Basis for Groundwater Releases Controlled Determination
RCRIS Code CA750
at
The W. W. Cross Division, Emhart Industries Surface Impoundment
EPA ID No. NHD000845768
Jaffrey, New Hampshire

The purpose of this report is to provide the basis for determining that the W. W. Cross Division, Emhart Industries Surface Impoundment can be recorded with the status code of **YE** under the RCRIS Event Code of 750 - Groundwater Releases Controlled.

The July 29, 1994 EPA Memorandum from the Office of Solid Waste to EPA Regional Waste Management Division Directors concerning RCRIS Corrective Action Environmental Event Codes CA725 and CA750 specifies that the CA750 Event Code, Groundwater Releases Controlled Determination, may be counted when one or both of the conditions listed below are fulfilled and documented. These conditions apply to all known or suspected instances of groundwater contamination in excess of action levels or in excess of some other specified clean up level. These conditions are:

1. An engineered system has been installed that is designed and operated to effectively control further migration of contaminants beyond a designated boundary, or

2. The New Hampshire Department of Environmental Services, as the state equivalent authorized by EPA for RCRA C Corrective Action, has determined that the groundwater cleanup objectives can be met without the use of an engineered system through the remedial measures selected, including facilities where the contamination will naturally attenuate.

Based on a review of available information contained in files maintained by the Department of Environmental Services, and subject to the limitations cited below, the Department of Environmental Services has determined that the groundwater cleanup objectives have been met without the use of an engineered system through the remedial measures selected, including provisions for the contamination to naturally attenuate. This determination is based on the conclusions described in number 1 below and supplemented by additional facts in numbers 2 and 3 below and the references listed in number 4 below.

1. Conclusion

No groundwater contamination remains at the facility that requires further remediation. RCRA closure of the filter bed (unlined surface impoundment) was completed with state oversight in 1986. Site conditions are such that all releases of regulated contaminants to groundwater have been controlled. Cyanide plating wastes contained in the filter bed and the uppermost one foot of in-situ soils immediately below the plating wastes were removed from the site for appropriate off-site disposal. If there was any residual cyanide contamination in the soils beneath the surface impoundment after closure, it has attenuated to the extent that it no longer serves as a source of groundwater contamination. Since 1996, groundwater quality has been in compliance with Ambient Groundwater Quality Standards (AGQS), both on- and off-site.

2. Release Summary

Groundwater: Groundwater contaminants that have historically been detected at the site include chromium; cyanide (total and amenable); zinc; sulfate; cadmium; copper; tetrachloroethylene and its degradation products; toluene and methylene chloride. Groundwater monitoring has been required by the Department of Environmental Services, through the Department's Groundwater Management Permit process, since 1988. Beginning with the round of sampling performed in April 1996 and continuing through sampling performed in April 1997 (the latest round for which data are available), groundwater quality has been in compliance with Ambient Groundwater Quality Standards (AGQS), as established by the New Hampshire Department of Environmental Services, for both on- and off-site sampling points. The next round of groundwater quality sampling and analysis is scheduled for April 1998.

Soil: Chromium, lead, total cyanide, and free cyanide were the contaminants of concern identified in the in-situ soils immediately below the filter bed wastes. About 4000 tons of electroplating wastes, metal parts washing wastes and steel pickling wastes were excavated from the filter bed and transported off-site for appropriate disposal in 1985 and 1986. Included in this total volume were the uppermost twelve inches of in-situ soils immediately below the wastes. After the filter bed wastes and the underlying first foot of in situ soils were removed, additional analyses were performed to determine residual contaminant levels. This sampling indicated that zinc was the only analyte that was elevated above background values, although the detected levels were well below the Department's Risk Characterization and Management Policy (RCMP) soil standards for zinc. For weak acid dissociable cyanide (free cyanide), the most toxic form of cyanide, the values ranged from 0.9 milligrams per kilogram (mg/kg) to 11 mg/kg. The Department's RCMP standard for free cyanide in soil is 100 mg/kg.

Surface Water: Four surface water sampling locations have been established at the site. An upstream background sampling location along Cretia Brook, a location at the fire pond immediately adjacent to the surface impoundment, a downstream location before Cretia Brook discharges to Cheshire Pond, and a Cheshire Pond location. Concentrations of volatile organic compounds, cadmium, total chromium and total cyanide detected in samples from the surface water sampling stations have remained at or below method detection limits for the monitoring period from August 1992 through April 1997.

3. Relevant Conditions and Assumptions

Groundwater: The sporadic presence of groundwater contaminants (VOCs and RCRA metals) at levels just above the Department's AGQS in one of four off-site downgradient monitoring wells was observed through sampling performed in April 1995. For the two most recent rounds of annual sampling in 1996 and 1997, downgradient off-site groundwater quality was in compliance with AGQS for all contaminants of concern. Cyanide has not been detected in any on-site or off-site downgradient groundwater monitoring wells at levels above the Department's AGQS for sampling

performed from August 1992 to the most recent sampling.

Surface Water: Three surface water bodies are in close proximity to the site. These include Cretia Brook, about 50 feet west of the surface impoundment, a fire pond formed by the downstream damming of Cretia Brook to the northwest of the surface impoundment, and Cheshire Pond. Cretia Brook flows into Cheshire Pond about 200 feet north of the surface impoundment. These are the only surface water pathways at the site by which any residual contamination associated with the surface impoundment could contaminate surface waters. Although these surface water pathways do exist, surface water sampling conducted under the terms of the Groundwater Management Permit has consistently shown that the contaminants of concern are not affecting surface water quality at and downstream of the site.

There are no commercial or residential uses at the site. Accordingly, there are no on-site workers or residents who would have the potential to ingest groundwater from the site. Also, drinking water for the city of Jaffrey is supplied by the city's public water system. Off-site human exposures to contaminated groundwater are not plausible as the most recent off-site groundwater quality data indicate that groundwater is in compliance with the Department's AGQS.

4. References

1. 1997 Annual Summary of Post Closure Monitoring Data, Former W.W. Cross Surface Impoundment, Jaffrey, New Hampshire, Loureiro Engineering Associates, May 22, 1997

2. Comprehensive Monitoring Evaluation, W. W. Cross Waste Water lagoon, Black and Decker Corporation, Jaffrey, New Hampshire, New Hampshire Department of Environmental Services, September 1992.

5. Sign Off

Prepared by James B. Zeppieri Date March 6, 1998

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Approved by John M. Regan Date March 17, 1998

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