



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460

October 20, 2000

MEMORANDUM

TO: Francis X. Lyons
Regional Administrator

FROM: Robert J. Martin *RJM*
National Ombudsman

SUBJECT: Industrial Excess Landfill Case / Preliminary National Ombudsman
Recommendations

SUMMARY

I am writing to submit my preliminary recommendations in connection with my investigation of the Industrial Excess Landfill in Uniontown, Ohio (IEL). The investigation has been comprised of nearly two years of review of documents from the Administrative Record, meetings and consultations with EPA regional staff, with citizens, with representatives of Congress, state, and local governments and with representatives for the responsible parties for the IEL site. A public hearing was also held last year in Uniontown, Ohio, at which I heard witnesses on the record with respect to IEL matters. A transcript of that hearing is attached for your review. I have also reviewed the work of the U.S. EPA Inspector General, the U.S. EPA Science Advisory Board and the independent report of Clean Sites Inc. as part of my deliberations.

In view of the need to make timely decisions regarding the disposition of waste at the IEL

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site; my recommendations at this juncture of the case only address the principal issue of whether the protection of human health and the environment in compliance with laws and regulations necessitate that the IEL site be further characterized.

My considered presumption is that the IEL site should be further characterized by EPA in order to protect the long-term health and environment of the public and that EPA. Before proceeding to further implement the remedy embodied within the Amended Record of Decision announced this past March, a technical working group should be convened with representation from the EPA Environmental Response Team, EPA Region V, the Ohio Environmental Protection Agency, the Trustees of Lake Township and their technical advisors, Concerned Citizens of Lake Township and their technical advisors as well as the Responsible parties and their technical advisors.

I offer to chair the Technical Working Group with you, if you so accept. I intend to convene the technical dialogue within 60 days from the issuance of these preliminary recommendations in Uniontown, Ohio. Prior to convening the Technical Working Group, I will submit interrogatories to the parties based upon additional technical review of the record and, if necessary in my discretion, on-the-record interviews with some or all of the parties. This 60 day period will also serve to allow for extensive public comment on the preliminary recommendations. By March 1, 2001, I will issue a Draft Final Report, which will contain a broader set of recommendations and will hold a final public hearing on the record to gather the views of the public. Until the Ombudsman Final Report, my preliminary recommendation should be considered rebuttable presumptions, that is, initial findings that can be overturned upon the showing of sufficient proof.

AUTHORITY

The Office of Ombudsman was established by the Congress within Section 2008 of the Resource Conservation and Recovery Act. Section (a) of the law authorized the Ombudsman to "receive individual complaints, grievances, and requests for information submitted by any person

with respect to any program or requirement under this Act." Subsection (b) authorized the Ombudsman to "make appropriate recommendations to the Administrator." EPA established the Office in 1986 pursuant to the Congressional mandate. Following sunset of the mandate in 1989, EPA decided to make the Office of Ombudsman and its functions permanent because "Congress has chosen this solution for dealing with such problems in the hazardous waste programs EPA administers." (See, Hazardous Waste Ombudsman Handbook at pg. 1-1.)

Thus, "[b]oth the statutory language and its legislative history confirm the importance Congress places on the public assistance function of the Office of Ombudsman. By centralizing these functions in the Office of Ombudsman, Congress intended to improve EPA's responsiveness to the public with respect to the increasingly complex RCRA and Superfund programs . . . the charge of the Ombudsman to provide assistance with problems, complaints, or grievances, is an extremely broad one." (See, Handbook at pg. 2-2,3.) Notably, the authority and framework of the Office of Ombudsman did not originate with EPA; EPA merely elected to make permanent an institution which the Congress had required in the law and for which the mandate had expired.

Affected citizens represented by Concerned Citizens of Lake Township, joined by the Project on Government Oversight and the Northeast Ohio Friends Service Committee, petitioned for National Ombudsman intervention at the IEL site in 1998. Following a denial for Ombudsman intervention by the Administrator that year, Congressman Thomas Sawyer (D., OH.) joined the request for intervention. EPA thereafter sanctioned National Ombudsman intervention at the IEL site. Congressman Ralph Regula (R., OH.) Has also joined in the request of citizens for National Ombudsman intervention at the IEL site.

BACKGROUND AND HISTORY

IEL, located in Lake Township, Stark County, Ohio, is a National Priorities List (NPL) site. The site is located on Cleveland Avenue, immediately south of the community of Uniontown and about 10 miles southeast of Akron, Ohio. The 29.9-acre site was used as an

open-pit sand and gravel mine until 1966 when it was converted to a landfill for disposing of a wide variety of wastes. The landfill was closed in 1980 (CDM Federal Programs Corporation (CDMFPC) 1988).

Metzger Ditch forms the eastern boundary of the site. A chain-link fence delineates the western boundary between the landfill and residential and commercial property located along Cleveland Avenue. A combination of chain-link and barbed-wire fences defines the boundary between the site and residential and commercial property to the north and south. The site is accessible to pedestrians on the northeast, east, and southeast boundaries.

The site is situated on the eastern side of an elongated hill or ridge with an estimated on-site relief of 60 feet. Most of the surface slopes to the east and southeast. Surface-water runoff from the site drains into Metzger Ditch. An off-site pond is located across Cleveland Avenue from IEL, but it is not connected with Metzger Ditch or any known drainage pathway from IEL.

IEL is a former sand and gravel quarry. The resultant excavation was converted into a landfill. From 1966 to 1980, an estimated minimum of 780,000 tons of waste (including at least 1 million gallons of wastes) were disposed of at the site. The disposal rate for chemical waste increased to a maximum of 11,000 gallons/day in 1972. Up to 60,000 barrels were emptied onto the site with the contents of 75% of these of unknown composition. Also unknown was the amount of hazardous wastes disposed of in drums at the site.

The site has been the subject of community complaints and regulatory investigations since 1971. In response to community complaints, the Stark County Board of Health issued a prohibition against the dumping of chemical wastes in 1972. In 1980, because of public concern and because the facility had reached its volumetric maximum capacity, the landfill was closed by means of a consent agreement ordered by the Stark County Court of Common Pleas (CDMFPC, 1988). The site was then covered with a mixture of granular material from the site and "clayey overburden" from a nearby area. Finally, it was seeded.

Concerns about the generation and migration of methane gas from the landfill were expressed before it was closed. Investigations had revealed that methane was migrating off the site. Monitoring for methane was initiated in homes adjacent to the site. The landfill owner had

installed an on-site, a passive gas-vent system with ground flares to help mitigate methane migration.

In 1984, EPA and the Ohio Environmental Protection Agency (OEPA) conducted investigations at the site. In January of that year, ATSDR reviewed analytic results from samples of drinking water from private wells located "approximately 100 yards from Industrial Excess Landfill" and concluded that "the concentration of the compounds found is such that consumption of the water does not pose an undue health risk." ATSDR recommended additional monitoring to determine "if and when the water quality becomes such that the water should not be used for human consumption" and sampling to determine background water quality for that area.

In December 1984, OEPA's investigations revealed high on-site concentrations of methane, lateral migration of methane from the landfill, and air methane concentrations in the crawl spaces of the houses adjacent to the site that were up to 100% of the lower explosive limit (LEL). In response to the problem, the EPA Region V Emergency Response Team (ERT) installed an active methane-venting system (MVS) at the site between 1985 and 1987 to control migration of methane. This system was located on the northern, western, and southern edges of the site. EPA proposed in 1984 that IEL be placed on the NPL and began the RI/FS in 1985. Vented gases were initially burned with a candle-flare system, which was later replaced with a ground-flare system.

In March 1986, ATSDR reviewed air-monitoring data from the trace atmospheric gas analyzer for samples taken from ambient air, air at the landfill, and surrounding Uniontown residences. Vinyl chloride was found in an air sample from the backyard of one residence, and vinyl chloride and benzene were found in samples from 10 monitoring wells. ATSDR concluded that:

the concentrations of volatile organic chemicals do not represent a significant public health threat; however . . . benzene and vinyl chloride are known to cause cancer at higher exposure levels Because any additional exposure of the public to these chemicals is

undesirable, and these chemicals occur in a pattern typically seen at many landfills, immediate steps should be taken to determine if there is a continuing presence of these chemicals and any trend of increasing levels in houses In the absence of continuous monitoring and data on continuing ambient levels of these chemicals it is not possible to quantify the risk from exposure to the identified substances. Given this data, a more accurate assessment of the potential public health impact of the substances and guidance on emergency action levels could be provided.

Subsequently, ATSDR comments in July 1986 on the air-monitoring results suggested problems with the quality of the data. These comments indicated that the observed contaminant levels were mostly "at levels . . . reported as common in the published literature," and most likely represented volatile organic compounds (VOCs) found in common household products. Further monitoring was recommended to determine if the contaminants represented migration from the landfill.

ATSDR reviewed the results of groundwater sampling in February 1987 and concluded that:

Several priority pollutants were detected in groundwater collected from residential wells located in the vicinity of the Industrial Excess Site near Akron, Ohio. Most of these appear to be artifacts caused by contamination of the samples. The only potential health threat from organic chemicals appears to be due to 5 µg/L of vinyl chloride found in one well. Appropriate action should be taken to reduce the exposure to vinyl chloride or rule out its presence. Fifteen of the wells show sodium concentrations at or above the 20mg/L level of concern for people on low sodium diets.

The Health Assessment Coordination Activity (HACA) and Emergency Response Branch (ERB) of ATSDR reviewed additional sampling data from well water in February 1987. Samples from three houses showed vinyl chloride levels in excess of the EPA proposed maximum contaminant level (PMCL) of 1 µg/L. A sample from one of these houses had previously shown a vinyl chloride level of 5 µg/L in the data on well water reviewed by ATSDR

in January 1987. The EPA Office of Drinking Water (ODW) stated that the presence of vinyl chloride at these levels posed an unacceptably high excess lifetime risk of cancer from vinyl chloride exposure by the ingestion of drinking water and recommended an alternative supply of drinking water for the houses affected. In response to a consultation request from EPA Region V, HACA and ERB recommended an alternative water supply for all uses at the three houses where samples of well water showed vinyl chloride in excess of the EPA PMCL. The EPA Region V ERT installed in-home air strippers to remove the vinyl chloride.

In response to concerns about the direction of flow for contaminated groundwater, ATSDR enlisted the assistance of the U.S. Geological Survey (USGS) in late 1987. The USGS evaluation was completed in October 1988 and is incorporated in the appendices of the ATSDR report. Also in 1987, EPA prepared a Focused Feasibility Study (FFS) addressing the need for alternative water supplies for residences having wells with endangered water supplies. From the FFS, EPA selected an alternative water-supply system for some of the residences immediately west and northwest of the site. A Record of Decision for provision of alternative water supplies was signed in September 1987.

In June 1988, the ATSDR Epidemiology and Medicine Branch (EMB) released a final technical-assistance report to the Ohio Department of Health (ODOH) on measurements of VOCs in whole blood for 13 of 16 nearby residents who previously had obtained such measurements privately. In this report, ATSDR concluded that:

The VOC test results were within established norms for all but two participants. These two had high levels of tetrachloroethene. Also reported was the presence of a 6-carbon, 14-hydrogen compound. The level of this compound could not be quantified because of the absence of laboratory validation standard materials.

In the report, ATSDR further stated that:

A follow-up of the two participants with high tetrachloroethene levels was done by the

Ohio Department of Health. Neither participant wanted to discuss potential exposure sources because each was sure that exposure was due to the landfill.

The EPA Proposed Remedial Alternative was released for public comment on December 21, 1988. The remedial alternative proposed by EPA, Region V, for the IEL site at that time included (1) installation of a multilayered cap that meets the specifications of the Resource Conservation and Recovery Act of 1976 (RCRA cap), (2) expansion of the MVS and (3) groundwater collection via extraction wells and treatment of the collected groundwater by air stripping, carbon absorption, and "flocculation/sedimentation/filtration." The proposed collection of groundwater was expected to lower the water table under the landfill contents, effecting an "indirect containment" of the landfill contents. Treatment was to be discontinued when discharge criteria of the Clean Water Act were met for the effluent. However, groundwater extraction with discharge to Metzger Ditch would continue in perpetuity. A fence was also to be installed; and property would be acquired on the north, west, and south edges of the site. Monitoring will also be conducted.

On March 24, 1989, ATSDR notified EPA Region V by telephone of a new public health conclusion and recommendation concerning off-site migration of soil-gases at IEL (the verbal discussion was confirmed in a July 13 letter to Basil G. Constantelos, USEPA from Mark M. Bashor, ATSDR, Appendix A). Also on July 7, ATSDR was verbally informed by EPA of a recent detection of high concentrations of methane gas at a location 10 feet beyond the western boundary and 40 feet east of an adjacent residence. A final Remedial Investigation (RI) report was released by EPA in July 1988.

On July 17, 1989, EPA signed a Record of Decision (ROD) mandating a slightly modified version of the above described remedy. EPA also acknowledged the ATSDR concern for persons living or working on properties adjacent to IEL and offered immediate temporary relocation for those persons. EPA announced that acquisition proceedings for the adjacent properties identified in the ROD would begin immediately.

EPA Region V decided on March 1, 2000 to forego the requirements of the original

Record of Decision that provided for treatment of groundwater and the establishment of a RCRA Subtitle C cap over the landfill facility at the IEL site in favor of a strategy of natural attenuation of the groundwater and a RCRA Subtitle D cap over the landfill facility.

ISSUES

Several citizens have long maintained that characterization of the IEL site has not been adequate. Their concerns resulted in three reviews of the IEL site which have been helpful. One such review was performed by the EPA Office of Inspector General (OIG) on April 6, 1998 at the request of Congressman Sawyer and "concluded that there was no indication of wrongdoing by EPA or Ohio EPA employees involved with IEL." and that "prior reviews respond to the identified issues" so that "additional OIG review of the adequacy of the ongoing Superfund cleanup of IEL" would not be warranted.

It is more useful, therefore, to focus upon the reviews of Clean Sites Inc. and the EPA Science Advisory Board. Referrals will be made to the EPA Inspector General or the EPA Criminal Investigation Division, as appropriate, if citizens should present further complaints sounding in wrongdoing.

The Clean Sites review, submitted on March 4, 1992, in general, found that many of the site characterization issues presented by citizens were "well founded and deserve action." Clean Sites found, in particular, that "[t]he conduct of testing, contracting, analysis and information release has been flawed in several major respects during the remedial design process. These flaws must be corrected if trust is to be restored." (See, Clean Sites Report, Finding Number 3). According to the Clean Sites review, such flaws included "significant data gaps" that meant the Region "could not know for sure whether so called 'hot spots' really existed" leading to the conclusion that "while it may be highly probable that no hot spots exist, it is not a fact." Accordingly, Clean Sites found that "the post-ROD testing has become more than usually important at IEL."

Going further than Clean Sites, the EPA Science Advisory Board in the Final Report of

the ad hoc Industrial Excess Landfill Panel submitted on October 6, 1994 noted that "[t]he experience at the IEL site is an indication that the standard procedures used for Superfund Sites in terms of site characterization are inadequate in the face of concerns of the surrounding community." This is substantiated by a review of the Records of Decision (1987, 1989, and as amended in March, 2000) which suggest that little or no landfill waste characterization was undertaken in accordance with requirements as set forth under CERCLA, NCP, and EPA guidance. The NCP (40 CFR, Part 300, March 8, 1990, p. 8847) specifies "that the lead agency shall characterize the nature and threat posed by the hazardous substances and hazardous materials and gather data necessary to assess the extent to which the release poses a threat to human health or the environment or to support the analysis and design of potential response actions by conducting, as appropriate, field investigations to assess the following factors." Seven factors are presented on this issue within the NCP. The third is of particular importance when conducting a mandatory field investigation necessary to support an appropriate cleanup alternative. The third factor provides the following information must be obtained: "The general characteristics of the waste, including quantities, state, concentration, toxicity, propensity to bioaccumulate, persistence, and mobility." In light of the fact that very large amounts of wastes (both liquids and solids) were disposed at IEL, without characterization of the entire site, no determination can be made about the future [potential] threat of releases from "hot spots" or specific points of burial. For example, a localized area where drums of unknown substances were buried may deteriorate over time such that the contents may be released. For this reason, CERCLA and the NCP require definitive analysis of sites known or suspected to pose a threat to human health or the environment.

The Science Advisory Board also noted that the initial rounds of sampling for radiation at the IEL suffered from "imperfections in the chain of custody of the samples and questions about counting methodologies," among other matters, the Science Advisory Board astutely observed that "[f]rom the records of the early rounds of IEL testing it is not always possible to determine from which well and at what depth a sample was drawn Any unusual findings could not be interpreted with confidence, nor could they be compared with values in another round of

sampling. . . . [t]he invalidation decision thus becomes necessary and inevitable when breakdowns in the chain of custody occur, and USEPA was correct in invalidating such rounds" SAB Report at pg. 23-24.

Technically qualified citizens have also registered concerns regarding the characterization of the IEL site. Mr. James Titmas, a civil and sanitary engineer who served as an expert witness for the U.S. Department of Justice to recreate the footprint of wastes from synthetic rubber production during WWII, observed that:

The fundamental problem appears to include a massive underestimation of the IEL by the EPA. This began on day one, and continues today. Without adequate core sampling there has not been a complete assessment of the amounts and kinds of waste. Without identifying the true groundwater background, there has been no comprehensive evaluation of the limits of the contaminated underground water, the rate or directions of movement. Without a containing cap over the IEL, there has ben no measurement of the amount or types of gas emerging from the landfill or moving laterally under a frozen surface.

See notes for Robert Martin, EPA, Uniontown, Ohio meetings. January 25, 1999.

Clean Water Action observed the need to undertake additional test bores in the northeast corner of the IEL site and the Ohio EPA commented in 1991 that "the magnetometry and ground penetrating radar (GPR) studies were not completed in that area." Dr. Theodore Magel, a former scientist associated with the Manhattan Project, testified in a written statement at the Ombudsman hearing last year that further characterization was needed, in general, and for core drilling, in particular. See, Hearing Record pg 49-52.

Concerns were also brought forward in the Hearing about the effectiveness of natural attenuation as a remedy at IEL for groundwater contamination. Mr. Thomas Shalala, an industrial hydrogeologist, testified that "We already have groundwater contamination. [t]he

groundwater has been impacted so [you're] going to have a mounding effect up gradient of the landfill that's going to push the groundwater through the landfill down gradient of the landfill. You have I don't know how many active pumping wells for residential purposes that's literally going to pull that stuff down gradient and you're not going to have any barrier control and that's the number one buzz word of EPA is that you must maintain control of your plume and there is no control of the plume here. You can put an 80 foot cap on but you still have groundwater contamination and you're not controlling the plume. That's all I have." See, Hearing Record, pg. 101-104.

EPA Guidance for the use of natural attenuation at Superfund sites as a remedy, in general, establishes that a high level of site characterization is needed to support a comprehensive evaluation of natural attenuation as a remedy, as opposed to the kind of information needed to support an active remediation. See, OSWER Directive 9200. 4-27. Issued November 1997. The Directive reads in pertinent part:

Demonstrating the efficacy of this remediation approach likely will require analytical or numerical simulation of complex attenuation processes. Such analyses, which are critical to demonstrate natural attenuation's ability to meet remedial action objectives, generally require a detailed conceptual site model as a foundation'. Site characterization should include collecting data to define (in three spatial dimensions over time) the nature and distribution of contamination sources as well as the extent of the groundwater plume and its potential impacts on receptors. However, where monitored natural attenuation will be considered as a remedial approach, certain aspects of site characterization may require more detail or additional elements. For example, to assess the contributions of sorption, dilution, and dispersion to natural attenuation of contaminated groundwater, a very detailed understanding of aquifer hydraulics, recharge and discharge areas and volumes, and chemical properties is required. Where biodegradation will be assessed, and acceptors present in the groundwater, the concentrations of co-metabolites and metabolic by-products, and perhaps specific analyses to identify the microbial populations present.

The findings of these, and any other analyses pertinent to characterizing natural attenuation processes, should be incorporated into the conceptual model of contaminant fate and transport developed for the site.

Mr. Shalala noted the absence of such microbial studies in testimony last year. See Hearing Records, pg. 101-104. EPA Region V in its Responsiveness Summary earlier this year observed that microbial studies had not yet been performed to support the natural attenuation remedy, but that they could be performed in the future.

Factors to be considered in tandem with the adequacy of the characterization of the IEL site are the nearness of homes to the site which rely upon wells for drinking water and the potential multiplicity of off-specification wastes in the landfill. For example, it is possible that drinking water wells are at a level (40 ft.) with the deposition of waste in the IEL site. The U.S. Geological Survey has found that groundwater flows radially from the site. Thorough characterization of IEL, therefore, is extremely important to long-term protection of human health and the environment.

Further characterization should occur in two areas: the landfill itself and the groundwater. On the landfill, in view of safety concerns about sinking multiple boreholes and recognizing that surficial analyses may have been done, it may be more realistic to undertake limited excavation where a number of test pits or trenches are implemented to more fully evaluate contamination. For the groundwater, the EPA Guidance on Natural Attenuation should be followed, which would include performance of microbial studies.

It should be noted that this additional characterization work can proceed on a parallel course with the Performance Monitoring Plan for groundwater now being implemented with appropriate technical oversight from the Lake Township Trustees. The construction of trenches on-site and the placement of a comprehensive monitoring well network off-site are not inconsistent with technical plans of the Trustees to develop a groundwater contingency plan; to further investigate gases that may be spreading off-site (including a possible upgrade of the methane gas venting systems); full analysis of the contents of above ground barrels and nearby

structures as well as testing for tritium on the site.

RECOMMENDATION

The EPA Environmental Response Team should provide oversight and coordination for additional characterization work on the IEL Site that would involve: (1) trenching the site to allow for a more complete analysis of contamination and, (2) establishing a comprehensive monitoring network off-site and performance of microbial studies to fulfill the EPA Guidance on Natural Attenuation and to further understand the impact of potential migration of wastes to nearby homes and drinking water wells. This work should be implemented in tandem with the work being done by the Region, the Trustees and Responsible Parties.

RECOMMENDATION

EPA Region V should assist the National Ombudsman in convening a Technical Working Group within 60 days to openly and jointly address technical issues at the IEL site. Representation should include the Region, the National Ombudsman, the Environmental Response Team, the Ohio EPA, the Lake Township Trustees and their technical advisors, and the Concerned Citizens of Lake Township and their technical advisors, as well as the Responsible Parties and their technical advisors.

CONCLUSION

Several years ago, Clean Sites Inc. noted in their review that "the non-scientific signs of real problems should have been readily apparent and should have triggered the highest quality Agency effort." Several years later, many citizens in the Uniontown community do not feel that

enough is known about the IEL site or that they have had any meaningful involvement in the course of planned remediation for the site. As the EPA Science Advisory Board has found:

The information seeking and sharing process has to be one that the community finds legitimate and agrees to in advance, the community needs to be in the process. . . . Dialogue with and outreach to the larger community is essential. . . . Communication efforts are likely to fail if they are not informed by a thorough empirical characterization of the beliefs and knowledge held by those living near the site.

In view of the findings of Clean Sites and the SAB regarding the need for adequate site characterization and meaningful citizen participation, therefore, these preliminary Ombudsman Recommendations should be adopted to ensure further remedial progress at the IEL site.

Attachment:

January 30, 1999 Transcript Public Hearing

cc: Tim Fields
Mike Shapiro, Titles
Doug Ballotti, Region V Ombudsman
Lake Township Trustees
EPA Environmental Response Team
Concerned Citizens of Lake Township
Mr. Paul Wolford