DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Agency for Toxic Substances
and Disease Registry

Memorandum

Date December 23, 1994

From Laura Barr
Environmental Health Scientist

Subject Industrial Excess Landfill
Health Consultation on Health Outcome Data

To Addresses:

We have enclosed a health consultation on health outcomes, such as cancers and birth defects, of citizens living near the Industrial Excess Landfill, Uniontown, Ohio. In this consultation, the Agency for Toxic Substances and Disease Registry (ATSDR) summarizes the available information and makes recommendations for further evaluation.

Concerns or questions on the health consultation should be directed to Laura Barr or Deborah Boling at 404-639-0628. Additionally, ATSDR staff will be available to discuss the consultation at future meetings of the Technical Information Committee.

Sincerely yours,

Laura Barr

Laura H. Barr

Attachment

Addresses:
TIC Distribution List

DEPARTMENT OF HEAL[illegible] x HUMAN SERVICES

Public Health Service
Agency for Toxic Substances
and Disease Registry

Memorandum

Date December 13, 1994

From Medical Officer, SSAB, DHAC (E32)
Environmental Health Scientists, SSAB, DHAC (E32)

Subject Health Consultation: Community Health Concerns near Industrial Excess Landfill, Uniontown, Ohio (50W2).

To Louise Fabinski
ATSDR Senior Regional Representative
EPA Region V, Chicago, Illinois
Through: Director, DHAC (E32) AS for BW
Branch Chief, SSAB, DHAC (E32) AHH for
Chief, Section A, SSAB, DHAC (E32) AHH

Background and Statement of Issues

The Agency for Toxic Substances and Disease Registry (ATSDR) has received comments concerning several community health concerns expressed by residents of Lake Township, Stark County, Ohio, in the vicinity of the Industrial Excess Landfill. These concerns were expressed to ATSDR via a letter from Dr. Elaine B. Panitz, a board certified physician in occupational and environmental medicine, after she was asked to review a cancer death case in a young man who lived on the western edge of the Industrial Excess Landfill site in Uniontown, Ohio. Dr. Panitz's concerns were raised after she interviewed several area residents. There appeared to be an unusually large number of neoplasms in the group of individuals she interviewed. ATSDR has been asked to evaluate these community health concerns based on the available health outcome data. Dr. Panitz and the residents are concerned that there may be increased occurrences of bone cancer, reticuloendothelial system cancers, soft-tissue cancers, and birth defects. Specific cancer types of concern are: breast cancer, thyroid cancer, and central nervous system (CNS) cancers in children and young adults. (Attachment 1)

Industrial Excess Landfill (IEL) is a National Priorities List (NPL) site just outside of Uniontown, Stark County, Ohio (figure 1). From 1966 to 1980, the site was operated as an industrial and municipal waste dump. Landfill material included paper and lumber scraps, fly ash, masonry rubble and a variety of solid and liquid wastes.

In 1989, ATSDR released a public health assessment for IEL.[1] Some contaminants of concern included methane, volatile organic compounds (VOCs), and metals [1,2,3]. An active methane

venting system (MVS) was installed in 1987 and those residents in the area of groundwater contamination, west of the IEL, have been provided with alternate water since January 1991. The site is fenced and remediation is scheduled to begin in 1995. Currently ATSDR is reviewing environmental data collected after 1989. Consultations and opinions are provided to the Technical Information Committee (TIC).

According to the 1980 population estimates, 20,000 residents live within a 3-mile radius of IEL and approximately 3,000 people reside within a one-mile radius. There are approximately 400 residential homes within a 0.5 mile radius.[1]

Dr. Panitz and the citizens believe that possible exposure to toxic substances originating from the landfill have resulted in adverse health effects. (Attachment 1)

For the United States population as a whole, cancer is a common illness occurring in one in three individuals' lifetime.[4] The risk of developing a cancer increases with age.

The Ohio State Department of Health (OHDOH) does not have registry or mortality cancer data readily available at the community level (i.e. by zip code, census tract, or block). The only cancer mortality data readily available are at the county level and above.[5] Their birth defects data is also available only at the county level and above.

Discussion

This health consultation will focus on the following questions as interpreted from the community concerns:

> Have an excess number of bone cancers occurred in the past in the population of children and young adults in the community living near the Industrial Excess Landfill as compared to the number of bone cancers which occurred in the past in the State and surrounding communities?
>
> Have an excess number of soft-tissue cancers occurred in the past in the population of children and young adults in the community living near the Industrial Excess Landfill as compared to the number of soft-tissue cancers which occurred in the past in the State and surrounding communities?
>
> Have an excess number of birth defects occurred in the past in the community living near the Industrial Excess Landfill as compared to the number of birth defects which

occurred in the past in the State and surrounding communities?

In order to focus on these questions, ATSDR reviewed health outcome data. In our health outcome data analysis, we used the following information, which is discussed below:

- Cancer Mortality Rates in Ohio, 1986 - 1988[10]
- Childhood Cancer Burden in Portage, Stark, and Summit Counties, Ohio[13]
- Assessment of the Pediatric Cancer Burden in Portage, Stark, and Summit County, Ohio.[14]
- Letter from Dr. Elaine Panitz regarding health information on the IEL site in Uniontown, Ohio.[Attachment 1]
- Vital Statistics. 1979 - 1988.[15,18]

It should be noted that this analysis of health outcome data does not attempt to link cancer patterns with exposures to hazardous agents associated with the Industrial Excess Landfill site. Furthermore, it does not provide information on future patterns of cancer. Analysis of health outcome data cannot establish cause and effect relationships with environmental exposures. Rather it is an attempt to determine if indeed a higher number of cases of those specific cancers and birth defects exist in the community living near the IEL site. Our analysis will indicate why there is currently insufficient information to answer the above questions based on available health outcome data. However, our analysis will include recommendations for additional health outcome data collection and review.

Birth Defects Information

Birth defects may arise in two to three percent of all births. Sixty to sixty-five percent of these birth defects are of unknown cause with twenty-five percent caused by genetic problems and five to ten percent caused by teratogenic agents.[6]

Environmental teratogens may be classified as follows: biological agents (viruses, bacteria, and protozoa), physical agents (radiation, hyperthermia), habitual practices (smoking and drinking), nutritional factors, and chemicals (drugs and toxic exposures in the workplace and general environment). Of birth defects caused by exposure to environmental agents, it

is estimated that four to six percent may result from exposure to chemicals.[6]

Birth defects information was not available from the Ohio Department of Health but could be made available on a limited basis. Before 1988, the birth certificates only contained the defect which was written in by the physician. During 1988-89, the birth certificate record was changed to include a list of birth defects so that the physician could check-off the appropriate defect to make the records more standardized (Attachment 2).[7] This information has been copied into computer format beginning with 1989 data. Counts and rates of specific birth defects can be done at the county level and above. For example, the Stark county rates for specific birth defects can be provided for the years 1989 to the present either for Stark county or Stark county excluding Akron metropolitan area.[8,9] These can be compared to other Ohio counties and the State.

The major difficulty of reviewing birth defects data from currently available birth defects records is that the data only covers a time span of four years with a relatively small number of exposed persons near the landfill within the one-mile radius. In addition, only county statistics are available and as explained previously only 2%-3% of all live births result in birth defects. The State of Ohio is currently reviewing the birth defects rates.

Letter from Dr. Panitz Regarding Health Information on the IEL site

The information from Dr. Panitz consists of several case histories and preliminary interview reports of possible tumors in the area surrounding the landfill in Uniontown; however, confirmations of many of the "tumors" described in the case histories through pathology and/or physician reports are not stated in the document.

Most of the information on possible cancers in the area surrounding the Industrial Excess Landfill in Uniontown, Stark County, Ohio lacks identifying information needed to make definitive conclusions. Identifying information should include name, sex, age (birth date), occupation, race, diagnosis, date of diagnosis, date of death (if applicable), address (approximate geographic location), telephone number, length of time in residence, contact person (i.e. patient, parent, friend, relative), method for contact, and physician contact. The data included in each case report varied.

Two previous health studies on the population of Stark County exist.[10,12,13] The first study is of cancer mortality in the state of Ohio and its constituent counties. This study was initiated as part of an effort to increase surveillance of cancer in the state of Ohio. The study was an analysis of the population-based computerized death records of Ohio residents with the underlying cause of death attributed to cancer during the years 1986 through 1988.[10] The second study was an assessment of the pediatric cancer burden in Stark, Portage, and Summit counties.[12,13] This study was conducted as a direct result of regional community health concerns regarding childhood cancer and environmental exposures.

Cancer Mortality in Ohio[10]

The Ohio Department of Health, in an effort to increase surveillance of cancer in Ohio, issued a report on the rates of cancer mortality in Ohio from 1986 - 1988. The cases were defined as deceased Ohio residents with the underlying cause of death attributed to cancer. Linear extrapolation of Ohio's 1970 and 1980 Census populations was used to estimate the population at risk in the 88 counties and seven selected cities during the observation period.

Death certificate information is subject to recording and diagnostic errors and may not be a true indicator of the number of people diagnosed with cancer but provides a good indication of the prevalence of the disease in the population. The county rates may not be representative of the specific cities located in each county because of possible population errors, differences in demographic make-up of the populations, and also the case averaging due to the small number of cancer cases in the numerator.[11]

No conclusions regarding cancer were drawn by the Ohio Department of Health.[4]

Childhood Cancer Burden Study[13,14]

Standardized Mortality Ratios (SMRs) [*the number of deaths observed in a given population / the number of deaths expected in that population, given the death rates from a comparison population*] and Standardized Incidence Ratios (SIRs) [*the number of new cases of a disease in a given population / the number of new cases expected in that population, given the rates of new disease in a comparison population*] were calculated by the Ohio Department of Health for total cancers and for four primary cancers (i.e. brain & central nervous

system (CNS), leukemia, lymphoma, kidney) for Portage, Stark, and Summit counties. Cases were also mapped according to residence location to see if any pattern of spatial clustering exists. Spatial clustering refers to whether or not a greater than expected number of cancer cases was observed in any specific part of the three counties over time. Incidence data was gathered from hospital records.

Based on statistical analysis, the observed number of deaths attributed to cancer were not significantly higher than expected for Portage, Stark, and Summit Counties (Table 1). The observed number of new cases was not statistically different from the expected number of cases [based on the Surveillance, Epidemiology and End Results (SEER) Program data] (Table 2). According to the Ohio State Department of Health, mapping of cases did not reveal any visual evidence of spatial clustering. However, the cluster maps were not included with the reports furnished to ATSDR.

The study also reviewed the limitations of the available mortality data and the inherent errors that could appear in any epidemiological study such as the possibility that incident cases were missed, or that information was misreported because of inconsistencies in the way the hospitals were surveyed or the reporting of incident cases. Reporting errors could have caused duplication of incident cases, with a single case counted as two or more in the data set.

Vital Statistic Analysis (Cancer Mortality)

ATSDR analyzed the census and cancer mortality data available in a database administered by the National Centers for Health Statistics. Cancer mortality and census data for the years 1979 - 1988 were analyzed to see if any significant increase in cancer mortality occurred during those years (Tables 3 - 14). The deaths occurring in persons 5 - 24 years old were evaluated for the following cancer types: bone, leukemia, lymphatic and hematopoietic, brain, and all cancers. The expected number of cancer deaths in Stark County was projected using the rate for the State of Ohio.[15,16,17,18]

Analysis of these data did not indicate any significant excesses of cancers for the residents of Stark County as a whole, however it does not rule out the possibility that certain subpopulations in smaller areas of the county (i.e. the population surrounding the Industrial Excess Landfill) experienced excesses. This type of occurrence is known as

dilution of effect. This analysis has the same limitations as the previous mortality data analysis.[11]

This analysis can only serve as a descriptive tool since the analysis was based on data taken from death certificates. It is not necessarily indicative of the total number of people who are diagnosed with cancer. Cancer cases that occurred among persons now deceased may not be helpful in linking exposure to disease because of the lack of information on exposure, possible confounding factors such as filling out the form incorrectly or with misinformation, and random error associated with the observation of deaths.[11]

Future Data Sources

All primary malignancies with the exception of basal and squamous cell carcinoma of the skin and carcinoma *in situ* of the cervix diagnosed on and after January 1, 1992 are required to be reported to the Ohio Cancer Incidence Surveillance System (OCISS). The primary objective of the OCISS is to provide high quality data for the identification of high risk populations for various types of cancer in Ohio. The incidence information can be used in future years to evaluate if there is an increase of a particular cancer in a specific part of Ohio. The parameters included in the OCISS are described in attachment 3.[19]

Conclusions

Based on the information reviewed, ATSDR concludes the following:

1. There are insufficient data available to either support or negate the concern that there are an excessive number of cancers near the Industrial Excess Landfill. The January 1992 implementation of the Ohio Cancer Incidence Surveillance System (OCISS) can be used in future years to evaluate if there is an increase of a particular cancer in a specific part of Ohio. Additionally, it will further help identify high risk populations for various cancers. However, these data do not currently cover a sufficient time span to give any reliable cancer rates compared to city, county, and state populations.

2. Birth defects data were also insufficient to determine if an excess number of birth defects occurred in the community near the Industrial Excess Landfill. Birth defects data were only recently (1988 to present) standardized by the State of Ohio. The State is maintaining a computer database for further investigation and is currently reviewing the birth defects rates. However, this database can only be used to extrapolate county birth defect rates. The size of the community in Uniontown coupled with the fact that only 2%-3% of all live births result in birth defects will make statistical analysis difficult to interpret.

Our conclusions from specific reports and databases are the following:

1. The Panitz report of possible cancer cases in Uniontown, Stark County, Ohio in the proximity of the Industrial Excess Landfill lacks information to reach any conclusions as to the extent of cancer found in the city, county, and state populations.

2. The Cancer Mortality Rates in Ohio, 1986-88 Final Report is solely descriptive. The data is taken from death certificates. No conclusions were drawn by the Ohio Department of Health or ATSDR.

3. The final report on the Assessment of Pediatric Cancer Burden in Portage, Stark, and Summit counties has errors inherent to analysis of mortality and incidence. The report better characterized the population at risk because it reviewed newly diagnosed cancer cases in the hospitals at each county and cross-referenced these cases with medical records between January 1, 1979 and June 30,

1987. In addition, the use of clustering helps in assessing whether or not a greater than expected number of cancer cases was observed in any specific part of the three counties. It was concluded in the report that the statistical analysis and mapping of deaths and cases did not indicate a need to further investigate the prevalence or mortality of childhood cancers in Portage, Stark, and Summit counties.

Recommendations

1. A birth defects review should include, if possible, the following: overall birth defect rate, anencephalus, microcephalus, other central nervous system anomalies, and other musculoskeletal/integumental anomalies.

2. When sufficient information is available, ATSDR should obtain the OCISS information from the Ohio Department of Health to determine if there is an increase in cancer burden in Uniontown, Stark County, Ohio in comparison to other counties and state rates. If an increase is indicated, a case series (medical records review) of the observed cancer cases should be considered.

3. Provide community health education by ATSDR and the Ohio Department of Health. This could include contaminant-related information about diseases at the site as well as information about diseases that have a high prevalence in the community but may not be site-related.

4. ATSDR should continue to review environmental data as it becomes available and to provide consultations and opinions through the Technical Information Committee.

Health Activities Recommendation Panel (HARP)

The data and information developed in the public health consultation for the community concerns near the IEL site have been evaluated by the ATSDR Health Activities Recommendation Panel (HARP) for appropriate public health actions. HARP has determined that the following actions are indicated. If records for Uniontown are available, a case series is recommended to review cases of cancer in the area and a review of birth defects data for the community surrounding IEL is recommended. Community health education is recommended to assist the community near the IEL site in understanding their potential for exposure. Health professions education is also recommended to assist the local health professional in

diagnosing, treating, and preventing injury or disease due to exposure to hazardous substances.

Public Health Actions

The purpose of the Public Health Action Plan (PHAP) is to ensure that this public health consultation not only identifies public health hazards but also provides a plan of action designed to mitigate and prevent adverse human health effects resulting from exposure to hazardous substances in the environment.

ATSDR in cooperation with appropriate public health agencies will evaluate the feasibility and resources necessary to pursue implementation of the health actions determined by the HARP. In addition, ATSDR will collaborate with appropriate federal, state, and local agencies to pursue the implementation of the recommendations outlined in this public health consultation.

ATSDR has requested that the Ohio Department of Health review birth defects data in the area of the IEL. ATSDR will continue to inform the community on health related issues through the Technical Information Committee.

ATSDR will continue to discuss health concerns with individual community members. ATSDR may encourage state health agencies to conduct health professions education.

ATSDR will evaluate this PHAP annually unless additional information warrants more frequent evaluation.

Mark Rodriguez

Mark Rodriguez
Medical Officer

Déborah A. Boling

Déborah A. Boling
Environmental Health Scientist

Laura J Barr

Laura Barr
Environmental Health Scientist

Attachments

cc: Technical Information Committee members

References

1. Agency for Toxic Substances and Disease Registry. Site Review and Update for Industrial Excess Landfill, Uniontown, Stark County, Ohio, CERCLIS No. OHD000377911. September 16, 1992.

2. ATSDR Health Assessment for Industrial Excess Landfill, Uniontown, Ohio, July 21, 1989.

3. Agency for Toxic Substances and Disease Registry. Public health assessment guidance manual. Atlanta: ATSDR, March, 1992.

4. MMWR. Guidelines for Investigating Clusters of Health Events. Atlanta, GA. July 27, 1990. 39(RR-11);1-16.

5. Ohio Department of Health. Shelley, T. *Personal Communication*. September 29, 1992.

6. Principles and Practice of Environmental Medicine. Edited by Alyce Bezman Tarcher, MD. Plenum Medical Book Company. 1992.

7. Agency for Toxic Substances and Disease Registry. ATSDR record of activity for telephone communication with Ohio Department of Health, Tracy Shelley. October 22, 1993.

8. Ohio Department of Health. Shelley, T. *Personal communication*. October 1, 1992.

9. Ohio Department of Health. Shelley, T. *Personal communication*. July 20, 1993.

10. Ohio Department of Health. Cancer Mortality Rates in Ohio, 1986 - 1988, Final Report. Report Number 890414. June 1990.

11. Mauser, JS and AK Bahn. Epidemiology: an introductory text. 2nd ed. W.B. Saunders Company. 1985.

12. Hennekens, C.H., et. al. Epidemiology In Medicine. Little, Brown and Company. 1987.

13. Ohio Department of Health, Chronic Disease and Special Studies Unit. Childhood Cancer Burden in Portage, Stark, and Summit Counties, Ohio, 1979 - 1987, Update Report #1 (Protocol). Case Log No. 870617. July 10, 1987.

14. Ohio Department of Health, Special Studies Branch, Division of Epidemiology. Assessment of the Pediatric Cancer Burden in Portage, Stark, and Summit County, Ohio. Case Log No. 870617. October 13, 1988.

15. Division of Cancer Prevention and Control, National Cancer Institute. Surveillance, Epidemiology and End Result (SEER), 1973-89.

16. U.S. Department of Commerce, Bureau of the Census. 1970 Census of Population: Ohio, General Population Characteristics. Washington, D.C.. 1972.

17. U.S. Department of Commerce, Bureau of the Census. 1980 Census of Population: Ohio, General Population Characteristics. Washington, D.C.. 1982.

18. State of Ohio, Department of Health. 1987 Report of Vital Statistics for Ohio. Table 29. 1988.

19. Ohio Department of Health. The Ohio Cancer Incidence Surveillance System Physician Fact Sheet. February, 1992.

Tables and Attachments

Table 1[14]

Portage, Stark and Summit County Pediatric Cancer - Observed[1] and Expected[2] cancer mortality in children 0-14 years of age, standardized mortality ratios (SMR) and 99% confidence intervals (99% CI) for January 1, 1980 - December 30, 1986

	OHIO Rates				SEER Rates		
	Obs	Exp	SMR	99% CI	Exp	SMR	99% CI
PORTAGE							
Brain & CNS	5	2.40	2.08	0.45-5.89	1.93	2.59	0.56-7.34
Leukemia	5	3.43	1.45	0.31-4.11	3.94	1.27	0.27-3.60
Lymphoma	2	0.74	2.70	+	0.74	2.70	+
Other	3	2.62	1.15	+	2.95	1.02	+
All	15	9.19	1.63	0.75-3.06	9.56	1.57	0.72-2.95
STARK							
Brain & CNS	6	6.35	0.94	0.24-2.45	5.18	1.15	0.29-3.00
Leukemia	11	9.18	1.20	0.47-2.48	10.41	1.06	0.42-2.19
Lymphoma	4	2.03	1.97	+	2.00	2.00	+
Other	6	7.15	0.84	0.22-2.19	7.83	0.77	0.20-2.01
All	27	24.71	1.09	0.63-1.76	25.42	1.06	0.61-1.71
SUMMIT							
Brain & CNS	12	8.00	1.50	0.62-3.02	6.64	1.81	0.74-3.64
Leukemia	14	11.60	1.21	0.54-2.32	13.07	1.07	0.48-20.5
Lymphoma	1	2.65	0.38	+	2.53	0.40	+
Other	10	9.44	1.06	0.39-2.27	10.11	0.99	0.37-2.12
All	37	31.69	1.18	0.74-1.76	32.35	1.14	0.71-1.70
Three County Totals							
Brain & CNS	23	16.75	1.37	0.74-2.29	13.75	1.67	0.91-2.79
Leukemia	30	24.21	1.24	0.73-1.95	27.42	1.09	0.64-1.72
Lymphoma	7	5.42	1.29	0.38-3.15	5.27	1.33	0.39-3.25
Other	19	19.21	0.99	0.50-1.62	20.89	0.91	0.46-1.60
All	79	65.59	1.20	0.88-1.59	67.33	1.17	0.86-1.55

Table 1 explained:

+ less than 5 cases observed

[1] From Division of Vital Statistics, Ohio Department of Health

[2] From age, race, and sex specific 1978-1981 SEER rates and 1980-1986 Ohio rates applied to the average of the 1982 and 1984 NCI county population estimates.

The 99% Confidence Interval (99% CI) means that 99% of the estimates fall within the given range of indicated values.

Data compiled and calculations by Special Studies Branch, Division of Epidemiology, Ohio Department of Health.

Table 2[14]

Portage, Stark and Summit County Pediatric Cancer - Observed[1] and Expected[2] new cases in children 0-14 years of age, standardized incidence ratios (SIR) and 99% confidence intervals (99% CI) for January 1, 1979 - June 30, 1987.

	Observed	Expected	SIR	99% CI
PORTAGE				
Brain & CNS	6	7.12	0.84	0.22-2.19
Leukemia	13	10.68	1.22	0.52-2.39
Lymphoma	5	4.12	0.97	0.21-2.75
Kidney	0	2.37	+	+
Other	4	10.61	0.38	+
All	28	34.90	0.80	0.47-1.28
STARK				
Brain & CNS	13	18.90	0.69	0.30-1.35
Leukemia	26	27.62	0.94	0.53-1.53
Lymphoma	19	10.80	1.76	0.89-3.09
Kidney	6	6.51	0.92	0.24-2.40
Other	32	28.19	1.14	0.69-1.77
All	96	92.03	1.04	0.79-1.34
SUMMIT				
Brain & CNS	33	24.13	1.37	0.83-2.12
Leukemia	39	34.68	1.12	0.72-1.66
Lymphoma	13	13.34	0.97	0.42-1.90
Kidney	10	8.81	1.14	0.42-2.44
Other	32	36.09	0.89	0.54-1.38
All	127	117.06	1.08	0.86-1.35
Three County Totals				
Brain & CNS	52	50.15	1.04	0.70-1.48
Leukemia	78	72.98	1.07	0.79-1.42
Lymphoma	37	28.26	1.31	0.82-1.97
Kidney	16	17.69	0.90	0.43-1.66
Other	68	74.89	0.91	0.67-1.23
All	251	243.99	1.03	0.87-1.21

Table 2 explained:

[1] Reported by area hospitals and regional pediatric centers. Sixteen cases, county of residence unknown, have been randomly assigned to a county based on distribution of cases

[2] From age, race, and sex specific 1978-1981 SEER rates applied to the average of the 1982 and 1984 NCI county population estimates.

The 99% Confidence Interval (99% CI) means that 99% of the estimates fall within the given range of indicated values.

Data compiled and calculations by Special Studies Branch, Division of Epidemiology, Ohio Department of Health, 1988.

Table 3 - Numbers of Deaths and Proportional Comparison of 1979-1988 Cancer Mortality for Stark County versus Portage County, Summit County and the state of Ohio in persons 5 - 24 years old

Age Group	Stark	Stark Proportion	Portage	Portage Proportion	Summit	Summit Proportion	State	State Proportion
05 - 09	12	19.67%	8	25.00%	23	24.47%	341	18.67%
10 - 14	14	22.95%	3	9.38%	20	21.28%	333	18.27%
15 - 19	17	27.87%	8	25.00%	23	24.47%	496	27.21%
20 - 24	18	29.51%	13	40.63%	28	29.79%	653	35.82%
Total	61	100.00%	32	100.00%	94	100.00%	1823	100.00%

* ICD Code 140.0 - 239.9

Table 4 - Numbers of Deaths and Proportional Comparison of 1979-1988 Lymphatic and Hematopoietic Tissue Cancer Mortality for Stark County versus Portage County, Summit County and the state of Ohio in persons 5 - 24 years old

Age Group	Stark	Stark Proportion	Portage	Portage Proportion	Summit	Summit Proportion	State	State Proportion
05 - 09	8	25.00%	5	29.41%	8	18.60%	164	20.50%
10 - 14	9	28.13%	2	11.76%	9	20.93%	158	19.75%
15 - 19	6	18.75%	5	29.41%	13	30.23%	233	29.13%
20 - 24	9	28.13%	5	29.41%	13	30.23%	245	30.63%
Total	32	100.00%	17	100.00%	43	100.00%	800	100.00%

* ICD Code 200.0 - 208.9

Table 5 - Numbers of Deaths and Proportional Comparison of 1979-1988 Leukemia Mortality for Stark County versus Portage County, Summit County and the state of Ohio in persons 5 - 24 years old

Age Group	Stark	Stark Proportion	Portage	Portage Proportion	Summit	Summit Proportion	State	State Proportion
05 - 09	6	33.33%	4	36.36%	8	23.53%	136	23.90%
10 - 14	5	27.78%	1	9.09%	9	26.47%	126	22.14%
15 - 19	3	16.67%	3	27.27%	10	29.41%	158	27.77%
20 - 24	4	22.22%	3	27.27%	7	20.59%	149	26.19%
Total	18	100.00%	11	100.00%	34	100.00%	569	100.00%

* ICD Code 204.0 - 208.9

Table 6 - Numbers of Deaths and Proportional Comparison of 1979-1988 Bone Cancer Mortality for Stark County versus Portage County, Summit County and the state of Ohio in persons 5 - 24 years old

Age Group	Stark	Stark Proportion	Portage	Portage Proportion	Summit	Summit Proportion	State	State Proportion
05 - 09	0	0.00%	0	0.00%	0	0.00%	8	6.35%
10 - 14	1	25.00%	0	0.00%	2	33.33%	28	22.22%
15 - 19	3	75.00%	1	100.00%	4	66.67%	57	45.24%
20 - 24	0	0.00%	0	0.00%	0	0.00%	33	26.19%
Total	4	100.00%	1	100.00%	6	100.00%	126	100.00%

* ICD Code 170.0 - 170.9

Table 7 - Numbers of Deaths and Proportional Comparison of 1979-1988 Connective Tissue Cancer Mortality for Stark County versus Portage County, Summit County and the state of Ohio in persons 5 - 24 years old

Age Group	Stark	Stark Proportion	Portage	Portage Proportion	Summit	Summit Proportion	State	State Proportion
05 - 09	0	0.00%	0	0.00%	1	16.67%	13	13.40%
10 - 14	0	0.00%	0	0.00%	1	16.67%	18	18.56%
15 - 19	1	100.00%	1	33.33%	3	50.00%	26	26.80%
20 - 24	0	0.00%	2	66.67%	1	16.67%	40	41.24%
Total	1	100.00%	3	100.00%	6	100.00%	97	100.00%

* ICD Code 171.0 - 171.9

Table 8 - Numbers of Deaths and Proportional Comparison of 1979-1988 Brain Cancer Mortality for Stark County versus Portage County, Summit County and the state of Ohio in persons 5 - 24 years old

Age Group	Stark	Stark Proportion	Portage	Portage Proportion	Summit	Summit Proportion	State	State Proportion
05 - 09	4	44.44%	3	50.00%	6	33.33%	82	28.28%
10 - 14	2	22.22%	1	16.67%	5	27.78%	69	23.79%
15 - 19	3	33.33%	0	0.00%	2	11.11%	66	22.76%
20 - 24	0	0.00%	2	33.33%	5	27.78%	73	25.17%
Total	9	100.00%	6	100.00%	18	100.00%	290	100.00%

* ICD Code 191.0 - 191.9

Table 9

Percentage of Deaths in State Attributed by County by Age and Cancer Type								
	Age Group	State Number	Stark County Number	Portage County Number	Summit County Number	Stark County %	Portage County %	Summit County %
All Cancer Types								
	05-09 years old	341	12	8	23	3.5191	2.3460	6.7449
	10-14 years old	333	14	3	20	4.2042	0.9009	6.0060
	15-19 years old	496	17	8	23	3.4274	1.6129	4.6371
	20-24 years old	653	18	13	28	2.7565	1.9908	4.2879
Lymphatic and Hemopoietic Cancer								
	05-09 years old	164	8	5	8	4.8780	3.0488	4.8780
	10-14 years old	158	9	2	9	5.6962	1.2658	5.6962
	15-19 years old	233	6	5	13	2.5751	2.1459	5.5794
	20-24 years old	245	9	5	13	3.6735	2.0408	5.3061
Leukemia								
	05-09 years old	136	6	4	8	4.4118	2.9412	5.8824
	10-14 years old	126	5	1	9	3.9683	0.7937	7.1429
	15-19 years old	158	3	3	10	1.8987	1.8987	6.3291
	20-24 years old	149	4	3	7	2.6846	2.0134	4.6980
Bone Cancer								
	05-09 years old	8	0	0	0	0.0000	0.0000	0.0000
	10-14 years old	28	1	0	2	3.5714	0.0000	7.1429
	15-19 years old	57	3	1	4	5.2632	1.7544	7.0175

Table 9. (continued)

Percentage of Deaths in State Attributed by County by Age and Cancer Type								
	Age Group	State Number	Stark County Number	Portage County Number	Summit County Number	Stark County %	Portage County %	Summit County %
	20-24 years old	33	0	0	0	0.0000	0.0000	0.0000
Connective Tissue Cancer								
	05-09 years old	13	0	0	1	0.0000	0.0000	7.6923
	10-14 years old	18	0	0	1	0.0000	0.0000	5.5556
	15-19 years old	26	1	1	3	3.8462	3.8462	11.5385
	20-24 years old	40	0	2	1	0.0000	5.0000	2.5000
Brain Cancer								
	05-09 years old	82	4	3	6	4.8780	3.6585	7.3171
	10-14 years old	69	2	1	5	2.8986	1.4493	7.2464
	15-19 years old	66	3	0	2	4.5455	0.0000	3.0303
	20-24 years old	73	0	2	5	0.0000	2.7397	6.8493

Table 10

95.00% Confidence limits (based on Poisson) for Observed deaths and for the SMR due to death from brain cancer in the 5 - 24 years old age group

Year	Observed Deaths	Expected Deaths	95.00% C.I.* on Observed		SMR	95.00% C.I.* on SMR		P Value
			Lower	Upper		Lower	Upper	
1979	3.0000	1.0800	0.6187	8.7673	2.7778	0.5728	8.1178	0.0956
1980	1.0000	1.1900	0.0253	5.5716	0.8403	0.0213	4.6821	0.6662
1981	0.0000	0.9800	0.0000	3.6889	0.0000	0.0000	3.7642	0.3753
1982	1.0000	1.4700	0.0253	5.5716	0.6803	0.0172	3.7902	0.5679
1983	2.0000	1.3900	0.2422	7.2247	1.4388	0.1743	5.1976	0.4247
1984	0.0000	0.8100	0.0000	3.6889	0.0000	0.0000	4.5542	0.4449
1985	0.0000	0.8700	0.0000	3.6889	0.0000	0.0000	4.2401	0.4189
1986	2.0000	0.8300	0.2422	7.2247	2.4096	0.2918	8.7044	0.2020
1987	0.0000	0.8200	0.0000	3.6889	0.0000	0.0000	4.4986	0.4404
1988	0.0000	0.0088	0.0000	3.6889	0.0000	0.0000	4.1919	0.4148

* C.I. = confidence interval

Table 11

95.00% Confidence limits (based on Poisson) for Observed deaths and for the SMR due to death from lymphatic and hemopoietic cancers in the 5 - 24 years old age group

Year	Observed Deaths	Expected Deaths	95.00% C.I.* on Observed Lower	Upper	SMR	95.00% C.I.* on SMR Lower	Upper	P Value
1979	4.0000	2.6400	1.0899	10.2416	1.5152	0.4128	3.8794	0.2727
1980	3.0000	3.9000	0.6187	8.7673	0.7692	0.1586	2.2480	0.4532
1981	6.0000	2.8500	2.2019	13.0595	2.1053	0.7726	4.5823	0.0696
1982	3.0000	5.6500	0.6187	8.7673	0.5310	0.1095	1.5517	0.1853
1983	1.0000	2.7700	0.0253	5.5716	0.3610	0.0091	2.0114	0.2362
1984	1.0000	2.5900	0.0253	5.5716	0.3861	0.0098	2.1512	0.2693
1985	5.0000	2.1800	1.6235	11.6683	2.2936	0.7447	5.3524	0.0703
1986	5.0000	2.1800	1.6235	11.6683	2.2936	0.7447	5.3524	0.0703
1987	1.0000	2.1300	0.0253	5.5716	0.4695	0.0119	2.6158	0.3720
1988	3.0000	2.2300	0.6187	8.7673	1.3453	0.2774	3.9315	0.3853

* C.I. = Confidence Interval

Table 12

95.00% Confidence limits (based on Poisson) for Observed deaths and for the SMR due to death from leukemia in the 5 - 24 years old age group

Year	Observed Deaths	Expected Deaths	95.00% C.I.* on Observed Lower	95.00% C.I.* on Observed Upper	SMR	95.00% C.I.* on SMR Lower	95.00% C.I.* on SMR Upper	P Value
1979	1.0000	2.0300	0.0253	5.5716	0.4926	0.0125	2.7447	0.3979
1980	3.0000	2.9500	0.6187	8.7673	1.0169	0.2097	2.9720	0.5565
1981	3.0000	1.9300	0.6187	8.7673	1.5544	0.3206	4.5426	0.3044
1982	2.0000	3.7800	0.2422	7.2247	0.5291	0.0641	1.9113	0.2721
1983	1.0000	1.8200	0.0253	5.5716	0.5495	0.0139	3.0613	0.4569
1984	0.0000	2.0500	0.0000	3.6889	0.0000	0.0000	1.7995	0.1287
1985	4.0000	1.4100	1.0899	10.2416	2.8369	0.7730	7.2635	0.0549
1986	2.0000	1.5500	0.2422	7.2247	1.2903	0.1563	4.6611	0.4588
1987	0.0000	1.5100	0.0000	3.6889	0.0000	0.0000	2.4430	0.2209
1988	2.0000	1.5700	0.2422	7.2247	1.2739	0.1563	4.6017	0.4653

* C.I. = Confidence Interval

Table 13

95.00% Confidence limits (based on Poisson) for Observed deaths and for the SMR due to death from bone cancer in the 5 - 24 years old age group

Year	Observed Deaths	Expected Deaths	95.00% C.I.* on Observed Lower	Upper	SMR	95.00% C.I.* on SMR Lower	Upper	P Value
1979	1.0000	0.6400	0.2053	5.5716	1.5625	0.0396	8.7057	0.4727
1980	0.0000	0.6500	0.0000	3.6889	0.0000	0.0000	5.6752	0.5220
1981	0.0000	0.3400	0.0000	3.6889	0.0000	0.0000	10.8496	0.7118
1982	0.0000	0.6800	0.0000	3.6889	0.0000	0.0000	5.4248	0.5066
1983	2.0000	0.6100	0.2422	7.2247	3.2787	0.3971	11.8438	0.1252
1984	0.0000	0.2400	0.0000	3.6889	0.0000	0.0000	15.3703	0.7866
1985	1.0000	0.3700	0.0253	5.5716	2.7027	0.0684	15.0585	0.3093
1986	0.0000	0.4000	0.0000	3.6889	0.0000	0.0000	9.2222	0.6703
1987	0.0000	0.1600	0.0000	3.6889	0.0000	0.0000	23.0555	0.8521
1988	0.0000	0.4300	0.0000	3.6889	0.0000	0.0000	8.5788	0.6505

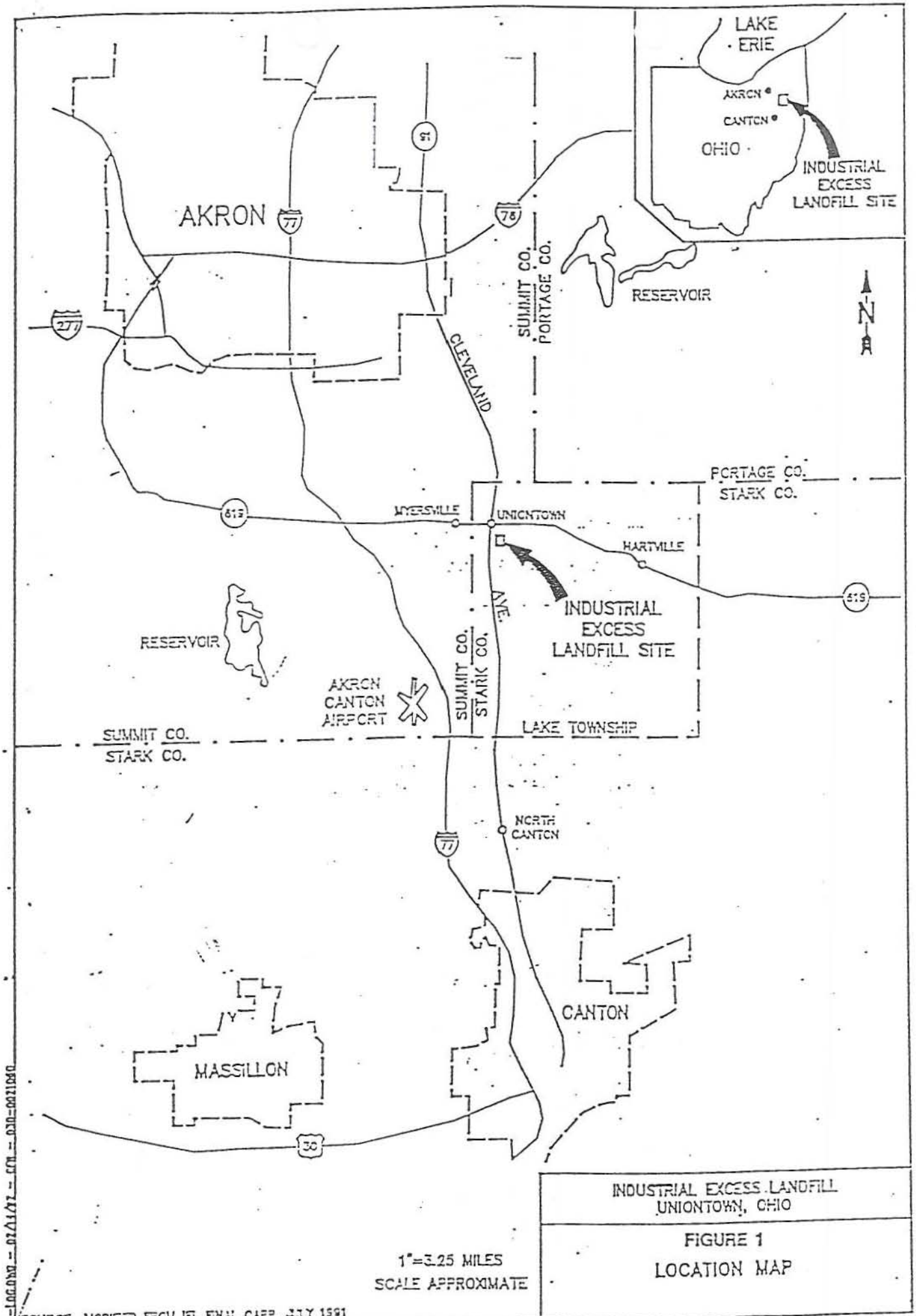
* C.I. = Confidence Interval

Table 14

95.00% Confidence limits (based on Poisson) for Observed deaths and for the SMR due to death from all cancers in the 5 - 24 years old age group

Year	Observed Deaths	Expected Deaths	95.00% C.I.* on Observed		SMR	95.00% C.I.* on SMR		P Value
			Lower	Upper		Lower	Upper	
1979	9.0000	6.6600	4.1154	17.0848	1.3514	0.6179	2.5653	0.2278
1980	8.0000	8.3200	3.4538	15.7632	0.9615	0.4151	1.8946	0.5480
1981	7.0000	6.7500	2.8144	14.4227	1.0370	0.4169	2.1367	0.5124
1982	8.0000	12.2600	3.4538	15.7632	0.6525	0.2817	1.2857	0.1387
1983	6.0000	6.7200	2.2019	13.0595	0.8929	0.3277	1.9434	0.4922
1984	2.0000	5.3500	0.2422	7.2247	0.37.8	0.0453	1.3504	0.0981
1985	7.0000	5.1200	2.8144	14.4227	1.3672	0.5497	2.8169	0.2556
1986	7.0000	4.7200	2.8144	14.4227	1.4831	0.5963	3.0557	0.1981
1987	2.0000	4.8400	0.2422	7.2247	0.4132	0.0500	1.4927	0.1388
1988	5.0000	5.3400	1.6235	11.6683	0.9363	0.3040	2.1851	0.5565

* C.I. = Confidence Interval



INDUSTRIAL EXCESS LANDFILL
UNIONTOWN, OHIO

FIGURE 1
LOCATION MAP

1"=3.25 MILES
SCALE APPROXIMATE

SOURCE: MODIFIED FROM IEL FINAL CAPP, JULY 1991

ATTACHMENT 1

Elaine B. Panitz, MD, P.A.
Occupational and Environmental Medicine
37 Cleveland Lane
Princeton, N J 08540

Telephone
(609) 278-3737

Telecopier
(609) 921-2031

December 1, 1992

Maureen Y. Lichtveld, MD, MPH
Assistant Director for Public Health Practice
Division of Health Assessment and Consultation
ATSDR, US PHS, DHHS
Atlanta, Georgia 30333

Re: <u>IEL Uniontown, Ohio</u>

Dear Dr. Lichtveld:

This is in reference to your letter of October 14, 1992 which requested health information on the IEL site in Uniontown, Ohio. I am a physician who is board certified in both Internal Medicine and Preventive Medicine (Occupational Medicine), and I am a Clinical Assistant Professor of Medicine at Robert Wood Johnson Medical School.

I was recently asked to review a cancer death case in a young man who lived on the western edge of the IEL site in Uniontown (see Appendix, Patient #1). The diagnosis proved to be osteosarcoma of the right fibula, prompting concern about the possible role of environmental radiation exposure. During preliminary interviews with multiple area residents, there appears to be an unusually large number of neoplasms of the extremities, of the reticulo-endothelial system (RES), and of other sites (see Appendix for currently available information). The majority of these neoplasms appear to have occurred in young people.

I have reviewed materials suggesting radiation contamination of the IEL site and surrounding groundwater. There is also evidence of contamination with benzene, vinyl chloride, and chlorophenols, among many other chemical agents.

ATTACHMENT-1

Maureen Y. Lichtveld, MD, MPH
November 21, 1992
IEL Uniontown, Ohio (continued)

In my opinion, the case of Patient #1 (coupled with the anecdotal evidence of Appendix Patients #2 and #3, and the many other neoplams suggested in the Appendix) presents disturbing evidence that radiation (and possibly other carcinogens such as benzene, vinyl chloride, and chlorophenols) may be causing neoplasms among residents surrounding the IEL site. The routes of exposure are likely to include ingestion (well water, fruits and vegetables), skin absorption (well water for bathing and washing clothes, as well as swimming or playing in marshy areas near IEL), and inhalation (radiactive dusts released from the landfill, radioactive gases released from contaminated ground and groundwater).

I urge you to consider an immediate review of cancer death certificates from 1970 to the present for the counties surrounding the IEL site. The neoplasms of greatest concern, based on my informal interviews, are those of a) bone and soft tissue, b) the reticulo-endothelial system, c) breast, d) thyroid, and e) CNS.

Thank you for your consideration, and please let me know if I can be of assistance in your investigations.

Yours truly,

Elaine B. Panitz, MD, FACP, FACPM

EBP/jp

DO NOT WRITE IN MARGIN RESERVED FOR CDH DATA CODING

ATTACHMENT

Ohio Department of Health

VITAL STATISTICS
CERTIFICATE OF LIVE BIRTH

Reg. Dist. No. _____ Registrar's No. _____

Primary Reg. Dist. No. _____

Birth No. 134 —

VOID

1. CHILD - NAME (First, Middle, Last) | 2. SEX | 3. DATE OF BIRTH (Month, Day, Year) | 3a. TIME OF BIRTH

4a. FACILITY NAME (If not institution, give street and number) | 4b. CITY, VILLAGE OR LOCATION OF BIRTH | 4c. COUNTY OF BIRTH

5. PLACE OF BIRTH ☐ Hospital ☐ Freestanding Birthing Center ☐ Clinic/Doctor's Office ☐ Residence ☐ Other (Specify)

6. REGISTRAR'S SIGNATURE ▶ | 7. FILED BY REGISTRAR (Month, Day, Year)

8a. I certify that the above named child was born alive at the place and time and on the date stated above. SIGNATURE ▶ | 8b. DATE SIGNED | 8c. ATTENDANT - ☐ M.D. ☐ D.O. ☐ C.N.M. ☐ Other Midwife ☐ Other (Specify)

8d. ATTENDANT - NAME (Type or Print) | 8e. MAILING ADDRESS (Street or R.F.D. No., City or Village, State, Zip)

9a. MOTHER'S NAME (First, Middle, Last) | 9b. MAIDEN SURNAME | 10a. DATE OF BIRTH (Month, Day, Year) | 10b. AGE

11. BIRTHPLACE (State or Foreign Country) | 12a. RESIDENCE - STATE | 12b. COUNTY | 12c. CITY, TOWN, OR LOCATION

12d. STREET AND NUMBER | 12e. INSIDE CITY LIMITS? (Yes or No) | 13. MOTHER'S MAILING ADDRESS (If same as residence, write DO NOT STATE)

14. FATHER'S NAME (First, Middle, Last) | 14a. DATE OF BIRTH (Month, Day, Year) | 14b. AGE | 15. BIRTHPLACE (State or Foreign Country)

17. I certify that the personal information provided on this certificate is correct to the best of my knowledge and belief. Name or Signature of Parent or Other Informant ▶

INFORMATION FOR MEDICAL AND HEALTH USE ONLY

18. OF HISPANIC ORIGIN? (Specify No or Yes — If yes, specify Cuban, Mexican, Puerto Rican, etc.)	19. RACE — American Indian, Black, White, etc. (Specify below)	20. EDUCATION (Specify only highest grade completed) Elementary/Secondary (0–12)	College (1–4 or 5+)	21. OCCUPATION AND BUSINESS/INDUSTRY (Worked during last year) Occupation	Business/Industry
18a. ☐ No ☐ Yes Specify:	19a.	20a.		21a.	21b.
18b. ☐ No ☐ Yes Specify:	19b.	20b.		21c.	21d.

22. PREGNANCY HISTORY (Complete each section)

LIVE BIRTHS (Do not include this child)	OTHER TERMINATIONS (Spontaneous and induced at any time after conception)
22a. NOW LIVING Number ____ ☐ None	22b. NOW DEAD Number ____ ☐ None
22c. DATE OF LAST LIVE BIRTH (Month, Year)	22d. DATE OF LAST OTHER TERMINATION (Month, Year)

22e. Number ____ ☐ None

23. APGAR SCORE: 23a. 1 Minute | 23b. 5 Minutes

24. DATE LAST NORMAL MENSES BEGAN (Month, Day, Year)

25. MONTH OF PREGNANCY PRENATAL CARE BEGAN - First, Second, Third, etc. (Specify)

25a. TOTAL PRENATAL VISITS (If none, so state)

25b. CITY | 25c. COUNTY

26. BIRTH WEIGHT IN GRAMS

27. CLINICAL ESTIMATE OF GESTATION (Weeks)

28. PLURALITY - Single, Twin, Triplet, etc. (Specify)

28a. IF NOT SINGLE BIRTH - Born First, Second, Third, etc. (Specify)

31a. MOTHER TRANSFERRED PRIOR TO DELIVERY? ☐ No ☐ Yes If yes, enter name of facility and city transferred from.

31b. FACILITY NAME | 31c. CITY

31d. INFANT TRANSFERRED? ☐ No ☐ Yes If yes, enter name of facility and city transferred to.

31e. FACILITY NAME | 31f. CITY

29. MEDICAL RISK FACTORS FOR THIS PREGNANCY (Check all that apply)

- Anemia (Met. <30/Hgb. <10) ..... 01 ☐
- Cardiac disease ..... 02 ☐
- Acute or chronic lung disease ..... 03 ☐
- Diabetes ..... 04 ☐
- Genital herpes ..... 05 ☐
- Hydramnios/Oligohydramnios ..... 06 ☐
- Hemoglobinopathy ..... 07 ☐
- Hypertension, chronic ..... 08 ☐
- Hypertension, pregnancy-associated ..... 09 ☐
- Eclampsia ..... 10 ☐
- Incompetent cervix ..... 11 ☐
- Previous infant 4000+ grams ..... 12 ☐
- Previous preterm or small-for-gestational-age infant ..... 13 ☐
- Renal disease ..... 14 ☐
- Rh sensitization ..... 15 ☐
- [illegible] ..... 16 ☐

30. COMPLICATIONS OF LABOR AND/OR DELIVERY (Check all that apply)

- Febrile (>100°F, or 38°C) ..... 01 ☐
- Meconium, moderate/heavy ..... 02 ☐
- Premature rupture of membranes (>12 hours) ..... 03 ☐
- Abruptio placenta ..... 04 ☐
- Placenta previa ..... 05 ☐
- Other excessive bleeding ..... 06 ☐
- Seizures during labor ..... 07 ☐
- Precipitous labor (<3 hours) ..... 08 ☐
- Prolonged labor (>20 hours) ..... 09 ☐
- Dysfunctional labor ..... 10 ☐
- Breech/Malpresentation ..... 11 ☐
- Cephalopelvic disproportion ..... 12 ☐
- Cord prolapse ..... 13 ☐
- Anesthetic complications ..... 14 ☐
- Fetal distress ..... 15 ☐
- None ..... 00 ☐
- Other _____ ..... 16 ☐

32. CONGENITAL ANOMALIES OF CHILD (Check all that apply)

- Anencephalus ..... 01 ☐
- Spina bifida/Meningocele ..... 02 ☐
- Hydrocephalus ..... 03 ☐
- Microcephalus ..... 04 ☐
- Other central nervous system anomalies (Specify) _____ ..... 05 ☐
- Heart malformations ..... 06 ☐
- Other circulatory/respiratory anomalies (Specify) _____ ..... 07 ☐
- Rectal atresia/stenosis ..... 08 ☐
- Tracheo-esophageal fistula/Esophageal atresia ..... 09 ☐
- Omphalocele/Gastroschisis ..... 10 ☐
- Other gastrointestinal anomalies (Specify) _____ ..... 11 ☐

ATTACHMENT 3

OHIO CANCER INCIDENCE SURVEILLANCE SYSTEM
THE OHIO DEPARTMENT OF HEALTH
INFORMATION TO BE REPORTED FOR EACH CANCER CASE[1]

1) Last Name
2) First Name
3) Middle Initial
4) Patient's Social Security Number (if available)
5) County of Residence at Diagnosis (if Ohio resident)
6) Street Address (at diagnosis)
7) City of Residence (at diagnosis)
8) State of Residence (at diagnosis)
9) Zip Code (at diagnosis)
10) Birth Date
11) Sex
12) Race
13) Date of Diagnosis
14) Age in Years at Diagnosis
15) Anatomical Site
16) Sequence Code
17) Histology
18) Stage at Diagnosis
19) Grade at Diagnosis
20) Type of Staging Used
21) Last Name of Treating or Diagnosing Physician (prefer treating)
22) First Name of Treating or Diagnosing Physician (prefer treating)
23) OCISS Source Reporting Code Number

[1]"Cancer Case" means any primary malignant neoplasm with the exception of basal and squamous cell carcinoma of the skin and carcinoma in-situ of the cervix diagnosed on and after January 1, 1992.

Source: Cancer Epidemiology, Prevention and Control Program, Bureau of Chronic Diseases, The Ohio Department of Health, P.O. Box 118, 246 N. High Street, Columbus, Ohio, 43266-0118, (Telephone: (614) 466-2144), March, 1992.

MULTIPLE BIRTHS
Inter State File
Number for Mate(s)
LIVE BIRTH(S)

FETAL DEATH(S)

Other ______________________________ 17 ☐
(Specify)

33b. OTHER RISK FACTORS FOR THIS PREGNANCY
(Complete all items)

Tobacco use during pregnancy .... Yes ☐ No ☐
Average number cigarettes per day ______
Alcohol use during pregnancy .... Yes ☐ No ☐
Average number drinks per week ______
Weight gained during pregnancy ______ lbs.
Pre-Pregnancy weight ______ lbs.

34. OBSTETRIC PROCEDURES
(Check all that apply)

Amniocentesis .... 01 ☐
Electronic fetal monitoring .... 02 ☐
Induction of labor .... 03 ☐
Stimulation of labor .... 04 ☐
Tocolysis .... 05 ☐
Ultrasound .... 06 ☐
None .... 00 ☐
Other ______________________________ 07 ☐
(Specify)

35. METHOD OF DELIVERY (Check all that apply)

Vaginal 01
Vaginal birth after previous C-section 02
Primary C-section .... 03 ☐
Repeat C-section .... 04 ☐
Forceps .... 05 ☐
Vacuum .... 06 ☐

36. ABNORMAL CONDITIONS OF THE NEWBORN
(Check all that apply)

Anemia (Hct. < 39/Hgb. < 13) .... 01 ☐
Birth injury .... 02 ☐
Fetal alcohol syndrome .... 03 ☐
Hyaline membrane disease/RDS .... 04 ☐
Meconium aspiration syndrome .... 05 ☐
Assisted ventilation < 30 min .... 06 ☐
Assisted ventilation ≥ 30 min .... 07 ☐
Seizures .... 08 ☐
None .... 00 ☐
Other ______________________________ 09 ☐
(Specify)

Other urogenital anomalies
(Specify) ______________________________ 14 ☐

Cleft lip/palate .... 15 ☐
Polydactyly/Syndactyly/Adactyly .... 16 ☐
Club foot .... 17 ☐
Diaphragmatic hernia .... 18 ☐
Other musculoskeletal/integumental anomalies
(Specify) ______________________________ 19 ☐

Down's syndrome .... 20 ☐
Other chromosomal anomalies
(Specify) ______________________________ 21 ☐

None .... 00 ☐
Other ______________________________ 22 ☐
(Specify)

38. NAME OF PROPHYLACTIC USED IN EYES OF CHILD	39. DATE OF APPROVED TEST FOR SYPHILIS, IF NONE STATE REASON	40. DATE OF APPROVED TEST FOR GONORRHEA, IF NONE STATE REASON

HEA 7/88
5417 of Dec. 1/89