NJ.7-5

CERTIFICATION DOCKET

FOR

THE FORMER KELLEX CORPORATION
JERSEY CITY, NEW JERSEY

DEPARTMENT OF ENERGY
OFFICE OF NUCLEAR ENERGY

OFFICE OF TERMINAL WASTE DISPOSAL AND REMEDIAL ACTION
DIVISION OF REMEDIAL ACTION PROJECTS

CONTENTS

INTRODUCTION TO
THE CERTIFICATION DOCKET FOR THE
FORMER KELLEX LABORATORY SITE
JERSEY CITY, NEW JERSEY

The Department of Energy, Office of Nuclear Energy, Office of Terminal Waste Disposal and Remedial Action, Division of Remedial Action Projects (and/or the predecessor agency, offices, and divisions) has reviewed the past activities of the Manhattan Engineer District and Atomic Energy Commission at the former Kellex Corporation site in Jersey City, New Jersey and completed a radiological survey of the site. The site was determined to contain some low-level residual radioactive material. As a result, remedial actions were implemented to remove contaminated soil. All remedial measures at the site have been completed and the Department of Energy has determined that the radiological conditions at the former Kellex Laboratory site are now consistent with radiological guidelines and standards determined to apply to this site and that unrestricted use of this site will not result in any measurable radiological hazard to the general public.

Purpose

This docket references the published reports that contain information supporting the certification of the site's radiological condition and contains certain other unpublished references and correspondence supporting the site's certification.

This certification docket references and contains only the material most pertinent to the certification; a more comprehensive package of records is to be archived by the Department of Energy through the Assistant Secretary for Management and Administration and will be available through either the DOE Records Office or the DOE Historian Office. Copies of the certification docket will be maintained by the Department at the DOE Public Document Room in Washington, D.C., so that the docket will be accessible to members of the general public.

Property Identification

The northeastern portion of the site, Lots 1-L and 1-M of Block 1288.1 in Figure 1 of Exhibit I (now known as Block 1288A) contains shopping centers under the control of Levco Shopping Centers. Lots 1-J and 1-N Block 1288A are owned by Pierport Associates, Inc. and Lot 1-G Block 1288A is owned by Jersey City. The enclosed certification docket and references cover all five lots of Block 1288A (formerly 1288.1).

Docket Contents

The history of the Kellex Corporation and its relation to the Manhattan Engineer District is discussed in The New World, Volume I: A History of the United States Atomic Energy Commission, Hewlett and Anderson. Exhibit I of the certification package briefly discusses this history and some of the activities under Kellex contracts with the Atomic Energy Commission. Copies of Contracts AT(30-1)-812 and Amendments 1 through 9 and Contract AT(30-1)-850 are contained in the archived records.

Preliminary radiological surveys of the site were begun in October of 1976 and the final characterization surveys were completed in August 1979 and November 1980. The results of these surveys have been documented in the following reports:

- Oak Ridge National Laboratory, "Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey," (DOE/EV-0005/29), February 1982.
- Hutchinson, S.W., (Desert Research Institute) "Radiological Characterization of the Kellex Site," (DOE/DP/01253-20), March 1981.
- EG&G, Inc., "Surface and Subsurface Gamma Survey of the Kellex Site," (EGG-1183-1795, UC-41), April 1981.

The results of these reports are summarized in Exhibit I. Additional information describing the radiological condition of the site is also contained in the archived records.

At the beginning of the Kellex site remedial action, no soil criteria existed that were directly applicable to the specific site conditions. In order to expedite the remedial action, the Department of Energy developed site-specific criteria for this site. Based on the initial survey results, contamination found on the Levco properties, Lots, 1-L and 1-M, contained natural uranium with its daughter products including radium-226. The radium was determined to be the limiting radionuclide. DOE prepared a radium-in-soil cleanup criterion that was later approved by New Jersey State. However, surveys of Lots 1-J and 1-G identified uranium in the soil without significant quantities of radium; accordingly, DOE developed an additional cleanup criterion for uranium in soil. The following references show the development of, and rationale for, the subject cleanup criteria and are contained in this docket.

- Tyler, G.J., (State of New Jersey) to W.E. Mott (DOE), "Comments on Proposed Decontamination Criteria for Real Property Contaminated with Radium," May 29, 1979—Approves radium-in-soil and gamma radiation criteria proposed in DOE's "Decontamination Criteria for Real Property Contaminated with Radium" study for use at New Jersey sites.

- Mott, W.E., (DOE) to R.C. Clusen (DOE), "Final Agreement Between DOE, the State of New Jersey, and Delco-Levco," July 19, 1979—Defines criteria in May 29, 1979 letter from Tyler to Mott as cleanup criteria for the Levco properties.

- Tyler, G.J., (State of New Jersey) to W.E. Mott (DOE), "Remedial Action of Former Kellex Site in Jersey City, New Jersey," September 19, 1979—Contains New Jersey's agreement on uranium criteria and restatement of criteria for radium-226 and thorium-232.

- Mott, W.E., (DOE) to R.C. Clusen (DOE), "Decontamination and Decommissioning of Former Kellex Laboratory Site," Jersey City, New Jersey, September 19, 1979—Agreement with Tobar Construction for conduct of remedial action on Pierport property proposes using criteria in September 19, 1979 letter G.J. Tyler to W.E. Mott.

- Frangos, T.G., (DOE) to G.J. Tyler (State of New Jersey), "Proposed Uranium Criteria," July 14, 1980—Contains rationale for limiting uranium to 40 pCi/gram of soil averaged over 400 m^2.

- Stanton, J., (State of New Jersey) to W.E. Mott (DOE), "Agreement on Decontamination Criteria for the Pierport Property, Former Kellex Site," August 22, 1980—Letter requests radium criterion and external gamma criterion remain at previous levels and approves 40 pCi/gram of uranium in the soil.

The remedial action on the Levco property was completed by Tobar Construction Company, a Levco contractor, and health physics and environmental monitoring was provided by Envirosphere Company (a Division of Ebasco Services, Inc.). The Oak Ridge National Laboratory conducted the post-remedial action survey at the Levco property and the Office of Environment (now the Office of Environmental Protection, Safety, and Emergency Preparedness) certified, in a 14 September 1979 letter, Clusen to Keighley (see reference below), that the radiological conditions at the Levco property meet appropriate radiological criteria.

Tobar Construction was also contracted to complete additional cleanup of the other portions of the former Kellex Site. Final characterization surveys to ensure the remainder of the site (the Pierport and Jersey City properties) conformed to the agreed-upon criteria were documented in a report by Desert Research Institute based on data collected by the EG&G Energy Measurements Group and the Eberline Instrument Corporation. Documents indicating that the applicable criteria are met include:

- Kaye, S.V., (Oak Ridge National Laboratory) to E.L. Keller (DOE), "Formerly Utilized Sites—Remedial Action Program—Post Decontamination Radiological Survey of a Portion of the Former Kellex Laboratory Site, Jersey City, New Jersey," August 21, 1979—Describes survey results on the Delco-Levco property and mentions contamination on the nearby Pierport property.

- Fritzsche, A.E., (EG&G Energy Measurements Group), "Surface and Subsurface Gamma Survey of the Kellex Site, Jersey City, New Jersey," (EG&G-1183-1795, UC-41), April 1981—Summarizes the results of the radiological survey conducted from September 8 to November 11, 1980.

- Hutchinson, S.W., (Desert Research Institute), "Radiological Characterization of the Kellex Site," (DOE/DP/01253-20), March 1981—Indicates conditions on the Pierport and Jersey City properties meet criteria.

- Oak Ridge National Laboratory, "Post Remedial Action Survey of Areas 4 through 10 of the Former Kellex Site, Jersey City, New Jersey," February 1983—An independent assessment indicating conditions on the Pierport and Jersey City properties meet criteria.

Documents which indicate concurrence by the State of New Jersey include:

- Tyler, G.J., (State of New Jersey) to W.E. Mott (DOE), "Remedial Action at Delco-Levco Property in Jersey City, New Jersey," August 29, 1979—Sample analyses by New Jersey also indicate that criteria are met; New Jersey concurs that the site should be certified for unrestricted use.

- Kuhrtz, S.G., (State of New Jersey) to A.J. Whitman (DOE), "Data Review and Concurrence with Remedial Action Criteria," May 23, 1983—New Jersey concluded that remedial action successfully reduced contamination below the criteria.

Documents which indicate the certification of the radiological criteria of the properties located at the former Kellex Laboratory site include:

- Clusen, R.C., (DOE) to T. Keighley (Delco-Levco), "Certification of Documentation for Delco-Levco Property," September 14, 1979.

- Baublitz, J.E., Director of the Division of Remedial Action Projects to F. E. Coffman, Director of the Office of Terminal Waste Disposal and Remedial Action, "Recommendation for Certification of the Former Kellex Laboratory Site, Jersey City, New Jersey," September 12, 1983.

- Coffman, F.E., Director of the Office of Terminal Waste Disposal and Remedial Action, "Statement of Certification: The Former Kellex Laboratory Site, Jersey City, New Jersey," September 13, 1983.

- Coffman, F.E., Director of the Office of Terminal Waste Disposal and Remedial Action, Federal Register Notice, "Department of Energy Office of Environmental Protection, Safety, and Emergency Preparedness, Certification of the Former Kellex Laboratory Site, Jersey City, New Jersey," signed September 13, 1983.

EXHIBIT I

SUMMARY OF ACTIVITIES AT THE
FORMER KELLEX CORPORATION
Jersey City, New Jersey

Site Function

The M.W. Kellogg Company established the Kellex Corporation as a wholly owned subsidiary in 1943 for the purpose of designing and constructing (in Oak Ridge, Tennessee) the first gaseous diffusion uranium enrichment plant (K-25 and later K-27) under a 1942 Manhattan Engineer District (MED) contract (W-7405-Eng-23). Work for the MED and Atomic Energy Commission (AEC) continued to July 1952 and included research and development of PUREX fuel reprocessing and component testing with uranium hexafluoride. Other contracts included W-28-094-Eng-73 (technical services), AT-30-1-GEN-169 (solvent extraction process for recovery of uranium and other byproducts from the wastes in storage at Richland, Washington; effective June 1, 1947), AT(30-1)-848 (application of new solvent processing techniques to pitchblende ore and /or other uranium feeds or residues; recovery of uranium from various low-grade wastes; effective January 31, 1950), AT(30-1)-850 (gas decontamination studies and decontamination of waste streams; effective February 6, 1950), and AT(30-1)-812 (no information available). In August 1951, the Vitro Corporation of America assumed all the rights and obligations of the Kellex Corporation. Work under AEC contracts was discontinued at the Jersey City site in July 1953.

Site Description

The Kellogg Company site was located at the intersection of New Jersey Route 440 and Kellogg Street and included Lots 1-G, 1-J, 1-L, 1-M, and 1-N of Block 1288A (formerly 1288.1). This site consisted of approximately 43 acres with more than 20 buildings. The Kellex operations were centered around Building 11. The building contained laboratories, offices, weighing facilities,

toilets, change rooms, and a shielded counting room. In 1953, Building 11 was demolished, leaving only the concrete pad. All of the original buildings have since been demolished, and some of the Building 11 concrete pad has been covered with fill dirt. The disposal site for the rubble from these demolished buildings is uncertain.

A shopping center has been constructed on a part of the site, Lots 1-L and 1-M. There are plans to use other portions of the site (the Pierport Property) for a housing project.

Owner History

The Kellogg site has been sold by Vitro Corporation and portions of the site are occupied by various businesses. A Pathmark supermarket is located near the south end of the property, and the new shopping center was constructed in the central portion of the site. The northern part of the site where the Kellogg Corporation research facility was located is currently owned partially by the Delco-Levco Venture and partially by Pierport Associates, Inc. The western part of the site, Lot 1-G is owned by Jersey City. Pierport Associates, Inc. own Lots 1-J and 1-N while Levco Shopping Centers is responsible for Lots 1-L and 1-M under the names Pals-Mals Venture and Delco-Levco Venture, respectively (see Figure 1).

Radiological History and Status

On June 25, 1953, the Vitro Corporation of America prepared a contamination status report that detailed the findings of a radiation survey of Building 11 undertaken by the Kellex Laboratory. This report identified external gamma radiation readings that were above background, but no transferable alpha or beta-gamma contamination was observed in any of the accessible areas.

Representatives from Oak Ridge Operations Office and Oak Ridge National Laboratory conducted a site visit and screening survey on October 21, 1976. The survey revealed gamma ray readings in the background range. However, due to

the size of the property and uncertainty as to the exact location and extent of Kellex operations, it was decided that a comprehensive survey should be conducted.

Oak Ridge National Laboratory personnel performed a comprehensive survey of a portion of the site on March 28 to 30, 1977. The survey indicated that levels of radioactivity were indistinguishable from background with the exception of a few isolated and well defined spots on or near the site of the former Kellex Laboratory (Areas 1 and 2 of Figure 2).

Additional radiological characterization efforts between March and August 1979 identified a number of other isolated areas of above-background radioactivity in the north and western portions of the site (areas 3 to 9 in Figure 2). Efforts to decontaminate the site were begun in July 1979, by contractors of the Department of Energy's Office of Environment. On October 15, 1979, the Department of Energy's Office of Environment transferred responsibility for the remedial action to the Office of Nuclear Energy. Decontamination efforts were extended to cover the additional areas identified after remedial action began. A total of about 1000 barrels of contaminated soil and debris were removed from the site and disposed of at Barnwell, South Carolina. Remedial action was completed at the Levco portion of the property, Lots 1-L and 1-M and these lots were certified by the Office of Environment on September 14, 1979, as complying with State approved criteria. Final survey reports prepared by the remedial action contractor and an independent overview survey by the Oak Ridge National Laboratory indicated the remainder of the site also meets criteria approved by the State. These reports were evaluated by the Office of Terminal Waste Disposal and Remedial Action and found to be adequate justification for certification that the site is in compliance with applicable remedial action criteria. On May 23, 1983, the New Jersey Department of Environmental Protection concurred with the Department of Energy's findings.

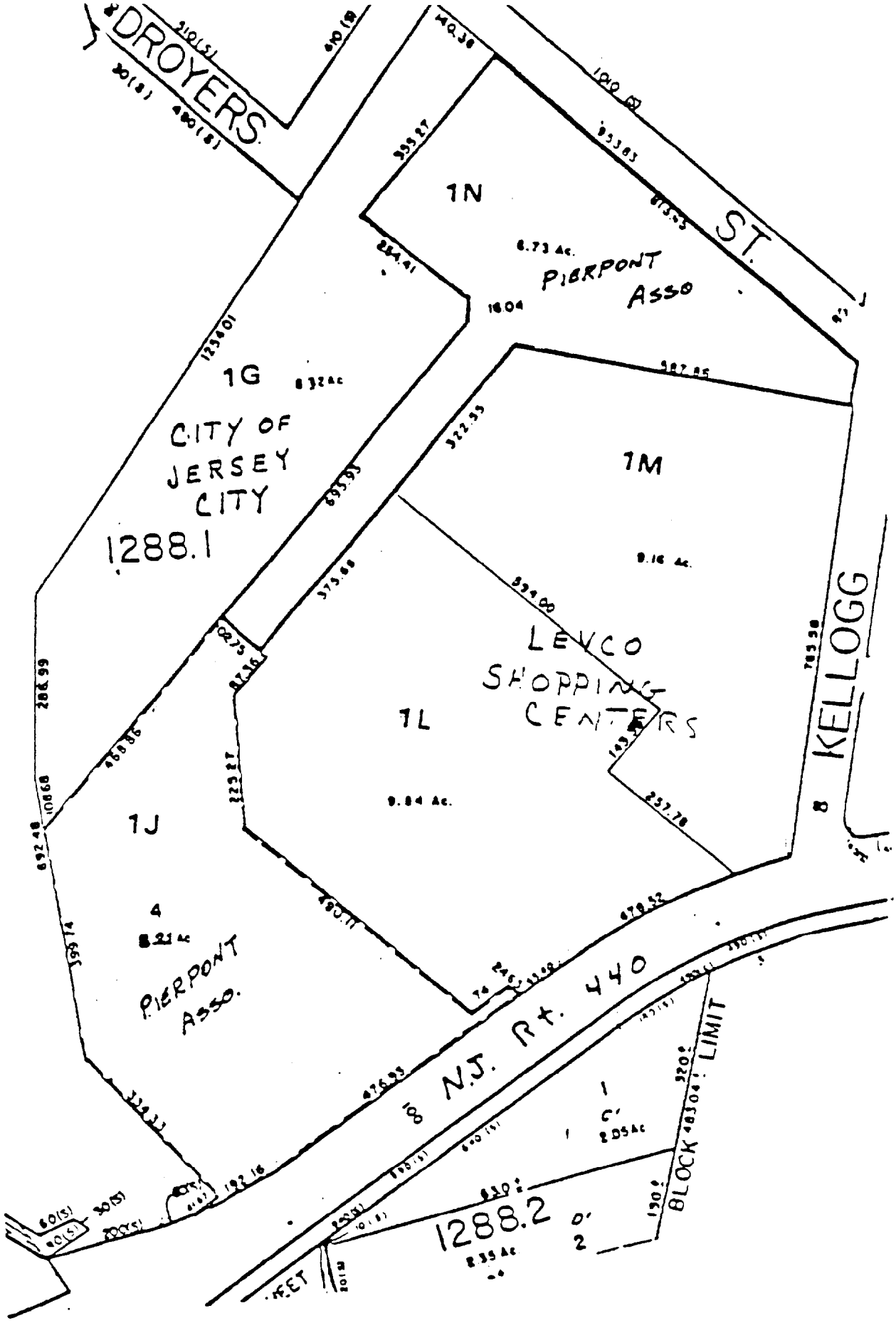

Figure 1. Property/Ownership Plot Map of the Former Kellex Site

ORNL DWG 79 20265

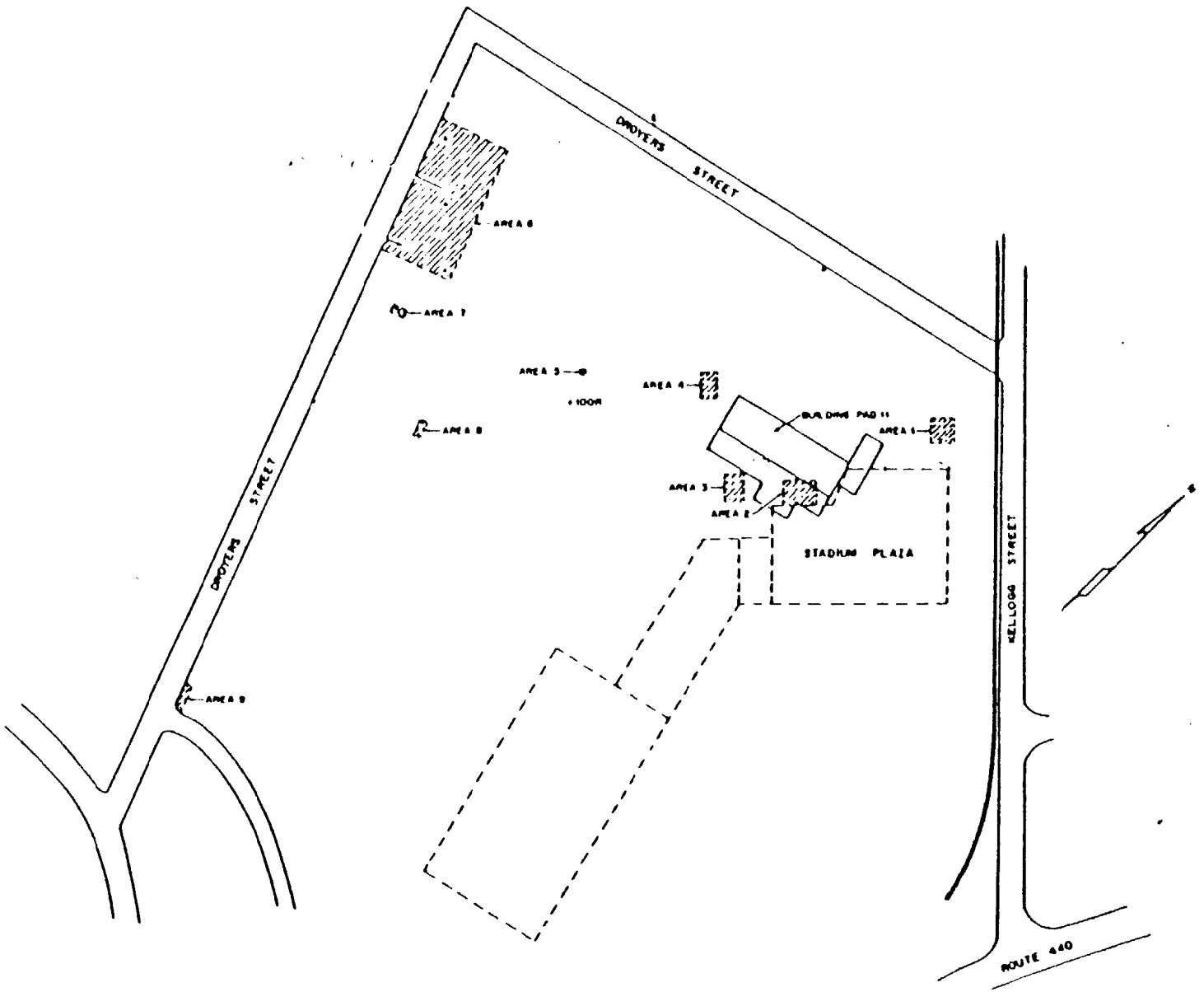

Figure 2. Location of Areas of the Kellex Site With Above Background Levels of Radioactivity

EXHIBIT II

DOCUMENTS SUPPORTING THE CERTIFICATION
OF THE FORMER KELLEX LABORATORY
JERSEY CITY, NEW JERSEY

Tyler, G.J., (State of New Jersey) to W.E. Mott (DOE)—

"Comments on Decontamination Criteria for Real Property Contaminated with Radium," May 29, 1979.

Mott, W.E., (DOE) to R.C. Clusen (DOE)—

"Final Agreement Between DOE, The State of New Jersey, and Delco-Levco," July 19, 1979.

Kaye, S.V., (Oak Ridge National Laboratory) to E.L. Keller (DOE)—

"Formerly Utilized Sites—Remedial Action Program—Post Decontamination Radiological Survey of a Portion of the Former Kellex Site, Jersey City, New Jersey," August 21, 1979.

Tyler, G.J., (State of New Jersey) to W.E. Mott (DOE)—

"Remedial Action at Delco-Levco Property in Jersey City, New Jersey," August 29, 1979.

Clusen, R.C., (DOE) to T. Keighley (Delco-Levco)—

"Certification of Decontamination for Delco-Levco Venture Property," September 14, 1979.

Mott, W.E., (DOE) to R.C. Clusen (DOE)—

"Decontamination and Decommissioning of the Former Kellex Laboratory Site, Jersey City, New Jersey," September 19, 1979.

Tyler, G.J., (State of New Jersey) to W.E. Mott (DOE)—

"Remedial Action at Former Kellex Site, Jersey City, New Jersey," September 19, 1979.

Frangos, T.G., (DOE) to G.J. Tyler (State of New Jersey)—

"Proposed Uranium Criteria," July 14, 1980.

Stanton, J., (State of New Jersey) to W.E. Mott (DOE)—

"Agreement on Decontamination Criteria for the Pierport Property, Former Kellex Site," August 22, 1980.

Kuhrtz, Steven G., (State of New Jersey) to A. Whitman (DOE)—

"Data Review and Concurrence in Success of Remedial Action," May 23, 1983.

Baublitz, J.E., Director of the Division of Remedial Action Projects, to F.E. Coffman, Director of the Office of Terminal Waste Disposal and Remedial Action—

"Recommendation for Certification of the Former Kellex Laboratory Site, Jersey City, New Jersey," September 12, 1983.

Coffman, F.E., Director of Terminal Waste Disposal and Remedial Action—

"Statement of Certification: The Former Kellex Laboratory Site, Jersey City, New Jersey," September 13, 1983.

Coffman, F., Director of Terminal Waste Disposal and Remedial Action—

Federal Register Notice: "Department of Energy, Office of Environmental Protection, Safety and Emergency Preparedness, Certification of the Former Kellex Laboratory Site, Jersey City, New Jersey," signed September 13, 1983.

The following published documents are included in this docket by reference:

- EG&G, Inc., "Surface and Subsurface Gamma Survey of the Kellex Site," (EGG-1183-1795, UC-41), April 1981.[1]
- Hutchinson, S.W., (Desert Research Institute), "Radiological Characterization of the Kellex Site," (DOE/DP/01253-20), March 1981.[2]
- Oak Ridge National Laboratory, "Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey," (DOE/EV-0005/29), February 1982.[2]
- Oak Ridge National Laboratory, "Results of the Post Remedial Action Survey of Areas 4 through 10 of the Former Kellex Site, Jersey City, New Jersey," (DOE/EV-0005/29 (Supplement)), February 1983.

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[1]Available from: Director of the Division of Remedial Action Projects
Office of Nuclear Waste Management,
U.S. Department of Energy,
Germantown, Maryland 20548

[2]Available from: National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22161

May 29, 1979

Dr. William E. Mott, Director
Division of Environmental
Control Technology
U.S. Department of Energy
Washington, D.C. 20545

Dear Dr. Mott:

The New Jersey State Department of Environmental Protection has reviewed U.S. DOE's Decontamination Criteria for Real Property Contaminated with Radium and wishes to extend their compliments on this well presented and thorough document.

While the supporting documentation is yet to be published and will be available in a few weeks, we find no reason to delay our concurrence with these criteria providing that the following interpretation represents the bottom-line for certification.

It is our understanding that a site could be certified as being decontaminated if:

1. the Ra-226 concentration in the first 2 to 3 meters of soil does not exceed 5 pci/gm (including background), and

2. the external gamma exposure rate shall not exceed 170 mr/year (including background).

These two criteria would jointly assure that neither the state, federal Radiation Protection Guides for external exposure to members of the general public nor the Surgeon General's Guideline for the average indoor Radon concentration could be exceeded. Naturally, we concur with the application of the ALARA concept, where it can be applied on a case-by-case basis, to reduce exposures as near as practical to the natural background for an area. Also, we, of course, welcome your position with regard to the "offsite properties" in Middlesex Borough, New Jersey where we understand that the cleanup will be to background with the possible exception of the drainage area immediately adjacent to the marine base.

The Department's principal recommendation with respect to this document would be in the area of IMPLEMENTATION; i.e., it may be worthwhile for U.S. DOE to elaborate regarding specific techniques, instrument specifications and permissible error limits for the actual field operations and methods to be used in performing a site evaluation. This type of standardization would help to reduce technical or legal disputes following cleanup.

The DEP greatly appreciates DOE's efforts and cooperation in attempting to expedite the remedial actions at the several contaminated New Jersey sites. If we can in any way contribute to these efforts, please do not hesitate to call.

Sincerely,

ORIGINAL SIGNED BY
GEORGE J. TYLER

George J. Tyler
Director

GJT/cc

cc: Commissioner O'Hern
Assistant Commissioner Arbesman
Eugene Fisher
Mayor Martin S. Matuskiewicz

* U.S. GOVERNMENT PRINTING OFFICE: 1979-633-408

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JUL 19 1979

EV-131

Final Agreement between DOE, the State of New Jersey, and DELCO-LEVCO

Ruth C. Clusen
Assistant Secretary for Environment

Transmitted herewith for your signature are four copies of the final agreement between DOE, the State of New Jersey, and DELCO-LEVCO for the reimbursement of costs for a remedial action at the former MED/AEC Site in Jersey City, New Jersey.

This agreement has been reviewed and approved in final form by ECT and OGC and was previously approved by you in draft.

Please sign all of the attached copies and return to this office as soon as possible.

ORIGINAL SIGNED BY
R. W. RAMSEY

William E. Mott, Director
Environmental Control
Technology Division

Attachments

OGC:SMiller:
EV-131:RWRamsey:zs:353-5028:7/19/79

w/encl
bcc: S. Miller, OGC
W. E. Mott, ECT
R. W. Ramsey, ECT
A. Whitman, ECT
Aerospace

CONCURRENCES

RTG. SYMBOL	INITIALS/SIG.	DATE
OGC	SMiller	7/19/79
EV-131	RWRamsey	7/19/79
EV-13	WEMott	7/19/79
EV-10	TFrancos	7/20/79
EV-2	LBrothe	7/20/79
EV-51	DMayhew	7/20/79

OFFICIAL FILE COPY

DOE 1 ORM AD-9 (12-77)

AGREEMENT

This AGREEMENT, effective July 20, 1979 by and between THE UNITED STATES OF AMERICA (hereinafter called the Government"), acting through the UNITED STATES DEPARTMENT OF ENERGY (hereinafter called the "DOE"), and DELCO-LEVCO VENTURE (hereinafter called the "Principal"), with a mailing address of One Wayne Hills Drive, Wayne, N.J., and the STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION (hereinafter called the "State"):

WITNESSETH THAT:

WHEREAS, it has been determined by the DOE that small quantities of radioactively contaminated soil constituting a potential minimal public health risk exist on certain portions of Principal owned property, as outlined on portions of the attached map; WHEREAS, the parties have agreed that such soil should be removed from the Site (hereinafter called the "remedial action"); WHEREAS, the Principal has agreed to furnish equipment, services and labor necessary to accomplishing such remedial action to move the contaminated soil from the site (to enable construction of a shopping center there to be completed); WHEREAS, the DOE has agreed, under the terms of this agreement, to reimburse the Principal for the furnishing of such equipment, services, and labor; and,

WHEREAS, the parties have agreed that the State and DOE will jointly supervise the remedial action.

NOW THEREFORE, in consideration of the mutual promises, the parties hereto agree as follows:

1. DOE has provided such remedial decontamination instructions in the form of an Engineering Plan in performance of the remedial action efforts. These instructions specify conditions of the site necessary for unrestricted use.

2. The remedial action criteria upon which the instructions are based has been provided to and approved by the State as per the May 29th letter from George Tyler to William Mott.

3. DOE in conjunction with the State will monitor each stage of the procedure for the removal of contaminated material.

4. The Engineering Plan has been reviewed by the Principal and the State to assure understanding of the scope and procedure.

5. The State will assist DOE in overcoming any transportation restrictions that may apply to the movement of radioactive material, and in determining the location for the physical storage of the material.

~~6. DOE will arrange physical storage facilities to receive contaminated material from the site and dispose of~~ the material.

7. The Principal agrees to provide the earth moving equipment, other equipment or vehicles, labor, as needed, and to remove the contaminated soil from its location, load it into approved containers and transport it to a selected site.

8. Radiological monitoring will be the responsibility of DOE who will provide data to the City of Jersey City and the State.

9. DOE will conduct a final radiological site survey immediately upon completion of the remedial action, and after concurrence by the State will issue a certification to the Principal and the City of Jersey City that the site meets the State approved remedial action criteria for unrestricted use as reflected in paragraph 2 above.

10. DOE will reimburse the Principal for costs incurred on a time plus materials basis only per attached Form 60, as authorized by attached Forms 799A.

11. The Principal will furnish DOE with copies of time records showing length of time spent on jobs covered by their agreement and normal hourly wages paid each worker. Reimbursement will be made on the basis of each hour worked plus any quarterly fraction thereto. The Principal will also furnish copies of all receipts or other forms of evidence of material purchased for the job covered by this agreement.

12. The DOE reserves the right to review, audit, and disapprove of any charges submitted by the Principal for reimbursement under this agreement which DOE feels are unreasonable, or excessive.

13. The Principal hereby grants DOE and its designees: (a) the right to restrict access to the site within the contaminated area, (b) the right to enter on such property for the purpose of making surveys, and of supervising the removal and disposal of radioactive materials and the right to remove any restrictions upon access to the contaminated area once DOE has issued the certification provided in paragraph 9 above.

14. The Principal will refrain from building or constructing or disturbing any buildings or structures or soil on the contaminated areas of its property, which are outlined on the attached map during the term of this agreement. The Principal will also not allow, grant, sell, or give a right of any kind to any other party to build or construct any buildings or structures on the same areas of the site during the term of this agreement.

15. No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

16. The Principal warrants that no person or selling agency has been employed or retained to solicit or secure this agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, the Government shall have the right to annul this agreement without liability or in its discretion to deduct from the agreement price or consideration or otherwise recover, the full amount of each such commission percentage, brokerage, or contingent fee.

17. During the term of this agreement, the Principal will notify by mail the Director, Environmental Control Technology Division, Department of Energy, Washington, D.C. 20545 of any change in ownership or any leasing arrangement in connection with, the real property covered by this agreement and the details thereof within one week after such change or lease arrangement is made.

18. Effective and based upon issuance by DOE of the certification and payment provided in paragraphs 9 and 10 above, the Principal hereby (a) releases the State and DOE, its contractors and subcontractors from all claims respecting personal injury, or damage to property arising out of, based on, or attributable to the work performed under this agreement except with respect to any claim or claims resulting from willful misconduct on the part of the State and DOE, its contractors, and subcontractors; and (b) releases the State and DOE from all claims for damages it may have due to economic loss arising out of, based on, or attributable to the presence and/or clean-up of the contaminated soil on the site.

19. The implementation of this agreement does not in any way constitute or form the basis for any estoppel of the State, DOE, or the Principal or be admitted as evidence of any legal responsibility of the State, DOE, or the Principal (other than an action by the Principal to enforce the agreement) for any public health risk created or otherwise, or give any third parties any rights or claims whatsoever.

20. The DOE shall take title to the contaminated material.

21. This agreement shall terminate on 9/30/79 or at such earlier time upon issuance by DOE of the certification provided in paragraph 9 above, unless the parties by mutual written consent extend its term.

IN WITNESS WHEREOF, THE PARTIES HAVE EXECUTED THIS AGREEMENT IN SEVERAL COUNTERPARTS --

THE UNITED STATES OF AMERICA
BY THE ~~US~~ DEPARTMENT OF ENERGY

BY: Ruth C. Clusen

TITLE: Asst. Sec. for Environment

DELCO-LEVCO VENTURE

BY:

TITLE:

STATE OF NEW JERSEY

BY: For George J. Tyler, Director Division of Environmental Quality by Frank J. Cocolito

TITLE: Bureau of Radiation Protection

DELCO-LEVCO VENTURE

BY:

TITLE:

STATE OF NEW JERSEY

BY:

TITLE:

COMPANY CERTIFICATE

I, THOMAS KEIGHLEY, certify that I am the duly qualified AGENT, of the ~~company~~ (Venture) named herein as the Principal; that A.L. Levine who signed this Agreement on behalf of the Principal was then A PARTNER OF LEVCO of said ~~company~~ (Venture); that said Agreement was duly signed for and in behalf of said ~~company~~ (Venture) by authority of its governing body and is within the scope of its powers.

Witness my hand and the seal of said ~~company~~ (Venture).

(Impress Seal Here)

PATRICIA H. COOLEY
NOTARY PUBLIC OF NEW JERSEY
MY COMMISSION EXPIRES AUG 4, 19[illegible]

T. J. Keighley

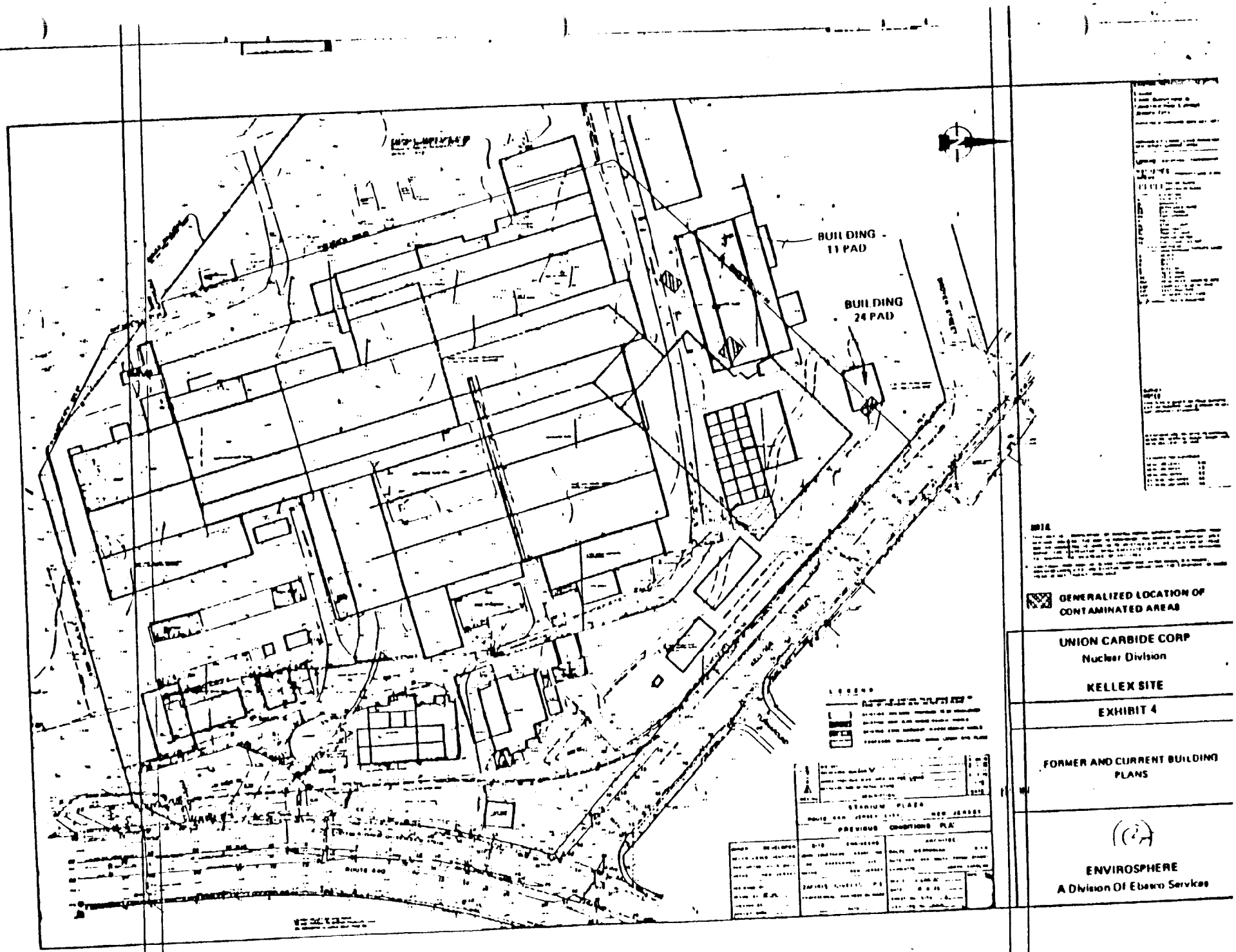
COMPANY CERTIFICATE

I, THOMAS KEIGHLEY, certify that I am the duly qualified AGENT, of the company (Venture) named herein as the Principal; that A.L. LEVINE who signed this Agreement on behalf of the Principal was, then AN AUTHORIZED SIGNATOR OF DEKO of said ~~company~~ (Venture); that said Agreement was duly signed for and in behalf of said company (Venture) by authority of its governing body and is within the scope of its powers.

Witness my hand and the seal of said company (Venture).

(Impress Seal Here)

Thomas J. Keighley


BUILDING
11 PAD
BUILDING
24 PAD
GENERALIZED LOCATION OF
CONTAMINATED AREAS
UNION CARBIDE CORP
Nuclear Division
KELLEX SITE
EXHIBIT 4
FORMER AND CURRENT BUILDING
PLANS
ENVIROSPHERE
A Division Of Ebasco Services

CONTRACT PRICING PROPOSAL

(RESEARCH AND DEVELOPMENT)

Office of Management and Budget Approval No. 29-R0184

This form is for use when (i) submission of cost or pricing data (see FPR 1-3.807-3) is required and (ii) substitution for the Optional Form 59 is authorized by the contracting officer

PAGE NO | NO OF PAGES

NAME OF OFFEROR	SUPPLIES AND OR SERVICES TO BE FURNISHED
HOME OFFICE ADDRESS	
DIVISION(S), AND LOCATION(S) WHERE WORK IS TO BE PERFORMED	TOTAL AMOUNT OF PROPOSAL $ / GOVT SOLICITATION NO

DETAIL DESCRIPTION OF COST ELEMENTS

	EST COST ($)	TOTAL EST COST	REFERENCE
1 DIRECT MATERIAL *(Itemize on Exhibit A)*			
a PURCHASED PARTS			
b SUBCONTRACTED ITEMS			
c. OTHER—(1) RAW MATERIAL			
(2) YOUR STANDARD COMMERCIAL ITEMS			
(3) INTERDIVISIONAL TRANSFERS *(At other than cost)*			
TOTAL DIRECT MATERIAL			
2 MATERIAL OVERHEAD *(Rate % X $ base =)*			

3 DIRECT LABOR *(Specify)*	ESTIMATED HOURS	RATE HOUR	EST COST ($)
TOTAL DIRECT LABOR			

4 LABOR OVERHEAD *(Specify Department or Cost Center)*	O H RATE	X BASE =	EST COST ($)
TOTAL LABOR OVERHEAD			

5 SPECIAL TESTING *(Including field work at Government installations)*	EST COST ($)
TOTAL SPECIAL TESTING	
6 SPECIAL EQUIPMENT *(If direct charge) (Itemize on Exhibit A)*	
7 TRAVEL *(If direct charge) (Give details on attached Schedule)*	EST COST ($)
a. TRANSPORTATION	
b PER DIEM OR SUBSISTENCE	
TOTAL TRAVEL	
8 CONSULTANTS *(Identify—purpose—rate)*	EST COST ($)
TOTAL CONSULTANTS	
9 OTHER DIRECT COSTS *(Itemize on Exhibit A)*	
10 TOTAL DIRECT COST AND OVERHEAD	
11 GENERAL AND ADMINISTRATIVE EXPENSE *(Rate % of cost element No.)*	
12 ROYALTIES	
13 TOTAL ESTIMATED COST	
14 FEE OR PROFIT	
15 TOTAL ESTIMATED COST AND FEE OR PROFIT	

OPTIONAL FORM 60
October 1971
General Services Administration

This proposal is submitted for use in connection with and in response to (*Describe RFP etc.*)

and reflects our best estimates as of this date, in accordance with the Instructions to Offerors and the Footnotes which follow.

TYPED NAME AND TITLE	SIGNATURE

NAME OF FIRM	DATE OF SUBMISSION

EXHIBIT A—SUPPORTING SCHEDULE (*Specify. If more space is needed, use reverse.*)

COST EL NO	ITEM DESCRIPTION (*See footnote 5.*)	EST COST ($)

I HAS ANY EXECUTIVE AGENCY OF THE UNITED STATES GOVERNMENT PERFORMED ANY REVIEW OF YOUR ACCOUNTS OR RECORDS IN CONNECTION WITH ANY OTHER GOVERNMENT PRIME CONTRACT OR SUBCONTRACT WITHIN THE PAST TWELVE MONTHS?

☐ YES ☐ NO (*If yes identify below.*)

NAME AND ADDRESS OF REVIEWING OFFICE AND INDIVIDUAL	TELEPHONE NUMBER EXTENSION

II WILL YOU REQUIRE THE USE OF ANY GOVERNMENT PROPERTY IN THE PERFORMANCE OF THIS PROPOSED CONTRACT?

☐ YES ☐ NO (*If yes, identify on reverse or separate page.*)

III DO YOU REQUIRE GOVERNMENT CONTRACT FINANCING TO PERFORM THIS PROPOSED CONTRACT?

☐ YES ☐ NO (*If yes, identify.*) ☐ ADVANCE PAYMENTS ☐ PROGRESS PAYMENTS OR ☐ GUARANTEED LOANS

IV DO YOU NOW HOLD ANY CONTRACT (*Or, do you have any independently financed (IR&D) projects*) FOR THE SAME OR SIMILAR WORK CALLED FOR BY THIS PROPOSED CONTRACT?

☐ YES ☐ NO (*If yes, identify.*)

V DOES THIS COST SUMMARY CONFORM WITH THE COST PRINCIPLES SET FORTH IN AGENCY REGULATIONS?

☐ YES ☐ NO (*If no, explain on reverse or separate page.*)

See Reverse for Instructions and Footnotes

OPTIONAL FORM 60 (10-83)

INSTRUCTIONS TO OFFERORS

1. The purpose of this form is to provide a standard format by which the offeror submits to the Government a summary of incurred and estimated costs *(and attached supporting information)* suitable for detailed review and analysis. Prior to the award of a contract resulting from this proposal the offeror shall, under the conditions stated in FPR 1-4.807-5, be required to submit a Certificate of Current Cost or Pricing Data (see FPR 1-3.807-5(b) and 1-3.807-4).

2. In addition to the specific information required by this form, the offeror is expected, in good faith, to incorporate in and submit with this form any additional data, supporting schedules, or substantiation which are reasonably required for the conduct of an appropriate review and analysis in the light of the specific facts of this procurement. For effective negotiations, it is essential that there be a clear understanding of:

a. The existing, verifiable data.
b. The judgmental factors applied in projecting from known data to the estimate, and
c. The contingencies used by the offeror in his proposed price.

In short, the offeror's estimating process itself needs to be disclosed.

3. When attachment of supporting cost or pricing data to this form is impracticable, the data will be described *(with schedules as appropriate)* and made available to the contracting officer or his representative upon request.

4. The formats for the "Cost Elements" and the "Proposed Contract Estimate" are not intended as rigid requirements. These may be presented in different format with the prior approval of the Contracting Officer if required for more effective and efficient presentation. In all other respects this form will be completed and submitted without change.

5. By submission of this proposal the offeror grants to the Contracting Officer, or his authorized representative, the right to examine, for the purpose of verifying the cost or pricing data submitted, those books, records, documents and other supporting data which will permit adequate evaluation of such cost or pricing data, along with the computations and projections used therein. This right may be exercised in connection with any negotiations prior to contract award.

FOOTNOTES

1. Enter in this column those necessary and reasonable costs which in the judgment of the offeror will properly be incurred in the efficient performance of the contract. Where any of the costs in this column have already been incurred (e.g. on a letter contract or change order), describe them on an attached supporting schedule. Identify all sales and transfers between your plants, divisions or organizations under a common control, which are included at other than the lower of cost to the original transferror or current market price.

2. Where space in addition to that available in Exhibit A is required, attach separate pages as necessary and identify in this "Reference" column the attachment in which the information supporting the specific cost element may be found. No standard format is prescribed, however the cost or pricing data must be accurate, complete and current, and the judgment factors used in projecting from the data to the estimate, must be stated in sufficient detail to enable the Contracting Officer to evaluate the proposal. For example, provide the basis used for pricing materials such as by vendor quotations, shop estimates, or invoice prices; the reason for use of overhead rates which depart significantly from experienced rates (reduced volume, a planned major rearrangement, etc.); or justification for an increase in labor rates (anticipated wage and salary increases, etc.). Identify and explain any contingencies which are included in the proposed price, such as anticipated costs of rejects and defectives, scrap or anticipated technical difficulties.

3. Indicate the rates used and provide an appropriate explanation. Where agreement has been reached with Government representatives on the use of forward pricing rates, describe the nature of the agreement. Provide the method of computation and application of your overhead expense, including cost breakdown and showing trend and budgetary data as necessary to provide a basis for evaluation of the reasonableness of proposed rates.

4. If the total cost entered here is in excess of $250, provide on a separate page the following information on each separate item of royalty or license fee: name and address of licensor, date of license agreement, patent numbers, patent application serial numbers, or other basis on which the royalty is payable, brief description, including any part or model numbers of each contract item or component on which the royalty is payable, percentage or dollar rate of royalty per unit, unit price of contract item, number of units, and total dollar amount of royalties. In addition, if specifically requested by the contracting officer, a copy of the current license agreement and identification of applicable claims of specific patents shall be provided.

5. Provide a list of principal items within each category indicating known or anticipated source, quantities, unit price, competition obtained, and basis of establishing source and reasonableness of cost.

CONTINUATION OF EXHIBIT A—SUPPORTING SCHEDULE AND REPLIES TO QUESTIONS 11 AND 5

U. S. DEPARTMENT OF ENERGY

PROCUREMENT/FINANCIAL ASSISTANCE REQUEST-AUTHORIZATION

A

6-25-79

1. TO: John D. Wagner, Director, Contract Division, OR, Oak Ridge Operations and Regional Office, Oak Ridge, Tennessee Attention: Don Sloan
2. FROM INITIATING OFFICE: Environmental Control Technology Division (ECT), ASEV, U.S. Department of Energy, Washington, D.C. 20545

3. INITIAL [X] UPDATE [ ] 4. PROCUREMENT [X] FINANCIAL ASSISTANCE [ ]
5. PR NUMBER 05-79EV10260.000 6. PR CORRECTION LETTER _ 7. RELATED PR NUMBER

ACTION IDENTIFICATION

8. TITLE: Remedial Action at Formerly Utilized MED/AEC Site, Kellex Laboratory, Jersey City, New Jersey; Appropriation for Services

9. UNSOLICITED PROPOSAL NO. 10. PROJECT NO 800462 11. CFDA NO
12. PRODUCT OR SERVICE * ZZZZ 13. SUPPORT SERVICES YES [ ] NO [X] 14. CONSULTANT AWARD YES [ ] NO [X]
15. CONTROLLED DELIVERABLE: * DG1 16. REPORT/DRAWING REQ. YES [X] NO [ ] IF YES, ATTACH DETAILS.
17. CLASSIFICATION OF MATERIALS/WORK U U — UNCLASSIFIED C — CONFIDENTIAL S — SECRET T — TOP SECRET
18. GOVERNMENT PROPERTY F — FURNISHED P — PURCHASED (N) — NOT INVOLVED IF CODE F OR P, ATTACH DETAILS

AWARD PLANNING

19. AWARD AS ORDER UNDER BOA
20. DESIRED AWARD DATE 06 22 79 21. KIND OF AWARD ACTION * 2L 22. TYPE OF AWARD * Y IF CODE T ATTACH DETAILS
23. IF MULTI-YEAR AWARD, INDICATE NUMBER OF YEARS _ 24. TYPE SOLICITATION INSTRUMENT * UD
25. EXTENT OF COMPETITION * CE IF COMPETITIVE, ATTACH TECHNICAL EVALUATION PLAN. IF NON-COMPETITIVE ATTACH JUSTIFICATION. REF. Justification Attached
26. SOURCE SELECTION PROCEDURE 4 1 — A-E 2 — SEB 3 — OTHER 4 — NONE
27. FOR A-E, SHOW ESTIMATED CONSTRUCTION COST IN DOLLARS N/A

SOURCE

IF COMPETITIVE, HAS LIST OF SOURCES BEEN ATTACHED? YES [ ] NO [ ] IF NON-COMPETITIVE, COMPLETE 28-31
28. NAME: LEVCO 29. ADDRESS One Wayne Hills Mall, Wayne, New Jersey
30. DIVISION: [illegible]
31. GOOD LAB [illegible] A — GOOD LAB B — GOOD NON-LAB C — NON-GOOD LAB D — NOT APPLICABLE

FINANCIAL — AWARD VALUE

	DOLLAR AMOUNT
32. GOV'T SHARE	$ 10,000
33. TOTAL	10,000

34. CONSIDERATION IN KIND, LOAN, OR LOAN GUARANTEE DATA REPORTED ON PR-799C [ ]
35. PROJECT PERIOD FROM 06 25 79 THRU 09 30 79

CURRENT FY FUNDS COMMITTED

36. B&R NUMBER	37. FUND CLASS	38. DOLLAR AMOUNT
AG 76 04 00	E	$10,000

39. FROM PR-799B (PART A)
40. TOTAL THIS PR $10,000
41. FUNDING PERIOD FROM 06 25 79 THRU 09 31 79
42. APPROPRIATION SYMBOL: 8990201.91
ALLOTMENT SYMBOL: EI 9691 (OR)
OBJECT CLASS 2551

PROJECT MANAGER

45. NAME Whitman
46. SIGNATURE [signature]
47. DATE 6-14-79 48. OFFICE CODE DOE/EV-13
49. FTS TELEPHONE NUMBER 233-5025

PROGRAM OFFICIAL

50. NAME: Clusen, Ruth C.
51. SIGNATURE [signature]
52. DATE: 06 19 79

CERTIFYING OFFICIAL

53. NAME Mayhew, D. Dr
I HEREBY CERTIFY THAT THE FUNDS CITED IN ITEM 42 ARE AVAILABLE
54. SIGNATURE [signature]
55. DATE 6-14-79

M. CARD
S. CARD
SUMMARY
RPIS

JUN 20 1979

* SEE BACK OF FORM FOR CODES

U.S. DEPARTMENT OF ENERGY

PROCUREMENT/FINANCIAL ASSISTANCE REQUEST-AUTHORIZATION

TO: John D. [illegible], Director, Contract Division, OR, Oak Ridge Operations and [illegible] Office, Oak Ridge, Tennessee Attention: Don Sloan

FROM INITIATING OFFICE: Environmental Control Technology Division ([illegible]), [illegible], U.S. Department of Energy, Washington, D.C. 20545

INITIAL [X] UPDATE [ ] PROCUREMENT [X] FINANCIAL ASSISTANCE [ ]

NUMBER: 05-79EV10365.000 CORRECTION LETTER _ 7. RELATED PR NUMBER _____

TITLE: Remedial Action at Formerly Utilized MED/AEC Site, Kellex Laboratory, Jersey City, New Jersey; Appropriation for Drums

UNSOLICITED PROPOSAL NO. _____ 10. PROJECT NO. 800463 11. CFDA NO. _____

PRODUCT OR SERVICE: [illegible] 13. SUPPORT SERVICES YES [ ] NO [X] 14. CONSULTANT AWARD YES [ ] NO [ ]

CONTROLLED DELIVERABLE: [illegible] 16. REPORT/DRAWING REQ. YES [X] NO [ ] IF YES, ATTACH DETAILS

CLASSIFICATION OF MATERIALS/WORK: U U — UNCLASSIFIED C — CONFIDENTIAL S — SECRET T — TOP SECRET

GOVERNMENT PROPERTY: N F — FURNISHED P — PURCHASED N — NOT INVOLVED IF CODE F OR P, ATTACH DETAILS

AWARD PLANNING

AWARD AS ORDER UNDER: _____

DESIRED AWARD DATE: [illegible] 21. KIND OF AWARD ACTION: [illegible] 22. TYPE OF AWARD: [illegible] IF CODE [illegible], ATTACH [illegible]

IF MULTI-YEAR AWARD, INDICATE NUMBER OF YEARS _ 24. TYPE SOLICITATION INSTRUMENT: [illegible]

EXTENT OF COMPETITION: [illegible] IF COMPETITIVE, ATTACH TECHNICAL EVALUATION PLAN. IF NON-COMPETITIVE, ATTACH JUSTIFICATION. REF. [illegible] Justification Attached

SOURCE SELECTION PROCEDURE: 4 1 — A-E 2 — SEB 3 — OTHER 4 — NONE

FOR A-E, SHOW ESTIMATED CONSTRUCTION COST IN DOLLARS: N/A

[illegible]

IF COMPETITIVE, HAS LIST OF SOURCES BEEN ATTACHED? YES [ ] NO [ ] IF NON-COMPETITIVE [illegible]

NAME: [illegible] 29. ADDRESS: One Wayne Hills [illegible], Wayne, New Jersey [illegible]

DIVISION: [illegible]

GOOD/LAS: [illegible] A — GOOD LAS B — [illegible] C — NON-GOOD/LAS D — NOT APPLICABLE

FINANCIAL — AWARD VALUE

	DOLLAR AMOUNT
GOV'T SHARE	$10,000
TOTAL	10,000

CONSIDERATION IN KIND, LOAN, OR LOAN GUARANTEE DATA REPORTED ON PR-[illegible] [ ]

PROJECT PERIOD: FROM 06 25 79 THRU 09 31 79

CURRENT FY FUNDS COMMITTED

36. B&R NUMBER	37. FUND CLASS	38. DOLLAR AMOUNT
EG1004[illegible]	E	$10,000

FROM PR-799B (PART A) _____

TOTAL THIS PR _____

FUNDING PERIOD: FROM 06 25 [illegible] THRU 09 31 79

APPROPRIATION SYMBOL: 8940221.91

ALLOTMENT SYMBOL: EV-90-51 (OR)

OBJECT CLASS: 25[illegible]

PROJECT MANAGER

55. NAME: Whitman, [illegible]

66. SIGNATURE: [signature]

67. DATE: 6-14-79 68. OFFICE CODE: 000EV-13

69. FTS TELEPHONE NUMBER: 233-5025

PROGRAM OFFICIAL

50. NAME: Clusen, Ruth C.

51. SIGNATURE: [signature]

52. DATE: 06 19 79

CERTIFYING OFFICIAL

53. NAME: Mayhew, D. D.

I HEREBY CERTIFY THAT THE FUNDS CITED IN ITEM [illegible] ARE AVAILABLE

54. SIGNATURE: [signature]

55. DATE: 6-[illegible]-79

M. CARD

S. CARD

SUMMARY

EPIS

JUN 20 1979

* SEE BACK OF FORM FOR CODES

OAK RIDGE NATIONAL LABORATORY
OPERATED BY
UNION CARBIDE CORPORATION
NUCLEAR DIVISION

POST OFFICE BOX X
OAK RIDGE, TENNESSEE 37830

August 21, 1979

Department of Energy, Oak Ridge Operations
Attention: E. L. Keller, Director for
Technical Services Division
Post Office Box E
Oak Ridge, Tennessee 37830

Gentlemen:

Formerly Utilized Sites—Remedial Action Program — Post Decontamination Radiological Survey of a portion of the Former Kellex Laboratory Site, Jersey City, New Jersey

Decontamination of three (3) small land areas on the Levco portion of the former Kellex Laboratory site was completed by the Tobar Construction Company during the week ending August 11, 1979. Health physics and environmental monitoring services during clean-up operations were provided by Envirosphere Company (a Division of Ebasco Services, Inc.).

The principal objective of this decontamination operation was the removal of radioactivity to as-low-as-reasonably-achievable (ALARA) levels in accordance with an engineering plan prepared by Envirosphere Company.

A final radiological survey of the decontaminated portion of the site was conducted by ORNL Health and Safety Research Division staff. Results of this survey are enclosed. It is our belief that decontamination objectives for those decontaminated areas of the site have been met.

If you have questions regarding the enclosed data, or if you need further information, please let us know.

Sincerely,

Stephen V. Kaye

Stephen V. Kaye, Ph.D.
Director, Health and Safety
Research Division

SVK:FTH:rod

Enclosures

cc: F. F. Haywood
C. R. Richmond
P. S. Rohwer
File-RC

POST DECONTAMINATION RADIOLOGICAL SURVEY OF THE FORMER KELLEX LABORATORY SITE, JERSEY CITY, NEW JERSEY

Introduction

A formal radiological survey of the former Kellex Laboratory site in Jersey City, New Jersey was conducted for the Department of Energy (DOE) in March 1977. A draft report of the findings of this survey was submitted to the Department of Energy in October 1977. Natural radioactivity was found in two small areas near a concrete pad upon which Building No. 11 (which housed the Kellex Laboratory) was located. Available records of previous Kellex operations were incomplete at the time of the survey and there was no indication that radioactivity was handled or stored on the site other than in Building 11.

In late 1978, DOE learned that much of the site had been sold and that plans were underway to develop a large shopping center on a portion of the site bordered by New Jersey Route 440 and Kellog Street. Additional radiological survey measurements were made on the proposed shopping center site by ORNL and New Jersey State personnel in late March 1979 in order to determine if the radioactivity had been redistributed and to properly describe the boundaries of the contaminated areas. In the course of this follow-up survey, additional contamination (natural thorium) was found in the edge of a ditch which had been dug for installation of a water main. The source of this contamination was unknown. However, because of this latter development and as DOE initiated plans to decontaminate the site, other follow up investigations were initiated. These included: 1) drilling of a series of holes on the shopping center

site and on the remaining former Kellex property to identify subsurface deposits of radioactivity, and 2) conducting a comprehensive gamma-ray scan of the surface in order to identify deposits of radioactivity on the surface.

The results of these survey activities revealed several spotty areas of natural uranium and natural thorium contaminated soil in one section of the property still owned by Pierpoint Associates.

Location of areas to be decontaminated

A plan view of the Levco Shopping Center Site (southeastern section of the former Kellex property) is shown in Fig. 1. The three areas of the Levco property to be cleaned are depicted as areas 1, 2, and 3. For reference, coordinates of these areas were tied into a site grid system also shown in Fig. 1. Surface areas of the grid systems covering area 1, 2, and 3 are respectively 1512, 2106, and 1440 ft^2.

Decontamination criteria

No firm and widely accepted criteria for residual radioactivity in soil exist. However, it has been suggested by both DOE and EPA that a uniform ^{226}Ra concentration of 5 pCi/g would be acceptable considering potential health effects. For the purpose of this decontamination operation, clean-up was approached on the basis of as-low-as-reasonably-achievable (ALARA) principles. That is, a reasonable effort was made to reduce the contamination to natural background levels. The upper limit for radionuclides such as ^{232}Th, ^{226}Ra and its precursors in soil was assumed to be 5 pCi/g in any 1 lb (450 g) sample chosen at random, or in a composite sample averaged over the decontaminated zone. Decontamination progress in the field was determined by counting soil samples in a NaI

gamma-ray spectrometer on site. Final results were determined using a high resolution gamma-ray spectrometer and neutron activation techniques at the Oak Ridge National Laboratory (ORNL).

Results of measurements and sample analyses

In order to document the location of post clean-up radiation readings and residual radionuclide concentrations, a grid system was established in each of the three areas as shown in Figs. 2-4. Within the borders of each area one can find a diagram of the portion of that area which was cleaned and the location of soil samples.

At each grid point, gamma-ray exposure rates were measured 1 m above the ground and beta gamma dose rates were measured about 1 cm above the ground. In addition, each grid block was scanned at a height above the ground which ranged from 0-10 cm. Results of these measurements for the three decontaminated areas are presented in Tables 1-3.

Final soil samples were returned to ORNL, processed, and analyzed using routine laboratory techniques. Each sample was counted with a Ge(Li) spectrometer for a period ranging from 3,600 to 40,000 sec ar the concentration of ^{232}Th and ^{226}Ra was determined using a computer based multi-channel analyzer. Uranium determinations were made by t e ORNL Analytical Chemistry Division using a neutron irradiation techn que. Results of these analyses for soil samples collected in the three decontaminated areas are presented in Tables 4-6. It should be pointed o t that these samples were counted shortly (within 24 hours) after they were dried and pulverized. Because of this, ^{222}Rn will not have reached equilibrium with the parent ^{226}Ra. However, based on previous experience the estimates of ^{226}Ra should not increase by more than 20%.

The maximum observed ^{226}Ra concentration was 3.0 pCi/g for sample K-65 (area 3), therefore it is unlikely that this value will exceed 3.6 pCi/g after ^{222}Rn has reached equilibrium.

Conclusions

Based on the foregoing results of measurements, it appears that ALARA objectives were reached and the concentration of radionuclides in soil are well within the decontamination criteria.

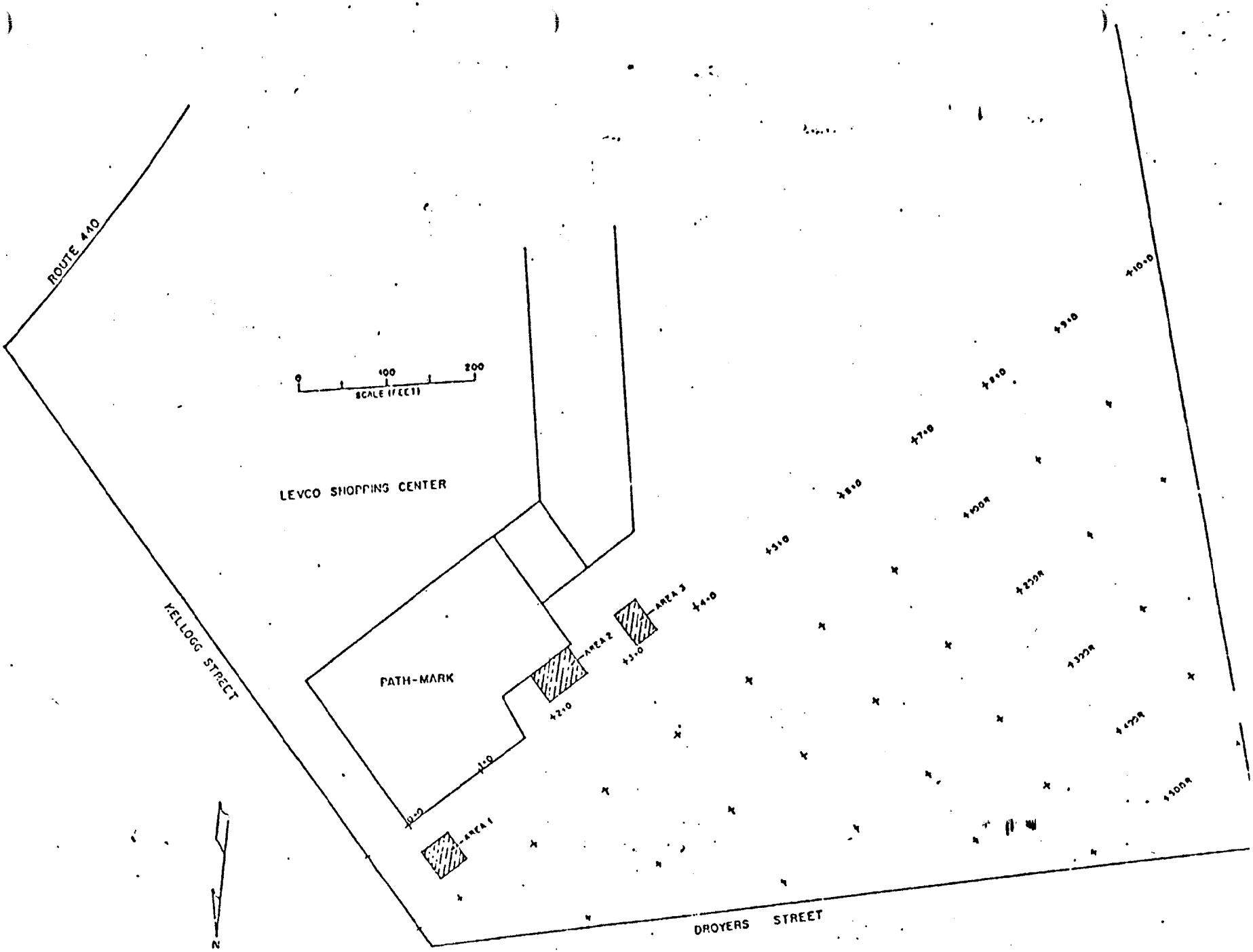


Fig. 1. Plan view of Levco Shopping Center showing the location of decontamination areas 1, 2, and 3.

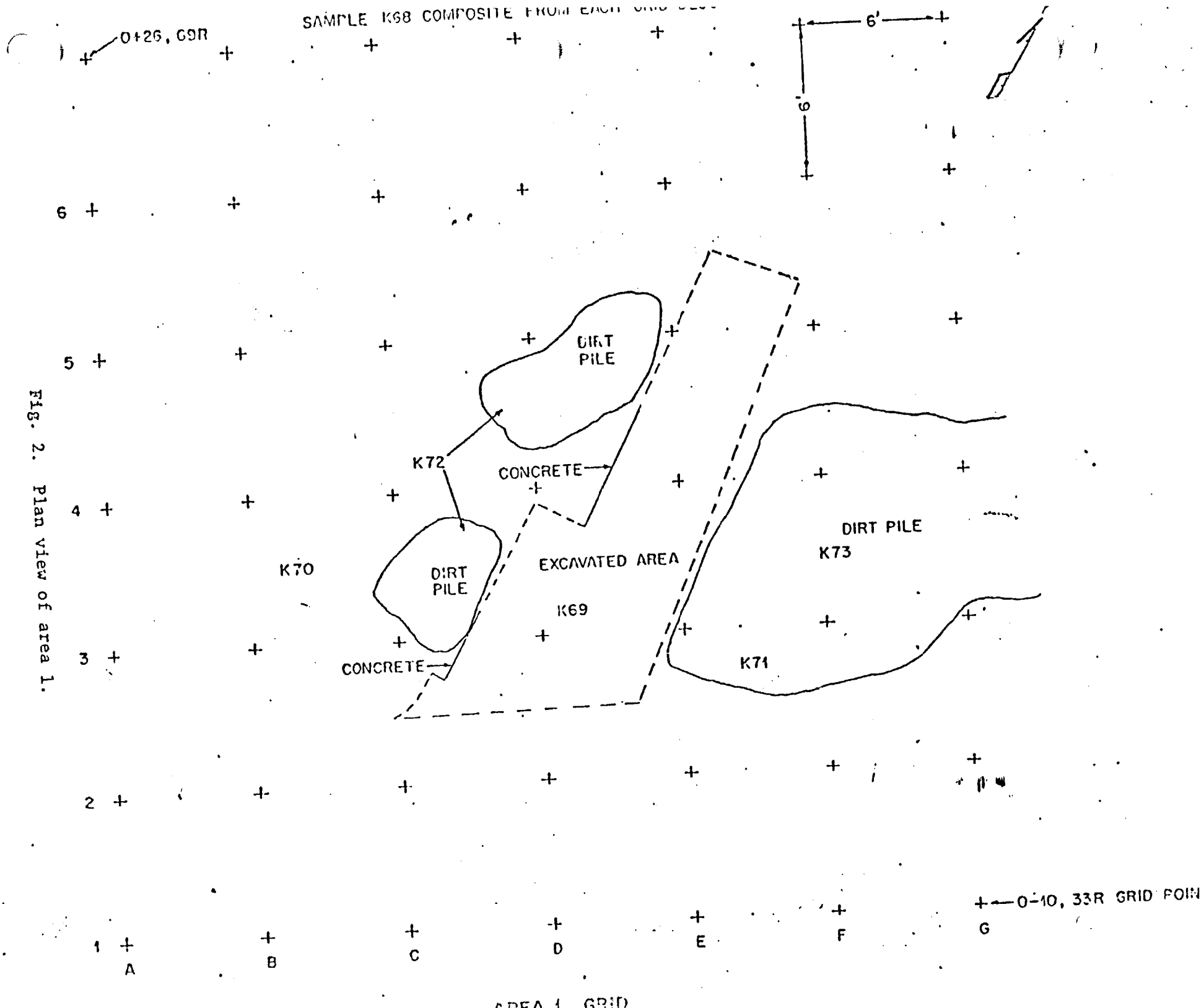


Fig. 2. Plan view of area 1.

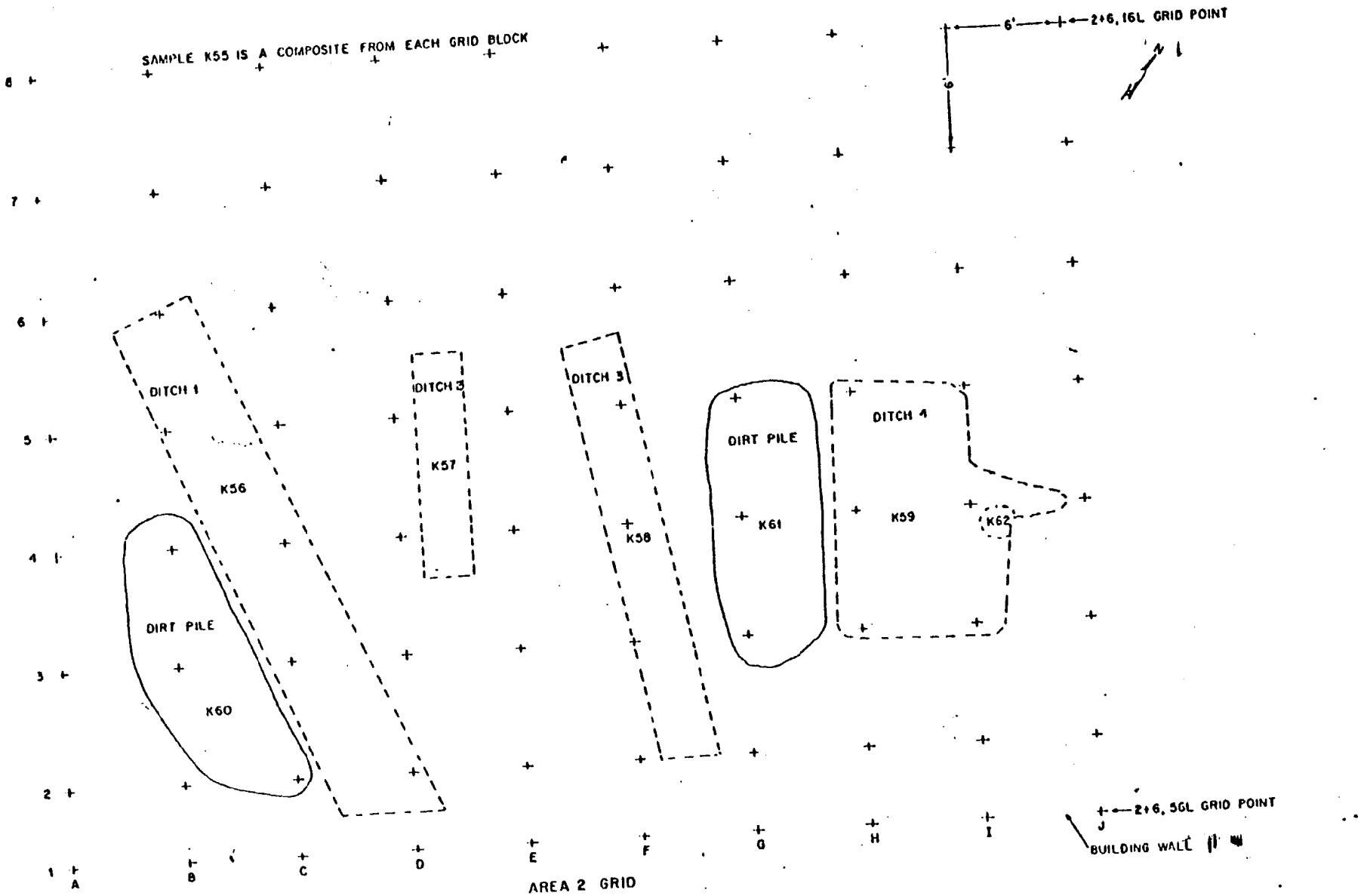


Fig. 3. Plan view of area 2.

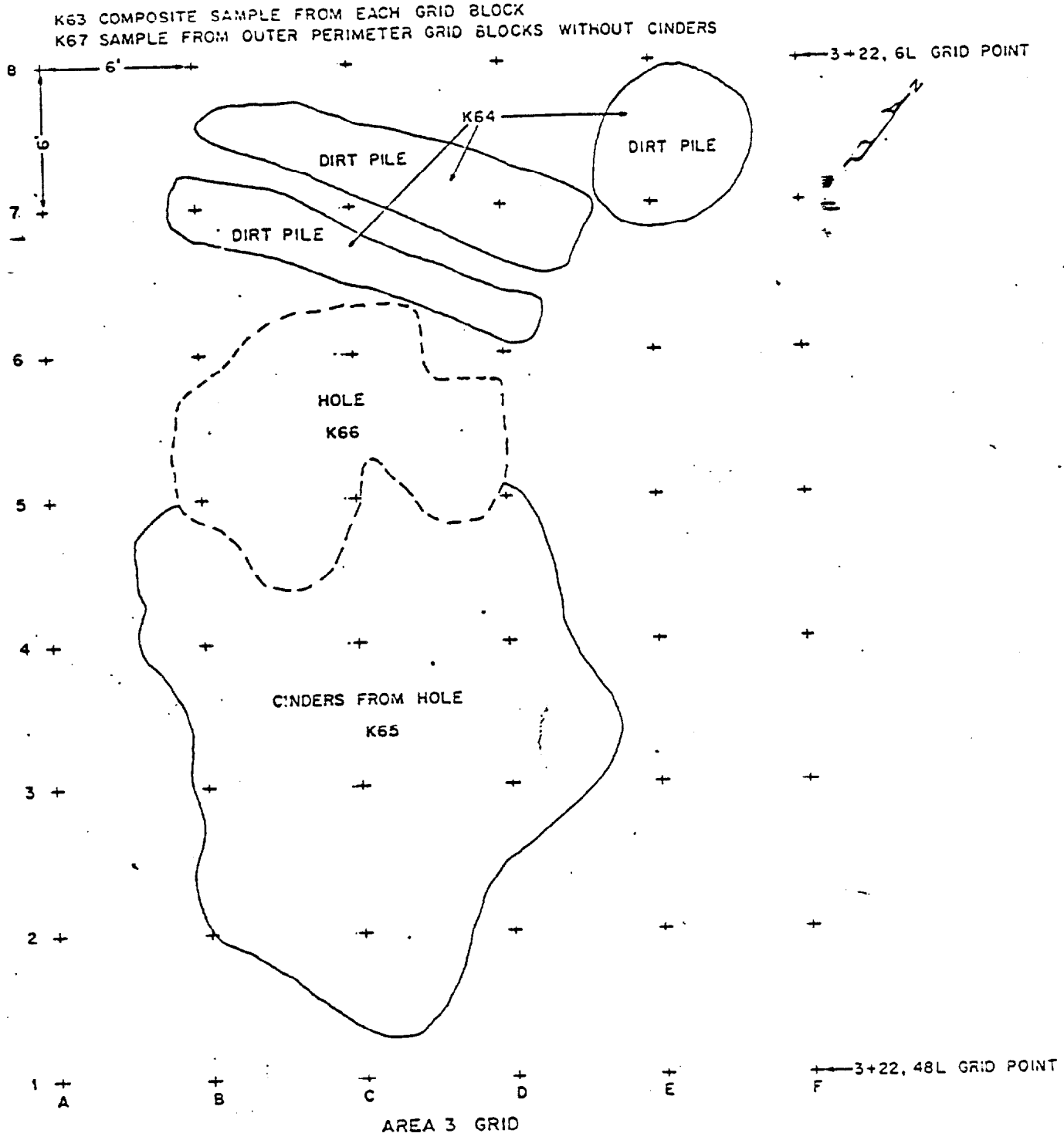


Fig. 4. Plan view of area 3.

Table 1.

Former Kellex Laboratory: Jersey City, New Jersey

Grid Survey for Decontaminated Area 1

Grid point	Gamma exposure rate 1 m above grid point (μR/hr)	Beta gamma dose rate at 1 cm at grid point (mrad/hr)	Grid block scan average gamma exposure rate (μR/hr) 0-3 in. above surface
A1	6.9	0.01	8.0
A2	7.2	0.01	6.6
A3	7.7	0.01	6.6
A4	8.8	0.01	5.3
A5	6.1	0.01	6.6
A6	7.2	0.01	6.6
A7	6.1	0.01	--
B1	7.2	0.02	8.0
B2	7.4	0.01	8.0
B3	6.6	0.02	9.3
B4	7.2	0.01	8.0
B5	6.6	0.02	8.0
B6	6.1	0.01	8.0
B7	6.1	0.02	8.0
C1	7.7	0.01	8.0
C2	8.5	0.02	9.3
C3	8.0	0.02	10.7
C4	8.0	0.01	10.7
C5	7.2	0.02	9.3
C6	6.6	0.02	8.0
C7	6.1	0.02	8.0
D1	6.6	0.01	8.0
D2	8.5	0.02	10.7
D3	8.8	0.02	12.0
D4	8.5	0.01	10.7
D5	7.4	0.02	10.7
D6	7.2	0.02	9.3
D7	6.1	0.01	8.0
E1	8.8	0.01	8.0
E2	7.5	0.02	10.7
E3	9.9	0.02	10.7
E4	8.5	0.01	10.7
E5	8.0	0.02	10.7
E6	6.7	0.01	10.7
E7	7.5	0.02	9.3
F1	8.5	0.01	8.0
F2	8.0	0.02	9.3
F3	8.8	0.02	9.3
F4	8.8	0.02	9.3
F5	6.7	0.01	9.3

Table 1. (continued)

Former Kellex Laboratory: Jersey City, New Jersey

Grid Survey for Decontaminated Area 1

Grid point	Gamma exposure rate 1 m above grid point (μR/hr)	Beta gamma dose rate at 1 cm at grid point (mrad/hr)	Grid block scan average gamma exposure rate (μR/hr) 0-3 in. above surface
F6	7.2	0.02	8.0
F7	7.2	0.02	8.0
G1	7.5	0.02	--
G2	8.0	0.02	--
G3	8.0	0.02	--
G4	8.5	0.02	--
G5	8.0	0.01	--
G6	7.5	0.01	--
G7	6.7	0.02	--

Table 2.

Former Kellex Laboratory: Jersey City, New Jersey

Grid Survey for Decontaminated Area 2

Grid point	Gamma exposure rate 1 m above grid point (μR/hr)	Beta gamma dose rate at 1 cm at grid point (mrad/hr)	Grid block scan average gamma exposure rate (μR/hr)=0-3 in. above surface
A1	9.3	0.01	8.0
A2	8.0	0.01	9.3
A3	9.3	0.02	9.3
A4	8.0	0.02	10.7
A5	9.3	0.02	10.7
A6	8.0	0.02	9.3
A7	8.0	0.02	8.0
A8	8.0	0.02	--
B1	9.3	0.02	8.0
B2	9.3	0.02	8.5
B3	9.3	0.02	9.3
B4	9.3	0.02	10.7
B5	8.0	0.02	10.7
B6	8.0	0.02	8.5
B7	8.0	0.02	7.5
B8	8.0	0.02	--
C1	9.3	0.02	10.7
C2	9.3	0.02	10.7
C3	9.3	0.02	9.3
C4	9.3	0.02	9.3
C5	9.3	0.02	8.5
C6	8.5	0.02	8.0
C7	8.0	0.02	8.0
C8	8.0	0.02	--
D1	8.5	0.02	9.3
D2	10.1	0.02	9.3
D3	9.3	0.02	10.7
D4	9.3	0.02	8.5
D5	8.5	0.02	8.8
D6	8.5	0.02	8.0
D7	8.5	0.02	7.5
D8	7.5	0.02	--
E1	9.3	0.02	8.0
E2	10.7	0.02	8.5
E3	10.7	0.02	9.3
E4	9.3	0.02	10.7
E5	9.3	0.02	10.7
E6	9.3	0.02	8.0
E7	8.5	0.02	7.5
E8	7.5	0.02	--
F1	8.0	0.02	10.7

Table 2. (continued)

Former Kellex Laboratory: Jersey City, New Jersey

Grid Survey for Decontaminated Area 2

Grid point	Gamma exposure rate 1 m above grid point (μR/hr)	Beta gamma dose rate at 1 cm at grid point (mrad/hr)	Grid block, scan average gamma exposure rate (μR/hr) 0-3 in. above surface
F2	9.3	0.02	12.0
F3	10.7	0.02	16.0
F4	9.3	0.02	12.0
F5	12.0	0.02	12.0
F6	10.1	0.02	10.7
F7	9.3	0.02	8.5
F8	8.0	0.02	--
G1	9.3	0.02	9.9
G2	10.1	0.02	9.3
G3	8.5	0.02	9.3
G4	8.5	0.02	9.3
G5	9.3	0.02	10.7
G6	10.7	0.02	9.3
G7	9.3	0.02	6.7
G8	8.0	0.02	--
H1	10.7	0.02	10.7
H2	9.3	0.02	10.7
H3	10.1	0.02	13.3
H4	10.7	0.02	12.0
H5	6.7	0.02	9.3
H6	9.3	0.02	9.3
H7	8.5	0.02	9.3
H8	7.5	0.02	--
I1	10.7	0.02	10.7
I2	10.7	0.02	9.3
I3	10.1	0.02	9.3
I4	10.7	0.02	9.3
I5	9.3	0.02	8.5
I6	8.5	0.02	8.5
I7	8.0	0.02	8.0
I8	8.0	0.02	--
J1	10.7	0.02	--
J2	9.3	0.02	--
J3	9.3	0.02	--
J4	8.5	0.02	--
J5	9.3	0.02	--
J6	7.5	0.02	--
J7	6.7	0.02	--
J8	8.0	0.02	--

Table 3.

Former Kellex Laboratory: Jersey City, New Jersey

Grid Survey for Decontaminated Area 3

Grid point	Gamma exposure rate 1 m above grid point (μR/hr)	Beta gamma dose rate at 1 cm at grid point (mrad/hr)	Grid block-scan average gamma exposure rate (μR/hr) 0-3 in. above surface
A1	9.3	0.02	9.3
A2	9.3	0.02	9.3
A3	9.6	0.02	12.0
A4	10.7	0.01	12.0
A5	12.0	0.02	9.3
A6	9.9	0.02	9.3
A7	8.8	0.02	8.0
A8	8.8	0.01	--
B1	10.1	0.02	13.3
B2	10.1	0.02	9.3
B3	12.5	0.02	12.0
B4	11.5	0.01	16.0
B5	13.3	0.02	17.3
B6	11.2	0.02	10.7
B7	9.9	0.01	9.3
B8	9.9	0.01	--
C1	10.1	0.01	10.7
C2	12.5	0.02	13.3
C3	12.8	0.02	13.3
C4	12.5	0.01	12.0
C5	12.8	0.01	13.3
C6	12.5	0.02	10.7
C7	10.7	0.01	9.3
C8	9.3	0.02	--
D1	9.3	0.02	10.7
D2	12.0	0.02	14.7
D3	12.5	0.02	12.0
D4	12.5	0.01	10.7
D5	11.2	0.01	9.3
D6	10.1	0.01	9.3
D7	10.1	0.01	8.0
D8	8.8	0.02	--
E1	10.1	0.02	9.3
E2	10.1	0.02	10.7
E3	9.9	0.02	9.3
E4	11.5	0.02	9.3
E5	9.3	0.02	8.0
E6	10.1	0.02	8.0
E7	9.9	0.02	8.0
E8	8.8	0.01	--

Table 3. (continued)

Former Kellex Laboratory: Jersey City, New Jersey

Grid Survey for Decontaminated Area 3

Grid point	Gamma exposure rate 1 m above grid point (μR/hr)	Beta gamma dose rate at 1 cm at grid point (mrad/hr)	Grid block scan average gamma exposure rate (μR/hr) 0-3 in. above surface
F1	8.8	0.02	--
F2	9.3	0.02	--
F3	8.8	0.01	--
F4	9.3	0.01	--
F5	10.7	0.02	--
F6	9.3	0.02	--
F7	9.9	0.02	--
F8	9.3	0.02	--

Table 4.

Former Kellex Laboratory: Jersey City, New Jersey

Results of Soil Samples from Decontaminated Area 1

Sample No.	^{226}Ra pCi/g	^{232}Th pCi/g	^{238}U pCi/g
K-68[a] (composite)	0.63	1.5	0.64
K-69	<0.99	4.4	0.60
K-70	<0.13	12	0.53
K-71	<0.74	8.2	0.71
K-72	0.85	1.4	0.85
K-73	0.80	4.1	0.74
K-83[b] (post K-70)	0.73	5.14	0.72
K-84[c] (post K-71)	0.56	2.6	0.60

[a] Composite sample from grid points.

[b] Sample after recleaning at K-70.

[c] Sample after recleaning at K-71.

Table 5.

Former Kellex Laboratory: Jersey City, New Jersey

Results of Soil Samples from Decontaminated Area 2

Sample No.	^{226}Ra pCi/g	^{232}Th pCi/g	^{238}U pCi/g
K-54	0.99	1.3	0.92
K-55[a] (composite)	0.90	1.0	0.74
K-56	0.82	0.94	0.79
K-57	0.70	1.3	0.76
K-58	1.5	1.2	0.77
K-59	0.92	1.0	0.85
K-60	0.78	0.97	0.83
K-61	1.2	1.2	0.93
K-62	2.1	2.2	2.0

[a]Composite sample from grid points.

Table 6.

Former Kellex Laboratory: Jersey City, New Jersey

Results of Soil Samples from Decontaminated Area 3

Sample No.	^{226}Ra pCi/g	^{232}Th pCi/g	^{238}U pCi/g
K-63[a] (composite)	1.4	1.1	1.3
K-64	1.0	0.94	2.2
K-65	3.0	2.1	3.9
K-66	2.5	1.8	3.0
K-67	0.74	0.95	0.75

[a]Composite sample from grid points.

2.21.7

B1042

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA. P. O. BOX 2807. TRENTON, N. J. 08625

August 29, 1979

Dr. William E. Mott, Director
Environmental Control Technology Division
U.S. Department of Energy
Mail Stop E-201
Washington, D.C. 20545

Dear Dr. Mott:

Remedial Action at DELCO-LEVCO
Property in Jersey City

The Department of Environmental Protection's Radiation Laboratory has analyzed soil samples collected jointly with ORNL's Division of Technical Services, subsequent to decontamination operations performed by DOE's contractor at the subject site.

The results of these analyses show none of the final samples exhibited concentrations above the remedial action criteria of 5 pci/gm Ra-226 approved by this Department as per my May 29, 1979 letter to your Division.

On the basis of these results the Department concurs in ORNL's assessment that the subject property can be certified as being decontaminated and released for general use.

We appreciate your efforts and cooperation in conducting this remedial action and look forward to the continuation of these programs until all formerly utilized sites in New Jersey can be certified for unrestricted use.

Sincerely,

George J. Tyler
Director

GJT:js
cc: Mr. R. Ramsey
Mr. S. Miller
Mr. F. Haywood
Mr. I. Hardiman
Mr. P. Arbesman
Mr. E. Fisher
Mr. T. Renahan

Department of Energy
Washington, D.C. 20585

SEP 14 1979

Mr. Thomas Keighley
Director, Real Estate
DELCO-LEVCO Venture
One Wayne Hills Mall
Wayne, New Jersey 07410

CERTIFICATION OF DECONTAMINATION FOR DELCO-LEVCO VENTURE PROPERTY
JERSEY CITY, NEW JERSEY

Pursuant to the terms of the joint agreement between DELCO-LEVCO Venture, the U.S. Department of Energy (DOE) and the State of New Jersey, the DOE has successfully performed a remedial action at the captioned subject site.

As per paragraph 9 of the agreement, DOE has completed a final radiological survey at the site. Based upon the results from this survey, the DOE, with the concurrence of the State, hereby certifies that the site now meets the State approved decontamination criteria provided in the Engineering Plan. Consistent with the survey, DOE advises the City of Jersey City that all building restrictions of the formerly contaminated portion of the site may be lifted, and that the site is considered to be released for unrestricted use. This certification may be entered in the records of property ownership for the captioned subject site.

A Federal Register Notice publicly notifying all interested parties will be issued upon completion of the remedial action at the Pierpont property.

THE U.S. DEPARTMENT OF ENERGY

BY: Ruth C. Thuen

TITLE:

CONCURRENCE:

STATE OF NEW JERSEY

BY:

TITLE:

2.21.7

B1074

SEP 19 1979

EV-131

Decontamination and Decommissioning of Former Kellex Laboratory Site, Jersey City, N.J.

Ruth C. Clusen, EV-1
THRU: Thomas G. Frangos, EV-10

Transmitted herewith is a copy of the agreement between the TOBAR Construction Co., the State of New Jersey and DOE to complete a remedial action at the subject site.

The Former Kellex Laboratory Site was divided into two parcels by the previous owner. The remedial action was successfully conducted on the first parcel pursuant to the agreement dated July 20, 1979, which you had signed.

The attached agreement covers the decontamination and decommissioning (remedial action) of the second parcel.

A prompt concurrence is required so work may begin as soon as possible prior to fiscal year 1980.

Thank you for your cooperation.

/s/
William E. Mott, Director
Environmental Control
Technology Division

4 Attachments (4 cys).

bcc: WMott, EV-13
Aerospace
SMiller, GC
TFrangos, EV-10

EV-131:Whitman:ngm:9/18/79

EV-1
RClusen
9/ /79

CONCURRENCE

RTG. SYMBOL	INITIALS/SIG.	DATE
EV-131	AJWhitma	9/18/79
EV-131	RWRamsey	9/19/79
EV-13	WMott	9/18/79
GC	SMiller	9/19/79
EV-10	TFrango	9/5/79
EV-1		
GC	SHGree	9/18/79

AGREEMENT

This AGREEMENT, effective September 20, 1979 by and between THE UNITED STATES OF AMERICA (hereinafter called the "Government"), acting through the UNITED STATES DEPARTMENT OF ENERGY (hereinafter called the "DOE"), and Tobar Construction Co. Inc. (hereinafter called the "Principal"), with a mailing address of P.O. Box 2011, Morristown, N.J. 07960, and the STATE OF NEW JERSEY, DEPARTMENT OF ENVIRONMENTAL PROTECTION (hereinafter called the "State"):

WITNESSETH THAT:

WHEREAS, it has been determined by the DOE that small quantities of low level radioactively contaminated material (hereinafter called the "material") constituting a potential minimal public health risk exist on certain portions of property owned by Pierpont Associates, as outlined on portions of the attached map;

WHEREAS, the parties have agreed that such material should be removed from the Site (hereinafter called the "remedial action");

WHEREAS, the Principal has agreed to furnish equipment, services and labor necessary to accomplishing such remedial action to move the material from the site;

WHEREAS, the DOE has agreed, under the terms of this agreement, to reimburse the Principal for the furnishing of such equipment, services, and labor; and,

WHEREAS, the parties have agreed that the State and DOE will jointly supervise the remedial action.

NOW THEREFORE, in consideration of the mutual promises, the parties hereto agree as follows:

1. DOE has provided remedial decontamination instructions in the form of an Engineering Plan in performance of the remedial action efforts. These instructions specify conditions of the site necessary for unrestricted use.

2. The remedial action criteria upon which the instructions are based has been provided to and approved by the State as per the letter from George Tyler to William Mott, dated September 19, 1979.

3. DOE, in conjunction with the State, will monitor each stage of the procedure for the removal of the material.

4. The Engineering Plan has been reviewed by the Principal and the State to assure understanding of the scope and procedure.

5. The State will assist DOE in overcoming any transportation restrictions that may apply to the movement of the material.

6. DOE will arrange physical storage facilities to receive the material from the site and dispose of the material.

7. The Principal agrees to provide the earth moving equipment, other equipment or vehicles, labor, as needed, and to remove the material from its location, load it into approved containers and transport it to a selected site.

8. The DOE will furnish drums in its possession for containment of the material. If additional drums are needed, the Principal will obtain them per DOE's instructions.

9. Radiological monitoring will be the responsibility of DOE who will provide data to the City of Jersey City and the State.

10. DOE will conduct a final radiological site survey immediately upon completion of the remedial action, and after concurrence by the State will issue a certification to the property owner and the City of Jersey City that the site meets the State approved remedial action criteria for unrestricted use as reflected in paragraph 2 above.

11. DOE will reimburse the Principal for costs incurred on a time plus materials basis only per attached Form 60, as authorized by attached Form 799A.

12. The Principal will furnish DOE with copies of time records showing length of time spent on jobs covered by their agreement and normal hourly wages paid each worker. Reimbursement will be made on the basis of each hour worked plus any quarterly fraction thereto. The Principal will also furnish copies of all receipts or other forms of evidence of material purchased for the job covered by this agreement.

13. The DOE reserves the right to review, audit, and disapprove of any charges submitted by the Principal for

reimbursement under this agreement which DOE feels are unreasonable, or excessive.

14. No member of or delegate to Congress or resident commissioner shall be admitted to any share or part of this agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

15. The Principal warrants that no person or selling agency has been employed or retained to solicit or secure this agreement upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee. For breach or violation of this warranty, the Government shall have the right to annul this agreement without liability or in its discretion to deduct from the agreement price or consideration or otherwise recover, the full amount of each such commission percentage, brokerage, or contingent fee.

16. Effective and based upon issuance by DOE of the certification and payment provided in paragraphs 9 and 10 above, the Principal hereby releases the State and DOE, its contractors and subcontractors from all claims respecting personal injury, or damage to property arising out of, based on, or attributable to the work performed under this agreement except with respect to any claim or claims resulting from willful misconduct on the part of the State and DOE, its contractors, and subcontractors.

17. The implementation of this agreement does not in any way constitute or form the basis for any estoppel of the State, DOE, or the Principal or be admitted as evidence of any legal responsibility of the State, DOE, or the Principal (other than an action by the Principal to enforce the agreement) for any public health risk created or otherwise, or give any third parties any rights or claims whatsoever.

18. This agreement shall terminate on 11/30/79 or such earlier time upon issuance by DOE of the certification provided in paragraph 9 above, unless the parties by mutual written consent extend its term.

IN WITNESS WHEREOF, THE PARTIES HAVE EXECUTED THIS AGREEMENT IN SEVERAL COUNTERPARTS --

THE UNITED STATES OF AMERICA
BY THE U.S. DEPARTMENT OF ENERGY

BY:

TITLE: ____________________

BY: Ruth C. Clusen

TITLE: ____________________

TOBAR CONSTRUCTION CO. INC.

BY: Anthony Ferraro

TITLE: Sec't-Treas.

STATE OF NEW JERSEY

BY: For George J. Tyler, Director Division of Environmental Quality

TITLE: by Frank J Cosolito, Bureau of Radiation Protect.

CORPORATE CERTIFICATE

I, Patricia A. Szerlip, certify that I am the duly qualified Secretary, of the corporation named herein as the Principal; that Anthony D'Aurria who signed this Agreement on behalf of the Principal was then Secretary-Treasurer of said corporation Tobar Constr; that said Agreement was duly signed for and in behalf of said corporation by authority of its governing body and is within the scope of its powers.

Witness my hand and the seal of said corporation.

Patricia A. Szerlip

PATRICIA A. SZERLIP
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires August 9, 1983

2.21.7

B1089

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA. P. O. BOX 2807. TRENTON, N. J. 08625

September 19, 1979

Dr. William E. Mott, Director
Division of Environmental Control Technology
U.S. Department of Energy
Washington, D.C. 20545

Dear Dr. Mott:

Remedial Action at Former
Kellex Laboratory Site in
Jersey City, New Jersey

This is in response to your letter of September 13, 1979 which proposes an agreement and remedial action criteria for the clean-up of uranium contaminated materials on that portion of the subject property presently owned by Pierpont Associates.

While supporting documentation is yet to be published, we find no reason to delay our concurrence with the proposed remedial action criteria providing that the following interpretation represents the conditions for certification.

It is our understanding that this site will be certified as being decontaminated when:

1. The natural uranium, Ra-226, and Th-232 concentrations in the first 2 to 3 meters of soil do not exceed 5 pCi/gm including background, and

2. The external gamma exposure rate shall not exceed 170 mr/year including background.

These two criteria would jointly assure that neither the state, federal Radiation Protection Guides for external exposure to members of the general public nor the Surgeon General's Guideline for the average indoor Radon concentration could be exceeded. Naturally, we concur with the application of the ALARA concept, where it can be applied on a case-by-case basis, to reduce exposures as near as practical to the natural background for an area.

The Department, once again, would like to take this opportunity to reemphasize the need for guidelines in the area of Implementation of Remedial Action Criteria; i.e., it would be worthwhile for U.S. DOE to elaborate regarding specific techniques, instrument specifications and permissible error limits for the actual field operations and methods to be used in performing a site evaluation. This type of standardization would help to reduce technical or legal disputes following clean-up.

The DEP greatly appreciates DOE's efforts and cooperation in attempting to expedite the remedial actions at the several contaminated New Jersey sites.

Sincerely,

George J. Tyler
Director

GJT:js
cc: Commissioner English
Assistant Commissioner Arbesman
Chief Fisher

Copy aerospace whitman (CV→ DF-52

EV-123
LJDeal
6- -80
EV-12
Patterson/
6- -80
EV-13
Mott
6- -80
NE-30
Ramsey
- -80
GC
Greenlei
- -80
EV-10
TFrangos
- -80

JUL 14 1980

Mr. George J. Tyler, Director
New Jersey Department of
Environmental Protection
P.O. Box 2807
Trenton, NJ 08625

Dear Mr. Tyler:

I have enclosed our proposal, "Decontamination Criteria for the Former Kellex Site (Pierpont Property) Remedial Action, Jersey City, New Jersey" June 1980, which reflects the changes agreed to at the June 13, 1980 meeting with you and the U.S. Environmental Protection Agency.

Please review the final draft and indicate your acceptance so that we may proceed with the remedial action.

Sincerely,

Thomas G. Frangos, Director
Office of Environmental Compliance
and Overview

Enclosure

cc: W. A. Mills
Environmental Protection Agency

bcc: E. L. Keller, OR
OECO RF
OES RF
Mott, EV-13
Ramsey, NE-30
Greenleigh, GC

EV-123:KBaker:kab:353-5615:6-25-80

DECONTAMINATION CRITERIA FOR THE FORMER KELLEX SITE (PIERPONT PROPERTY) REMEDIAL ACTION, JERSEY CITY, NEW JERSEY

U.S. DEPARTMENT OF ENERGY
WASHINGTON, D.C. 20545

JUNE 1980

alternate guide of 0.003 Ci for ^{226}Ra in the adult skeleton, that corresponds to about 1 rem/y. In the derivation of limits for D&D 0.5 rem/y has been used to apply to any organ although one could argue that a limit of 1.5 rems/y was intended for organs such as bone or lung.

The FRC was abolished when the U.S. Environmental Protection Agency (EPA) was created and the responsibilities were assumed by the EPA. The guidance developed by the FRC is still applicable athough the EPA has proposed much more restrictive guidance for specific situations based upon what is considered by them as technically and economically practicable for the situation. The proposed drinking water limits and transuranics in soil limits, as well as the basis for Uranium Fuel Cycle Standard, consider the costs of implementation compared to the benefits derived from the use of the standard. The dose equivalent limits proposed or recommended for these specific sources of exposure are included in Table 1.

Recent ICRP Guidance

The International Commission on Radiological Protection (ICRP) recently published revised guidance in ICRP Publication 26, "Recommendations of the International Commission on Radiological Protection." For individual members of the public, they recommend a limit of 500 mrem to the whole body or the equivalent risk if the dose is distributed non-uniformly. They recognized that this limit when applied to an individual normally results in an average annual dose equivalent to the population of less than 100 mrem or an individual risk in the range of 10^{-6} - 10^{-5} per year. The limit of 500 mrem is also considered adequate to assure that no one or group of individuals will be expected to bear an undue portion of the health related cost. The ICRP goes

TABLE 1 - ENVIRONMENTAL STANDARDS

General Environmental Standards

Organization	Annual Limit	Comments
FRC-EPA	500 mrem	whole body, bone marrow
FRC-EPA	170 mrem	whole body, bone marrow (exposure to average population groups)
ICRP	500 mrem	whole body or equivalent risk from organ doses

Specific Environmental Standards

EPA Fuel Cycle Standard (Effective December 1980)	75 mrem 25 mrem	thyroid whole body or other organ (Rn and daughters excluded)
EPA Drinking Water Standard	4 mrem/y 5 pCi/l 15 pCi/l	manmade beta-gamma emitting radioactivity ^{226}Ra or ^{228}Ra gross alpha measurement
EPA Proposed Guidance for Transuranics	1 mrad* 3 mrad**	lung bone

*This is equivalent to approximately 20 mrem
**This is equivalent to approximately 150 mrem

on to further state tnat any manmade contribution to the radiation exposure of a population must be justified by its benefits.

For exposure to radiation such that the organs receive different doses, the ICRP recommends that the "dose limitation be based on the principle that the risk should be equal whether tne whole body is irradiated uniformly or whether there is non-uniform irradiation." This is achieved by converting the partial body dose equivalents to whole-body dose equivalents by multiplying the organ dose equivalents by weighting factors (Wt) that express comparative risk factors, provided in Table 2, for each organ, and comparing the sum with the whole-body dose equivalent limit.

TABLE 2 - ORGAN WEIGHTING FACTORS USED BY THE ICRP IN RELATING ORGAN DOSES TO WHOLE BODY DOSE

Tissue	Wt
Gonads	0.25
Breast	0.15
Red Bone Marrow	0.12
Lung	0.12
Bone Surfaces	0.03
Remainder	0.30

Rationale for Cleanup Limits and Sampling Methodology for Soils at the Kellex Site

In proposing limits for soil contamination, it is important to identify the principal pathways of radiation exposure to man and provide soil limits and measurement methodologies which are appropriate for limiting exposure via those particular pathways. The most recent analysis of the hazards associated with soils contaminated with uranium has been done by J. W. Healy, J. C. Rodgers, and C. L. Wienke, "Interim Soil Limits for D&D Projects," Draft LA-UR-79-1865-Rev. (September 1979). In their analysis they estimated, on a conservative basis, the soil contamination levels necessary to deliver a dose equivalent of 500 mrem/y to the organ receiving the highest annual dose of the maximum exposed individual. Their analysis demonstrates that the significant pathway to man is from ingestion. Since surface waters are not consumed, a home gardener living on the site all of his life who grew all of the fruit and vegetables which he ate would be considered the most severely exposed individual. For this extreme situation, the study predicts that a garden with an average concentration of 18 pCi/g of ^{238}U would produce a bone dose equivalent of less than 500 mrem/y. In the analysis, the effects of ^{234}U were included in with the ^{238}U since they are normally in secular equilibrium, i.e., the disintegration rates per soil mass are equal for ^{234}U and ^{238}U. The next most restrictive pathway was shown to be inhalation where continuous occupancy of a large site having a soil concentration of 750 pCi/g of ^{238}U would correspond to a maximum lung dose of less than 500 mrem.

The 18 pCi/g limit for ^{238}U is based upon a very conservative estimate of a quantity that leads to a dose of 500 mrem/year to the highest organ at any time during the lifetime of an individual who has the highest intake of uranium from the contaminated area. Because the inhalation is a minor problem

compared to ingestion of foods from the area, the lung is only slightly involved and the bone-surface becomes the critical organ. If we consider only the bone as irradiated, the new ICRP formulation would indicate that this would be equivalent to a whole-body dose of 15 mrem/y. However, because other organs such as kidney and liver are undoubtedly irradiated also, a more realistic value is on the order of 20-50 mrem/y.

Since the pathway analysis demonstrates that home gardening is by far the most significant concern when using land contaminated with uranium, the soil sampling methodology and limits are being selected accordingly. Garden crops normally extract most of their nutrients from the uppermost 20 cm of soil so that sampling must assure that a garden capable of producing a significant fraction of a person's vegetables will not have an average contamination level in the top 20 cm of soil greater than the proposed limit. The size of a garden plot which could supply this quantity of food is assumed, for purposes of the cleanup, to be 400 square meters. This size is based upon an estimate provided by personnel at the U.S. Department of Agriculture. Dr. Ray Webb of that Department stated that a fertile garden of 1/4 acres (1,000 m^2) could supply all the vegetables for a family of four. Allowing an additional 50 m^2 for each of several fruit trees and assuming only one person per household, the minimum size of concern would be approximately 400 m^2.

The Kellex site (Pierpont Property) is not suitable for home gardening or other agricultural uses at present. The site has been used to deposit waste soils, cinders, and other rubble for many years. These materials would have to be removed or replaced with more fertile top soil before a large fraction of a man's diet could be grown on a 400 m^2 plot. The effect of bringing in top soil would be to reduce the contamination in the root zone to a small fraction of the initial concentration. This dilution factor should be

considered when establishing a maximum allowable limit for this site as described below. One might argue that the plot size could be enlarged and thus the most conservative limit should be retained. We believe that enlarging the garden plot size in this case would also reduce the average uranium concentration, for the contamination has been found in small isolated areas and enlarging the area would have a net result of lowering the average uranium concentration. After considering the physical properties of the land, and the unlikelihood that a family would desire to eat only fruits and vegetables grown on that plot, we estimate that a residual limit of 40 pCi/g of ^{238}U (rather than 18 pCi/g) averaged over 400 m^2 would correspond to less than 500 mrem/y to the bone of the maximum exposed individual. This site specific adjustment factor of approximately 2 is still considered very conservative.

Throughout the cleanup, the principle of As Low As Reasonably Achievable (ALARA) will be applied. The degree and costs of decontamination depend to a great extent upon the ability to detect the contaminant with field instruments. It is normally impractical to assure that decontamination to levels below the detection limit of the field instruments will be achieved. The practical detection limit for presently available field instruments is about 20 pCi/g for uranium-238. Therefore, soils sampled and found to exceed 20 pCi/g will be removed from the top 20 cm layer during remedial action. Since the contamination on this site is expected to occur in small areas compared to 400 m^2, we anticipate that the average contamination for any 400 m^2 will be a small fraction of the 40 pCi/g limit.

Subsurface exploration will be made in suspected contaminated areas by trenching or other methods. Considering the past uses of the site, exploring to a depth of about 3' will be adequate unless indications of burial of radioactive material are found, and then it will be necessary to go deeper.

Care will be taken to explore enough of the subsurface in areas of suspected contamination such that a high degree of assurance is provided that significant quantities of contaminated soils have been located and removed. (A "significant quantity" in this context is defined as a quantity of activity capable of exceeding the soil limits (40 pCi/g) if brought to the surface and mixed with the top soil.) Furthermore, subsurface soil below 20 cm depth identified as contaminated above the sensitivity of the field instruments (20 pCi/g) will be removed to the extent it is practical.

Uranium-238 Soil Limits and Cleanup Criteria*

Soil Limit
40 pCi/g

* Average concentration in the top 20 cm of soil averaged over a 400 m^2 area as specified in the implementation section. The limit of 40 pCi/g has been increased from 18 pCi/g because of site specific considerations (see text).

Implementation

1. A gamma-ray survey or combination of gamma-ray and alpha survey will be made to locate contaminated areas exceeding 20 pCi/g uranium-238 to a depth of 20 cm. All contaminated soil within this depth found to exceed 20 pCi/g will be removed from these areas.
2. In areas where subsurface deposits are suspected, a plan for subsurface sampling shall be followed which will identify and remove quantities of contamination capable of exceeding the soil limit (40 pCi/g) for the Kellex site, if under any possible future land use, this contaminated soil were to be brought to the surface.
3. After decontamination of the site, the excavated areas will be backfilled with clean soil or leveled.

4. A final survey will be performed to describe the condition of the site after cleanup. The following procedure will be followed unless an alternative procedure is agreed to by the DOE and the State of New Jersey. All decontaminated areas will be divided into grid systems described by perpendicular lines 4 m apart, thus forming individual grid blocks of 16 m^2 each. Decontaminated areas larger than 400 m^2 will be subdivided into 2 or more approximately equal subareas of less than or equal to 400 m^2 each. Soil samples from each 16 m^2 area will be taken to a depth of 20 cm. A composite sample will be made from sample aliquots from each 16 m^2 grid block and analyzed, representing the average concentration of the 400 m^2, or less, area. If the average concentration exceeds 20 pCi/g uranium-238, the analyses of the soil samples from the 16 m^2 area will be used to guide further remedial action.

Certification

During cleanup operations, the remedial action radiological support contractor will collect and document radiological data from analyses of soil samples and portable radiation detection instruments to determine the adequacy of decontamination. Concurrently and independently, the DOE Office of Environment's survey contractor will collect and analyze spot soil samples and make in situ radiological measurements.

After completion of the remedial actions, the Office of the Environment's survey contractor will conduct an onsite survey to establish the final radiological condition. Using the data documented by the remedial action contractor and the independently collected radiological data, the Office of Environment will determine the status of certification.

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, CN 027, TRENTON, N. J. 08625

August 22, 1980

Dr. William E. Mott, Director
Division of Environmental Control
Technology
U.S. Department of Energy
Washington, DC 20545

Dear Dr. Mott:

The New Jersey Department of Environmental Protection has reviewed the "Decontamination Criteria for the Former Kellex Site (Pierpont Property) Remedial Action, Jersey City, New Jersey" prepared by the U.S. Department of Energy dated June 1980 and provided in your letter dated July 14, 1980. The DEP appreciates the efforts DOE has made to address the State's concerns and to develop a site specific uranium clean-up criteria in the absence of a generic standard. The June 13, 1980, meeting with the U.S. Environmental Protection Agency was most useful to DEP. The meeting confirmed our preliminary review that the assumptions used in developing the criteria are acceptable for this site.

We agree that the Kellex site specific uranium-238 soil limit of 40 pCi/gm in the top 20 centimeters of soil is conservative since soil conditions at the Kellex site make the most restrictive agricultural pathway extremely remote unless the site is supplemented with more fertile soil. It is our understanding at the meeting with EPA that readily detectable contamination should be removed to the extent possible. The implementation section should be expanded to discuss how to detect uranium contamination at depths greater than a few centimeters. Verification of adequate clean-up should be performed before the decontaminated area is backfilled.

Although the criteria discusses only uranium-238, the clean-up of the Kellex site should include the radium criteria of not more than 5 pCi/gm (including background) and external gamma exposure rate of not more than 170 mrem/yr (including background).

The DEP greatly appreciates DOE's efforts and cooperation in attemping to expedite the remedial actions at contaminated New Jersey sites.

Sincerely,

Jack Stanton
Director

JS/km

cc: Paul Arbesman
George Tyler
Eugene Fisher
Frank Cosolito
Jeanette Eng

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF ENVIRONMENTAL QUALITY
JOHN FITCH PLAZA, CN027, TRENTON, N.J. 08625

STEVEN G. KUHRTZ
DIRECTOR

May 23, 1983

Arthur J. Whitman, Ph.D.
Division of Remedial Action Projects
Office of Terminal Waste Disposal
and Remedial Action
Department of Energy
Washington, DC 20545

Dear Dr. Whitman:

The New Jersey State Department of Environmental Protection has completed their review of both the radiological survey reports[1,2] and the post-remedial action radiological survey report[3] which affirms the United States Department of Energy's activities involving the decontamination of the Pierpont Section of the former Kellex Research Facility in Jersey City, New Jersey and concludes that the objectives of the remedial action(s) have been accomplished.

The data contained in these reports document that the "site-specific" criteria, defining the radiation levels (in accordance with the Memorandum of Agreement[4] and the Decontamination Criteria Report[5] negotiated between the Department and DOE) have not exceeded:

1. 40 picocuries/gram of uranium^{238} (without radium 226 or thorium 232 present); or

2. 5 picocuries/gram of radium 226 or thorium 232;

when averaged over an area of 400 m^2 in the top 20 centimeters of any area. As per paragraphs 2 and 10 of the Agreement, the New Jersey State Department of Environmental Protection is in general agreement with the summaries and conclusions presented in these reports.

However, it should be noted, that of the more than 100 composited and biased soil samples analyzed, one sample (representing an area $\leq 1 m^2$), reported an activity of more than 140 pCi/gm of U238, and one reported a radium 226 activity of approximately 9.1 pCi/gm. These results, however, do not affect the overall assessment.

In conclusion, the New Jersey State Department of Environmental Protection accepts the radiological reports of the United States Department of Energy as evidence that the remedial actions, performed on the former Kellex Research Facility (Pierpont Section), have successfully reduced the levels of contamination below the criteria, and that all the conditions for certifying the Kellex property as being decontaminated have been met.

Sincerely,

Steven G. Kuhrtz, Director
Division of Environmental Quality

SGH:JRM;js
cc: Mr. E. Fisher
Mr. F. Cosolito
Ms. J. Eng

REFERENCES

1. Berven, B.A., et al, Radiological Survey of the Former Kellex Research Facility, Jersey City, New Jersey, Oak Ridge National Laboratory, ORNL-5734, DOE/EV-0005/29 (February 1982).

2. Hutchinson, S.W. Radiological Characterization of the Kellex Site, Desert Research Institute, Water Resources Center, University of Nevada System, Publication No. 45020, DOE/DP/01253-50 (March 1981).

3. Berven, B.A., et al, Results of the Post-Remedial Action Survey of Arease 4 through 10 at the Former Kellex Site, in Jersey City, New Jersey, Oak Ridge National Laboratory (March 1983).

4. N.J. State DEP, DOE and Fobar Construction Co., Memorandum of Remedial Action Agreement, Effective September 20, 1979.

5. Decontamination Criteria for the Former Kellex Site (Pierpont Property) Remedial Action, Jersey City, New Jersey, U.S. DOE, (June 1980).

SEP 12 1983

NE-24

Recommendation for Certification of Decontamination of the Former Kellex Laboratory, Jersey City, New Jersey

Frank E. Coffman, Director
Office of Terminal Waste Disposal
and Remedial Action
Office of Nuclear Energy (NE-20)

I am attaching for your signature the post-decontamination Statement of Certification and the Federal Register Notice of certification of the former Kellex Laboratory site, Jersey City, New Jersey.

From 1943 to 1952 the Atomic Energy Commission and its predecessor, the Manhattan Engineer District contracted with the Vitro Corporation of America and the Kellex Corporation to conduct research and development work at the Kellex Laboratory. Original research was concerned with the development of the gaseous diffusion uranium enrichment process. Later research at the laboratory involved liquid extraction processes, including the development of the PUREX process. During the laboratory's operation, some portions of the site became contaminated with uranium, radium, or thorium.

Radiological surveys in 1977 by the Oak Ridge National Laboratory (ORNL) revealed the extent of the contamination. Remedial action was begun in 1979 and a portion of the property was certified for unrestricted use in 1979. The remaining sections of the site were decontaminated. These properties are:

- Lots 1-G, 1-J, 1-L, 1-M, and 1-N of Block 1288-1, now known as 1288A in the Jersey City tax maps.

Following remedial action, ORNL, under contract to the Department of Energy's Public Safety Division, performed a post-remedial action survey of the site. Results of gamma scans and laboratory soil analysis indicated that the remedial action was successful. The Department of Environmental Protection of the State of New Jersey has reviewed the documentation and has agreed that the remedial action was completed in accordance with Federal and State standards and criteria.

Based on a review of documents related to this site, I have concluded that the site should be certified for unrestricted use. I have provided the attached docket to effect this certification.

Following your concurrence in the certification, this office will notify interested State and local agencies, the public, local land records offices and the specific property owners of the certification actions by correspondence and local newspaper announcements, as appropriate. The documents

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transmitted with the Statement of Certification and the Federal Register Notice will be compiled in final docket form by the Division of Remedial Action Projects for retention in accordance with DOE Order 1324.2 (Disposal Schedule 25).

Original signed by
J. E. Baublitz

John E. Baublitz, Director
Division of Remedial Action Projects
Office of Terminal Waste Disposal
and Remedial Action
Office of Nuclear Energy

Attachments

Aerospace
NE-73 (4)
NE-24 RF
Whitman RF

NE-24:AWhitman:ph:353-5439:9/9/83:V-7-A-27/28:3.30.1

9/9/83

CONCURRENCES	
RTG SYMBOL	NE-24
INITIALS/SIG.	DeLaney
DATE	9/12/83
RTG SYMBOL	NE-24
INITIALS/SIG.	Baublitz
DATE	9/12/83
RTG SYMBOL	GC-34
INITIALS/SIG.	Miller
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STATEMENT OF CERTIFICATION:
THE FORMER KELLEX LABORATORY SITE,
JERSEY CITY, NEW JERSEY

The Office of Terminal Waste Disposal and Remedial Action has reviewed and analyzed the radiological data obtained following remedial action on the site once occupied by the former Kellex Laboratory in Jersey City, New Jersey. Based on this analysis and the concurrence of the New Jersey Department of Environmental Protection, the Department of Energy certifies that the following properties are in compliance with all applicable decontamination criteria and standards:

- Lots 1-G, 1-J, 1-L, 1-M, and 1-N of Block 1288-1, now known as Block 1288A (reference Jersey City Tax Maps)

This certification of compliance provides assurance that unrestricted use of any of the properties will result in no radiological exposure above current applicable criteria and standards to members of the general public or to site occupants.

By: F E Coffman
F.E. Coffman, Director
Office of Terminal Waste Disposal
and Remedial Action

Date: 9/13/83

[6450-01]

DEPARTMENT OF ENERGY
OFFICE OF ENVIRONMENTAL PROTECTION, SAFETY, AND EMERGENCY PREPAREDNESS
CERTIFICATION OF THE RADIOLOGICAL CONDITION OF THE FORMER KELLEX LABORATORY, LOCATED IN JERSEY CITY, NEW JERSEY

AGENCY: Office of Terminal Waste Disposal and Remedial Action
Department of Energy

ACTION: Notice of Certification

SUMMARY: The Department of Energy has completed radiological surveys and taken remedial actions to decontaminate properties found to contain low-level, naturally occurring residual radioactive material resulting from research and development projects at the former Kellex Laboratory while it operated under contract to the Manhattan Engineer District and Atomic Energy Commission. The Department, through the Office of Terminal Waste Disposal and Remedial Action has issued the following statement:

STATEMENT OF CERTIFICATION:
THE FORMER KELLEX LABORATORY SITE,
JERSEY CITY, NEW JERSEY

The Office of Terminal Waste Disposal and Remedial Action has reviewed and analyzed the radiological data obtained following remedial action on the site once occupied by the former Kellex Laboratory in Jersey City, New Jersey. Based on this analysis and the concurrence of the New Jersey Department of Environmental Protection, the Department of Energy certifies that the following properties are in compliance with all applicable decontamination criteria and standards:

- Lots 1-G, 1-J, 1-L, 1-M, and 1-N of Blocks 1288.1, now known as Block 1288A (reference Jersey City Tax Maps).

This certification of compliance provides assurance that unrestricted use of any of the properties will result in no radiological exposure above applicable criteria and standards to members of the general public or to site occupants.

FOR FURTHER INFORMATION CONTACT:

J.E. Baublitz, Director
Division of Remedial Action Projects
Office of Terminal Waste Disposal
and Remedial Action (NE-24)
U.S. Department of Energy
Washington, D.C. 20545
(301) 353-5272

SUPPLEMENTARY INFORMATION: The Department of Energy has established a program to characterize and, where necessary, correct the radiological conditions at sites formerly used by the Army Corps of Engineers' Manhattan Engineer District and the Atomic Energy Commission during the early years of nuclear research, development, and production. The ultimate objective of the program is to ensure that these formerly utilized sites, and any associated properties in their vicinity, are within the radiological guidelines established to protect the general public. The former Kellex Laboratory in Jersey City, New Jersey, is one of the formerly utilized sites.

The M.W. Kellogg Company established the Kellex Corporation as a wholly owned subsidiary in 1943 under contract to the Manhattan Engineer District to design the first gaseous diffusion uranium enrichment plant to be built in Tennessee. The laboratory continued work until July 1952 developing various solvent extraction methods under contract to the Atomic Energy Commission. At the time of its closing, the laboratory was controlled by the Vitro Corporation of America.

Radiological surveys completed at the site in 1977 revealed the presence of surface and subsurface radiological contamination. Decontamination activities were begun in 1979. The Delco-Levco Venture property was certified to comply with site specific guidelines on September 14, 1979, following a post-remedial action radiological survey by the Oak Ridge National Laboratory. Following remedial action on the remaining lots of the former Kellex Laboratory site, the Oak Ridge National Laboratory conducted an independent radiological survey and determined that the decontamination criteria were met.

The Department of Energy coordinated its activities with the New Jersey Department of Environmental Protection which verified Department of Energy results through independent analysis of soil samples.

Based upon the results of the radiological surveys completed at the five properties, the Department of Energy has determined that radiological conditions on the affected properties are consistent with applicable criteria agreed upon by the New Jersey Department of Environmental Protection and that the unrestricted use of the property presents no radiological hazards to the general public or to site occupants.

These findings are supported by the Department of Energy "Certification Docket for the former Kellex Laboratory, Jersey City, New Jersey." The docket will be available for review between 8:00 a.m. and 4:00 p.m., Monday through Friday (except Federal holidays), in the Department of Energy Public Document Room located in Room 1E-190 of the Forrestal Building, 1000 Independence Avenue, S.W., Washington, D.C.

Dated: 9/13/83

P.E. Coffman, Director
Office of Terminal Waste Disposal
and Remedial Action