

ILLINOIS POLLUTION CONTROL BOARD
February 17, 1994

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)

OPINION AND ORDER OF THE BOARD (by E. Dunham):

This matter comes before the Board on the filing of a petition for adjusted standard by Keystone Steel and Wire Company (Keystone). Keystone seeks a delisting, through an adjusted standard, of certain K-062 listed hazardous waste sediments treated by lime-stabilization and Portland cement solidification.

PROCEDURAL HISTORY

Keystone filed its petition for an adjusted standard on August 2, 1993. Notice of the petition was published in the Peoria Star on August 13, 1993. Keystone filed an amended petition, providing additional test reports on August 25, 1993. The Illinois Environmental Protection Agency (Agency) filed its response to the petition on November 15, 1993. On December 6, 1993, Keystone filed its reply to the Agency's recommendation. Keystone also filed a second amendment to the petition for adjusted standard providing additional information and changes as noted in the Agency's recommendation. The Agency did not file a response to the second amended petition.

The petition was filed pursuant to a consent order filed on July 2, 1993 in the case People of the State of Illinois v. Keystone Consolidated Industries Inc. (Peoria County, Chancery Division, No. 93 CH 000103.) The consent order required Keystone to file a petition for delisting for certain K062-listed sediments and contaminated solids by August 1, 1993.

A hearing was not held in this matter. In the petition filed on August 2, 1993, Keystone requested a hearing on the petition. In its response to the Agency's recommendation, filed on December 6, 1993, Keystone withdrew its request for hearing and requested the Board to waive the hearing. On December 16, 1993, the Board noted that a request for hearing had not been received from the Agency or any other person and granted Keystone's request to waive the hearing.

The Board amended 35 Ill. Adm. Code 720.120, 720.122, 721.110 and 721.111 in R90-17 (In the Matter of: RCRA Delistings, R90-17, 119 PCB 181, February 28, 1991, effective May 9, 1991) to allow use of the adjusted standard procedures for delistings. These amendments were made by the Board in response to the March 1, 1990, USEPA delegation of authority to Illinois

to administer several additional components of the RCRA program, including the authority to delist hazardous waste in lieu of USEPA and pursuant to 35 Ill. Adm. Code 720.122. (55 Fed. Reg. 7320.) Several post-adoption modifications to R90-17 were made in a Board order of April 11, 1991.

BACKGROUND

Keystone's steel and wire mill is located in Bartonville, Peoria County, Illinois. (Pet. at 1.)¹ The mill has been in operation since 1890. (Pet. at 1.) The mill is the second largest industrial employer in the Peoria area, employing approximately 1,700 people. (Pet. at 1.)

Steel "rod" produced in the steel mill is immersed in a "pickle liquor", a sulfuric acid cleaning solution, to remove oxidation on the surface of the rod before the rod can be drawn and fabricated in the wire mill. (Pet. at 1.) When the cleaning effectiveness of the sulfuric acid is exhausted, the pickle liquor is considered to be spent and becomes a waste. (Pet. at 1.) Spent pickle liquor is 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. (Pet. at 1.)

Prior to October 1, 1986, Keystone disposed of the spent pickle waste by mixing it with wastewater and conveying the combined wastewater to its wastewater treatment plant through a chain of surface impoundments. (Pet. at 1.) Under the RCRA program the surface impoundments are classified as hazardous waste management units (HWMUs). (Pet. at 2.) Prior to the construction of the wastewater treatment plant in 1969, an additional surface impoundment was used to manage the plant's wastewater. (Pet. at 2.) Keystone considers this impoundment to be a solid waste management unit (SWMU) but has, as part of its closure plan, committed to close the SWMU in the same manner as the HWMUs. (Pet. at 2.) The hazardous waste was in contact with sediments in the management units, therefore, these sediments are classified as K062-listed hazardous waste under the "mixture" rule (35 Ill. Adm. Code 721.103). (Pet. at 7.)

Keystone's closure plan 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 of the surface impoundments. (Pet. at 2.) Keystone has determined that lime stabilization and Portland cement solidification is the most effective treatment method for the contaminated sediment. (Pet.

¹ The amended petitions filed by Keystone incorporate data and makes small changes to the text of the original petition. Because most of the original petition is not affected by the amendments, the original petition with the changes as noted by the amendments will be referenced as Pet. at _____.)

at 3.) Keystone has shown the effectiveness of this treatment by a full scale demonstration project conducted from July 1992 to February 1993. (Pet. at 3.) After treatment, the sediment no longer exhibits the hazardous characteristics that caused USEPA to list the K062 waste. (Pet. at 3.)

REGULATORY FRAMEWORK

Section 22.4 of the Act requires that the identification and listing of hazardous wastes in Illinois must be identical in substance to that in the USEPA's RCRA program (40 C.F.R. 261). Regulations governing the identification and listing of hazardous wastes are found in 35 Ill. Adm. Code 721. Pertinent to this adjusted standard are the lists of hazardous wastes in 35 Ill. Adm. Code 721.Subpart D.

The Board's regulations for delisting of hazardous wastes are contained in 35 Ill. Adm. Code 720.Subpart C, as amended in R90-17. (In the Matter of: RCRA Delistings, R90-17, 119 PCB 181, February 28, 1991, effective May 9, 1991.) Section 720.122(n) provides, in part, as follows:

Section 720.122 Waste Delisting

- (n) Delistings which have not been adopted by USEPA may be proposed to the Board pursuant to a petition for adjusted standard pursuant to 35 Ill. Adm. Code 106.Subpart G. The justification for the adjusted standard is as specified in subsections (a) et seq., as applicable to the waste in question.

Section 720.122(d) provides the level of justification for wastes listed in code "T". Section (d) states:

- (d) Toxic waste. If the waste is listed in code "T" . . . :

- (1) the petitioner shall demonstrate that the waste:
- (A) Does not contain the constituent or constituents (as defined in 35 Ill. Adm. Code 721.Appendix G) that caused USEPA to list the waste, using the appropriate test methods prescribed . . . ; or
 - (B) Although containing one or more of the hazardous constituents (as defined in 35 Ill. Adm. Code 721.Appendix G) that caused USEPA to list the waste, does not meet the criterion of 35 Ill. Adm. Code 721.111(a)(3) when considering the factors used in 35 Ill. Adm. Code 721.111(a)(3)(A) through (K) under which the waste was listed as hazardous; and

* * *

- (3) The petitioner shall demonstrate that the waste does not exhibit any of the characteristics, defined in 35 Ill. Adm. Code 721.121, 721.122, 721.123 or 721.124 using any applicable methods prescribed in those Sections.

In addition to the requirements of Section 720.122(n), a petition for adjusted standard must also comply with 35 Ill. Adm. Code 720.122(i). Subsection (i) contains a list of 12 additional points of information necessary to have a complete and reviewable petition. These twelve items will be discussed later in this opinion.

ADJUSTED STANDARD PETITION

Keystone is requesting an adjusted standard to delist the treated sediment and reclassify it as special waste. The sediment would then be disposed of as a special waste in accordance with applicable regulations.

Keystone contends that the treated sediment does not meet the criteria for listing as a hazardous waste based on the factors set for the in 35 Ill. Adm. Code 721.111. Keystone's petition discusses each of the factors considered for delisting: (Pet. at 9 - 25.)

A. Nature of Toxicity - Keystone provides the toxicity for lead and hexavalent chromium. Keystone states that trace levels of chromium and lead are present in the lime-stabilized sediment, however, concentrations in the delisting samples are lower than the corresponding delisting thresholds as calculated by the EPA Composite Model for Landfills (EPACML).

B. Concentration of Constituents in Waste - Treated sediment samples were analyzed for both total and Toxicity Characteristic Leaching Procedure (TCLP) lead and chromium. The samples indicate an average total concentrations of lead of 6765 mg/kg and an average total concentration of chromium of 706 mg/kg. The average TCLP concentrations were 0.169 mg/l for lead and 0.0072 mg/l for chromium.

C. Migration Potential - Keystone states that the solidification/stabilization process physically and chemically binds lead and chromium and other metals, thereby reducing their leachable quantities below concentrations which could cause harm to human health and the environment.

D. Persistence and Degradation - Keystone states that the constituents will persist and not degrade after stabilization treatment.

E. Degradation into Non-Harmful Constituents - Keystone states that the only significant degradation into non-harmful constituents that may occur is that of hexavalent chromium to trivalent chromium. However, the expected levels of hexavalent chromium are small and will not significantly affect the waste characteristics.

F. Bioaccumulation - Keystone addresses the bioaccumulation of hexavalent chromium and lead in humans.

G. Plausible Improper Management - Keystone believes that there is no plausible risk that the delisted materials will be subjected to improper management during treatment and handling of the waste on site and the subsequent transport of the waste off site to the disposal facility. Keystone asserts that in the worst case, if stabilized waste were shipped to a municipal landfill, no adverse impact would result. Keystone notes that Keystone's closure activities are being closely monitored by Keystone and the Agency.

H. Waste Quantities Generated - The estimated quantity of waste from the Keystone site is 85,860 cubic yards².

I. Improper Management Environmental Impacts - Keystone maintains that aside from the mixing of K062 wastes with the natural sediment there has been no adverse environmental impact caused by the disposal of K062 wastes. Keystone further notes that this impact will be eliminated through closure activities.

J. and K. Other Governmental Activities and Other Factors Keystone is aware of no other State or Federal petitions similar to its petition.

Keystone further represents that the treated sediment does not contain hazardous constituents that could leach from the waste in concentrations exceeding health-based levels (HBLs). Testing of the treated sediment showed that for the 12 metals analyzed (in addition to chromium and lead), the leachate

² The Board notes that Table 4-1 referenced in Table B-1 "Basis for Sediment and Bottom Soil Volume Estimates" was not provided in the petition. This missing table results in some ambiguity as to the methods used to estimate the amount of waste generated. The accurate estimation of the waste generated is critical to the petition as this number is used as a parameter to estimate other parameters.

concentrations are less than their respective delisting HBLs. The samples were also analyzed for volatile and semivolatile organics. Of the 40 volatile organic and the 69 semivolatile organic analytes considered, six volatile and two semivolatile organics were detected. However, none of the calculated TCLP concentrations of the detected organics exceeded the respective delisting HBLs.

Testing by Keystone also demonstrated that the waste does not destabilize over time. Keystone has found that the treated sediment does not exhibit any of the characteristics of hazardous waste (ignitability, corrosivity, reactivity or toxicity) as defined by the Board's regulations.

AGENCY RECOMMENDATION

The Agency filed its response on November 15, 1993. The Agency notes that it is in agreement with most of the information provided by Keystone in its petition. However, the Agency noted several deficiencies in the petition filed by Keystone and provided comments on the proposed language. The Agency notes it has not conducted a independent cost analysis to determine the costs of compliance alternatives. (Res. at 3.) The Agency recommends approval of the Keystone RCRA adjusted standard with certain conditions. The Agency believes that approval of the adjusted standard will not have a detrimental impact upon human health or the environment. (Res. at 11.)

The Agency indicates that Keystone did not provide the number of persons employed at the facility as required by 35 Ill. Adm. Code 106.705(d). (Res. at 2.) The Agency notes that the proposed language for the adjusted standard does not specify the size of "treatment cell". (Res. at 3.) The Agency believes that the treatment cell should be no larger than the 100 cubic yard cells used at the 24 Hour Retention Reservoir. (Res. at 3.) The Agency also suggested alternate language concerning the verification testing to correct a potential weakness. (Res. at 4.) The Agency suggests that a minimum number of roll-off containers be sampled on Day 1 before the sample frequency is reduced to every tenth container. (Res. at 4.)

The Agency notes that the USEPA Delisting petition submitted as Appendix A of the petition is not consistent with the petition. These inconsistencies involve the type of relief requested and a typographical error.

In its reply to the Agency's recommendation, Keystone notes its general agreement with the Agency's recommendation and has incorporated these changes with minor modification into the second amended petition.

DISCUSSION

The Board's regulations at 35 Ill. Adm. Code 720.122 (derived from 40 CFR 260.22) provide for delisting of hazardous wastes. Subsection (a) provides for delisting of Part 721, Subpart D (40 CFR 261, Subpart D) listed wastes from a particular facility if the generator demonstrates that the waste exhibits none of the criteria for which it was listed, and the Board determines that no additional factors warrant retaining the waste as hazardous. Subsection (b) provides for rendering inapplicable the "mixtures" and "derived-from" provisions of 35 Ill. Adm. Code 721.103(a)(2)(B) and (a)(2)(C) (40 CFR 261.3(a)(2)(ii) and (a)(2)(iii)), which basically maintain that any mixture containing a Subpart D listed waste and any material derived from a Subpart D listed waste are hazardous wastes.

For a grant of an adjusted standard delisting its waste, Keystone must demonstrate that the treated sediment does not exhibit the toxicity characteristic for which USEPA listed K062 wastes, and the Board must determine that there is no other reasonable basis that warrants retaining the treated sediment as RCRA hazardous. (See 35 Ill. Adm. Code 720.122(a) and (d), 721.111(a)(3), 721.131, and 721.Appendix G.) Additionally, Keystone must demonstrate that the waste will be generated or managed in Illinois (35 Ill. Adm. Code 720.122(p)), and the Board will not grant the delisting if it would render the state RCRA program less stringent than the federal program. (35 Ill. Adm. Code 720.122(q).)

The Board finds that Keystone has meet its burden under 35 Ill. Adm. Code 720.122. The results of the testing performed by Keystone has demonstrated that the hazardous characteristics of the sediment are removed through treatment. The Board grants the adjusted standard as requested and adopts the language of the adjusted standard as proposed by Keystone in its second amended petition.

This opinion constitutes the Board's findings of fact and conclusions of law in this matter.

ORDER

Pursuant to the authority of Section 28.1 of the Environmental Protection Act (415 ILCS 5/28.1 (1992)), the Board hereby grants a RCRA delisting adjusted standard to Keystone Wire and Steel for the treated sediment from its Bartonville facility. The adjusted standard is effective on the date of this order and is subject to the following conditions:

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 or 192,000 mg/kg to 215,000 mg/kg, the sample also will be analyzed for TCLP lead. Sample 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 tested sediments located in the Retention reservoir and all of the other waste management units. Verification testing will consist of sampling roll-off or other containers a minimum of 20 cubic yards in size ("containers") of the treated sediment during the removal of the sediments from the waste management units. The sampling frequency shall be as follows:

a) For Day 1 of treated sediment excavation and removal, every container will be sampled with a minimum of sixty (60) containers being sampled on Day 1, the Day 1 sampling frequency shall carry over into succeeding days until sixty (60) 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) containers have been sampled, every tenth 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:

<u>ANALYTE</u>	<u>TCLP LEVEL</u>
Cadmium	0.082 mg/l
Chromium	1.64 mg/l

Lead	0.246 mg/l
Zinc	115 mg/l

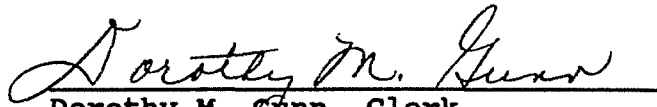
d) The sediments in all containers where the alkalinity lies outside the range of 115,000 mg/kg to 215,000 mg/kg, and the TCLP values exceed the levels given in item (c) will be retreated and resampled.

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

IT IS SO ORDERED.

Section 41 of the Environmental Protection Act, (415 ILCS 5/41 (1992)), provides for appeal of final orders of the Board within 35 days of the date of service of this order. The Rules of the Supreme Court of Illinois establish filing requirements. (See also 35 Ill. Adm. Code 101.246, Motion for Reconsideration.)

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above opinion and order was adopted on the 17th day of February, 1994, by a vote of 6-0.


 Dorothy M. Gunn, Clerk
 Illinois Pollution Control Board