-93	29-Apr-93	10:55
	BG(06A) 4/28 B	28-Apr-93	29-Apr-93	9:45

TABLE E-1

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received By the Lab	Time of Collection
	BG(07A) 4/28 B	28-Apr-93	29-Apr-93	9:25
	BG(08A) 4/27 B	27-Apr-93	28-Apr-93	15:45
	BG(09A) 4/27 B	27-Apr-93	28-Apr-93	13:35
	BG(31) 4/27 B	27-Apr-93	28-Apr-93	13:50
	BG(10A) 4/28 B	28-Apr-93	29-Apr-93	15:35
	BG(11A) 4/27 B	27-Apr-93	28-Apr-93	14:10
	BG(12A) 4/28 B	28-Apr-93	29-Apr-93	15:30
	BG(13A) 4/28 B	28-Apr-93	29-Apr-93	15:25
	BG(14A) 4/27 B	27-Apr-93	28-Apr-93	15:20
	BG(15A) 4/27 B	27-Apr-93	28-Apr-93	15:10
Delisting Samples				
1	C(01) 5/13B	13-May-93	14-May-93	17:30
	G(01) E06(10) 5/20 B	20-May-93	21-May-93	8:50
	G(01) E07(05) 5/20 B	20-May-93	21-May-93	8:35
	G(01) F05(11) 5/20 B	20-May-93	21-May-93	8:45
	G(01) F05(12) 5/20 B	20-May-93	21-May-93	8:40
	G(01) F07(11) 5/20 B	20-May-93	21-May-93	8:30
	G(01) F07(11)FB 5/13B	13-May-93	14-May-93	16:10
	G(01) F07(11)FB 5/20 B	20-May-93	21-May-93	7:30
	G(01) F07(11)TB 5/20 B	20-May-93	21-May-93	13:00[2]
2	C(02) 5/13B	13-May-93	14-May-93	16:45
	G(02) H03(07) 5/20 B	20-May-93	21-May-93	10:10
	G(02) H06(13) 5/20 B	20-May-93	21-May-93	9:15
	G(02) I06(09) 5/20 B	20-May-93	21-May-93	9:10
	G(02) I08(04) 5/20 B	20-May-93	21-May-93	8:55

TABLE E-1

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received By the Lab	Time of Collection
	G(29) I08(04) 5/20 B	20-May-93	21-May-93	9:00
	G(02) I08(16) 5/20 B	20-May-93	21-May-93	9:05
3	C(03) 5/13B	13-May-93	14-May-93	15:40
	G(03) J07(08) 5/19 B	19-May-93	20-May-93	13:15
	G(03) K08(01) 5/19 B	19-May-93	20-May-93	13:10
	G(03) K08(08) 5/19 B	19-May-93	20-May-93	13:25
	G(03) M08(06) 5/19 B	19-May-93	20-May-93	13:35
	G(03) M09(01) 5/19 B	19-May-93	20-May-93	13:05
	G(03) M09(01)FB 5/13B	13-May-93	14-May-93	14:00
	G(03) M09(01)FB 5/19 B	19-May-93	20-May-93	12:45
4	C(04) 5/13B	13-May-93	14-May-93	14:15
	G(04) N05(12) 5/19 B	19-May-93	20-May-93	9:25
	G(04) O06(05) 5/19 B	19-May-93	20-May-93	9:35
	G(04) O09(07) 5/19 B	19-May-93	20-May-93	9:40
	G(28) O09(07) 5/19 B	19-May-93	20-May-93	9:45
	G(04) P06(07) 5/19 B	19-May-93	20-May-93	9:50
	G(04) P09(09) 5/19 B	19-May-93	20-May-93	13:40
5	C(05) 5/13B	13-May-93	14-May-93	13:40
	G(05) N11(06) 5/19 B	19-May-93	20-May-93	8:40
	G(05) N11(06)FB 5/13B	13-May-93	14-May-93	10:00
	G(05) N11(06)FB 5/19 B	19-May-93	20-May-93	8:30
	G(05) N11(06)TB 5/19 B	19-May-93	20-May-93	13:30[2]
	G(05) N13(05) 5/19 B	19-May-93	20-May-93	9:10
	G(05) O10(15) 5/19 B	19-May-93	20-May-93	9:00
	G(05) O14(10) 5/19 B	19-May-93	20-May-93	8:55

TABLE E-1

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Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received By the Lab	Time of Collection
	G(05) P13(02) 5/19 B	19-May-93	20-May-93	8:45
6	C(06) 5/13B	13-May-93	14-May-93	11:40
	C(22) 5/13B	13-May-93	14-May-93	11:40
	G(06) K13(08) 5/18 B	18-May-93	19-May-93	12:50
	G(06) K14(04) 5/18 B	18-May-93	19-May-93	12:55
	G(27) K14(04) 5/18 B	18-May-93	19-May-93	13:00
	G(06) L12(09) 5/18 B	18-May-93	19-May-93	13:05
	G(06) L12(12) 5/18 B	18-May-93	19-May-93	13:15
	G(06) L15(02) 5/18 B	18-May-93	19-May-93	13:25
7	C(07) 5/13B	13-May-93	14-May-93	11:00
	G(07) E14(13) 5/18 B	18-May-93	19-May-93	12:45
	G(07) E14(13)FB 5/13B	13-May-93	14-May-93	9:20
	G(07) E14(13)FB 5/18 B	18-May-93	19-May-93	12:30
	G(07) E14(13)TB 5/18 B	18-May-93	19-May-93	12:15[2]
	G(07) F12(15) 5/18 B	18-May-93	19-May-93	9:45
	G(07) F14(02) 5/18 B	18-May-93	19-May-93	9:43
	G(07) F15(16) 5/18 B	18-May-93	19-May-93	9:40
	G(07) G13(09) 5/18 B	18-May-93	19-May-93	9:35
8	C(08) 5/12B	12-May-93	13-May-93	11:30
	G(08) B16(03) 5/18 B	18-May-93	19-May-93	9:00
	G(08) C11(03) 5/18 B	18-May-93	19-May-93	9:10
	G(08) C11(07) 5/18 B	18-May-93	19-May-93	9:15
	G(08) D15(10) 5/18 B	18-May-93	19-May-93	9:20
	G(08) D19(02) 5/18 B	18-May-93	19-May-93	9:25

TABLE E-1

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received By the Lab	Time of Collection
	G(26) D19(02) 5/18 B	18-May-93	19-May-93	9:30
9	C(09) 5/12B	12-May-93	13-May-93	11:00
	G(09) E18(04) 5/17 B	17-May-93	18-May-93	12:40
	G(09) E18(04)FB 5/12B	12-May-93	13-May-93	8:20
	G(09) E18(04)FB 5/17 B	17-May-93	18-May-93	12:20
	G(09) G17(06) 5/17 B	17-May-93	18-May-93	13:35
	G(09) G19(09) 5/17 B	17-May-93	18-May-93	13:55
	G(09) G19(14) 5/17 B	17-May-93	18-May-93	14:10
	G(09) H19(07) 5/17 B	17-May-93	18-May-93	13:15
10	C(10) 5/11 B	11-May-93	12-May-93	15:15
	G(10) 019(09) 5/17 B	17-May-93	18-May-93	10:20
	G(25) 019(09) 5/17 B	17-May-93	18-May-93	10:25
	G(10) K18(13) 5/17 B	17-May-93	18-May-93	10:30
	G(10) M20(14) 5/17 B	17-May-93	18-May-93	10:35
	G(10) N21(01) 5/17 B	17-May-93	18-May-93	10:40
	G(10) N21(12) 5/17 B	17-May-93	18-May-93	12:50
11	C(11) 5/11 B	11-May-93	12-May-93	14:25
	G(11) P19(09) 5/17 B	17-May-93	18-May-93	9:15
	G(11) P19(09)FB 5/17 B	17-May-93	18-May-93	8:45
	G(11) P19(09)FB 5/11B	11-May-93	12-May-93	13:20
	G(11) P19(09)TB 5/17 B	17-May-93	18-May-93	8:45[2]
	G(11) Q19(15) 5/17 B	17-May-93	18-May-93	9:30
	G(11) Q23(12) 5/17 B	17-May-93	18-May-93	9:45
	G(11) Q25(12) 5/17 B	17-May-93	18-May-93	10:00

TABLE E-1

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received By the Lab	Time of Collection
18	C(18) 5/03 B	03-May-93	04-May-93	14:45
	G(18) O30(03) 5/04 B	04-May-93	05-May-93	11:30
	G(18) O31(13) 5/04 B	04-May-93	05-May-93	11:25
	G(18) O33(14) 5/04 B	04-May-93	05-May-93	11:20
	G(18) O33(14)FB 5/03 B	03-May-93	04-May-93	12:45
	G(18) O33(14)FB 5/04 B	04-May-93	05-May-93	11:00
	G(18) P31(13) 5/04 B	04-May-93	05-May-93	11:40
	G(18) Q30(12) 5/04 B	04-May-93	05-May-93	11:48
	G(18) Q30(12)TB 5/04 B	04-May-93	05-May-93	11:48[2]

Notes:

(1) Sample Number Designation:

BG(01)4/28B = BG-Background, (01)-Location Modifier, 4/28-Date, B-Delisting Modifier

C(01)5/13B = C-Composite, (01)-Section Number, 5/13-Date, B-Delisting Modifier

G(01)E06(10)5/20B = G-Grab, (01)-Section Number, E06-Cell Number, (10)-Subcell Number, 5/20-Date, B-Delisting Modifier

G(01)F07(11)FB5/20B = G-Grab, (01)-Section Number, F07-Cell Number, (11)-Subcell Number, FB-Field Blank, 5/20-Date, B-Delisting Modifier

TB = Indicates Trip Blank

(2) Trip blanks were prepared by IEA. The time provided is the time in which the trip blank vial was packaged with the volatile samples.

TABLE E-2
NUMBER AND FREQUENCY OF INVESTIGATIVE AND QA SAMPLES TO BE PREPARED FOR LABORATORY ANALYSIS

Sample Location	Matrix	Investigative Samples			Quality Assurance Samples								Project Total	Laboratory Parameters
					Field (Equipment) Blank		Field Duplicate		Matrix Spike/Duplicate [4]		Trip Blank [1]			
		No.	Freq.	Total	Freq.	Total	Freq.	Total	Freq.	Total	Freq.	Total		
Retention Reservoir	Soil/ Sediment	90	1/1	90	--	--	1/10	9	1/20 [6]	5	--	--	99	Volatile Organic Compounds
		18	1/1	18	--	--	1/10	2	1/20	1	--	--	20	Oil and Grease
		18	1/1	18	--	--	1/10	2	1/20	1	--	--	20	Nonvolatile Organic Compounds; Total, TCLP, and MEP Metals; Total, TCLP and Reactive Cyanide; Total and Reactive Sulfide; Ignitability; Corrosivity; Reactivity; and TOC.
	Water	--	--	--	1/10	9	--	--	--	--	Daily	[1]	9	Volatile Organic Compounds
		--	--	--	1/2 [5]	9	--	--	--	--	--	--	9	Oil and Grease
		--	--	--	1/2 [5]	9	--	--	--	--	--	--	9	Nonvolatile Organic Compounds; Total Metals; Total and Reactive Cyanide; Total and Reactive Sulfide; and TOC.
		30	1/cooler	30	--	--	--	--	--	--	--	--	30	Temperature [2]
Background	Soil/ Sediment	25	1/1	25	--	--	1/10	3	1/20	2	--	--	28	Total and TCLP Metals [3]
	Water	--	--	--	1/10	3	--	--	--	--	--	--	3	Total Metals [3]

Notes:

(1) VOA trip blank samples will be shipped/analyzed with each cooler of investigative and QA samples.
(2) The number of temperature samples to be analyzed is estimated and based on the anticipated number of coolers to be shipped to the laboratory.
(3) Metals limited to: Arsenic, Antimony, Barium, Beryllium, Cadmium, Chromium, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.
(4) Extra volume is added to the investigative and duplicate samples. This is not a separate sample. Therefore, the MS/MSD total is not included in the project total.
(5) Field (equipment) blanks will be generated from sampling equipment used in obtaining samples from 90 borings at a frequency of 1/10 individual samples or 1/2 composite samples.
(6) A MS/MSD is to be taken on 1/20 of the samples or 1 per 7 days.

TABLE E-3
RETENTION RESERVOIR REMEDIATION
SAMPLE SUMMARY

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
Background Samples									
	BG(01) 4/28 B	28-Apr-93	29-Apr-93						
	BG(02) 4/28 B	28-Apr-93	29-Apr-93						
	BG(03) 4/28 B	28-Apr-93	29-Apr-93						
	BG(04) 4/28 B	28-Apr-93	29-Apr-93						
	BG(05) 4/28 B	28-Apr-93	29-Apr-93						
	BG(32) 4/28 B	28-Apr-93	29-Apr-93	BG(05)4/28B					
	BG(06) 4/28 B	28-Apr-93	29-Apr-93		1				
	BG(06)FB 4/28 B	28-Apr-93	29-Apr-93				1		
	BG(07) 4/27 B	27-Apr-93	28-Apr-93						
	BG(08) 4/27 B	27-Apr-93	28-Apr-93		1				
	BG(08)FB 4/27 B	27-Apr-93	28-Apr-93				1		
	BG(09) 4/27 B	27-Apr-93	28-Apr-93						
	BG(10) 4/27 B	27-Apr-93	28-Apr-93						
	BG(01A) 4/28 B	28-Apr-93	29-Apr-93		1				
	BG(01A)FB 4/28 B	28-Apr-93	29-Apr-93				1		
	BG(02A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(03A) 4/28 B	28-Apr-93	29-Apr-93						

TABLE E-3

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
	BG(04A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(33) 4/28 B	28-Apr-93	29-Apr-93	BG(04A)4/28B					
	BG(05A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(06A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(07A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(08A) 4/27 B	27-Apr-93	28-Apr-93						
	BG(09A) 4/27 B	27-Apr-93	28-Apr-93						
	BG(31) 4/27 B	27-Apr-93	28-Apr-93	BG(09A)4/27B					
	BG(10A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(11A) 4/27 B	27-Apr-93	28-Apr-93						
	BG(12A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(13A) 4/28 B	28-Apr-93	29-Apr-93						
	BG(14A) 4/27 B	27-Apr-93	28-Apr-93						
	BG(15A) 4/27 B	27-Apr-93	28-Apr-93						
Investigative Samples									
1	C(01) 5/13B	13-May-93	14-May-93		1			1	
	G(01) E06(10) 5/20 B	20-May-93	21-May-93						4-5
	G(01) E07(05) 5/20 B	20-May-93	21-May-93						1-2
	G(01) F05(11) 5/20 B	20-May-93	21-May-93						5-6
	G(01) F05(12) 5/20 B	20-May-93	21-May-93						4-5
	G(01) F07(11) 5/20 B	20-May-93	21-May-93						5-6

TABLE E-3

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
	G(01) F07(11)FB 5/13B	13-May-93	14-May-93				1		
	G(01) F07(11)FB 5/20 B	20-May-93	21-May-93				1		
	G(01) F07(11)TB 5/20 B	20-May-93	21-May-93			1			
2	C(02) 5/13B	13-May-93	14-May-93					1	
	G(02) H03(07) 5/20 B	20-May-93	21-May-93						0-1
	G(02) H06(13) 5/20 B	20-May-93	21-May-93						4-5
	G(02) I06(09) 5/20 B	20-May-93	21-May-93						1-2
	G(02) I08(04) 5/20 B	20-May-93	21-May-93						1-2
	G(29) I08(04) 5/20 B	20-May-93	21-May-93	G(02) I08(04) 5/20 B					1-2
	G(02) I08(16) 5/20 B	20-May-93	21-May-93						3-4
3	C(03) 5/13B	13-May-93	14-May-93					1	
	G(03) J07(08) 5/19 B	19-May-93	20-May-93						3-4
	G(03) K08(01) 5/19 B	19-May-93	20-May-93						0-1
	G(03) K08(08) 5/19 B	19-May-93	20-May-93						1-2
	G(03) M08(06) 5/19 B	19-May-93	20-May-93						4-5
	G(03) M09(01) 5/19 B	19-May-93	20-May-93		1				4-5
	G(03) M09(01)FB 5/13B	13-May-93	14-May-93				1		
	G(03) M09(01)FB 5/19 B	19-May-93	20-May-93				1		
4	C(04) 5/13B	13-May-93	14-May-93					1	
	G(04) N05(12) 5/19 B	19-May-93	20-May-93						3-4
	G(04) O06(05) 5/19 B	19-May-93	20-May-93						2-3

TABLE E-3

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
	G(04) O09(07) 5/19 B	19-May-93	20-May-93						1-2
	G(28) O09(07) 5/19 B	19-May-93	20-May-93	G(04) O09(07) 5/19 B					1-2
	G(04) P06(07) 5/19 B	19-May-93	20-May-93						4-5
	G(04) P09(09) 5/19 B	19-May-93	20-May-93						4-5
5	C(05) 5/13B	13-May-93	14-May-93					1	
	G(05) N11(06) 5/19 B	19-May-93	20-May-93						3-4
	G(05) N11(06)FB 5/13B	13-May-93	14-May-93				1		
	G(05) N11(06)FB 5/19 B	19-May-93	20-May-93				1		
	G(05) N11(06)TB 5/19 B	19-May-93	20-May-93			1			
	G(05) N13(05) 5/19 B	19-May-93	20-May-93						4-5
	G(05) O10(15) 5/19 B	19-May-93	20-May-93						3-4
	G(05) O14(10) 5/19 B	19-May-93	20-May-93						4-5
	G(05) P13(02) 5/19 B	19-May-93	20-May-93						1-2
6	C(06) 5/13B	13-May-93	14-May-93					1	
	C(22) 5/13B	13-May-93	14-May-93	C(06) 5/13B				1	
	G(06) K13(08) 5/18 B	18-May-93	19-May-93						1-2
	G(06) K14(04) 5/18 B	18-May-93	19-May-93						1-2
	G(27) K14(04) 5/18 B	18-May-93	19-May-93	G(06) K14(04) 5/18 B					1-2
	G(06) L12(09) 5/18 B	18-May-93	19-May-93						1-2
	G(06) L12(12) 5/18 B	18-May-93	19-May-93						1-2
	G(06) L15(02) 5/18 B	18-May-93	19-May-93						4-5

TABLE E-3

(Page 5 of 9)

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
7	C(07) 5/13B	13-May-93	14-May-93					1	
	G(07) E14(13) 5/18 B	18-May-93	19-May-93						2-3
	G(07) E14(13)FB 5/13B	13-May-93	14-May-93				1		
	G(07) E14(13)FB 5/18 B	18-May-93	19-May-93				1		
	G(07) E14(13)TB 5/18 B	18-May-93	19-May-93			1			
	G(07) F12(15) 5/18 B	18-May-93	19-May-93						4-5
	G(07) F14(02) 5/18 B	18-May-93	19-May-93						4-5
	G(07) F15(16) 5/18 B	18-May-93	19-May-93						4-5
	G(07) G13(09) 5/18 B	18-May-93	19-May-93						5-6
8	C(08) 5/12B	12-May-93	13-May-93					1	
	G(08) B16(03) 5/18 B	18-May-93	19-May-93						1-2
	G(08) C11(03) 5/18 B	18-May-93	19-May-93						1-2
	G(08) C11(07) 5/18 B	18-May-93	19-May-93						1-2
	G(08) D15(10) 5/18 B	18-May-93	19-May-93		1				4-5
	G(08) D19(02) 5/18 B	18-May-93	19-May-93						4-5
	G(26) D19(02) 5/18 B	18-May-93	19-May-93	G(08) D19(02) 5/18 B					4-5
9	C(09) 5/12B	12-May-93	13-May-93					1	
	G(09) E18(04) 5/17 B	17-May-93	18-May-93						5-6
	G(09) E18(04)FB 5/12B	12-May-93	13-May-93				1		
	G(09) E18(04)FB 5/17 B	17-May-93	18-May-93				1		
	G(09) G17(06) 5/17 B	17-May-93	18-May-93						2-3

TABLE E-3

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
	G(09) G19(09) 5/17 B	17-May-93	18-May-93						2-3
	G(09) G19(14) 5/17 B	17-May-93	18-May-93						4-5
	G(09) H19(07) 5/17 B	17-May-93	18-May-93						5-6
10	C(10) 5/11 B	11-May-93	12-May-93					1	
	G(10) 019(09) 5/17 B	17-May-93	18-May-93						4-5
	G(25) 019(09) 5/17 B	17-May-93	18-May-93	G(10) O19(09) 5/17 B					4-5
	G(10) K18(13) 5/17 B	17-May-93	18-May-93						4-5
	G(10) M20(14) 5/17 B	17-May-93	18-May-93						3-4
	G(10) N21(01) 5/17 B	17-May-93	18-May-93		1				0-1
	G(10) N21(12) 5/17 B	17-May-93	18-May-93						2-3
11	C(11) 5/11 B	11-May-93	12-May-93					1	
	G(11) P19(09) 5/17 B	17-May-93	18-May-93						1-2
	G(11) P19(09)FB 5/17 B	17-May-93	18-May-93				1		
	G(11) P19(09)FB 5/11B	11-May-93	12-May-93				1		
	G(11) P19(09)TB 5/17 B	17-May-93	18-May-93			1			
	G(11) Q19(15) 5/17 B	17-May-93	18-May-93						4-5
	G(11) Q23(12) 5/17 B	17-May-93	18-May-93						4-5
	G(11) Q25(12) 5/17 B	17-May-93	18-May-93						1-2
	G(11) R25(09) 5/17 B	17-May-93	18-May-93						3-4
12	C(12) 5/11 B	11-May-93	12-May-93		1			1	
	G(12) J23(01) 5/11 B	11-May-93	12-May-93						3-4

TABLE E-3

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
	G(12) N23(03) 5/11 B	11-May-93	12-May-93		1				3-4
	G(12) O25(05) 5/11 B	11-May-93	12-May-93						1-2
	G(12) O26(07) 5/11 B	11-May-93	12-May-93						2-3
	G(12) P25(14) 5/11 B	11-May-93	12-May-93						3-4
	G(24) P25(14) 5/11 B	11-May-93	12-May-93	G(12) P25(14) 5/11B					3-4
13	C(13) 5/06 B	06-May-93	07-May-93					1	
	G(13) F24(16) 5/06 B	06-May-93	07-May-93						0-1
	G(13) F24(16)FB 5/06 B	06-May-93	07-May-93				1		
	G(13) F24(16)FB 5/06 B	06-May-93	07-May-93				1		
	G(13) F24(16)TB 5/06 B	06-May-93	07-May-93			1			
	G(13) G22(04) 5/06 B	06-May-93	07-May-93						0-1
	G(13) G24(04) 5/06 B	06-May-93	07-May-93						0-1
	G(13) G26(08) 5/06 B	06-May-93	07-May-93						3-4
	G(13) J23(16) 5/06 B	06-May-93	07-May-93						3-4
14	C(14) 5/06 B	06-May-93	07-May-93		1			1	
	C(23) 5/06 B	06-May-93	07-May-93	C(14) 5/06 B				1	
	G(14) C23(15) 5/06 B	06-May-93	07-May-93						0-1
	G(14) C26(07) 5/06 B	06-May-93	07-May-93		1				3-4
	G(14) C27(02) 5/06 B	06-May-93	07-May-93						3-4
	G(14) D26(05) 5/06 B	06-May-93	07-May-93						0-1
	G(14) E25(15) 5/06 B	06-May-93	07-May-93						0-1

TABLE E-3

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
	G(23) E25(15) 5/06 B	06-May-93	07-May-93	G(14) E25(15) 5/06 B					0-1
15	C(15) 5/05 B	05-May-93	06-May-93					1	
	G(15) D28(05) 5/05 B	05-May-93	06-May-93						3-4
	G(21) D28(05) 5/05 B	05-May-93	06-May-93	G(15) D28(05) 5/05 B					3-4
	G(15) D29(06) 5/05 B	05-May-93	06-May-93						3-4
	G(15) D29(06)TB 5/05 B	05-May-93	06-May-93			1			
	G(15) E29(06) 5/05 B	05-May-93	06-May-93						0-1
	G(15) E30(03) 5/05 B	05-May-93	06-May-93						4-5
	G(15) F27(15) 5/05 B	05-May-93	06-May-93						6-7
16	C(16) 5/05 B	05-May-93	06-May-93					1	
	G(16) G27(12) 5/05 B	05-May-93	06-May-93						1-2
	G(16) G29(14) 5/05 B	05-May-93	06-May-93						0-1
	G(22) G29(14) 5/05 B	05-May-93	06-May-93	G(16) G29(14) 5/05 B					0-1
	G(16) I29(01) 5/05 B	05-May-93	06-May-93						6-7
	G(16) I30(04) 5/05 B	05-May-93	06-May-93						0-1
	G(16) I30(12) 5/05 B	05-May-93	06-May-93						1-2
	G(16) I30(12)FB 5/05 B	05-May-93	06-May-93				1		
	G(16) I30(12)FB 5/05 B	05-May-93	06-May-93				1		
17	C(17) 5/04 B	04-May-93	05-May-93					1	
	G(17) K32(14) 5/04 B	04-May-93	05-May-93						1-2
	G(17) L31(09) 5/04 B	04-May-93	05-May-93						4-5

TABLE E-3

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Date Received by the Lab	QA/QC Sample				Composite Sample	Volatile Sample Depth Interval (ft)
				Duplicate	MS/ MSD	Trip Blank	Field Blank		
	G(17) L32(04) 5/04 B	04-May-93	05-May-93						1-2
	G(17) N29(11) 5/04 B	04-May-93	05-May-93						1-2
	G(17) N30(10) 5/04 B	04-May-93	05-May-93						0-1
18	C(18) 5/03 B	03-May-93	04-May-93					1	
	G(18) O30(03) 5/04 B	04-May-93	05-May-93						3-4
	G(18) O31(13) 5/04 B	04-May-93	05-May-93						0-1
	G(18) O33(14) 5/04 B	04-May-93	05-May-93						0-1
	G(18) O33(14)FB 5/03 B	03-May-93	04-May-93				1		
	G(18) O33(14)FB 5/04 B	04-May-93	05-May-93				1		
	G(18) P31(13) 5/04 B	04-May-93	05-May-93						4-5
	G(18) Q30(12) 5/04 B	04-May-93	05-May-93		1				6-7
	G(18) Q30(12)TB 5/04 B	04-May-93	05-May-93			1			

Notes:

(1) Sample Number Designation:

BG(01)4/28B = BG-Background, (01)-Location Modifier, 4/28-Date, B-Delisting Modifier

C(01)5/13B = C-Composite, (01)-Section Number, 5/13-Date, B-Delisting Modifier

G(01)E06(10)5/20B = G-Grab, (01)-Section Number, E06-Cell Number, (10)-Subcell Number, 5/20-Date, B-Delisting Modifier

G(01)F07(11)FB5/20B = G-Grab, (01)-Section Number, F07-Cell Number, (11)-Subcell Number, FB-Field Blank, 5/20-Date, B-Delisting Modifier

TB = Indicates Trip Blank

TABLE E-4
RETENTION RESERVOIR REMEDIATION
SUMMARY OF THE DATES AND TIMES OF
WHEN THE GRAB SAMPLES WERE COLLECTED FOR COMPOSITING

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Time of Collection
Delisting Sampling			
1	C(01)5/13B	13-May-93	17:30
	G(01) E06(10) 5/13 B	13-May-93	15:50
	G(01) E07(05) 5/13 B	13-May-93	15:45
	G(01) F05(11) 5/13 B	13-May-93	16:00
	G(01) F05(12) 5/13 B	13-May-93	15:55
	G(01) F07(11) 5/13 B	13-May-93	16:25
2	C(02) 5/13B	13-May-93	16:45
	G(02) H03(07) 5/13 B	13-May-93	14:35
	G(02) H06(13) 5/13 B	13-May-93	15:05
	G(02) I06(09) 5/13 B	13-May-93	15:00
	G(02) I08(04) 5/13 B	13-May-93	14:37
	G(02) I08(16) 5/13 B	13-May-93	14:50
3	C(03) 5/13B	13-May-93	15:40
	G(03) J07(08) 5/13 B	13-May-93	14:05
	G(03) K08(01) 5/13 B	13-May-93	14:10
	G(03) K08(08) 5/13 B	13-May-93	14:15
	G(03) M08(06) 5/13 B	13-May-93	14:20
	G(03) M09(01) 5/13 B	13-May-93	14:25
4	C(04) 5/13B	13-May-93	14:15
	G(04) N05(12) 5/13 B	13-May-93	13:25
	G(04) O06(05) 5/13 B	13-May-93	13:22

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Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Time of Collection
	G(04) O09(07) 5/13 B	13-May-93	13:15
	G(04) P06(07) 5/13 B	13-May-93	13:10
	G(04) P09(09) 5/13 B	13-May-93	13:05
5	C(05) 5/13B	13-May-93	13:40
	G(05) N11(06) 5/13 B	13-May-93	12:55
	G(05) N13(05) 5/13 B	13-May-93	12:50
	G(05) O10(15) 5/13 B	13-May-93	12:47
	G(05) O14(10) 5/13 B	13-May-93	12:43
	G(05) P13(02) 5/13 B	13-May-93	12:40
6	C(06) 5/13B	13-May-93	11:40
	C(22) 5/13B	13-May-93	11:40
	G(06) K13(08) 5/13 B	13-May-93	10:05
	G(06) K14(04) 5/13 B	13-May-93	10:10
	G(06) L12(09) 5/13 B	13-May-93	10:20
	G(06) L12(12) 5/13 B	13-May-93	10:25
	G(06) L15(02) 5/13 B	13-May-93	10:30
7	C(07) 5/13B	13-May-93	11:00
	G(07) E14(13) 5/13 B	13-May-93	9:33
	G(07) F12(15) 5/13 B	13-May-93	9:53
	G(07) F14(02) 5/13 B	13-May-93	9:48
	G(07) F15(16) 5/13 B	13-May-93	9:40
	G(07) G13(09) 5/13 B	13-May-93	10:00
8	C(08) 5/12B	12-May-93	11:30
	G(08) B16(03) 5/12 B	12-May-93	11:10
	G(08) C11(03) 5/12 B	12-May-93	11:15
	G(08) C11(07) 5/12 B	12-May-93	11:00
	G(08) D15(10) 5/12 B	12-May-93	10:23

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Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Time of Collection
	G(08) D19(02) 5/12 B	12-May-93	9:55
9	C(09) 5/12B	12-May-93	11:00
	G(09) E18(04) 5/12 B	12-May-93	9:25
	G(09) G17(06) 5/12 B	12-May-93	10:17
	G(09) G19(09) 5/12 B	12-May-93	10:10
	G(09) G19(14) 5/12 B	12-May-93	9:35
	G(09) H19(07) 5/12 B	12-May-93	10:45
10	C(10) 5/11 B	11-May-93	15:15
	G(10) 019(09) 5/11 B	11-May-93	14:25
	G(10) K18(13) 5/11 B	11-May-93	14:35
	G(10) M20(14) 5/11 B	11-May-93	14:50
	G(10) N21(01) 5/11 B	11-May-93	15:00
	G(10) N21(12) 5/11 B	11-May-93	15:15
11	C(11) 5/11 B	11-May-93	14:25
	G(11) P19(09) 5/11 B	11-May-93	13:35
	G(11) Q19(15) 5/11 B	11-May-93	13:47
	G(11) Q23(12) 5/11 B	11-May-93	13:55
	G(11) Q25(12) 5/11 B	11-May-93	14:10
	G(11) R25(09) 5/11 B	11-May-93	13:25
12	C(12) 5/11 B	11-May-93	10:05
	G(12) J23(01) 5/11 B	11-May-93	9:00
	G(12) N23(03) 5/11 B	11-May-93	9:40
	G(12) O25(05) 5/11 B	11-May-93	9:30
	G(12) O26(07) 5/11 B	11-May-93	9:10
	G(12) P25(14) 5/11 B	11-May-93	9:50
13	C(13) 5/06 B	06-May-93	10:20
	G(13) F24(16) 5/06 B	06-May-93	8:50

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Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Time of Collection
	G(13) G22(04) 5/06 B	06-May-93	9:05
	G(13) G24(04) 5/06 B	06-May-93	9:25
	G(13) G26(08) 5/06 B	06-May-93	9:20
	G(13) J23(16) 5/06 B	06-May-93	9:35
14	C(14) 5/06 B	06-May-93	1:35
	C(23) 5/06 B	06-May-93	1:40
	G(14) C23(15) 5/06 B	06-May-93	12:25
	G(14) C26(07) 5/06 B	06-May-93	11:50
	G(14) C27(02) 5/06 B	06-May-93	12:10
	G(14) D26(05) 5/06 B	06-May-93	12:32
	G(14) E25(15) 5/06 B	06-May-93	13:00
15	C(15) 5/05 B	05-May-93	14:30
	G(15) D28(05) 5/05 B	05-May-93	13:17
	G(15) D29(06) 5/05 B	05-May-93	13:38
	G(15) E29(06) 5/05 B	05-May-93	13:50
	G(15) E30(03) 5/05 B	05-May-93	14:00
	G(15) F27(15) 5/05 B	05-May-93	14:15
16	C(16) 5/05 B	05-May-93	10:15
	G(16) G27(12) 5/05 B	05-May-93	9:40
	G(16) G29(14) 5/05 B	05-May-93	9:30
	G(16) I29(01) 5/05 B	05-May-93	9:20
	G(16) I30(04) 5/05 B	05-May-93	9:05
	G(16) I30(12) 5/05 B	05-May-93	8:55
17	C(17) 5/04 B	04-May-93	14:10
	G(17) K32(14) 5/04 B	04-May-93	13:41
	G(17) L31(09) 5/04 B	04-May-93	13:46
	G(17) L32(04) 5/04 B	04-May-93	13:27

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Sec. #	Sample Identification Number[1]	Sampling/ Shipment Date	Time of Collection
	G(17) N29(11) 5/04 B	04-May-93	13:20
	G(17) N30(10) 5/04 B	04-May-93	13:10
18	C(18) 5/03 B	03-May-93	14:45
	G(18) O30(03) 5/03 B	03-May-93	9:50
	G(18) O31(13) 5/03 B	03-May-93	10:35
	G(18) O33(14) 5/03 B	03-May-93	10:20
	G(18) P31(13) 5/03 B	03-May-93	10:00
	G(18) Q30(12) 5/03 B	03-May-93	9:30

Note:

(1) Sample Number Designation:

C(01)5/13B = C-Composite, (01)-Section Number, 5/13-Date, B-Delisting Modifier

G(01)E06(10)5/13B = G-Grab, (01)-Section Number, E06-Cell Number, (10)-Subcell Number, 5/13-Date, B-Delisting Modifier

TABLE E-5
ANALYTICAL PARAMETERS, SAMPLE LOAD, AND METHOD REFERENCES

Parameter/Characteristic	Number of Analysis of Field Samples	Method Reference
Ignitability	20	DOT Method 46 CFR, 25193
Corrosivity	20	SW-846 9045
Reactivity (CN- and SO_2) [3]	--	SW-846 Chapter 7.3
Total Metals in Soil, Sludge, Waste, Aqueous	60	ICP/MS EPA 200.8
TCLP Preparation	48	SW-846 1311
Metals in TCLP Extracts	48	ICP/MS EPA 200.8
MEP Metals	20	SW-846 1320
Total Cyanide in Soil , Sludge, Waste, Aqueous	29	SW-846 9010
Cyanide in TCLP Extracts [1] [4]	--	SW-846 9010
Cr^{+6} in Soil, Sludge, Waste [4]	--	SW-846 3060 (Modified)[2]/7196
Cr^{+6} in Aqueous	--	SW-846 7196
Cr^{+6} in TCLP Extracts [1] [4]	--	SW-846 7196
Total Mercury in Soil, Sludge, Waste, Aqueous	60	SW-846 7470/7471
Mercury in TCLP Extract [4]	--	SW-846 7470/7471
Total Volatile Organics in Soil, Sludge, Waste, Aqueous	108	SW-846 8240
Volatile Organics in TCLP Extracts [4]	--	SW-846 8240
Total Semivolatile Organics in Soil, Sludge, Waste, Aqueous	29	SW-846 8270
Semivolatile Organics in TCLP Extracts [4]	--	SW-846 8270
Total Sulfide in Soil, Sludge, Waste, Aqueous	29	SW-846 576.1
TOC in Soil, Sludge, Waste, Aqueous	29	EPA Region II
Oil and Grease in Soil, Sludge, Waste, Aqueous	29	SW-846 9071

Notes:
(1) Using deionized water for extraction medium.
(2) The SW-846 Method 3060 modifications include a 2.5 gram digestion to a 100 ml final digest volume plus additional quality control measures.
(3) Total cyanide did not exceed 250 ppm nor did total sulfide exceed 500 ppm.
(4) Total results did not exceed delisting threshold limits.

TABLE E-6
RETENTION RESERVOIR REMDIATION
LIST OF ANALYTICAL PARAMETERS

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

METALS

antimony
arsenic
barium
beryllium
cadmium
total chromium
hexavalent chromium
lead
nickel
selenium
silver
thallium
vanadium
zinc
mercury

VOLATILE ORGANICS

trans-1,2-dichloroethene
methylene chloride
toluene
1,1,1-trichloroethane
carbon disulfide
chloromethane
bromomethane
vinyl chloride
chloroethane
trichlorofluoromethane
1,1-dichloroethene
1,1-dichloroethane
chloroform
1,2-dichloroethane
carbon tetrachloride
bromodichloromethane
1,2-dichloropropane
trans-1,3-dichloropropene
cis-1,3-dichloropropene
trichloroethene
benzene
dibromochloromethane
1,1,2-trichloroethane
2-chloroethylvinyl ether
bromoform
1,1,1,2-tetrachloroethane
1,1,2,2-tetrachloroethane
tetrachloroethene
chlorobenzene
ethyl benzene
total xylenes
1,3-dichlorobenzene
1,2-dichlorobenzene
1,4-dichlorobenzene
acetone
2-butanone
vinyl acetate
4-methyl-2-pentanone
2-hexanone
styrene

SEMIVOLATILE ORGANICS

phenol
2-chlorophenol
4-methylphenol
2-methylphenol
2-nitrophenol
2,4-dimethylphenol
2,4-dichlorophenol
4-chloro-3-methylphenol
2,4,6-trichlorophenol
2,4,5-trichlorophenol

TABLE E-6

SEMIVOLATILE ORGANICS (Cont'd)

2,4-dinitrophenol
4-nitrophenol
2-methyl-4,6-dinitrophenol
pentachlorophenol
pyridine
benzoic acid
naphthalene
acenaphthylene
acenaphthene
fluorene
phenanthrene
2-propyl-n-ol
anthracene
fluoranthene
pyrene
benzo(a)anthracene
chrysene
benzo(b)fluoranthene
benzo(k)fluoranthene
benzo(a)pyrene
indeno(1,2,3-cd)pyrene
dibenzo(a,h)anthracene
benzo(g,h,i)perylene
2-methylnaphthalene
2-chloronaphthalene
N-nitrosodimethylamine
bis(2-chloroethyl)ether
1,3-dichlorobenzene
1,2-dichlorobenzene
1,4-dichlorobenzene
bis(2-chloroisopropyl)ether
N-nitrosodi-*n*-propylamine
hexachloroethane
nitrobenzene
isophorone
bis(2-chloroethoxyl)methane
1,2,4-trichlorobenzene
hexachlorobutadiene
hexachlorocyclopentadiene
dimethylphthalate
2,6-dinitrotoluene
2,4-dinitrotoluene
4-chlorophenylphenyl ether
diethylphthalate
1,2-diphenylhydrazine
N-nitrosodiphenylamine
4-bromophenylphenyl ether
hexachlorobenzene
di-*n*-butyl phthalate
benzidine
butylbenzyl phthalate
bis(2-ethylhexyl)phthalate
3,3'-dichlorobenzidine
di-*n*-octyl phthalate
benzyl alcohol
4-chloroaniline
2-nitroaniline
3-nitroaniline
4-nitroaniline
dibenzofuran

ADDITIONAL PARAMETERS

Oil and Grease
Total Organic Carbon
Total Cyanide
Total Sulfide
Reactivity
Corosivity/pH
Ignitability
Alkalinity
% Solids

TABLE E-7
RETENTION RESERVOIR REMEDIATION
SUMMARY OF BACKGROUND ANALYTICAL RESULTS[1]

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number [2]							
		BG(01)4/28B		BG(02)4/28B		BG(03)4/28B		BG(04)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	0.82	0.0011	0.36	<0.00077	0.74	<0.00077	0.82	0.0015
Arsenic	0.82	8.4	0.0059	8.7	<0.0021	12	<0.0021	8.4	<0.0021
Barium	32.8	88.7	0.205	121	0.363	108	0.24	88.7	0.817
Beryllium	0.082	1.5	<0.00026	1.6	<0.00026	0.98	<0.00026	1.5	<0.00026
Cadmium	1.64	3.9	0.0132	1.2	0.0042	2.6	0.0036	3.9	0.004
Chromium	3.28	11	<0.0027	18.2	<0.0027	20.1	<0.0027	11	0.0119
Lead	0.246	55.3	0.0115	39	0.0039	138	0.005	55.3	0.0078
Mercury	0.0328	<0.12	<0.0002	<0.12	<0.0002	<0.14	<0.0002	<0.12	<0.0002
Nickel	1.64	15.1	0.0155	20.9	0.0188	44.9	0.0185	15.1	0.0294
Selenium	0.82	0.96	<0.0022	1.1	<0.0022	1.9	<0.0022	0.96	<0.0022
Silver	3.28	0.79	<0.00015	0.081	<0.00015	0.19	<0.00015	0.079	<0.00015
Thallium	0.0328	0.25	<0.0016	<0.17	<0.0016	0.26	<0.0016	0.25	<0.0016
Vanadium	3.28	14.8	<0.0028	20.7	<0.0028	20.5	<0.0028	14.8	0.0044
Zinc	115	362	0.932	196	0.537	372	0.419	362	0.125
Additional Parameters									
% Solids		77.8		78.7		70.3		77.8	

TABLE E-7

Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number [2]							
		BG(05)4/28B		BG(32)4/28B		BG(06)4/28B		BG(06)FB4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/l)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	0.37	<0.00077	0.31	0.0012	0.46	<0.00077	0.00053	-
Arsenic	0.82	10.9	<0.0021	10.2	0.0021	17.6	0.0055	0.00059	-
Barium	32.8	101	0.459	92.7	0.629	141	0.787	0.0025	-
Beryllium	0.082	1.1	<0.00026	0.85	0.00038	1.0	<0.00026	0.00044	-
Cadmium	1.64	0.96	0.002	0.82	0.0047	3.5	0.0172	0.0004	-
Chromium	3.28	19.2	<0.0027	15.6	0.0027	66.5	<0.0027	0.0044	-
Lead	0.246	53.4	0.0067	53	0.0099	148	0.0107	0.005	-
Mercury	0.0328	<0.12	<0.0002	<0.11	<0.0002	1.3	<0.0002	<0.0002	-
Nickel	1.64	27.3	0.0102	22.3	0.0158	24.6	0.0369	0.058	-
Selenium	0.82	1.8	<0.0022	1.1	<0.0022	1.5	<0.0022	0.00073	-
Silver	3.28	0.093	<0.00015	0.076	0.00023	0.4	<0.00015	0.000082	-
Thallium	0.0328	0.41	<0.0016	0.23	<0.0016	0.23	<0.0016	0.00087	-
Vanadium	3.28	22.1	<0.0028	19.5	<0.0028	22.6	<0.0028	<0.0007	-
Zinc	115	162	0.196	129	0.261	369	0.494	0.0255	-
Additional Parameters									
% Solids		79.0		80.0		81.1		-	

TABLE E-7

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Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(07)4/27B		BG(08)4/27B		BG(08)FB4/27B		BG(09)4/27B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/l)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	0.33	<0.00077	0.22	0.00082	0.00059	-	0.18	<0.00077
Arsenic	0.82	13.5	<0.0021	10	<0.0021	<0.00053	-	8.6	0.0027
Barium	32.8	156	0.621	114	0.368	0.0011	-	86.7	0.571
Beryllium	0.0656	0.92	<0.00026	0.77	0.00042	0.00031	-	0.59	<0.00026
Cadmium	0.082	2.4	0.0159	0.4	0.0017	0.00032	-	24	0.0108
Chromium	1.64	25.6	<0.0027	19.6	<0.0027	0.0024	-	24.5	0.0043
Lead	0.246	118	0.0199	19	<0.0024	0.0038	-	36.3	0.0047
Mercury	0.0328	0.01	<0.0002	<0.12	<0.0002	<0.0002	-	<0.10	<0.0002
Nickel	1.64	29.6	0.0148	25.9	0.0116	0.0627	-	24.9	0.0432
Selenium	0.82	1.4	<0.0022	1.1	<0.0022	<0.00056	-	1.3	0.0035
Silver	3.28	0.1	<0.00015	0.061	<0.00015	0.000045	-	0.032	<0.0015
Thallium	0.0328	0.17	<0.0016	<0.16	<0.0016	0.0011	-	<0.11	<0.0016
Vanadium	3.28	27.8	<0.0028	23.3	<0.0028	<0.0007	-	17.1	<0.0028
Zinc	115	271	0.368	78.5	0.0527	0.0237	-	574	6.530
Additional Parameters									
% Solids		84.0		80.5		-		83.2	

TABLE E-7

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Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(10)4/27B		BG(01A)4/28B		BG(01A)FB4/28B		BG(02A)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/l)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	0.43	<0.00077	0.3	0.0012	<0.00019	-	0.21	<0.00077
Arsenic	0.82	12.5	0.005	8.1	0.0027	<0.00053	-	8	0.0035
Barium	32.8	137	0.372	127	0.763	0.0011	-	143	0.795
Beryllium	0.0656	0.96	<0.00026	0.97	0.00027	<0.000066	-	0.79	<0.00026
Cadmium	0.082	1.6	0.0022	1.0	0.0029	<0.00017	-	1.1	0.004
Chromium	1.62	26.3	<0.0027	26.4	<0.0027	0.0074	-	22.4	<0.0027
Lead	0.246	64	<0.0024	38.2	0.0072	0.0039	-	38.8	0.0064
Mercury	0.0328	<0.09	<0.0002	<0.12	<0.0002	<0.0002	-	<0.11	<0.0002
Nickel	1.64	27	0.0099	26.1	0.0161	0.126	-	25.8	0.0131
Selenium	0.82	1.3	<0.0022	1.1	<0.0022	<0.00057	-	1.1	<0.0022
Silver	3.28	0.11	<0.00015	0.14	<0.00015	<0.000039	-	0.09	<0.00015
Thallium	0.0328	0.2	<0.0016	0.76	<0.0016	<0.0004	-	0.45	<0.0016
Vanadium	3.28	28.4	<0.0028	29.2	<0.0028	<0.0007	-	30.4	<0.0028
Zinc	115	206	0.153	138	0.151	0.0246	-	136	0.143
Additional Parameters									
% Solids		82.3		69.3		-		77.3	

TABLE E-7

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Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(03A)4/28B		BG(04A)4/28B		BG(33)4/28B		BG(05A)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	0.26	<0.00077	0.14	0.00077	0.24	<0.00077	0.11	0.0019
Arsenic	0.82	6.9	<0.0021	9.3	0.0031	7.2	<0.0021	5.4	<0.0021
Barium	32.8	106	0.3	180	0.846	138	0.902	71.2	0.318
Beryllium	0.0656	0.72	<0.00026	0.92	<0.00026	0.72	<0.00026	0.65	0.0006
Cadmium	0.082	1.5	0.0029	0.79	0.0064	1.3	0.0043	0.34	0.0016
Chromium	1.64	14.3	<0.0027	27.9	<0.0027	29.2	<0.0027	12.9	<0.0027
Lead	0.246	32	0.0062	33	0.0123	58.6	0.015	13.4	<0.0024
Mercury	0.0328	<0.12	<0.0002	<0.13	0.00020	<0.11	<0.0002	<0.1	<0.0002
Nickel	1.64	22.6	0.0094	32.9	0.0244	24.8	0.0208	21.2	8
Selenium	0.82	1.4	<0.0022	1.2	<0.0022	1	<0.0022	0.74	<0.0022
Silver	3.28	0.084	<0.00015	0.12	<0.00015	0.16	<0.00015	0.032	<0.00015
Thallium	0.0328	0.17	<0.0016	0.29	<0.0016	0.23	<0.0016	0.16	<0.0016
Vanadium	3.28	17.3	<0.0028	36.7	<0.0028	29.1	<0.0028	16.3	<0.0028
Zinc	115	130	0.134	144	0.935	390	0.463	61	0.0074
Additional Parameters									
% Solids		79.0		78.6		77.6		84.7	

TABLE E-7

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Analyte	Delisting Threshold Limit (mg/l)	Background Sample Identification Number[2]							
		BG(06A)4/28B		BG(07A)4/28B		BG(08A)4/27B		BG(09A)4/27B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	5.5	0.0054	1.9	0.0059	0.67	0.0023	0.41	<0.00077
Arsenic	0.82	14.1	<0.0021	5.8	<0.0021	15.8	0.0040	8.2	<0.0021
Barium	32.8	411	2.15	71.2	0.181	169	0.461	118	0.576
Beryllium	0.0656	0.46	<0.00026	2.4	<0.00026	1.1	0.0013	0.8	0.00038
Cadmium	0.082	4.2	0.031	3.8	0.0122	3.7	0.0079	1.3	0.0045
Chromium	1.64	19.2	<0.0027	14.1	<0.0027	27.8	0.0042	26.4	<0.0027
Lead	0.246	548	0.23	105	0.0196	146	0.0114	57	0.0078
Mercury	0.0328	<0.33	<0.0002	<0.12	<0.0002	<0.12	<0.0002	<0.12	<0.0002
Nickel	1.64	30.4	0.104	17.7	0.0311	38.2	0.0137	28.2	0.0251
Selenium	0.82	1.3	0.0024	1.1	0.0023	1.4	0.004	1.2	<0.0022
Silver	3.28	2.9	<0.00015	0.083	<0.00015	0.11	0.00017	0.1	<0.00015
Thallium	0.0328	0.34	<0.0016	<0.18	<0.0016	0.2	0.0041	0.39	<0.0016
Vanadium	3.28	10.7	<0.0028	16.8	<0.0028	31.1	0.0028	20.4	<0.0028
Zinc	115	892	4.2	413	1.56	545	0.554	195	0.235
Additional Parameters									
% Solids		85.4		82.0		82.3		82.0	

TABLE E-7

Analyte	Method Detection Limit (mg/l)	Background Sample Identification Number[a]							
		BG(31)4/27B		BG(10A)4/28B		BG(11A)4/27B		BG(12A)4/28B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals									
Antimony	0.0984	0.22	<0.00077	0.19	<0.00077	0.21	<0.00077	0.13	<0.00077
Arsenic	0.82	8.5	<0.0021	4.6	<0.0021	8.6	<0.0021	8	<0.0021
Barium	32.8	125	0.479	112	0.726	111	0.373	129	0.887
Beryllium	0.0656	0.79	0.00031	0.57	<0.00026	0.84	0.00036	0.73	<0.00026
Cadmium	0.082	1.2	0.0035	0.61	0.0019	0.28	<0.00068	0.59	0.0044
Chromium	1.64	24.3	0.0029	20.2	<0.0027	26.9	0.0043	23.5	<0.0027
Lead	0.246	51.7	0.0038	15.7	0.0033	22.6	0.0078	25.5	0.0061
Mercury	0.0328	<0.10	<0.0002	<0.13	<0.0002	<0.10	<0.0002	<0.12	<0.0002
Nickel	1.64	24.3	0.0234	31.6	0.0162	25.1	0.012	27.2	0.0142
Selenium	0.82	0.96	<0.0022	0.84	<0.0022	0.66	<0.0022	1	<0.0022
Silver	3.28	0.075	<0.00015	0.066	<0.00015	0.049	<0.00015	0.07	<0.00015
Thallium	0.0328	0.17	<0.0016	0.18	<0.0016	0.21	<0.0016	0.18	<0.0016
Vanadium	3.28	22.8	<0.0028	28.6	<0.0028	40.9	<0.0028	32.7	<0.0028
Zinc	115	158	0.214	71.5	0.0164	89.1	0.0123	104	0.0767
Additional Parameters									
% Solids		82.7		79.4		79.5		80.3	

TABLE E-7

(Page 8 of 8)

Analyte	Method Detection Limit (mg/l)	Background Sample Identification Number[2]					
		BG(13A)4/28B		BG(14A)4/27B		BG(15A)4/27B	
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Total Conc. (mg/kg)	TCLP Conc. (mg/l)
Metals							
Antimony	0.0984	<0.072	<0.00077	0.3	0.00086	0.24	<.00077
Arsenic	0.82	7.6	0.0026	8.4	<0.0021	15	<0.0021
Barium	32.8	151	0.358	143	0.895	146	0.40
Beryllium	0.0656	0.88	<0.00026	0.86	<.00026	1	<.00026
Cadmium	0.082	1.1	0.0025	1.6	0.0061	1.1	0.0027
Chromium	1.64	25.4	<0.0027	16	0.003	28.9	0.0031
Lead	0.246	42.6	0.022	80.4	0.0155	38.3	0.0059
Mercury	0.0328	<0.13	<0.00020	<0.10	<0.0002	<0.13	<0.0002
Nickel	1.64	26.9	0.0093	20.1	0.0209	36.1	0.0113
Selenium	0.82	1.2	<0.0022	0.92	<0.0022	1.3	<0.0022
Silver	3.28	0.088	<0.00015	0.074	<.00015	0.082	<.00015
Thallium	0.0328	0.15	<0.0016	0.18	<0.0016	0.2	<0.0016
Vanadium	3.28	30.1	<0.0028	<0.18	<0.0028	30.6	<0.0028
Zinc	115	162	0.113	226	0.308	181	0.158
Additional Parameters							
% Solids		76.4		85.1		79.5	

Notes:

(1) Background sampling began on 4/27/93 and was completed on 4/30/93.

(2) Sample Number Designation:
BG(01)4/28B = BG-Background, (01)-Location Modifier, 4/28-Date, B-Delisting Modifier

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 1

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(01)5/13B			E06(10) [2]	E07(05)	F05(11)	F05(12)	F07(11)	F07(11)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	5.3	<0.00077	0.0114	- [7]	-	-	-	-	-
Arsenic	0.82	23.2	0.0038	0.0032	-	-	-	-	-	-
Barium	32.8	93.9	0.178	0.145	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	0.0012	-	-	-	-	-	-
Cadmium	0.082	1.3	0.005	0.004	-	-	-	-	-	-
Chromium	1.64	717	<0.0027	0.0351	-	-	-	-	-	-
Lead	0.246	7,570	<0.0024	0.0308	-	-	-	-	-	-
Mercury	0.0328	0.31	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	34.4	0.0828	0.0282	-	-	-	-	-	-
Selenium	0.82	2.2	<0.0022	0.004	-	-	-	-	-	-
Silver	3.28	0.74	<0.00015	0.00031	-	-	-	-	-	-
Thallium	0.0328	0.29	<0.0016	0.0022	-	-	-	-	-	-
Vanadium	3.28	31.3	<0.0028	0.0035	-	-	-	-	-	-
Zinc	115	2,670	0.0075	0.0126	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.19	<0.056	0.26	0.32	0.16	<0.005
Carbon Disulfide	65.6	-	-	-	0.052	<0.056	<0.05	0.065	<0.051	<0.005
Acetone	65.6	-	-	-	2.2	1.8	3.2	3.2	2.7	<0.01
2-Butanone	32.8	-	-	-	0.45	0.32	0.68	0.71	0.57	<0.01

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 1

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(01)5/13B			E06(10) [2]	E07(05)	F05(11)	F05(12)	F07(11)	F07(11)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Semivolatile Organics										
Phenol	328	3.6	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	230	-	-	-	-	-	-	-	-
TOC	(8)	40000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	16	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.4, 11.8	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	161,000	-	-	-	-	-	-	-	-
% Solids	(8)	45.7	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 2

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(02)5/13B			H03(07) [2]	H06(13)	I06(09)	I08(04)	I08(04) Dup.	I08(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	8.6	<0.00077	0.0066	- [7]	-	-	-	-	-
Arsenic	0.82	20.6	<0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	103	0.134	0.0373	-	-	-	-	-	-
Beryllium	0.0656	0.48	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	0.0021	0.0011	-	-	-	-	-	-
Chromium	1.64	600	<0.0027	0.021	-	-	-	-	-	-
Lead	0.246	6,270	<0.0024	0.0513	-	-	-	-	-	-
Mercury	0.0328	<0.19	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31.7	0.0481	0.0182	-	-	-	-	-	-
Selenium	0.82	2.1	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.58	<0.00015	0.00064	-	-	-	-	-	-
Thallium	0.0328	<0.23	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	32.2	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,450	0.0023	0.0599	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	<0.04	0.41	0.24	0.11	0.22	0.18
Carbon Disulfide	65.6	-	-	-	<0.04	<0.048	0.09	<0.049	0.15	0.16
Acetone	65.6	-	-	-	0.88	4.6	4.1	2.4	3.8	2.9

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 2

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(02)5/13B			H03(07) [2]	H06(13)	I06(09)	I08(04)	I08(04) Dup.	I08(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
2-Butanone	32.8	-	-	-	0.16	0.7	0.75	0.36	0.69	0.53
2-Hexanone	(5)	-	-	-	<0.081	<0.096	<0.1	<0.098	0.1	0.1
Semivolatile Organics										
Phenol	328	1.6	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	330	-	-	-	-	-	-	-	-
TOC	(8)	31000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	16	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.4, 12.3	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	178,000	-	-	-	-	-	-	-	-
% Solids	(8)	53.0	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 3

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(03)5/13B			JJ07(08) [2]	K08(01)	K08(08)	M08(06)	M09(01)	M09(01)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	2.4	<0.00077	0.009	- [7]	-	-	-	-	-
Arsenic	0.82	23.9	<0.0021	0.0021	-	-	-	-	-	-
Barium	32.8	80.5	0.0883	0.0202	-	-	-	-	-	-
Beryllium	0.0656	0.41	<0.00026	0.00037	-	-	-	-	-	-
Cadmium	0.082	1.5	0.0027	0.0049	-	-	-	-	-	-
Chromium	1.64	719	<0.0027	0.0436	-	-	-	-	-	-
Lead	0.246	7,810	<0.0024	0.135	-	-	-	-	-	-
Mercury	0.0328	0.38	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	33.1	0.0436	0.0234	-	-	-	-	-	-
Selenium	0.82	2.4	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.72	<0.00015	0.00036	-	-	-	-	-	-
Thallium	0.0328	<0.26	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	20.7	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	3,230	0.0015	0.354	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.14	0.1	0.24	0.27	0.26	<0.005
Carbon Disulfide	65.6	-	-	-	<0.06	<0.061	<0.061	0.084	0.17	<0.005

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 3

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(03)5/13B			JJ07(08) [2]	K08(01)	K08(08)	M08(06)	M09(01)	M09(01)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Acetone	65.6	-	-	-	3.1	3.0	4.8	4.3	6.1	<0.01
2-Butanone	32.8	-	-	-	0.51	0.49	0.66	0.74	1.0	<0.01
Semivolatile Organics										
Phenol	328	3.4	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	470	-	-	-	-	-	-	-	-
TOC	(8)	43000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	4	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.5, 11.8	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	157,000	-	-	-	-	-	-	-	-
% Solids	(8)	44.6	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 4

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(04)5/13B			N05(12) [2]	O06(05)	O09(07)	O09(07) Dup.	P06(07)	P09(07)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.6	<0.00077	0.0072	- [7]	-	-	-	-	-
Arsenic	0.82	21.7	<0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	108	0.168	0.0258	-	-	-	-	-	-
Beryllium	0.0656	0.54	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	0.0035	<0.00068	-	-	-	-	-	-
Chromium	1.64	542	<0.0027	0.0272	-	-	-	-	-	-
Lead	0.246	5,660	0.0069	0.0857	-	-	-	-	-	-
Mercury	0.0328	0.25	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	32.9	0.0607	0.0167	-	-	-	-	-	-
Selenium	0.82	2.0	<0.0022	0.0027	-	-	-	-	-	-
Silver	3.28	0.61	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	0.29	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	35.5	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,250	<0.0011	0.0808	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.11	0.12	0.17	0.23	<0.047	0.12
Carbon Disulfide	65.6	-	-	-	0.073	0.13	0.16	0.074	0.047	0.06

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 4

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(04)5/13B			N05(12) [2]	O06(05)	O09(07)	O09(07) Dup.	P06(07)	P09(07)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Acetone	65.6	-	-	-	3.4	3.4	5.8	5.2	2.9	4.6
2-Butanone	32.8	-	-	-	0.58	0.55	0.88	0.84	0.44	0.7
Semivolatile Organics										
Phenol	328	1.2	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	490	-	-	-	-	-	-	-	-
TOC	(8)	27000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	16	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.4, 12.0	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	148,000	-	-	-	-	-	-	-	-
% Solids	(8)	53.2	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 5

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(05)5/13B			N11(06) [2]	N11(06) Dup.	N11(05)	O10(05)	O14(10)	P13(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	4.8	<0.00077	0.0072	- [7]	-	-	-	-	-
Arsenic	0.82	13.9	0.0038	<0.0021	-	-	-	-	-	-
Barium	32.8	77.9	0.13	0.0259	-	-	-	-	-	-
Beryllium	0.0656	0.38	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	0.94	0.004	0.0018	-	-	-	-	-	-
Chromium	1.64	585	<0.0027	0.0366	-	-	-	-	-	-
Lead	0.246	6,060	<0.0024	0.217	-	-	-	-	-	-
Mercury	0.0328	0.31	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	29.8	0.0587	0.0184	-	-	-	-	-	-
Selenium	0.82	1.6	<0.0022	0.0023	-	-	-	-	-	-
Silver	3.28	0.61	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.23	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	18.7	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,340	0.004	0.172	-	-	-	-	-	-
Volatile Organics										
Methylene Chloride	0.082	-	-	-	<0.06	<0.005	0.074	<0.057	0.09	<0.056
Toluene	16.4	-	-	-	0.13	<0.005	<0.057	0.071	0.11	<0.056

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 5

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(05)5/13B			N11(06) [2]	N11(06) Dup.	N11(05)	O10(05)	O14(10)	P13(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Acetone	65.6	-	-	-	4.0	<0.01	2.4	3.4	2.6	3.0
2-Butanone	32.8	-	-	-	0.64	<0.01	0.34	0.52	0.49	0.44
Semivolatile Organics										
Phenol	328	3.2	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	450	-	-	-	-	-	-	-	-
TOC	(8)	31000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	16	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.5, 11.7	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	153,000	-	-	-	-	-	-	-	-
% Solids	(8)	53.6	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 6

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(06)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	2.5	<0.00077	0.0074	- [7]	-	-	-	-	-
Arsenic	0.82	21.1	0.0047	<0.0021	-	-	-	-	-	-
Barium	32.8	121	0.15	0.0206	-	-	-	-	-	-
Beryllium	0.0656	0.78	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	0.005	<0.00092	-	-	-	-	-	-
Chromium	1.64	738	<0.0027	0.0449	-	-	-	-	-	-
Lead	0.246	7,070	<0.0024	0.192	-	-	-	-	-	-
Mercury	0.0328	0.35	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	30.8	0.0762	0.0167	-	-	-	-	-	-
Selenium	0.82	5.2	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.74	<0.00015	0.00034	-	-	-	-	-	-
Thallium	0.0328	<0.11	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	30.5	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,830	<0.0011	0.179	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.084	0.088	0.074	0.21	0.33	0.12
Carbon Disulfide	65.6	-	-	-	0.07	0.088	<0.05	0.2	0.2	0.16

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 6

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(06)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Acetone	65.6	-	-	-	2.2	2.0	2.2	1.4	2.6	2.2
2-Butanone	32.8	-	-	-	0.39	0.41	0.36	0.33	0.54	0.46
Semivolatile Organics										
Phenol	328	1.8	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	300	-	-	-	-	-	-	-	-
TOC	(8)	29000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	16	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.4, 12.0	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	157,000	-	-	-	-	-	-	-	-
% Solids	(8)	53.4	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 6 (Duplicate)

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(22)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	7.2	<0.00077	0.0078	- [7]	-	-	-	-	-
Arsenic	0.82	21.2	0.0042	<0.0021	-	-	-	-	-	-
Barium	32.8	103	0.141	0.0251	-	-	-	-	-	-
Beryllium	0.0656	0.32	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	0.0053	0.0092	-	-	-	-	-	-
Chromium	1.64	712	<0.0027	0.042	-	-	-	-	-	-
Lead	0.246	6,410	<0.0024	0.116	-	-	-	-	-	-
Mercury	0.0328	0.22	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31	0.0804	0.0114	-	-	-	-	-	-
Selenium	0.82	2.0	<0.0022	0.0045	-	-	-	-	-	-
Silver	3.28	0.84	<0.00015	0.00056	-	-	-	-	-	-
Thallium	0.0328	<0.11	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	28.6	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,420	<0.0011	0.0941	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.084	0.088	0.074	0.21	0.33	0.12
Carbon Disulfide	65.6	-	-	-	0.07	0.088	<0.05	0.2	0.2	0.16

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 6 (Duplicate)

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(22)5/13B			K13(08) [2]	K14(04)	K14(04) Dup.	L12(09)	L12(12)	L15(02)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Acetone	65.6	-	-	-	2.2	2.0	2.2	1.4	2.6	2.2
2-Butanone	32.8	-	-	-	0.39	0.41	0.36	0.33	0.54	0.46
Semivolatile Organics										
Phenol	328	3.3	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	360	-	-	-	-	-	-	-	-
TOC	(8)	36000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	16	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.5, 12.0	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	155,000	-	-	-	-	-	-	-	-
% Solids	(8)	53.1	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 7

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(07)5/13B			E14(13) [2]	E14(13)FB	F12(15)	F14(02)	F15(16)	G13(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.5	<0.00077	0.0062	- [7]	-	-	-	-	-
Arsenic	0.82	25.3	0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	90.8	0.133	0.0238	-	-	-	-	-	-
Beryllium	0.0656	0.39	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.4	0.0024	<0.0012	-	-	-	-	-	-
Chromium	1.64	674	<0.0027	0.0339	-	-	-	-	-	-
Lead	0.246	7,040	<0.0024	0.106	-	-	-	-	-	-
Mercury	0.0328	0.38	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31.4	0.0573	0.0189	-	-	-	-	-	-
Selenium	0.82	2.2	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.84	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	0.23	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	25.9	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,540	0.0036	0.253	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.16	<0.005	0.12	0.07	0.14	.01
Carbon Disulfide	65.6	-	-	-	0.12	<0.005	<0.044	<0.056	0.066	<0.05
Acetone	65.6	-	-	-	2.0	<0.01	3.6	2.6	4.2	3.7

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 7

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(07)5/13B			E14(13) [2]	E14(13)FB	F12(15)	F14(02)	F15(16)	G13(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
2-Butanone	32.8	-	-	-	0.42	<0.01	0.57	0.53	0.61	0.53
Semivolatile Organics										
Phenol	328	0.72	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	130	-	-	-	-	-	-	-	-
TOC	(8)	30000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	12	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.5, 12.2	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	175,000	-	-	-	-	-	-	-	-
% Solids	(8)	48.9	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 8

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(08)5/13B			B16(03) [2]	C11(03)	C11(07)	D15(10)	D19(02)	D19(02) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.4	<0.00077	0.0055	- [7]	-	-	-	-	-
Arsenic	0.82	20.0	0.0036	<0.0021	-	-	-	-	-	-
Barium	32.8	134	0.32	0.0299	-	-	-	-	-	-
Beryllium	0.0656	0.55	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.1	0.002	<0.00068	-	-	-	-	-	-
Chromium	1.64	674	0.0116	0.0196	-	-	-	-	-	-
Lead	0.246	4,650	0.336	0.0809	-	-	-	-	-	-
Mercury	0.0328	0.19	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	34	0.0802	0.0178	-	-	-	-	-	-
Selenium	0.82	1.7	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.51	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.11	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	52.2	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	1,770	0.0091	0.0365	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	<0.045	<0.044	<0.043	0.097	0.097	0.047
Benzene	0.082	-	-	-	<0.045	<0.044	<0.043	0.049	<0.043	<0.047
Acetone	65.6	-	-	-	1.8	1.2	1.2	1.5	3.6	1.0

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 8

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(08)5/13B			B16(03) [2]	C11(03)	C11(07)	D15(10)	D19(02)	D19(02) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
2-Butanone	32.8	-	-	-	0.32	0.23	0.24	0.21	0.58	0.16
Semivolatile Organics										
Phenol	328	2.6	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	130	-	-	-	-	-	-	-	-
TOC	(8)	30,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	12	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 13, 12.17	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	175,000	-	-	-	-	-	-	-	-
% Solids	(8)	48.3	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 9

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(09)5/12B			E18(04) [2]	E18(04)FB	G17(06)	G19(09)	G19(14)	H19(07)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	10.3	<0.00077	0.0073	- [7]	-	-	-	-	-
Arsenic	0.82	26.3	0.0049	<0.0021	-	-	-	-	-	-
Barium	32.8	98.2	0.0997	0.0184	-	-	-	-	-	-
Beryllium	0.0656	0.40	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.4	0.0034	0.00089	-	-	-	-	-	-
Chromium	1.64	7.6	0.0028	0.0462	-	-	-	-	-	-
Lead	0.246	6,960	<0.0024	0.117	-	-	-	-	-	-
Mercury	0.0328	0.29	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	30.8	0.075	0.0177	-	-	-	-	-	-
Selenium	0.82	1.9	<0.0022	0.0025	-	-	-	-	-	-
Silver	3.28	0.67	<0.00015	0.0004	-	-	-	-	-	-
Thallium	0.0328	<0.12	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	29.6	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,120	0.0011	0.0781	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.12	<0.005	0.16	0.16	0.16	0.35
Carbon Disulfide	65.6	-	-	-	<0.045	<0.005	0.1	<0.05	0.047	0.12
Acetone	65.6	-	-	-	5.2	<0.01	9.6	6.6	7.0	15.0
2-Butanone	32.8	-	-	-	0.6	<0.01	1.1	0.83	0.79	1.8

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 9

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(09)5/12B			E18(04) [2]	E18(04)FB	G17(06)	G19(09)	G19(14)	H19(07)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Semivolatile Organics										
Phenol	328	2.6	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	130	-	-	-	-	-	-	-	-
TOC	(8)	38,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	12	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.4, 11.9	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	142,000	-	-	-	-	-	-	-	-
% Solids	(8)	51.5	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 10

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(10)5/11B			O19(09) [2]	O19(09) Dup.	K18(13)	M20(14)	N21(01)	N21(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	12.1	<0.00077	0.0081	- [7]	-	-	-	-	-
Arsenic	0.82	29.4	0.0072	<0.0021	-	-	-	-	-	-
Barium	32.8	111	0.0911	0.0209	-	-	-	-	-	-
Beryllium	0.0656	0.47	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.5	0.0077	0.0014	-	-	-	-	-	-
Chromium	1.64	868	0.0031	0.0287	-	-	-	-	-	-
Lead	0.246	8,860	<0.0024	0.0947	-	-	-	-	-	-
Mercury	0.0328	0.33	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	35.3	0.12	0.0197	-	-	-	-	-	-
Selenium	0.82	2.5	<0.0022	0.0024	-	-	-	-	-	-
Silver	3.28	0.89	<0.00015	0.00063	-	-	-	-	-	-
Thallium	0.0328	0.17	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	33.2	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,890	<0.0011	0.526	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.14	0.2	0.092	<0.047	0.087	0.046
Acetone	65.6	-	-	-	10.0	17.0	8.4	1.4	3.2	1.7
2-Butanone	32.8	-	-	-	1.1	1.9	1.1	0.18	0.44	0.23
Semivolatile Organics										
Phenol	328	3.2	-	-	-	-	-	-	-	-

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 10

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(10)5/11B			O19(09) [2]	O19(09) Dup.	K18(13)	M20(14)	N21(01)	N21(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
4-Nitroaniline	(6)	4.9	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	350	-	-	-	-	-	-	-	-
TOC	(8)	42000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	1	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.3, 11.6	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	150,000	-	-	-	-	-	-	-	-
% Solids	(8)	53.3	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 11

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(11)5/11B			P19(09) [2]	P19(09)FB	Q19(15)	Q23(12)	Q25(12)	R25(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	7.4	<0.00077	0.0064	- [7]	-	-	-	-	-
Arsenic	0.82	25.3	<0.0021	<0.0021	-	-	-	-	-	-
Barium	32.8	90.0	0.688	0.0441	-	-	-	-	-	-
Beryllium	0.0656	0.40	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.3	<0.00068	0.0013	-	-	-	-	-	-
Chromium	1.64	758	<0.0027	0.0342	-	-	-	-	-	-
Lead	0.246	7,560	<0.0024	0.0618	-	-	-	-	-	-
Mercury	0.0328	0.43	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	32.2	0.0321	0.0244	-	-	-	-	-	-
Selenium	0.82	1.9	<0.0022	0.025	-	-	-	-	-	-
Silver	3.28	0.85	<0.00015	0.00022	-	-	-	-	-	-
Thallium	0.0328	0.12	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	27.9	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,280	0.0044	0.0537	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.083	<0.005	0.11	0.12	0.12	0.66
Carbon Disulfide	65.6	-	-	-	<0.048	<0.005	<0.046	<0.048	<0.046	0.1
Acetone	65.6	-	-	-	4.6	<0.01	4.0	4.8	3.0	9.3
2-Butanone	32.8	-	-	-	0.58	<0.01	0.67	0.65	0.46	1.3

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 11

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(11)5/11B			P19(09) [2]	P19(09)FB	Q19(15)	Q23(12)	Q25(12)	R25(09)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Semivolatile Organics										
Phenol	328	1.5	-	-	-	-	-	-	-	-
Additional Parameters										
Oil and Grease	(8)	200	-	-	-	-	-	-	-	-
TOC	(8)	39000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	10	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.3, 12.0	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	193,000	-	-	-	-	-	-	-	-
% Solids	(8)	52.9	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 12

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(12)5/11B			J23(01) [2]	N23(03)	O25(05)	O26(07)	P25(14)	P25(14) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	8.8	<0.00077	0.0073	- [7]	-	-	-	-	-
Arsenic	0.82	25.2	0.0055	<0.0021	-	-	-	-	-	-
Barium	32.8	80.1	0.108	0.0273	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	0.00046	-	-	-	-	-	-
Cadmium	0.082	4.9	0.005	0.0035	-	-	-	-	-	-
Chromium	1.64	707	<0.0027	0.0451	-	-	-	-	-	-
Lead	0.246	6,860	<0.0024	0.086	-	-	-	-	-	-
Mercury	0.0328	0.50	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	31.3	0.1	0.28	-	-	-	-	-	-
Selenium	0.82	1.5	<0.0022	0.0034	-	-	-	-	-	-
Silver	3.28	0.97	<0.00015	0.00051	-	-	-	-	-	-
Thallium	0.0328	0.13	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	24.8	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,050	0.0026	0.046	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.11	0.13	0.16	0.2	0.19	0.26
Acetone	65.6	-	-	-	2.5	1.8	5.2	3.7	4.9	6.0
2-Butanone	32.8	-	-	-	0.36	0.26	0.61	0.58	0.7	0.9
Semivolatile Organics										
Phenol	328	2	-	-	-	-	-	-	-	-

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 12

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(12)5/11B			J23(01) [2]	N23(03)	O25(05)	O26(07)	P25(14)	P25(14) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Additional Parameters										
Oil and Grease	(8)	320	-	-	-	-	-	-	-	-
TOC	(8)	47000	-	-	-	-	-	-	-	-
Cyanide	3.28	1.1	-	-	-	-	-	-	-	-
Sulfide	(8)	2.0	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.2, 12.0	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	155,000	-	-	-	-	-	-	-	-
% Solids	(8)	51.0	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 13

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(13)5/6B			F24(16) [2]	F24(16)FB	G22(04)	G24(04)	G26(08)	J23(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	13.8	0.0019	0.012	- [7]	-	-	-	-	-
Arsenic	0.82	33	0.0093	0.0034	-	-	-	-	-	-
Barium	32.8	95.8	0.204	0.0102	-	-	-	-	-	-
Beryllium	0.0656	0.45	<0.00026	0.00074	-	-	-	-	-	-
Cadmium	0.082	2.1	0.0085	0.0023	-	-	-	-	-	-
Chromium	1.64	843	<0.0027	0.0347	-	-	-	-	-	-
Lead	0.246	8,880	<0.0024	0.155	-	-	-	-	-	-
Mercury	0.0328	0.74	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	42.1	0.156	0.032	-	-	-	-	-	-
Selenium	0.82	4.1	0.0031	0.0034	-	-	-	-	-	-
Silver	3.28	1.1	<0.00015	0.0002	-	-	-	-	-	-
Thallium	0.0328	<0.28	<0.0016	0.0017	-	-	-	-	-	-
Vanadium	3.28	28.9	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	3,180	0.0093	0.0817	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.17	<0.005	0.14	0.097	0.058	0.15
Acetone	65.6	-	-	-	3.7	<0.01	2.7	2.0	1.4	3.8
2-Butanone	32.8	-	-	-	0.73	<0.01	046	0.35	0.2	0.61
Semivolatile Organics										
Phenol	328	4.7	-	-	-	-	-	-	-	-

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 13

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(13)5/6B			F24(16) [2]	F24(16)FB	G22(04)	G24(04)	G26(08)	J23(16)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Additional Parameters										
Oil and Grease	(8)	260	-	-	-	-	-	-	-	-
TOC	(8)	52000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	14	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.2, 12.3	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	162,000	-	-	-	-	-	-	-	-
% Solids	(8)	47.2	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 14

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	7.1	0.0033	0.0106	- [7]	-	-	-	-	-
Arsenic	0.82	23.5	0.0043	0.0022	-	-	-	-	-	-
Barium	32.8	111	0.245	0.294	-	-	-	-	-	-
Beryllium	0.0656	0.53	<0.00026	<0.00026	-	-	-	-	-	-
Cadmium	0.082	1.2	0.0065	<0.00096	-	-	-	-	-	-
Chromium	1.64	629	0.0028	0.0143	-	-	-	-	-	-
Lead	0.246	5,560	0.0141	0.138	-	-	-	-	-	-
Mercury	0.0328	0.48	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	33.9	0.144	0.0268	-	-	-	-	-	-
Selenium	0.82	2.1	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.73	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.21	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	31.1	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	1,690	0.0107	0.190	-	-	-	-	-	-
Volatile Organics										
Methylene Chloride	0.082	-	-	-	0.13	0.1	<0.043	<0.045	<0.049	<0.048
Toluene	16.4	-	-	-	0.066	0.05	0.12	0.18	0.19	0.17
Acetone	65.6	-	-	-	1.5	1.1	2.5	3.6	5.4	4.9
2-Butanone	32.8	-	-	-	0.28	0.26	0.44	0.67	0.94	0.7

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 14

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Semivolatile Organics (10)										
Additional Parameters										
Oil and Grease	(8)	220	-	-	-	-	-	-	-	-
TOC	(8)	31000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	8.0	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.1, 12.1	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	147,000	-	-	-	-	-	-	-	-
% Solids	(8)	56.4	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 14 (Duplicate)

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	6.5	0.0043	0.0089	[7]	-	-	-	-	-
Arsenic	0.82	24	0.0055	0.0039	-	-	-	-	-	-
Barium	32.8	114	0.241	0.0105	-	-	-	-	-	-
Beryllium	0.0656	0.52	<0.00026	0.00027	-	-	-	-	-	-
Cadmium	0.082	1.3	0.0071	0.001	-	-	-	-	-	-
Chromium	1.64	565	<0.0027	0.0166	-	-	-	-	-	-
Lead	0.246	5,610	<0.0024	0.0328	-	-	-	-	-	-
Mercury	0.0328	0.4	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	34	0.15	0.0265	-	-	-	-	-	-
Selenium	0.82	2.4	<0.0022	0.0033	-	-	-	-	-	-
Silver	3.28	0.72	<0.00015	<0.00015	-	-	-	-	-	-
Thallium	0.0328	<0.22	<0.0016	<0.0016	-	-	-	-	-	-
Vanadium	3.28	29.2	<0.0028	0.0033	-	-	-	-	-	-
Zinc	115	1,640	0.0049	0.0351	-	-	-	-	-	-
Volatile Organics										
Methylene Chloride	0.082	-	-	-	0.13	0.1	<0.043	<0.045	<0.049	<0.048
Toluene	16.4	-	-	-	0.066	0.05	0.12	0.18	0.19	0.17
Acetone	65.6	-	-	-	1.5	1.1	2.5	3.6	5.4	4.9
2-Butanone	32.8	-	-	-	0.28	0.26	0.44	0.67	0.94	0.7

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 14 (Duplicate)

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(14)5/6B			C23(15) [2]	C26(07)	C27(02)	D26(05)	E25(15)	E25(15) Dup.
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Semivolatile Organics (10)										
Additional Parameters										
Oil and Grease	(8)	180	-	-	-	-	-	-	-	-
TOC	(8)	36,000	-	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-	-
Sulfide	(8)	8.0	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.1, 12.1	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	153,000	-	-	-	-	-	-	-	-
% Solids	(8)	55.3	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 15

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(15)5/5B			D28(05) [2]	D28(05) Dup.	D29(06)	E29(06)	E30(03)	F27(15)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	10.7	0.0024	0.012	- [7]	-	-	-	-	-
Arsenic	0.82	31	0.0082	0.0029	-	-	-	-	-	-
Barium	32.8	96.2	0.216	0.0121	-	-	-	-	-	-
Beryllium	0.0656	0.48	<0.00026	0.0019	-	-	-	-	-	-
Cadmium	0.082	1.7	0.0073	0.0028	-	-	-	-	-	-
Chromium	1.64	752	<0.0027	0.0243	-	-	-	-	-	-
Lead	0.246	7,960	<0.0024	0.0939	-	-	-	-	-	-
Mercury	0.0328	0.56	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	36.5	0.151	0.0415	-	-	-	-	-	-
Selenium	0.82	2.8	<0.0022	<0.0022	-	-	-	-	-	-
Silver	3.28	0.97	<0.00015	0.00037	-	-	-	-	-	-
Thallium	0.0328	<0.29	<0.0016	0.0028	-	-	-	-	-	-
Vanadium	3.28	28.5	<0.0028	<0.0028	-	-	-	-	-	-
Zinc	115	2,070	0.009	0.045	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.24	0.8	0.6	0.24	0.16	0.1
Acetone	65.6	-	-	-	5.3	9.2	9.3	3.7	3.5	1.8
2-Butanone	32.8	-	-	-	1.2	1.6	1.4	0.66	0.46	0.26
Semivolatile Organics (10)										

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 15

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(15)5/5B			D28(05) [2]	D28(05) Dup.	D29(06)	E29(06)	E30(03)	F27(15)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Additional Parameters										
Oil and Grease	(8)	490	-	-	-	-	-	-	-	-
TOC	(8)	55000	-	-	-	-	-	-	-	-
Cyanide	3.28	1.1	-	-	-	-	-	-	-	-
Sulfide	(8)	8.0	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.2, 12.4	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	160,000	-	-	-	-	-	-	-	-
% Solids	(8)	53.9	-	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 16

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]						
		C(16)5/5B			G27(12) [2]	G29(14)	G29(14) Dup.	I29(01)	I30(04)	I30(12)	I30(12)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals											
Antimony	0.0984	12.2	0.0022	0.0143	- [7]	-	-	-	-	-	-
Arsenic	0.82	33	0.0073	0.0029	-	-	-	-	-	-	-
Barium	32.8	108	0.206	0.0161	-	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	<0.00026	-	-	-	-	-	-	-
Cadmium	0.082	2.2	0.0088	0.0021	-	-	-	-	-	-	-
Chromium	1.64	828	<0.0027	0.0137	-	-	-	-	-	-	-
Lead	0.246	8,870	<0.0024	0.0804	-	-	-	-	-	-	-
Mercury	0.0328	0.7	<0.0002	<0.0002	-	-	-	-	-	-	-
Nickel	1.64	42.1	0.152	0.0424	-	-	-	-	-	-	-
Selenium	0.82	3	<0.0022	<0.0022	-	-	-	-	-	-	-
Silver	3.28	1.2	<0.00015	<0.00015	-	-	-	-	-	-	-
Thallium	0.0328	<0.27	<0.0016	<0.0016	-	-	-	-	-	-	-
Vanadium	3.28	32.5	<0.0028	<0.0028	-	-	-	-	-	-	-
Zinc	115	3,140	0.011	0.0648	-	-	-	-	-	-	-
Volatile Organics											
Methylene Chloride	0.082	-	-	-	<0.048	<0.05	0.029	<0.049	0.18	<0.041	<0.005

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 16

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]						
		C(16)5/5B			G27(12) [2]	G29(14).	G29(14) Dup.	I29(01)	I30(04)	I30(12)	I30(12)FB
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Toluene	16.4	-	-	-	0.3	0.17	0.01	0.24	0.31	0.08	<0.005
Acetone	65.6	-	-	-	3.6	3.2	0.25	3.9	4.3	2.0	<0.01
2-Butanone	32.8	-	-	-	0.57	0.53	0.024	0.63	0.99	0.3	<0.01
Semivolatile Organics (10)											
Additional Parameters											
Oil and Grease	(8)	560	-	-	-	-	-	-	-		-
TOC	(8)	46000	-	-	-	-	-	-	-		-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-		-
Sulfide	(8)	8.0	-	-	-	-	-	-	-		-
Reactivity	(8)	NO	-	-	-	-	-	-	-		-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.1, 12.4	-	-	-	-	-	-	-		-
Ignitability	(8)	NO	-	-	-	-	-	-	-		-
Alkalinity	(8)	164,000	-	-	-	-	-	-	-		-
% Solids	(8)	49.6	-	-	-	-	-	-	-		-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 17

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]				
		C(17)5/4B			K32(14) [2]	L31(09)	L32(04)	N29(11)	N30(10)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals									
Antimony	0.0984	12	0.0019	0.0113	- [7]	-	-	-	-
Arsenic	0.82	25.2	0.0079	0.0074	-	-	-	-	-
Barium	32.8	114	0.18	0.0148	-	-	-	-	-
Beryllium	0.0656	0.53	<0.00026	0.00063	-	-	-	-	-
Cadmium	0.082	1.93	0.0066	<0.0068	-	-	-	-	-
Chromium	1.64	870	<0.0027	0.0254	-	-	-	-	-
Lead	0.246	7,650	<0.0024	0.0348	-	-	-	-	-
Mercury	0.0328	0.61	<0.0002	<0.0002	-	-	-	-	-
Nickel	1.64	42.6	0.136	0.0276	-	-	-	-	-
Selenium	0.82	31.6	<0.0022	0.0061	-	-	-	-	-
Silver	3.28	0.88	<0.00015	0.00025	-	-	-	-	-
Thallium	0.0328	<0.31	<0.0016	0.0072	-	-	-	-	-
Vanadium	3.28	51.8	<0.0028	0.0051	-	-	-	-	-
Zinc	115	2,370	0.0065	0.043	-	-	-	-	-
Volatile Organics									
Toluene	16.4	-	-	-	0.055	0.13	0.09	0.32	0.13
Acetone	65.6	-	-	-	1.0	1.9	1.4	5.0	1.7
2-Butanone	32.8	-	-	-	0.15	0.31	0.22	0.87	0.3
Semivolatile Organics (10)									

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 17

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]				
		C(17)5/4B			K32(14) [2]	L31(09)	L32(04)	N29(11)	N30(10)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Additional Parameters									
Oil and Grease	(8)	820	-	-	-	-	-	-	-
TOC	(8)	37000	-	-	-	-	-	-	-
Cyanide	3.28	<1.0	-	-	-	-	-	-	-
Sulfide	(8)	14	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.1, 12.3	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-
Alkalinity	(8)	168,000	-	-	-	-	-	-	-
% Solids	(8)	51.0	-	-	-	-	-	-	-

Table E-8
Retention Reservoir Remediaiton
Summary of Delisting Analytical Results
for Section 18

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(18)5/3B			O30(03) [2]	O31(13)	O33(14)	O33(14)FB	P31(13)	Q30(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Metals										
Antimony	0.0984	11.3	0.0028	0.0125	- [7]	-	-	-	-	-
Arsenic	0.82	26.5	0.0073	0.0053	-	-	-	-	-	-
Barium	32.8	94.8	0.168	0.168	-	-	-	-	-	-
Beryllium	0.0656	0.46	<0.00026	0.0025	-	-	-	-	-	-
Cadmium	0.082	2.2	0.0048	0.0056	-	-	-	-	-	-
Chromium	1.64	647	<0.0027	0.0227	-	-	-	-	-	-
Lead	0.246	7,380	0.0056	0.083	-	-	-	-	-	-
Mercury	0.0328	0.77	<0.0002	<0.0002	-	-	-	-	-	-
Nickel	1.64	43	0.144	0.0411	-	-	-	-	-	-
Selenium	0.82	3.3	<0.0022	0.005	-	-	-	-	-	-
Silver	3.28	1	<0.00015	0.00029	-	-	-	-	-	-
Thallium	0.0328	<0.24	<0.0016	0.0048	-	-	-	-	-	-
Vanadium	3.28	32.6	<0.0028	0.0038	-	-	-	-	-	-
Zinc	115	3,640	0.028	0.0827	-	-	-	-	-	-
Volatile Organics										
Toluene	16.4	-	-	-	0.26	0.14	<0.041	<0.005	0.1	0.26
Total Xylenes	164	-	-	-	<0.047	<0.053	<0.041	<0.005	<0.049	0.1
Acetone	65.6	-	-	-	4.2	2.7	1.1	<0.01	1.1	4.8
2-Butanone	32.8	-	-	-	0.64	0.45	0.18	<0.01	0.18	0.79
Semivolatile Organics (10)										
Additional Parameters										
Oil and Grease	(8)		-	-	-	-	-	-	-	-
TOC	(8)	46000	-	-	-	-	-	-	-	-

Table E-8
Retention Seservoir Remediation
Summary of Delisting Analytical Results
for Section 18

Keystone Steel & Wire Company
Bartonville, Illinois

Analyte [4]	Delisting Threshold Limit (mg/l)	Composite Sample [1]			Grab Samples [1]					
		C(18)5/3B			O30(03) [2]	O31(13)	O33(14)	O33(14)FB	P31(13)	Q30(12)
		Total Conc. (mg/kg)	TCLP Conc. (mg/l)	Maximum MEP Conc.[3] (mg/l)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)	Total Conc. (mg/kg)
Cyanide	3.28	1.1	-	-	-	-	-	-	-	-
Sulfide	(8)	12	-	-	-	-	-	-	-	-
Reactivity	(8)	NO	-	-	-	-	-	-	-	-
Corrosivity, pH (IEA, Daily)	(8)	NO, 12.0, 11.7	-	-	-	-	-	-	-	-
Ignitability	(8)	NO	-	-	-	-	-	-	-	-
Alkalinity	(8)	163,000	-	-	-	-	-	-	-	-
% Solids	(8)	51.7	-	-	-	-	-	-	-	-

Notes:

(1) Sample Number Designation:
C(01)5/13B = C-Composite, (01)-Section Number, 5/13-Date, B-Delisting Modifier
G(01)E06(10)5/20B = G-Grab, (01)-Section, E06-Cell Number, (10)-Subcell Number, 5/20-Date, B-Delisting Modifier
FB = Field Blank

(2) Sample identification number has been shortened. The sample type, section number, date, and delisting modifier have been dropped. Example = G(01)E06(10)5/20B = E06(10)

(3) These values represent the maximum concentration of the nine MEP dilutions analyzed for the corresponding sections.

(4) Only detected analytes are listed.

(5) 2-Hexanone is not listed as 40 CFR 261, Appendix VIII (or 35 IAC 721, Appendix H) compound.

(6) There is not an established health-based level (HBL) for 4-nitroanaline as of July 1992.

(7) A "-" indicates the analysis was not performed for that sample.

(8) Delisting threshold not required.

(9) N/A = Not applicable.

(10) No semivolatile organics detected.

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 1

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0028	0.0037	0.0045	0.0056	0.007	0.0078	0.0088	0.0092	0.0114
Arsenic	0.820	0.0038	0.0025	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	0.003	0.0032	0.003
Barium	32.8	0.178	0.027	0.0145	0.0092	0.0092	0.0089	0.011	0.0068	0.0071	0.0066
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	0.00045	0.00057	<0.00026	0.0003	<0.00026	0.0012
Cadmium	0.082	0.005	0.004	0.0013	<0.00068	<0.00068	0.00091	0.0014	0.0013	0.0013	0.0018
Chromium	1.64	<0.0027	0.0351	0.0321	0.0312	0.0253	0.0238	0.019	0.0154	0.013	0.0109
Lead	0.246	<0.0024	0.0308	0.0191	0.0091	0.0033	0.0025	0.004	<0.0024	0.0115	0.0185
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0828	0.0282	0.0132	0.0096	0.0082	0.0067	0.0059	0.0059	0.0055	0.0056
Selenium	0.82	<0.0022	0.004	0.0026	<0.0022	0.0038	<0.0022	0.003	0.0032	0.0039	0.003
Silver	3.28	<0.00015	<0.00015	<0.00015	0.00031	<0.00015	<0.00015	0.0002	<0.00015	<0.00015	0.00019
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	0.0016	0.002	0.0017	0.0019	0.0022
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	0.0035
Zinc	115	0.0075	0.007	0.0082	0.006	0.0058	0.0059	0.007	0.0034	0.0103	0.0126

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 2

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0024	0.003	0.0035	0.0039	0.0046	0.0059	0.006	0.0062	0.0066
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.134	0.0373	0.0224	0.0162	0.0135	0.0122	0.0117	0.0087	0.0085	0.0125
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0021	<0.00087	<0.00068	<0.00068	<0.00068	0.0011	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0155	0.0184	0.021	0.0159	0.0145	0.0128	0.0116	0.0097	0.0075
Lead	0.246	<0.0024	0.0498	0.03	0.0459	0.024	0.0447	0.0366	0.0407	0.0513	0.038
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0481	0.0182	0.0124	0.011	0.008	0.0072	0.0049	0.0047	0.0043	0.0044
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00064	<0.00015	<0.00026	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0023	0.0126	0.0219	0.0312	0.0162	0.0402	0.0528	0.0182	0.0272	0.0599

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 3

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0026	0.003	0.0042	0.005	0.007	0.0072	0.009	0.0087	0.0085
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	0.0021	<0.0021
Barium	32.8	0.0883	0.0202	0.0118	0.0092	0.007	0.0084	0.0057	0.0125	0.0084	0.015
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	0.00037
Cadmium	0.082	0.0027	0.0049	<0.00068	<0.00068	<0.00068	0.00087	0.00074	0.001	0.0012	0.0011
Chromium	1.64	<0.0027	0.0244	0.0436	0.0377	0.0348	0.0281	0.00179	0.0175	0.0145	0.0163
Lead	0.246	<0.0024	0.0897	0.0548	0.069	0.0417	0.0546	0.0208	0.065	0.045	0.135
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0436	0.0234	0.0108	0.0091	0.0082	0.0068	0.0046	0.0062	0.0049	0.0065
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00036	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0015	0.006	0.0242	0.0302	0.025	0.0334	0.022	0.0718	0.0276	0.354

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 4

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0019	0.003	0.0035	0.0051	0.0054	0.0066	0.0072	0.0062	0.0063
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.168	0.0258	0.0183	0.0123	0.0113	0.01	0.0131	0.0071	0.0121	0.0157
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	0.00028	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0035	<0.00068	<0.00068	<0.00068	<0.00068	0.0008	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0164	0.0272	0.0252	0.0215	0.0193	0.017	0.0142	0.0105	0.0112
Lead	0.246	0.0069	0.0299	0.0302	0.0383	0.0343	0.0651	0.0856	0.0622	0.0584	0.0857
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0607	0.0167	0.0118	0.0088	0.0076	0.0063	0.0047	0.0056	0.0046	0.0049
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	0.0027	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	0.0038	0.0145	0.0141	0.0185	0.0378	0.0564	0.0378	0.0324	0.0808

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 5

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0025	0.003	0.0029	0.0038	0.0036	0.006	0.0064	0.0067	0.0072
Arsenic	0.820	0.0038	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.13	0.0259	0.017	0.0113	0.0109	0.0058	0.0102	0.0076	0.0157	0.014
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.004	0.0018	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0268	0.0366	0.0361	0.0351	0.0197	0.0241	0.0099	0.0182	0.018
Lead	0.246	<0.0024	0.0377	0.0279	0.0238	0.0442	0.0239	0.0379	0.032	0.173	0.217
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0587	0.0184	0.0113	0.0081	0.0081	0.0045	0.0055	0.0037	0.005	0.0056
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	0.0023	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.004	0.0071	0.011	0.0113	0.0284	0.0207	0.0317	0.0204	0.0939	0.172

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 5 (REANALYSIS)

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0019	0.0026	0.003	0.0029	0.0028	0.0032	0.0039	0.0048	0.0055	0.0061
Arsenic	0.820	0.0064	0.003	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.159	0.0325	0.0188	0.0177	0.013	0.0102	0.0087	0.0071	0.0054	0.0059
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	0.0005	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.005	0.0029	0.00082	0.0011	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	0.0011
Chromium	1.64	0.0031	0.0193	0.0289	0.0324	0.0328	0.0292	0.0284	0.0191	0.0157	0.0215
Lead	0.246	0.0162	0.0294	0.0285	0.0158	0.0099	0.0043	0.0052	0.0039	0.0024	0.0028
Mercury	0.0328	--	--	--	--	--	--	--	--	--	--
Nickel	1.64	0.0697	0.0208	0.0127	0.0122	0.0085	0.0074	0.0072	0.006	0.0057	0.0065
Selenium	0.82	<0.0022	0.0046	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.006	0.0096	0.0078	0.0143	0.0089	0.0022	0.0064	0.0044	0.0028	0.0049

Note:

-- - Not Analyzed

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 6

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0027	0.0045	0.0052	0.0063	0.0071	0.0062	0.0073	0.0074	0.0062
Arsenic	0.820	0.0047	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.15	0.0206	0.0127	0.0072	0.0115	0.0096	0.0142	0.0114	0.0133	0.018
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.005	0.00089	<0.00068	<0.00068	<0.00068	<0.00092	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0303	0.0449	0.0369	0.0272	0.0229	0.0175	0.0165	0.0152	0.0136
Lead	0.246	<0.0024	0.0188	0.0467	0.0294	0.0603	0.0422	0.0434	0.0512	0.192	0.141
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0762	0.0167	0.0106	0.0093	0.0064	0.006	0.004	0.0052	0.0036	0.0048
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	0.00017	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.00034	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.00016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	0.0035	0.0246	0.0195	0.024	0.0227	0.0374	0.0393	0.076	0.179

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 6 (DUPLICATE)

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0029	0.0055	0.0065	0.0078	0.0074	0.0073	0.0076	0.0068	0.0065
Arsenic	0.820	0.0042	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.141	0.0251	0.0181	0.01	0.0163	0.0201	0.0178	0.015	0.017	0.0145
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0053	<0.00068	0.0092	0.001	0.00094	0.00097	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0259	0.042	0.0406	0.0223	0.0219	0.0184	0.0167	0.0169	0.0132
Lead	0.246	<0.0024	0.0128	0.062	0.0945	0.674	0.116	0.0652	0.0605	0.0571	0.0647
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0804	0.015	0.0111	0.0114	0.0066	0.0056	0.0047	0.004	0.0044	0.0041
Selenium	0.82	<0.0022	<0.0022	0.0045	0.0039	0.0024	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	0.00056	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.00034	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	0.0067	0.0311	0.0672	0.0481	0.0941	0.0803	0.0304	0.0448	0.0567

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 7

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0017	0.0025	0.003	0.0042	0.0053	0.0056	0.0054	0.0062	0.006
Arsenic	0.820	0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.133	0.0238	0.017	0.0104	0.0103	0.0118	0.021	0.0199	0.0136	0.0111
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0024	0.0012	<0.00068	<0.00068	<0.00068	0.00088	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0262	0.0339	0.028	0.0268	0.0237	0.0219	0.0231	0.0175	0.0147
Lead	0.246	<0.0024	0.0284	0.0351	0.0304	0.066	0.07	0.0907	0.106	0.0573	0.06
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0573	0.0189	0.0111	0.0089	0.0077	0.0064	0.0058	0.0062	0.0049	0.0051
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0036	0.0047	0.0218	0.0139	0.0298	0.0435	0.0571	0.253	0.0565	0.109

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 8

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0013	0.0019	0.0021	0.0033	0.0037	0.005	0.0054	0.0055	0.0055
Arsenic	0.820	0.0036	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.32	0.0299	0.0174	0.0143	0.0135	0.0115	0.0102	0.0098	0.0113	0.01
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.002	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	0.0116	0.01	0.0152	0.0196	0.0173	0.0162	0.0141	0.0126	0.0123	0.0092
Lead	0.246	0.336	0.0296	0.0317	0.0809	0.0383	0.0652	0.0431	0.0644	0.0734	0.0729
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0802	0.0178	0.0111	0.0089	0.0083	0.0065	0.0051	0.0053	0.0047	0.0043
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0091	0.0145	0.0162	0.0277	0.0217	0.0347	0.0315	0.0296	0.0365	0.0319

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 9

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0028	0.0048	0.0048	0.0067	0.006	0.0062	0.0073	0.0069	0.0067
Arsenic	0.820	0.0049	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.0997	0.0184	0.0125	0.0069	0.012	0.0177	0.0071	0.013	0.0122	0.0122
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0034	0.00089	<0.00068	<0.00068	<0.00068	<0.00068	0.00071	<0.00068	0.00078	0.00088
Chromium	1.64	0.0028	0.0347	0.0462	0.0401	0.0323	0.0251	0.0231	0.021	0.0206	0.0179
Lead	0.246	<0.0024	0.0146	0.0221	0.0325	0.0453	0.117	0.0112	0.0581	0.0621	0.0814
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.075	0.0177	0.0116	0.0093	0.0071	0.0053	0.0041	0.0047	0.0049	0.0056
Selenium	0.82	<0.0022	0.0025	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.0004	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	0.004	0.0149	0.0166	0.031	0.0781	0.0106	0.0551	0.0425	0.0457

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 10

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.005	0.0081	0.0074	0.0073	0.0069	0.0062	0.0066	0.0061	0.0062
Arsenic	0.820	0.0072	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.0911	0.0091	0.011	0.0081	0.0121	0.0168	0.0209	0.0167	0.0167	0.0156
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0077	0.0014	<0.00071	<0.00068	<0.00068	<0.00068	0.00088	0.0012	0.001	0.00097
Chromium	1.64	0.0031	0.0213	0.0287	0.0232	0.0204	0.0187	0.0221	0.0173	0.0157	0.0131
Lead	0.246	<0.0024	0.0066	0.0696	0.0553	0.0399	0.0947	0.0817	0.0489	0.0599	0.0721
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.12	0.0197	0.0111	0.0085	0.007	0.0053	0.0052	0.0056	0.0046	0.0051
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	0.0024	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00027	<0.00015	0.00063	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	<0.0011	0.0077	0.0361	0.0286	0.0554	0.058	0.233	0.0604	0.526	0.0614

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 11

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0018	0.0028	0.0028	0.0038	0.004	0.0048	0.0064	0.0062	0.0061
Arsenic	0.820	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.688	0.0441	0.0315	0.0181	0.0162	0.0128	0.0109	0.014	0.0144	0.0127
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.0026	<0.00026	<0.00026
Cadmium	0.082	<0.00068	0.0013	0.001	<0.00068	<0.00068	<0.00068	<0.00068	0.0007	<0.00068	0.001
Chromium	1.64	<0.0027	0.027	0.0342	0.0299	0.0258	0.0205	0.0186	0.0182	0.0169	0.0147
Lead	0.246	<0.0024	0.0618	0.0484	0.0515	0.0249	0.0216	0.0239	0.0233	0.033	0.045
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.0321	0.0244	0.0151	0.0109	0.0102	0.0072	0.0054	0.0062	0.008	0.0056
Selenium	0.82	<0.0022	<0.0022	0.0037	<0.0022	0.0033	<0.0022	0.025	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.00022	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0044	0.0088	0.0148	0.0174	0.022	0.0132	0.0184	0.0179	0.0229	0.0537

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9

RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 12

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	<0.00077	0.0033	0.0042	0.0044	0.0053	0.0059	0.0058	0.0073	0.0068	0.007
Arsenic	0.820	0.0055	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.108	0.0273	0.0115	0.006	0.0076	0.007	0.0104	0.0086	0.0073	0.0078
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	0.00046	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.005	0.0035	0.0011	<0.00068	<0.00068	0.0014	0.00071	0.001	0.001	0.001
Chromium	1.64	<0.0027	0.0345	0.0451	0.0415	0.0363	0.0345	0.029	0.0309	0.026	0.0203
Lead	0.246	<0.0024	0.0305	0.0102	0.0112	0.0138	0.0221	0.0342	0.0362	0.086	0.0728
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.1	0.028	0.0151	0.0108	0.0094	0.0072	0.0048	0.0059	0.0051	0.0051
Selenium	0.82	<0.0022	0.0034	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	0.00023	<0.00015	0.00051	<0.00015	<0.00016	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.00028
Zinc	115	0.0026	0.0078	0.0113	0.0135	0.0112	0.0128	0.0209	0.0198	0.046	0.0392

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9
RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 13

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0019	0.0071	0.0108	0.012	0.0105	0.0099	0.0089	0.009	0.006	0.0086
Arsenic	0.820	0.0093	<0.0021	0.0032	0.0034	0.0028	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.204	0.0102	0.0028	0.0054	0.0057	0.01	0.008	0.009	0.0047	0.0094
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	0.00074	0.00066	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0085	0.0023	0.0011	0.0009	0.00098	0.00096	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0136	0.0244	0.0347	0.00227	0.0176	0.0216	0.0176	0.0174	0.0155
Lead	0.246	<0.0024	0.0097	0.0067	0.155	0.0581	0.0259	0.0291	0.0252	0.0423	0.0393
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.156	0.032	0.0169	0.0106	0.0059	0.0044	0.006	0.0051	0.0028	0.0046
Selenium	0.820	0.0031	<0.0022	<0.0022	0.0034	0.0029	0.0022	<0.0022	<0.0022	0.0023	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.0002	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	0.0017	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0093	0.0158	0.0155	0.0496	0.0282	0.0817	0.019	0.0452	0.052	0.0266

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9
RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 14

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0033	0.0096	0.0106	0.0089	0.008	0.007	0.0062	0.005	0.0049	0.0048
Arsenic	0.820	0.0043	<0.0021	0.0022	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.245	0.0177	0.0059	0.0108	0.008	0.0112	0.014	0.0265	0.0096	0.0294
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0065	<0.00096	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	0.0028	0.0109	0.013	0.0143	0.0094	0.0088	0.0092	0.0102	0.0068	0.007
Lead	0.246	0.0141	0.0074	0.009	0.072	0.0399	0.0429	0.0504	0.138	0.0189	0.0838
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.144	0.0268	0.014	0.0123	0.0083	0.0044	0.0051	0.0053	0.0036	0.0048
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0107	0.0172	0.0101	0.0427	0.0188	0.0271	0.0319	0.190	0.0378	0.139

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9
RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 14 (DUPLICATE)

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0043	0.008	0.0089	0.0083	0.0071	0.0064	0.0065	0.0058	0.0045	0.0053
Arsenic	0.820	0.0055	0.0036	0.0039	0.0027	0.0027	0.0028	0.0031	<0.0021	0.0028	<0.0021
Barium	32.8	0.241	0.00105	0.003	0.0047	0.0055	0.0048	0.0057	0.0105	0.0058	0.0051
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	0.00027	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0071	0.001	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.0068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0137	0.0166	0.0123	0.0126	0.0124	0.0108	0.0114	0.0116	0.0082
Lead	0.246	<0.0024	<0.0024	<0.0024	<0.0024	0.0122	0.0053	0.0048	0.0328	0.0087	0.0027
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.15	0.0265	0.0113	0.006	0.0051	0.0028	0.0046	0.0048	0.0037	0.003
Selenium	0.82	<0.0022	0.0033	0.0024	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	0.003	<0.0028	0.003	<0.0028	0.0033	<0.0028	<0.0028	<0.0028
Zinc	115	0.0049	0.005	<0.0011	<0.0011	0.0083	0.0048	0.0043	0.0351	0.0121	0.0035

Note:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9
RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 15

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0024	0.0104	0.012	0.0112	0.0106	0.0105	0.0084	0.0077	0.007	0.0077
Arsenic	0.820	0.0082	<0.0021	0.0029	<0.0021	<0.0021	0.0026	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.216	0.0121	0.0039	0.0059	0.0045	0.0067	0.0084	0.0108	0.007	0.0111
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	0.0019	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0073	0.0028	<0.00068	<0.00068	<0.00068	0.0019	<0.00068	<0.00068	0.00082	<0.00068
Chromium	1.64	<0.0027	0.0111	0.0193	0.0243	0.0168	0.0179	0.0181	0.0152	0.0174	0.0139
Lead	0.246	<0.0024	0.007	0.008	0.0939	0.0361	0.0359	0.0449	0.0444	0.0478	0.0733
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.151	0.0415	0.0198	0.0123	0.0073	0.0081	0.0057	0.0058	0.0044	0.0046
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.00037	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	0.0028	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.009	0.0217	0.0084	0.045	0.0201	0.0203	0.0255	0.0432	0.0443	0.0368

Notes:

- Maximum TCLP/MEP Extraction Concentration

TABLE E-9
RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 16

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0022	0.0112	0.0143	0.0128	0.0112	0.0099	0.0088	0.0082	0.0068	0.0075
Arsenic	0.820	0.0073	0.0029	0.003	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021
Barium	32.8	0.206	0.0161	0.0032	0.0101	0.0065	0.0071	0.0155	0.0127	0.0068	0.0141
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0088	0.003	0.00084	<0.00068	<0.00068	<0.00068	0.0021	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.007	0.0136	0.0132	0.0137	0.012	0.0137	0.0099	0.0095	0.0099
Lead	0.246	<0.0024	0.0028	0.0048	0.0512	0.0727	0.051	0.0804	0.0452	0.0163	0.119[1]
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.152	0.0424	0.0203	0.0108	0.0095	0.0051	0.006	0.0049	0.0038	0.0045
Selenium	0.82	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.011	0.0198	0.0114	0.036	0.0475	0.0348	0.0333	0.0513	0.0477	0.0648

Notes:

- Maximum TCLP/MEP Extraction Concentration

[1] Lead was detected in the leachate blank, thus this is an invalid value.

TABLE E-9
RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 17

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0019	0.0077	0.0113	0.0094	0.0096	0.0093	0.0082	0.0086	0.007	0.0083
Arsenic	0.820	0.0079	<0.0021	0.0074	0.0026	0.0023	<0.0021	<0.0021	<0.0021	0.0024	<0.0021
Barium	32.8	0.18	0.0148	0.0148	0.0048	0.0046	0.0087	0.0071	0.0095	0.0057	0.0123
Beryllium	0.0656	<0.00026	<0.00026	<0.00026	<0.00026	<0.00026	0.00063	<0.00026	<0.00026	<0.00026	<0.00026
Cadmium	0.082	0.0066	0.0021	0.0008	<0.00068	<0.0068	0.00087	<0.00068	<0.00068	<0.00068	<0.00068
Chromium	1.64	<0.0027	0.0226	0.0254	0.0157	0.0143	0.0139	0.013	0.0111	0.0123	0.0101
Lead	0.246	<0.0024	0.0114	0.0072	<0.0024	0.0314	0.0257	0.0348	0.0225	0.0209	0.0516
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.136	0.0276	0.0171	0.0068	0.0111	0.0044	0.0052	0.0055	0.0039	0.0055
Selenium	0.82	<0.0022	<0.0022	0.0061	<0.0022	0.0028	<0.0022	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	<0.00015	<0.00015	<0.00015	<0.00015	0.00025	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	<0.0016	0.0072	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Vanadium	3.28	<0.0028	<0.0028	0.0051	0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.0065	0.0257	0.019	<0.0011	0.0373	0.036	0.0225	0.029	0.0228	0.043

Note:

- Maximum TCLP/MEP Extraction Concentration

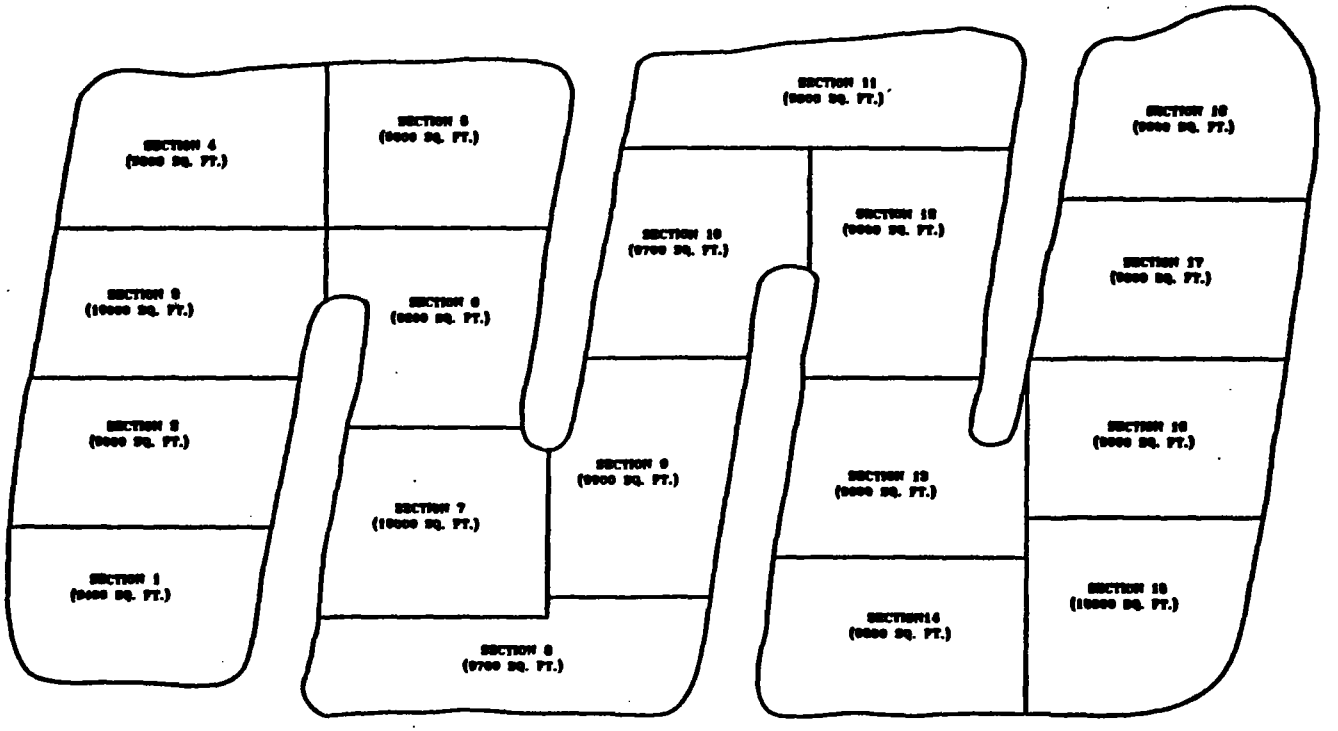
TABLE E-9
RETENTION RESERVOIR REMEDIATION
SUMMARY OF MEP ANALYTICAL RESULTS
FOR SECTION 18

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Analyte	Delisting Threshold Conc. (mg/l)	TCLP Conc. (mg/l)	MEP Dilutions (mg/l)								
			1	2	3	4	5	6	7	8	9
METALS											
Antimony	0.0984	0.0028	0.0121	0.0125	0.009	0.009	0.0105	0.0085	0.0074	0.0064	0.0081
Arsenic	0.820	0.0073	<0.0046	0.0053	0.0023	<0.0021	0.0039	<0.0021	<0.0021	0.0023	<0.0021
Barium	32.8	0.168	0.0168	0.0062	0.0036	0.0034	0.0057	0.0074	0.0172	0.007	0.0155
Beryllium	0.0656	<0.00026	0.0017	0.0024	<0.00026	<0.00026	0.0025	0.00037	0.0003	0.00036	0.00052
Cadmium	0.082	0.0048	0.0056	0.0031	<0.00068	<0.00068	0.0023	<0.00068	0.00076	0.00081	0.00082
Chromium	1.64	<0.0027	0.0185	0.0227	0.0152	0.00142	0.015	0.0145	0.0149	0.0131	0.0121
Lead	0.246	0.0056	0.0421	0.0049	<0.0024	<0.0024	0.0057	0.0136	0.083	0.0198	0.0638
Mercury	0.0328	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Nickel	1.64	0.144	0.0411	0.0203	0.0084	0.011	0.0061	0.0071	0.0069	0.0046	0.0054
Selenium	0.82	<0.0022	0.0036	0.005	<0.0022	<0.0022	0.0036	<0.0022	<0.0022	<0.0022	<0.0022
Silver	3.28	<0.00015	0.00022	0.00026	<0.00015	<0.00015	0.00029	<0.00015	<0.00015	<0.00015	<0.00015
Thallium	0.0328	<0.0016	0.0018	0.0035	<0.0016	<0.0016	0.0048	<0.0016	<0.0016	0.0017	<0.0016
Vanadium	3.28	<0.0028	<0.0028	0.0038	<0.0028	<0.0028	0.0029	<0.0028	<0.0028	<0.0028	<0.0028
Zinc	115	0.028	0.0827	0.0094	<0.0011	0.0056	0.005	0.0155	0.0789	0.0262	0.0683

Note:

- Maximum TCLP/MEP Extraction Concentration



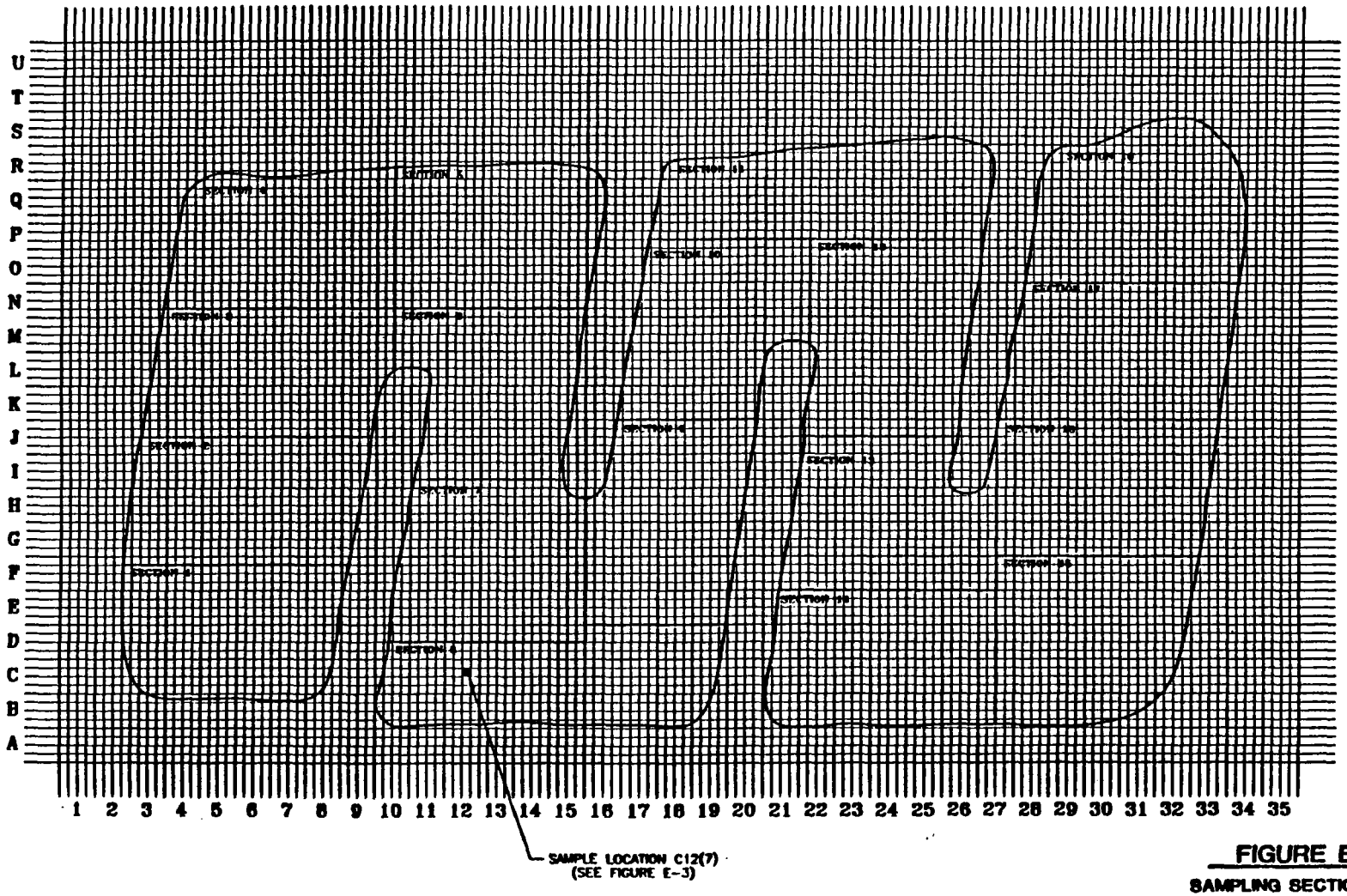
TOTAL AREA OF RETENTION RESERVOIR IS 175,500 SQUARE FEET

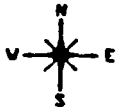
APPROX. SCALE (ft.)
0 60

FIGURE E-1

RETENTION RESERVOIR SAMPLING SECTIONS KEYSTONE STEEL AND WIRE BARTONVILLE, ILLINOIS

ERM





APPROX. SCALE (ft.)
0 60

FIGURE E-2

SAMPLING SECTIONS AND GRID SYSTEM
KEYSTONE STEEL AND WIRE
BARTONVILLE, ILLINOIS

ERM

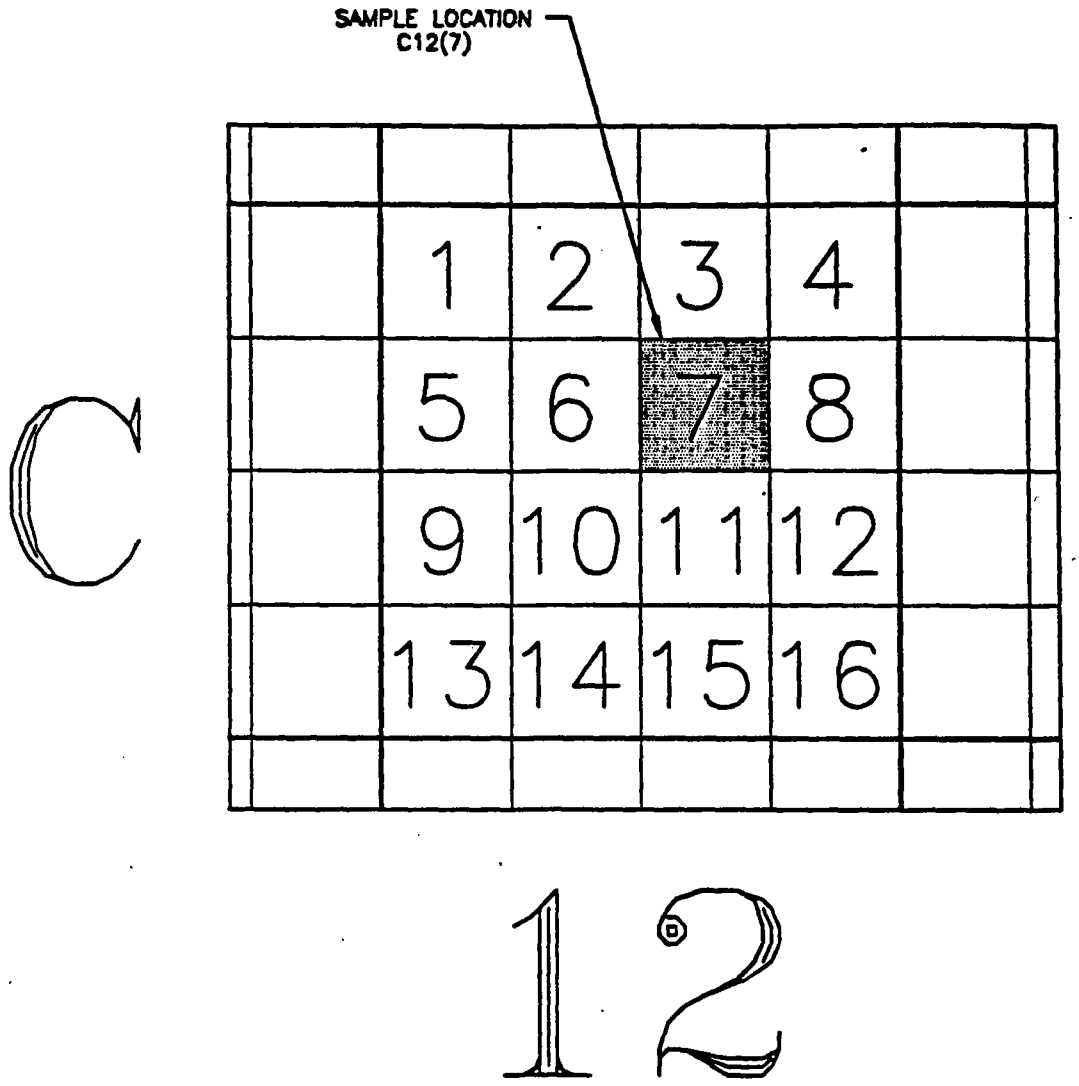


FIGURE E-3

EXAMPLE 20' X 20' CELL
WITH SAMPLE LOCATION PLOTTED
KEYSTONE STEEL AND WIRE
BARTONVILLE, ILLINOIS

ERM

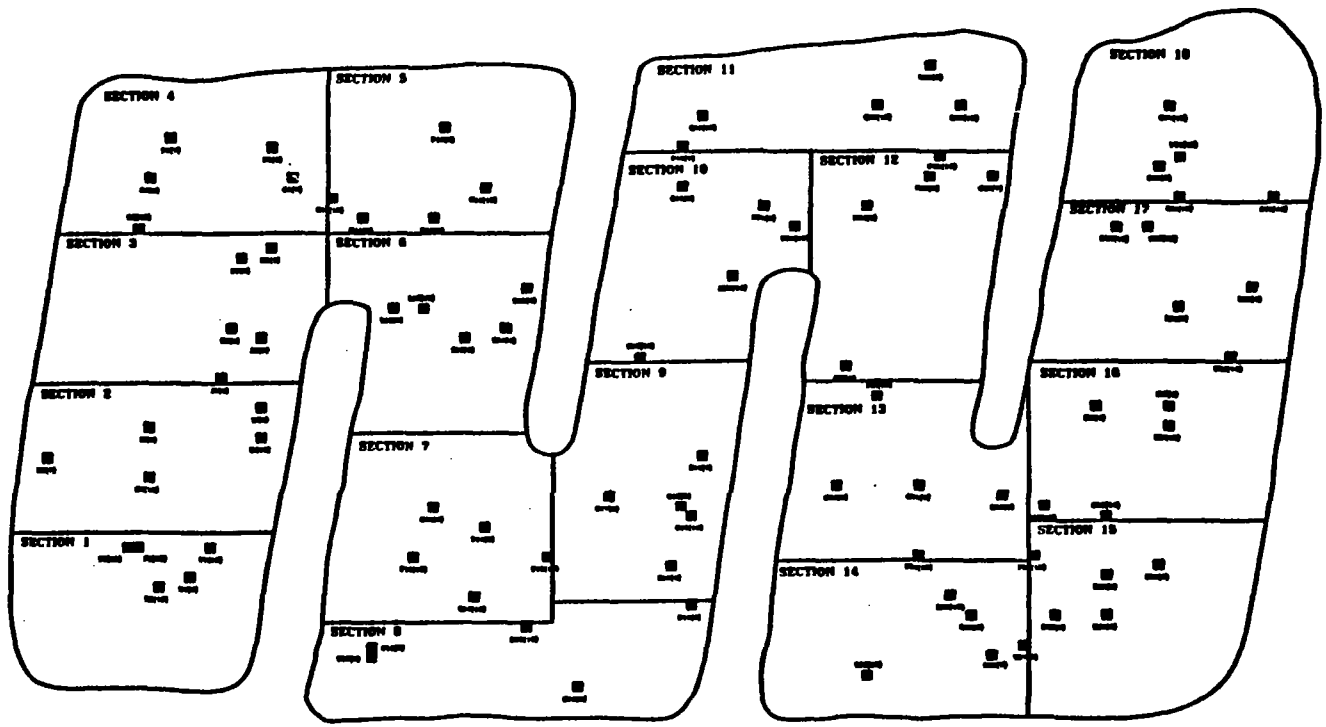


FIGURE E-4

MASTER PLOT OF
SAMPLING LOCATIONS
KEYSTONE STEEL AND WIRE
BARTONVILLE, ILLINOIS

ERM

SECTION F: GROUND-WATER MONITORING INFORMATION

1. The following describes the management of the petitioned waste.

   The petitioned waste is currently managed in on-site land-based waste management units. [Go to item 2]

2. Has Keystone previously submitted ground water monitoring information?

   ■ YES **[Continue with item 3]**

3. Do you wish that we directly obtain the ground water monitoring information from the EPA Region or State?

   ■ YES **[Complete item 4 and continue with item 6]**

4. Indicate the EPA Regional or State contact for obtaining the ground water monitoring information (include name of contact, affiliation, mailing address, and phone number).

   a. Name of Contact: **Mr. Kenith Lovett**

   b. Affiliation: **Permit Section of the Division of Land Pollution Control at the Illinois Environmental Protection Agency**

   c. Title of Report: **Proposed Ground Water Management Zone, dated July 16, 1993**

   d. Address: **P.O. Box 19276 Springfield, IL 62794-9276**

   e. Phone Number: **(217) 524-3868**

6. Is the unsaturated zone monitored?

   ■ NO **[Skip to item 8]**

8. Ground water contamination at the Keystone site.

Ground water contaminated with volatile organic compounds has been identified at the Keystone site. A ground water assessment study was completed in 1990 and a report was submitted to the IEPA in February 1991 (Keystone Steel & Wire Company 1990 Ground Water Assessment Report). The primary contaminants in the ground water are trichloroethylene (TCE) and 1,1,1-trichloroethane (TCA), potential sources of which are also discussed in the ground water assessment report. Neither the untreated K062 sediments nor the treated sediments (i.e., the petitioned waste) are considered a possible source of these contaminants.

SECTION G: SUMMARY AND CONCLUSIONS

The purpose of this Delisting Petition is to demonstrate that the treated sediments are non-hazardous in accordance with the level of justification given in 35 IAC 720.122 (see Section C of the Adjusted Standard Petition) by meeting the following criteria:

1. The treated sediments do not contain toxic levels of chromium and lead.

2. The treated sediments exhibit no factors, in addition to those for which the waste was listed, that would cause the waste to be considered hazardous, including: (1) containing hazardous constituents that could leach from the waste in concentrations exceeding HBLs, and/or (2) exhibiting a tendency to destabilize with time.

3. The treated sediments do not exhibit the characteristics of ignitability, corrosivity, reactivity, or toxicity.

This section presents a summary of the results of the delisting sampling presented previously in Section E. Also included is an evaluation of the results relative to the delisting criteria listed above using the methodology outlined in Section D.5. The following discussion demonstrates that the delisting sampling data support the conclusion that the petitioned waste is not hazardous in accordance with the level of justification.

1.0 LEAD AND CHROMIUM TOXICITY

The treated sediments do not contain toxic levels of chromium and lead (i.e., defined as exceeding delisting HBLs) when subjected to either TCLP or MEP analysis. The TCLP and MEP delisting sampling results are summarized on Table G-1.

The chromium results were evaluated by comparing the higher of the maximum TCLP and MEP values to the chromium delisting threshold. The higher of these two values (0.0462 mg/l) was chosen because this is the general approach used by the USEPA when applying fate and transport models to evaluate delisting petitions. An example of this can be found at 54 Federal Register (FR) 30411. The delisting threshold for chromium (derived from delisting HBLs) is 1.64 mg/l. The maximum chromium leachate level of 0.0462 mg/l, measured in the Section 9 composite sample, is approximately 35 times lower than the chromium delisting threshold.

The lead results could not be evaluated in the same manner as the chromium results, because the higher of the maximum TCLP and MEP lead values was found to be a statistical data outlier which exceeds the delisting threshold. The TCLP lead value of 0.336 mg/l measured in the Section 8 composite sample is believed to be a data outlier for the following reasons:

1. Out of a total of 530 treated sediment samples which were analyzed during performance and delisting sampling for TCLP and/or MEP lead, only the composite sample collected from Section 8 during the delisting sampling exceeds the lead delisting threshold. Of the 31 performance samples collected in Section 8 during the performance sampling, TCLP lead was not detected (i.e., <0.020 mg/l) in 28 of the samples, and the maximum detected TCLP lead value was 0.174 mg/l. These observations are supported by the delisting sampling results presented in Table G-1 and the performance sampling results presented in Table 2 of the Annual Report (see Attachment 1). The fact that the Section 8 composite is the only sample out of 530 total samples analyzed for TCLP lead which exceeds the delisting criteria indicates that it is a data outlier.

2. The Section 8 composite sample alkalinity level of 175,000 mg/kg (see Table E-8) *falls within the optimum treatment range. As noted in Section* C.14, during performance sampling, it was determined that the probability of achieving acceptable treatment is essentially 100 percent within an alkalinity range of 125,000 mg/kg to 185,000 mg/kg. The fact that the TCLP lead level for Section 8 is above the delisting threshold despite the achieved optimum alkalinity result (supported by rigorous performance sampling) indicates that it is a data outlier.

3. The Section 8 composite sample TCLP lead value is significantly higher than TCLP lead levels in the other sections. As shown in Table G-1, TCLP lead was not detected (i.e., <0.0024 mg/l) in 16 of the 20 sections, and of the 4 sections in which it was detected, the Section 8 value is almost 24 times higher than the next highest value (0.0141 mg/l from Section 14). The fact that the Section 8 TCLP lead level is significantly higher than levels measured in other sections indicates that it is a data outlier.

4. The MEP lead concentration in all sections other than Section 8 is greater than the TCLP lead concentration. This condition is due to the much more aggressive leaching procedure (nine extractions versus one) that is used in the MEP test. The fact that the TCLP lead in Section 8 was nearly four times higher than the MEP lead and the only section where TCLP lead exceeded MEP lead indicates that it is a data outlier.

In summary, the above items clearly demonstrate that the Section 8 TCLP lead result is a statistical data outlier. Therefore, this data point is inappropriate as input to the fate and transport model (i.e., comparison to the delisting threshold) to evaluate the treated sediment's lead toxicity.

Keystone used the results of a statistical analysis of the data to evaluate the lead toxicity of the treated sediments using the delisting sampling data. The USEPA in its evaluation of delisting petitions has indicated that this approach is acceptable when data outliers are encountered. For example, in 51 FR at 26421 (July 23, 1986), USEPA states:

> *An upper limit to a computed confidence interval may be used as the [fate and transport model] input in cases where the demonstrated maximum may be shown to be . . . a statistical outlier . . .*

An approved federal delisting based in part on a statistical analysis of sampling data can be found at 51 FR at 7822 (March 6, 1986). Keystone performed a statistical analysis of the delisting sampling data for TCLP lead using the methodology outlined in Chapter 9 of the USEPA Manual SW-846. The statistical data set includes the higher of the maximum TCLP and MEP lead results from each section of the Retention Reservoir, including the Section 8 TCLP lead result. The purpose of the analysis was to determine the interval or range within which the true mean lead level occurs so that the upper bound of that range can be compared with the delisting threshold. Keystone chose a 95 percent confidence interval (CI) for the statistical analysis of the lead data, consistent with petition reviews conducted previously by USEPA (see 51 FR at 7823 (March 6, 1986) and 51 FR at 26427 (July 23, 1986)). The mean and 95 percent CI for the lead data are given in the following table:

Data Set	No. of Samples	Mean (mg/l)	95% CI Range (mg/l)
Delisting Sampling	20	0.112	0.0784 - 0.146

The statistical analysis demonstrates that, given a 95 percent confidence level, the upper limit of the true mean of the lead level in the treated sediments is significantly less than the delisting threshold. To further demonstrate this, Keystone calculated the 99 percent CI range of the delisting sampling lead results to be 0.066 mg/l to 0.159 mg/l. This conclusively shows that when considering a very high level of confidence, the upper limit of the true mean of the leachable lead level in the petitioned waste is less than the delisting threshold.

In conclusion, the levels of leachable lead and chromium in the petitioned waste do not exceed their respective delisting thresholds. Therefore, the petitioned waste, although containing measurable levels of lead and chromium, should not be listed as a hazardous waste for lead and chromium toxicity.

2.0 ADDITIONAL HAZARDOUS FACTORS

2.1 Other Hazardous Constituents

Samples of the treated sediments were analyzed for other constituents, in addition to lead and chromium, found in 35 IAC 721, Appendix H which could cause the waste to be hazardous. The complete list of the analytes and the methodology used to perform the analysis are presented in Sections D.1 and D.6 Table G-2 provides a summary of the TCLP and MEP metals results. Table G-3 provides a summary of the detected volatile and semivolatile organics results. Both tables also include the delisting threshold for each of the constituents analyzed.

None of the maximum TCLP and MEP metals values exceeds the corresponding delisting threshold. The evaluation of the leachable metals results was made by comparing the higher of the maximum TCLP and MEP values to the corresponding delisting thresholds. The higher of these values was chosen for the same reasoning presented in Section 1.0 when evaluating the lead and chromium data.

None of the total constituent concentrations, with the exception of methylene chloride, exceeded the delisting thresholds. The evaluation of the volatile and semivolatile results was made by comparing the maximum total concentrations of the detected constituents in the petitioned waste to the corresponding delisting thresholds. TCLP analyses of these constituents was not performed in accordance with the methodology outlined in Section D.6. The level of total methylene chloride is approximately 1.6 times higher than the delisting threshold. As discussed in Section D.6, the maximum leachate level of methylene chloride, assuming all of the constituent leached into the extract during analysis, would be 20 times less than the total level or 0.0065 mg/l. Comparison of this calculated maximum methylene chloride leachate concentration to the delisting threshold of 0.082 mg/l, clearly demonstrates that methylene chloride meets the criteria for delisting.

In summary, leachable levels of all other hazardous constituents (in addition to lead and chromium) do not exceed health-based levels (i.e., delisting thresholds). Therefore, the petitioned waste should not be classified as a hazardous waste because it contains trace levels of hazardous constituents.

2.2 Long-Term Stability

None of the maximum MEP leachate values exceed the delisting thresholds for the metals analyzed. The results of the MEP tests performed on the delisting composite samples are shown in Table E-9. The quantitative evaluation of the MEP data was previously discussed in Sections G.1 and G.2. Qualitatively, the leachate values show no tendency to significantly increase with each sequential extraction for all of the metals analyzed. Therefore, the petitioned waste exhibits long-term stability and will not leach levels of hazardous constituents over time which exceed health-based levels.

3.0 HAZARDOUS CHARACTERISTICS

3.1 Ignitability

The treated sediments are not characteristically hazardous for ignitability. The results of the ignitability testing are presented in Table E-8. None of the delisting composite samples were flashed below 140°F.

3.2 Corrosivity

The treated sediments are not characteristically hazardous for corrosivity. The treated sediments were analyzed for pH immediately after compositing in the field by Daily Laboratories and again at the laboratory by IEA. The pH results are summarized on Table G-4. In addition, Daily analyzed over 1,900 samples for pH during the performance sampling. A summary of this data is provided on Table 4 of the Annual Report (see Attachment 1).

The procedure used to analyze for pH Method SW-846 9045 calls for a 50 percent solution of deionized water and solids to be analyzed. IEA followed the method exactly, whereas Daily modified the method and analyzed a 10 percent solution. To determine the correlation of results between a 10 percent and 50 percent solution, Keystone instructed IEA to reanalyze four samples first using a 50 percent solution and then at a 10 percent solution. In addition, to determine the precision which IEA can realistically achieve, Keystone instructed IEA to reanalyze the same four samples again at a 50 percent solution. The results of the reanalysis is provided on Table G-5. The 10 percent and 50 percent results only vary within $\pm$ 0.2 units, which is no greater than the variation between the duplicate quality control samples. This demonstrates that there is essentially a 1:1 correlation between the 10 percent and 50 percent results, and therefore, justifies the use of the 10 percent results determined in the field by Daily.
Keystone performed a statistical analysis of the pH data using the same methodology outlined previously in Section 1.0. The mean and 95 percent CI for the pH data are given in the following table:

Data Set	Laboratory	No. of Samples	Mean (mg/l)	95% CI Range (mg/l)
Field Delisting	Daily	19	12.0	11.9 - 12.2
Lab Delisting	IEA	20	12.3	12.2 - 12.4
Performance Sampling	Daily	1,963	12.3	12.3 - 12.3

None of the samples analyzed immediately after compositing were equal to or exceeded 12.5, thus supporting the conclusion that the treated sediments are non-corrosive. However, four of the same samples analyzed by IEA were equal to 12.5. Although these four sample results were right at the limit for the corrosivity characteristic, the statistical range and average is below 12.5. In addition, these four samples are the samples which were reanalyzed (two at a 50 percent solution and one at a 10 percent solution) and all of these additional pH readings were less than 12.5. The statistical range, average, and sample reanalysis all support the conclusion that the sediments are non-corrosive. Furthermore, the statistical range and average of the 1,900 performance samples support the validity and representativeness of the delisting sample results and the uniformity of the pH throughout the Retention Reservoir. In conclusion, the results of the delisting and performance sampling pH analyses demonstrate that the treated sediments are non-corrosive in accordance with 35 IAC 721.122.

3.3 Reactivity

The treated sediments are not characteristically hazardous for reactivity. This is based on the results of the total cyanide and sulfide analyses presented in Table E-8. Total cyanide ranged from <1.0 mg/kg to 1.1 mg/kg and total sulfide range from <10 mg/kg to 16 mg/kg. Because these values are significantly less than the regulatory thresholds for reactive cyanide (250 mg HCN/kg) and sulfide (500 mg H_2S/kg), it was determined that the petitioned is not reactive without actually performing reactivity analyses (See Section D.6).

3.4 Toxicity Characteristic

The treated sediments are not characteristically hazardous for toxic constituents. The results of the toxicity characteristics (TC) constituents TCLP analyses are summarized in Table G-4. None of the TC toxic constituents detected in the petitioned waste exceed the regulatory levels given in 35 IAC 721.124.

4.0 DATA VALIDATION

ESI is in the process of validating the analytical results provided by IEA. Data validation is expected to be completed on August 14, 1993. Any inconsistencies or deviations found in the reported analytical results will be noted in the case narratives of the validation reports. As of July 29, 1993, ERM-North Central has received 5 of the 17 validation reports and no significant inconsistencies or deviations have been found that would affect the validity and/or usability of the data.

5.0 CONCLUSIONS

Keystone has performed sampling of the petitioned waste in accordance with a plan designed to provide analytical data necessary to demonstrate that the previously listed waste is no longer hazardous. A summary of the results of this sampling and analysis were presented in this section, along with an evaluation of the results. The conclusion of this evaluation is that the petitioned waste is neither a listed hazardous waste nor a characteristically hazardous waste in accordance with the level of justification criteria given in 35 IAC 720.122.

TABLE G-1
SUMMARY OF DELISTING SAMPLING LEAD
AND CHROMIUM LEACHATE LEVELS

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Section	TCLP Lead (mg/l)	MEP Lead[1] (mg/l)	TCLP Chromium (mg/l)	MEP Chromium (mg/l)
1	<0.0024	0.0308	<0.0027	0.0351
2	<0.0024	0.0513	<0.0027	0.021
3	<0.0024	0.135	<0.0027	0.0436
4	0.0069	0.0857	<0.0027	0.0272
5	<0.0024	0.217	<0.0027	0.0366
6	<0.0024	0.192	<0.0027	0.0449
6D	<0.0024	0.116	<0.0027	0.042
7	<0.0024	0.106	<0.0027	0.0339
8	0.336	0.0809	0.0116	0.0196
9	<0.0024	0.117	0.0028	0.0462
10	<0.0024	.0 947	0.0031	0.0287
11	<0.0024	0.0618	<0.0027	0.0342
12	<0.0024	0.086	<0.0027	0.0451
13	<0.0024	0.155	<0.0027	0.0347
14	0.0141	0.138	0.0028	0.0143
14D	<0.0024	0.0328	<0.0027	0.0166
15	<0.0024	.0 939	<0.0027	0.0243
16	<0.0024	0.0804	<0.0027	0.0137
17	<0.0024	0.348	<0.0027	0.0254
18	0.0056	0.083	<0.0027	0.0227

Notes:

(1) Maximum concentration of the 9 MEP dilutions analyzed for the corresponding section.

Key:

TCLP = Toxicity Characteristic Leaching Procedure.
MEP = Multiple Extraction Procedure.

TABLE G-2
SUMMARY OF DELISTING SAMPLING
TCLP/MEP METALS DATA

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	TCLP Max.[1] (mg/l)	MEP Max.[1] (mg/l)	Delisting Threshold [2] (mg/l)
Antimony	0.0043	0.0143	0.0984
Arsenic	0.0093	0.0074	0.820
Barium	0.688	0.0441	32.8
Beryllium	<0.00026	0.0025	0.0656
Cadmium	0.0088	0.0092	0.082
Mercury	<0.0002	<0.0002	0.0328
Nickel	0.156	0.0424	1.64
Selenium	0.0031	0.025	0.82
Silver	<0.00015	0.00064	3.28
Thallium	<0.0016	0.0072	0.0328
Vanadium	<0.0028	0.0051	3.28
Zinc	0.028	0.526	115

Notes:

(1) These values represent the maximum TCLP or MEP levels of the constituent that were detected in the 20 delisting composite samples analyzed.

(2) Delisting thresholds are derived from delisting HBLs as discussed in Section D.

Key:

TCLP = Toxicity Characteristic Leachate Procedure
MEP = Multiple Extraction Procedure

TABLE G-3
SUMMARY OF DELISTING SAMPLING
VOLATILE AND SEMIVOLATILE ORGANICS DATA

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	Max. Total [1] (mg/kg)	Delisting Threshold [2] (mg/l)
Volatiles		
Methylene Chloride	0.13 [3]	0.082
Toluene	0.8	16.4
Carbon Disulfide	0.17	65.6
Benzene	0.049	0.082
Total Xylenes	0.1	164
Acetone	17.0	65.6
2-Butanone	1.9	32.8
2-Hexanone	0.1	—[3]
Semivolatiles		
Phenol	4.7	32.8
4-Nitroaniline	4.9	—[3]

Notes:

(1) These values represent the maximum total levels of the constituent that were detected in the 20 delisting composite samples (for semivolatiles) and the 108 delisting grab samples (for volatiles).

(2) Delisting thresholds are derived from delisting HBLs as discussed in Section D.

(3) While the total exceeds the delisting threshold, the maximum possible leachate level for methylene chloride will not. For further explanation, see Section 2.1.

(4) No delisting threshold can be determined because no delisting HBLs exist for this constituent.

TABLE G-4
SUMMARY OF DELISTING SAMPLING
FIELD AND LABORATORY pH DATA

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Section	Field pH [1] (pH Units)	Laboratory pH [2] (pH Units)
1	11.8	12.4
2	12.3	12.4
3	11.8	12.5
4	12.0	12.4
5	11.7	12.5
6	12.0	12.4
6D	12.0	12.3
7	12.0	12.5
8	12.2	12.5
9	11.9	12.4
10	11.7	12.3
11	11.8	12.3
12	12.0	12.2
13	12.4	12.2
14	12.1	12.1
14D	--	12.4
15	12.4	12.2
16	12.4	12.1
17	12.3	12.1
18	11.7	12.0

Notes:

(1) Analysis performed by Daily.
(2) Analysis performed by IEA.

Key:

-- = No analysis performed.

TABLE G-5
DELISTING SAMPLING pH REANALYSIS DATA

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Section	50% Slurry pH		10% Slurry pH (pH Units)
	Test 1 pH (pH Units)	Test 2 pH (pH Units)	
3	11.0	11.4	11.4
5	11.0	10.9	11.4
7	11.3	11.0	11.2
8	11.4	11.4	11.4

TABLE G-6
SUMMARY OF DELISTING SAMPLING
TOXICITY CHARACTERISTIC CONSTITUENTS

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	TCLP Level (mg/l)	TC Toxic Regulatory Level (mg/l) [3]
Arsenic	0.0093	5.0
Barium	0.688	100.0
Benzene	0.049[1]	0.5
Cadmium	0.0088	1.0
Carbon Tetrachloride	ND	0.5
Chlordane	NA[2]	0.03
Chlorobenzene	ND	100.0
Chloroform	ND	6.0
Chromium	0.0116	5.0
o-Cresol	ND	200.0
m-Cresol	ND	200.0
p-Cresol	ND	200.0
Cresol	ND	200.0
2,4-D	NA[2]	10.0
1,4-Dichlorobenzene	ND	7.5
1,2-Dichloroethane	ND	0.5
1,1-Dichloroethylene	ND	0.7
2,4-Dinitrotoluene	ND	0.13
Endrin	NA[2]	0.02
Heptachlor	NA[2]	0.008
Hexachlorobenzene	ND	0.13
Hexachlorobutadiene	ND	0.5
Hexachloroethane	ND	3.0
Lead	0.336	5.0
Lindane	NA	0.4

TABLE G-6
SUMMARY OF DELISTING SAMPLING
TOXICITY CHARACTERISTIC CONSTITUENTS

KEYSTONE STEEL & WIRE COMPANY
BARTONVILLE, ILLINOIS

Constituent	TCLP Level (mg/l)	TC Toxic Regulatory Level (mg/l) [3]
Mercury	ND	0.2
Methoxychlor	NA[2]	10.0
Methyl Ethyl Ketone	1.9[1]	200.0
Nitrobenzene	ND	2.0
Pentachlorophenol	ND	100.0
Pyridine	ND	5.0
Selenium	0.0031	1.0
Silver	ND	5.0
Tetrachloroethylene	ND	0.7
Toxaphene	NA[2]	0.5
Trichloroethylene	ND	0.5
2,4,5-Trichlorophenol	ND	400.0
2,4,6-Trichlorophenol	ND	2.0
2,4,5-TP	NA[2]	1.0
Vinyl Chloride	ND	0.2

Notes:

(1) The values are total constituent levels in mg/kg. As explained in Section D.6, the TCLP levels for these constituents would be at least 10 times less than or equal to the total level.

(2) These constituents are all pesticides, herbicides, or PCBs. Based upon prior agreements with IEPA, these constituents are not required to be included in the delisting analysis since they were never used at the Keystone facility.

(3) Regulatory levels are taken from 35 IAC 721.124.

Key:

ND = Not Detected.
NA = Not Analyzed.