



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

February 1, 2001

MEMORANDUM TO: Russell Wise, Senior Allegations Coordinator

THRU: D. Blair Spitzberg, Chief *Blair Spitzberg*
Fuel Cycle & Decommissioning Branch

FROM: Robert Evans, PE, CHP, Health Physicist *R. Evans*
Fuel Cycle & Decommissioning Branch *2/1/01*

SUBJECT: ALLEGATION RIV-2000-A-0161

FCDB has reviewed OI Report 4-2000-057 that was issued on January 12, 2001, regarding Spencer Chemical Company's Jayhawk Works plant located near Crestline, Kansas. We did not identify any new technical issues during our review of the OI Report. Also, you may recall that FCDB responded to Allegation RIV-2000-A-0161 by Memorandum dated December 6, 2000. Accordingly, unless additional information is provided to FCDB, no further action is planned regarding this allegation.

Gary Sanborn's e-mail dated January 18, 2001, stated, "if ACES receives no contrary views within 3 weeks of the date of this e-mail, ACES will proceed to close this matter with the alleged and involved licensee." For your information, Spencer Chemical no longer owns the Jayhawk Works plant. The plant is currently owned by Jayhawk Fine Chemicals. If you need to communicate with the property owner for any reason, the contact person is Mike Barecca, Plant Safety, Health & Environmental Manager. His telephone number is 316-783-3199.

Russell Wise

-2-

bcc:
DDChamberlain
ELWilliamson
(b)(7)(C)
LLHowell
DBSpitzberg
RJEvans
MIS
NMIB

DOCUMENT NAME: Draft: s:\dnms\dnms\rje\spencerchemical.wpd

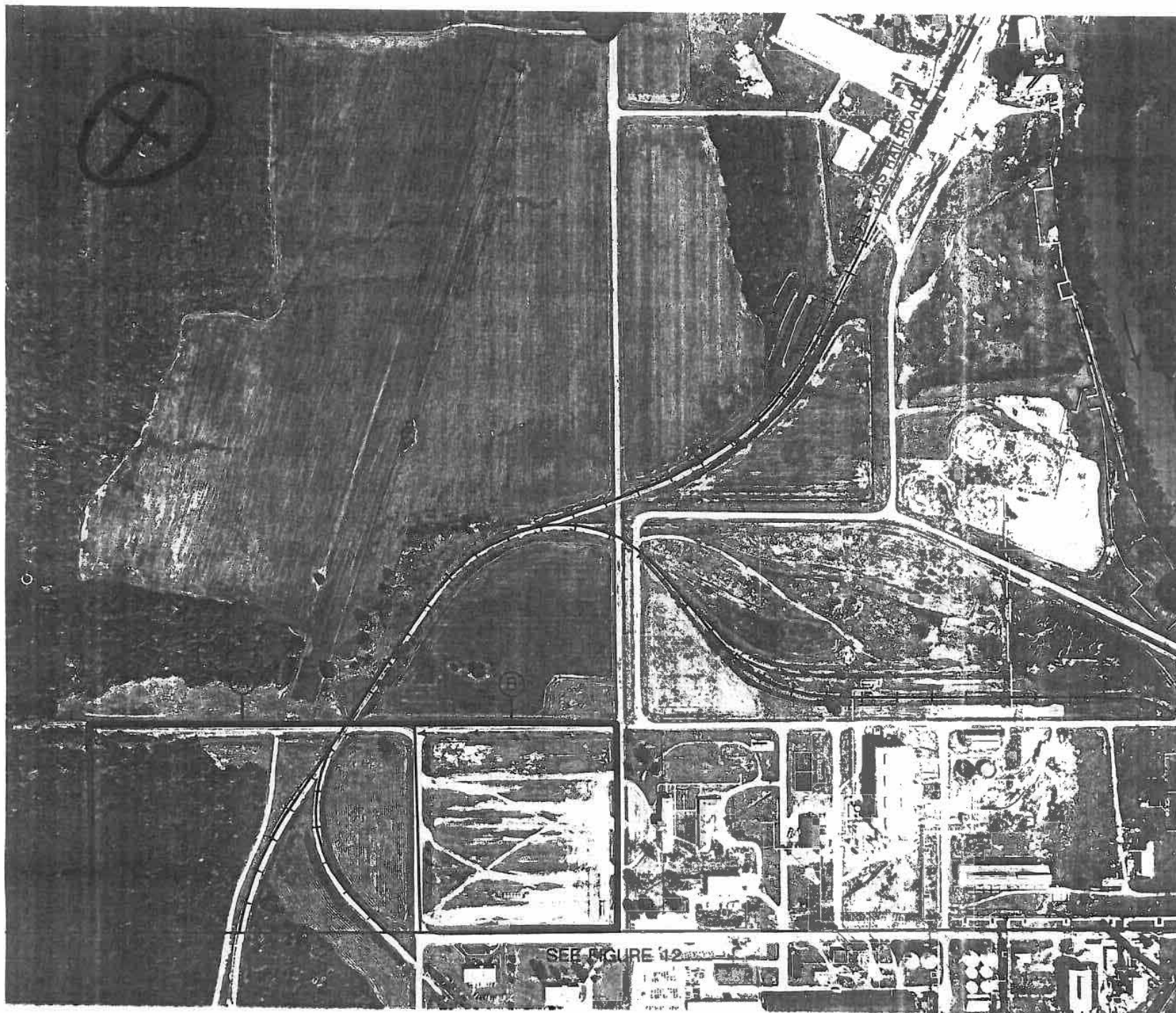
To receive copy of document, indicate in box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

RIV:DNMS:FCDB	C:FCDB	
RJEvans	DBSpitzberg <i>TSS</i>	
<i>K. Evans</i>		
02/ / 01	02/ / 01	

OFFICIAL RECORD COPY

T=Telephone E=E-mail F=Fax

9/23/91



INTERPRETATION CO

BOUNDARIES AND LIMIT

- x-x-x-x-x FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- x x x x x FENCE
- STUDY AREA

DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- INDETERMINATE DRAINAGE

TRANSPORTATION/UTIL

- ===== VEHICLE ACCESS
- ++++ RAILWAY

SITE FEATURES

- ===== DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EXCAVATION, (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL

SEE FIGURE 12

ATTACHMENT 2



Location of known burial pit in foreground with alleged burial pit in grove of trees in background.



Location of known burial pit in foreground with Jayhawk plant in background.



Typical crater in area of suspected burial pit.



Typical monitoring well in area of suspected burial pit.



One of nine monitoring wells in area of suspected burial pit.

From: Gary Sanborn
To: 3-week memo - OI reports - M
Date: Thu, Jan 18, 2001 2:36 PM
Subject: 3-week memo - OI 4-2000-057, Spencer Chemical, Jayhawk Works
Place: OEMAIL

OI Report 4-2000-057 (RIV-2000-A-161) was issued 1/12/01. Regional staff is being provided hard copies of the report. The exhibits to the report are available upon request. The investigation involved an alleged deliberate failure to properly dispose of uranium waste at the Jayhawk Works of Spencer Chemical, Pittsburgh, KS. OI did not substantiate the allegation.

Based on ACES' review of this report, it does not appear that enforcement action or other action is warranted. If ACES receives no contrary views within 3 weeks of the date of this e-mail, ACES will proceed to close this matter with the alleged and involved licensee.

If you believe enforcement action or other action is warranted, or believe that further discussion of this matter is warranted before closure, please respond to the sender of this e-mail with a cc to Russ Wise @ RXW and Harry Freeman @ HAF.

CC: Bob Evans, Charles Hackney

KANSAS BUREAU OF RADIATION CONTROL

Subject Gulf (Spencer) Lake
C. W. Allen

Date August 9th

Reviewed by _____

Checked _____

Sketch
Sheet

2

of

Sketches
Sheets

SAMPLE SITES
Aug 9th



Chemical Plant Area

DRAW

weir

wooden post

SAMPLE STATION

BROKEN CONCRETE SLABS

SAMPLE

#1 - surface sample dry material

#1 - sub same location but from 7" below surface

#1 - sub² same location but from 11" below surface.

#2 Surface sample at washed over and

#3 surface 30 ft from culvert between lakes (east)

#3 sub same location as 3 but at 7" deep

#3 sub² same location as 3 but at 11" deep.

#4 30 ft south of site #3 surface only.

BROKEN CONCRETE SLABS

SAMPLE STATION

BROKEN CONCRETE SLABS

8-8-84

To	HLS
Date	8-7-84 Time 2:46
WHILE YOU WERE OUT	
Name	Max Scott
of	Only Oil Corp.
Phone	412-665-6718
<input type="checkbox"/> TELEPHONED	<input checked="" type="checkbox"/> PLEASE CALL
<input type="checkbox"/> CALLED TO SEE YOU	<input type="checkbox"/> WILL CALL AGAIN
<input type="checkbox"/> WANTS TO SEE YOU	<input type="checkbox"/> RUSH
Message: start drink up material when dust to cover John afford 216/783-1794 cleared & C.L. Richards	

673-T

Star

TeleComm.

Mr. Russell Hill

ARCO Chemical Co. Div.

Atlantic Richfield Co.

they are considering purchasing
the ALCO Chemical Corp.

Σ Jaghawk Facility →

and wanted to know about the
uranium found in the ponds.

I explained what I knew
about the site as provided by
Max Scott and he said he
may check back with us next week
to see what we found during our
site visit.

783-1321

HLS

α 8 pCi/gm
β 24-42 pCi/gm

May 23

234/238

.18 g/gal.

3000 gal/day

Time

11" - 6 pCi/g
10 pCi/g

1-1-80 } 210 pCi/g
3-1-81 }

To	Harold
Date	8-7-84 Time 9:32
WHILE YOU WERE OUT	
Name	Mike Scott
of	Gulf Oil
Phone	412-665-6718
<input type="checkbox"/> TELEPHONED	<input type="checkbox"/> PLEASE CALL
<input type="checkbox"/> CALLED TO SEE YOU	<input type="checkbox"/> WILL CALL AGAIN
<input type="checkbox"/> WANTS TO SEE YOU	<input type="checkbox"/> RUSH
Message: Koman EPA has approved Disposal Pond. However, they do not have a permit per day. Call me if you want to visit the site on Monday day	

673-T

Gulf Chemical Corp.

Contract let to bury stuff

NUREG

Branch Tech. position paper

Oct 23, 81 in fed. Reg.

Start buried Tue.
~~14th~~ 14th

Map. will be there
but will come.

→ West → East → Sth

3-4 { 1 inlet to west pond
1 inlet to east pond
1 outlet of east pond
2 - gk + B

- How many samples
where collected gk

ponds drained & d

- What work to start Tue.
is. pond drained?

70 days
420 days x 3000
226800 gms

3.3×10^{-7} Ci/gm
~~2.5 mCi~~
75 mCi

#1 U-234 { 1.0 pCi/g top - 30"
238 { 1.0 pCi/g

#3	U-234	top - 6"	6-12"	12-18"	18-24"
		1.3	6.3	10.3	.8
	U-238	1.0	3.3	4.9	.7

#4 1.3 pCi/g top + bottom 6" (ie. 12")

.18 g/gal U-
3000 gal/day

{ 1-1-60
3-1-61 }

Work to start Tue., Aug. 14th:

- disk up material (pond bottom)
- add kiln dust to wet areas
- scoop up and move to disposal cell.

Site contact person: John Alford 316/783-1774
tell him cleared & C.L. Richards @ Corp. Office Houston, TX

From: (b)(7)(C)
To: Blair Spitzberg
Date: Mon, Jan 22, 2001 11:03 AM
Subject: Telephone call with Member of Public

On January 19, 2001, (b)(7)(C) and (b)(7)(C) had a conversation with (b)(7)(C) regarding the Spencer Chemical Company, Jayhawk Works Plant. Mr. Gerald Eckhardt, Cherokee County (Kansas) Emergency Management Director, gave the NRC (b)(7)(C) name and number with the understanding that (b)(7)(C) may be able to provide additional information regarding buried radioactive wastes at the Jayhawk plant in Crestline, KS.

(b)(7)(C) was a construction contractor at the Jayhawk plant during 1973-1990. The main topic of conversation was the installation of monitoring wells in the area where Mr. Eckhardt previously alleged that an undocumented burial pit existed. (b)(7)(C) stated that his crews installed a number of monitoring wells on the property during 1977 or 1978. He could not recall the exact number of wells installed. (b)(7)(C) recently toured the site and counted 9 wells.) (b)(7)(C) stated that the wells were installed in one day, and no well was deeper than 16 feet, the upper limit of his backhoe. He speculated that the wells were installed by Gulf Oil perhaps to demonstrate compliance with future EPA requirements. (b)(7)(C) did not clearly know why the wells were installed.)

(b)(7)(C) stated that the wells were dry following installation because the bottom of the wells were still above the water table. (b)(7)(C) noted water in the bottom of the wells during his site tour, but the fluid may have been only stagnant rain water.) (b)(7)(C) was not sure if the wells were ever tested.

(b)(7)(C) stated that the dirt, as it was being removed by the backhoe, was surveyed by a Gulf Oil employee using a "Radio Shack Geiger counter." (b)(7)(C) recalls hearing the surveyor say something like "this isn't any more radioactive than a TV set," suggesting that the dirt was at or near background levels. (b)(7)(C) also stated that he heard hear-say information from fellow site employees that the area where the wells were installed was the location where the radioactive material was buried. (The NRC has documentation indicating that the burial pit was actual a few hundred yards to the east of this site.) Mr. Bergan had no direct, first-hand knowledge or information to confirm if the area did contain a burial pit.

(b)(7)(C) also commented about concrete and a cooling tower remaining at the site. Apparently, concrete that was part of the original structure was left onsite. This concrete included portions of the basement that were buried in place and portions of the foundation that remained above ground. Contaminated concrete issues were investigated by the State of Kansas during the early 1980's, and the above ground concrete was radiologically surveyed by Wes Holley during September 1992.

(b)(7)(C) also commented that a wooden cooling tower was "contaminated." This information was based on hear-say information that he obtained from a third-party source, and he did not offer any evidence that any cooling tower was ever contaminated with radioactive material. Further, it was not clear which cooling tower was "contaminated," because at least one large cooling tower still exists at the site and others may have been demolished in the past.

In summary, no action is proposed in response to this telephone call. (b)(7)(C) did not provide any evidence that radioactive material was buried in the area that Mr. Eckhardt previously claimed to have a burial pit. (b)(7)(C) installed the monitoring wells at least 13 years after the last Spencer Chemical license was terminated. Plus, he overheard conversations suggesting that the dirt being excavated was not contaminated. (b)(7)(C) hinted that contaminated concrete and a cooling tower remained onsite (as of 1990, the last time he was at the site). He provided no direct information to substantiate these comments.

CC: (b)(7)(C)

From: (b)(7)(C)
To: Blair Spitzberg
Date: Fri, Jan 19, 2001 8:14 AM
Subject: Telephone conversations

On January 17, 2001, I talked briefly to Gerald Eckhardt, Cherokee County Emergency Management Director (316-429-1857). Mr. Eckhardt called asking questions about the DOE Energy Employees Occupational Illness Compensation Act of 2000. Apparently, he had read about it in the local Kansas newspaper because the Spencer Chemical Company, Jayhawk Works Plant, was included on the list of facilities covered. Vivian Campbell subsequently gave me the web page address of DOE's public notice. This web page consisted of a 16 page document. The document included a mailing address and toll free telephone number. I faxed a copy of the 16 page document to Mr. Eckhardt. Mr. Eckhardt was only asking questions about the DOE's Act. He did not say anything that appeared to be an allegation.

Also on the same date, (b)(7)(C) and I talked to (b)(7)(C) (b)(7)(C), an elderly gentlemen who was present when Spencer Chemical was being dismantled during the early 1960's. (b)(7)(C) obtained my phone number from Mr. Eckhardt. (b)(7)(C) called me and left a voice mail message. I returned his call with (b)(7)(C) assistance. (b)(7)(C) told a rambling story of being present when the Spencer Chemical site was being partially dismantled. According to (b)(7)(C) a house was moved 2 miles north of the site, concrete debris was moved to a location about 1/2 mile north, and truck loads of waste were carted off to local dumps. He made a comment about a hospital that was not clear; perhaps the house had been an onsite clinic or the perhaps house was moved to a site near a hospital. (b)(7)(C) appeared to ramble on occasions and he admitted that his memory was not what it used to be. He did not provide any specific information regarding radioactive material. Following the conclusion of the conversation, I determined that (b)(7)(C) was not making an allegation, but was simply providing us with information that he thought would be relevant to the NRC. As noted before, (b)(7)(C) was unable to provide us with any information about the disposal of radioactive material on or near the site property.

CC:

(b)(7)(C)

Office (316) 429-1857
(316) 429-2102
Residence (b)(7)(C)
Mobile

**CHEROKEE COUNTY
EMERGENCY MANAGEMENT**
Courthouse
Columbus, Kansas 66725

GERALD ECKHARDT
Director

316-429-
-1042
Fax

DEPARTMENT OF ENERGY

Energy Employees Occupational Illness Compensation Act of 2000; List of Covered Facilities

AGENCY: Department of Energy.

ACTION: Notice of Listing of Covered Facilities

SUMMARY: The Energy Employees Occupational Illness Compensation Act of 2000 (“Act”), Public Law 106-398, establishes a program to provide compensation to individuals who developed illnesses as a result of their employment in nuclear weapons production-related activities and at certain federally-owned facilities in which radioactive materials were used. On December 7, 2000, the President issued Executive Order 13179 (“Order”) directing the Department of Energy (“Department” or “DOE”) to list covered facilities in the Federal Register. This notice responds to both the Act and the Order.

FOR FURTHER INFORMATION CONTACT: Office of Worker Advocacy, 1-877-447-9756.

ADDRESSES: The Department welcomes comments on this list. Individuals who wish to suggest additional facilities for inclusion on the list, indicate why one or more facilities should be removed from the list, or provide other information may contact:

Office of Worker Advocacy (EH-8)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
email: worker_advocacy@eh.doe.gov
toll-free: 1-877-447-9756

SUPPLEMENTARY INFORMATION:

Purpose:

The Energy Employees Occupational Illness Compensation Act of 2000 ("Act"), Public Law 106-398, establishes a program to provide compensation to individuals who developed illnesses as a result of their employment in nuclear weapons production-related activities and at certain federally-owned facilities in which radioactive materials were used. On December 7, 2000, the President issued Executive Order 13179 ("Order") directing the Department of Energy ("Department" or "DOE") to list covered facilities in the Federal Register. Section 2. c. vii of the Order instructs the Department to list three types of facilities:

- 1) Atomic weapons employer facilities, as defined in section 3621 (4) of the Act;
- 2) Department of Energy facilities, as defined by section 3621 (12) of the Act; and
- 3) Beryllium vendors, as defined by section 3621 (6) of the Act.

Compensation options and mechanisms are defined differently for each of these facility categories. The atomic weapons employer category includes facilities in which the primary work was not related to atomic weapons, and consequently these facilities are not commonly known as atomic weapons facilities. Their inclusion in this list is consistent with the Act, and is not intended as a classification for any other purpose.

The list at the end of this notice represents the Department's best efforts to date to compile a list of facilities in these three categories. Reconstructing the operational history of the nuclear weapons system over a sixty-year period is a complex and sometimes imprecise undertaking. Some list entries are based on records that contain the names and addresses of companies and facilities at the time work was performed for the Department and its

predecessor federal agencies. The list may identify a corporate headquarters facility as a production location, or may contain some inadvertent duplication because of changes in names, ownership, and addresses. Similarly, attempts to minimize duplication may have resulted in the inadvertent omission of subsidiaries and satellite locations that should be included.

Accordingly, the Department is continuing its research efforts in order to better understand past production activities, and DOE intends to update this list at least once annually so long as new information becomes available. The public is invited to comment on the list and to provide additional information.

In addition to continuing its research efforts, the Department is developing information dissemination mechanisms to make facility-specific data available to the public, including a publicly accessible database of site-related information. This database will help ensure that the Department keeps track of facilities involved in atomic weapons and other work potentially resulting in contamination or exposure. The site database will include, among other information, the type of nuclear weapons-related production work done, the dates such work occurred, and available health and safety data concerning the facility. The listing of facility name and location in this notice represents only a first step in providing information to the public.

The Act does not cover workers involved in uranium mining and milling, or those who worked in support of naval nuclear propulsion programs. Consequently, facilities associated with this type of work are not listed in this notice. Some workers who became ill as a result of

their employment at these facilities may be covered by other programs such as the Radiation Exposure Compensation Act (RECA), the Federal Exposure Compensation Act (FECA), or other jurisdictions' worker compensation programs.

Introduction to the Covered Facility List

The list that follows covers the three categories of employers defined by the Act: atomic weapons employers ("AWE"), Department of Energy facilities ("DOE"), and beryllium vendors ("BE"). Some facilities fall into more than one category. For example, if a private contractor facility handled both radioactive materials and beryllium, it will have "AWE" and "BE" in the "facility type" column. For another example, a facility will have both "DOE" and "AWE" codes if ownership changed between the DOE and another entity. The Department intends to provide facility-specific explanations of the applicability of these categories through the database mentioned above.

Each of the categories is defined below:

1. Atomic Weapons Employers

Section 3621 (4) of the Act defines an atomic weapons employer as "an entity that--

(A) processed or produced, for the use by the United States, material that emitted radiation and was used in the production of an atomic weapon, excluding uranium mining and milling; and

(B) is designated as an atomic weapons employer for purposes of this title by the Secretary of Energy."

Most facilities listed as an AWE conducted nuclear weapons-related work for a limited period of time or in certain select areas of the plant. For example, some sites worked with radioactive materials to evaluate processing machinery that was being considered for use in atomic weapons production. Radioactive materials may not have been used as a routine part of the facility's operations. The Act covers those workers who became sick as a consequence of their work in support of nuclear weapons production activities, and was not intended to cover all workers at each site named.

The lines between research, atomic weapons production, and non-weapons production are often difficult to draw. For the purposes of this notice, and as directed by the Act, only those facilities whose work involved radioactive material that was connected to the weapons production chain are included. Available information about many of these facilities is incomplete or unclear, and the Department welcomes comments or additional information regarding facilities that may have supported atomic weapons production that are not on this list, as well as information that clarifies the work done at facilities named below.

2. Department of Energy Facilities

Section 3621 (12) of the Act defines a DOE facility as “any building, structure, or premise, including the grounds upon which such building, structure, or premise is located-

(A) in which operations are, or have been, conducted by, or on behalf of, the Department of Energy (except for buildings, structures, premises, grounds, or operations covered by Executive Order 12344, pertaining to the Naval Nuclear Propulsion Program); and

(B) with regard to which the Department of Energy has or had--

(i) a proprietary interest; or

(ii) entered into a contract with an entity to provide management and operation, management and integration, environmental remediation services, construction, or maintenance services.”

Consistent with this definition, the Department has taken a broad view of where operations have been conducted by DOE or its predecessor agencies. The list includes any facility handling radioactive materials or beryllium in which the Department had management and operations, management and integration, environmental remediation, or construction and maintenance contracts. This broad definition includes many facilities which are not generally thought of as Departmental facilities, as well as facilities which are not necessarily involved with weapons-related work. For example, some universities and private companies are included because the Department contracted for environmental remediation services at these sites, even though the Department did not own the facility. Also, some DOE-owned laboratories are included because they do work involving radioactive materials, even though that work is not related to nuclear weapons production.

The Act covers production workers at the gaseous diffusion plants at Paducah, KY and Piketon, OH. Production workers at these facilities are covered for work conducted until July 28, 1998, when the facilities were privatized under the control of the United States Enrichment Corporation (USEC, Inc.)

The listing of Department of Energy facilities is only intended for the context of implementing this Act and does not create or imply any new Departmental obligations or ownership at any of the facilities named on this list.

3. Beryllium Vendors

Section 3621(6) of the Act defines beryllium vendor as the following:

“(A) Atomics International.

(B) Brush Wellman, Incorporated, and its predecessor, Brush Beryllium Company.

(C) General Atomics.

(D) General Electric Company.

(E) NGK Metals Corporation and its predecessors, Kawecki-Berylco, Cabot Corporation, BerylCo, and Beryllium Corporation of America.

(F) Nuclear Materials and Equipment Corporation.

(G) StarMet Corporation, and its predecessor, Nuclear Metals, Incorporated.

(H) Wyman Gordan, Incorporated.

(I) Any other vendor, processor, or producer of beryllium or related products designated as a beryllium vendor for purposes of this title under Section 3622.”

Beryllium metal has been an important material for atomic weapons production, and it was used at many places throughout the production system. The list indicates private firms that processed, produced, or provided beryllium metal for the Department, as defined by the

Act. This information is drawn from a variety of historical documents, and much data remains incomplete. The Department welcomes comments or additional information about its beryllium vendors.

Covered Facility List

Jurisdiction	Facility Name	Location	Facility Type
AL	Southern Research Institute	Sylacauga	AWE
AL	Speed Ring Experimental & Tool Company	Culman	BE
AL	Tennessee Valley Authority	Muscle Shoals	AWE
AK	Amchitka Island Nuclear Explosion Site	Amchitka Island	DOE
AK	Project Chariot Site	Cape Thompson	DOE
CA	Arthur D. Little Co.	San Francisco	AWE
CA	Atomics International	Canoga Park	BE
CA	Burris Park Field Station	Kingsburg	AWE
CA	Ceradyne, Inc.	Santa Ana	BE
CA	Dow Chemical Co.	Walnut Creek	AWE
CA	Electro Circuits, Inc.	Pasadena	AWE
CA	Energy Technology Engineering Center	Santa Susana	DOE
CA	General Atomics	La Jolla	AWE/BE/DOE
CA	General Electric Vallecitos	Pleasanton	AWE
CA	Hunter Douglas Aluminum Corp.	Riverside	AWE
CA	Laboratory for Energy-Related Health Research	Davis	DOE
CA	Laboratory of Biomedical and Environmental Sciences	Los Angeles	DOE
CA	Laboratory of Radiobiology and Environmental Health	San Francisco	DOE
CA	Lawrence Berkeley National Laboratory	Berkeley	DOE
CA	Lawrence Livermore National Laboratory	Livermore	DOE
CA	Sandia Laboratory, Salton Sea Base	Imperial County	DOE
CA	Sandia National Laboratories--Livermore	Livermore	DOE
CA	Stanford Linear Accelerator Center	Palo Alto	DOE
CA	Stauffer Metals, Inc.	Richmond	AWE
CA	University of California	Berkeley	AWE/DOE
CO	Coors Porcelain	Golden	BE
CO	Project Rio Blanco Nuclear Explosion Site	Rifle	DOE
CO	Project Rulison Nuclear Explosion Site	Grand Valley	DOE
CO	Rocky Flats Plant	Golden	DOE
CO	Shattuck Chemical	Denver	AWE
CO	University of Denver Research Institute	Denver	AWE/BE
CT	American Chain and Cable Co.	Bridgeport	AWE
CT	Anaconda Co.	Waterbury	AWE
CT	Bridgeport Brass Co., Havens Lab.	Bridgeport	AWE
CT	Combustion Engineering	Windsor	AWE/DOE
CT	Connecticut Aircraft Nuclear Engine Lab. (CANEL)	Middletown	BE/DOE
CT	Dorr Corp.	Stamford	AWE
CT	Fenn Machinery Co.	Hartford	AWE

CT	New England Lime Co.	Canaan	AWE
CT	Seymour Specialty Wire	Seymour	AWE/DOE
CT	Sperry Products, Inc.	Danbury	AWE
CT	Torrington Co.	Torrington	AWE
DE	Allied Chemical and Dye Corp.	North Claymont	AWE
DC	National Bureau of Standards, Van Ness Street	Washington	AWE
DC	Naval Research Laboratory	Washington	AWE/DOE
FL	American Beryllium Co.	Sarasota	BE
FL	Armour Fertilizer Works	Bartow	AWE
FL	C.F. Industries, Inc.	Bartow	AWE
FL	Gardinier, Inc.	Tampa	AWE
FL	International Minerals and Chemical Corp.	Mulberry	AWE
FL	Pinellas Plant	Clearwater	DOE
FL	University of Florida	Gainesville	AWE
FL	Virginia-Carolina Chemical Corp	Nichols	AWE
FL	W.R. Grace Co., Agricultural Chemical Div.	Ridgewood	AWE
ID	Argonne National Laboratory--West	Scoville	DOE
ID	Idaho National Engineering Laboratory	Scoville	DOE
IL	Allied Chemical Corp.	Metropolis	AWE
IL	American Machine and Metals, Inc.	E. Moline	AWE
IL	Argonne National Laboratory--East	Argonne	DOE
IL	Armour Research Foundation	Chicago	AWE
IL	Blockson Chemical Co	Joliet	AWE
IL	C-B Tool Products Co.	Chicago	AWE
IL	Crane Co.	Chicago	AWE
IL	ERA Tool and Engineering Co.	Chicago	AWE
IL	Fansteel Metallurgical Corp.	North Chicago	BE
IL	Fermi National Accelerator Laboratory	Batavia	DOE
IL	Granite City Steel	Granite City	AWE/DOE
IL	Great Lakes Carbon Corp.	Chicago	AWE
IL	GSA 39th Street Warehouse	Chicago	AWE
IL	International Register	Chicago	AWE
IL	Kaiser Aluminum Corp.	Dalton	AWE
IL	Lindsay Light and Chemical Co.	W. Chicago	AWE
IL	Madison Site (Speculite)	Madison	AWE/DOE
IL	Midwest Manufacturing Co.	Galesburg	AWE
IL	Museum of Science and Industry	Chicago	AWE
IL	National Guard Armory	Chicago	AWE/DOE
IL	Podbeliniac Corp.	Chicago	AWE
IL	Precision Extrusion Co.	Bensenville	AWE
IL	Quality Hardware and Machine Co.	Chicago	AWE
IL	R. Krasburg and Sons Manufacturing Co.	Chicago	AWE
IL	Sciaky Brothers, Inc.	Chicago	AWE
IL	Swenson Evaporator Co.	Harvey	AWE
IL	University of Chicago	Chicago	AWE/DOE
IL	W.E. Pratt Manufacturing Co.	Joliet	AWE
IL	Wycoff Drawn Steel Co.	Chicago	AWE
IN	American Bearing Corp.	Indianapolis	AWE
IN	Dana Heavy Water Plant	Dana	DOE
IN	General Electric Plant	Shelbyville	AWE

IN	Joslyn Manufacturing and Supply Co.	Ft. Wayne	AWE
IN	Purdue University Van der Graaf Lab.	Lafayette	AWE
IN	Washrite	Indianapolis	AWE
IA	Ames Laboratory	Ames	DOE
IA	Iowa Ordnance Plant	Burlington	DOE
IA	Titus Metals	Waterloo	AWE
KS	Spencer Chemical Co., Jayhawks Works	Pittsburg	AWE
KY	Paducah Gaseous Diffusion Plant	Paducah	DOE
MR*	Eniwetok Test Site	Marshall Islands	DOE
MD	Armco-Rustless Iron & Steel	Baltimore	AWE
MD	W.R. Grace and Company	Curtis Bay	AWE/DOE
MA	American Potash & Chemical	West Hanover	AWE
MA	C.G. Sargent & Sons	Graniteville	AWE
MA	Chapman Valve	Indian Orchard	AWE/DOE
MA	Edgerton Germeshausen & Grier, Inc.	Boston	AWE
MA	Fenwal, Inc.	Ashland	AWE
MA	Franklin Institute	Boston	BE
MA	Heald Machine Co.	Worcester	AWE
MA	La Pointe Machine and Tool Co.	Hudson	AWE
MA	Massachusetts Institute of Technology	Cambridge	AWE/BE
MA	Metals and Controls Corp.	Attleboro	AWE
MA	National Research Corp.	Cambridge	AWE
MA	Norton Co.	Worcester	AWE/BE
MA	Nuclear Metals, Inc.	Concord	AWE/BE
MA	Reed Rolled Thread Co.	Worcester	AWE
MA	Shpack Landfill	Norton	AWE/DOE
MA	Ventron Corporation	Beverly	AWE/DOE
MA	Winchester Engineering and Analytical Center	Winchester	DOE
MA	Woburn Landfill	Woburn	AWE
MA	Wyman Gordon Inc.	Grayton, North Grafton	BE
MI	AC Spark Plug	Flint	BE
MI	Baker-Perkins Co.	Saginaw	AWE
MI	Carboloy Co.	Detroit	AWE
MI	Extruded Metals Co.	Grand Rapids	AWE
MI	General Motors	Adrian	AWE/DOE
MI	Gerity-Michigan Corp.	Adrian	BE
MI	Mitts & Merrel Co.	Saginaw	AWE
MI	Oliver Corp.	Battle Creek	AWE
MI	Revere Copper and Brass	Detroit	AWE/BE
MI	Speed Ring Experimental & Tool Company	Detroit	BE
MI	Star Cutter Corp.	Farmington	AWE
MI	University of Michigan	Ann Arbor	AWE
MI	Wolverine Tube Division	Detroit	AWE
MN	Elk River Reactor	Elk River	DOE
MS	Salmon Nuclear Explosion Site	Hattiesburg	DOE
MO	Kansas City Plant	Kansas City	DOE
MO	Latty Avenue Properties	Hazelwood	AWE/DOE
MO	Mallinckrodt Chemical Co., Destrehan St. Plant	St. Louis	AWE/DOE
MO	Medart Co.	St. Louis	AWE
MO	Roger Iron Co.	Joplin	AWE

MO	Spencer Chemical Co.	Kansas City	AWE
MO	St. Louis Airport Site	St. Louis	AWE/DOE
MO	Tyson Valley Powder Farm	St. Louis	AWE
MO	United Nuclear Corp.	Hematite	AWE
MO	Weldon Spring Plant	Weldon Spring	DOE
NE	Hallam Sodium Graphite Reactor	Hallam	DOE
NV	Nevada Test Site	Mercury	DOE
NV	Project Faultless Nuclear Explosion Site	Central Nevada Test Site	DOE
NV	Project Shoal Nuclear Explosion Site	Fallon	DOE
NV	Yucca Mountain Site Characterization Project	Yucca Mountain	DOE
NJ	Aluminum Co. of America (Alcoa)	Garwood	AWE
NJ	American Peddinghaus Corp.	Moonachle	AWE
NJ	Baker and Williams Co.	Newark	AWE
NJ	Bell Telephone Laboratories	Murray Hill	AWE
NJ	Bloomfield Tool Co.	Bloomfield	AWE
NJ	Bowen Lab.	North Branch	AWE
NJ	Callite Tungsten Co.	Union City	AWE
NJ	Chemical Construction Co.	Linden	AWE
NJ	Du Pont Deepwater Works	Deepwater	AWE/DOE
NJ	International Nickel Co., Bayonne Laboratories	Bayonne	AWE
NJ	J.T. Baker Chemical Co.	Phillipsburg	AWE
NJ	Kellex/Pierpont	Jersey City	AWE/DOE
NJ	Maywood Chemical Works	Maywood	AWE/DOE
NJ	Middlesex Municipal Landfill	Middlesex	AWE/DOE
NJ	Middlesex Sampling Plant	Middlesex	DOE
NJ	National Beryllia	Haskell	BE
NJ	New Brunswick Laboratory	New Brunswick	DOE
NJ	Picatinny Arsenal	Dover	AWE
NJ	Princeton Plasma Physics Laboratory	Princeton	DOE
NJ	Rare Earths/ W.R. Grace	Wayne	AWE/DOE
NJ	Standard Oil Development Co. of NJ	Linden	AWE
NJ	Tube Reducing Co.	Wallington	AWE
NJ	U.S. Pipe and Foundry	Burlington	BE
NJ	United Lead Co.	Middlesex	AWE
NJ	Vitro Corp. of America	West Orange	AWE
NJ	Westinghouse Electric Corp.	Bloomfield	AWE
NJ	Wykoff Steel Co.	Newark	AWE
NM	Chupadera Mesa	Chupadera Mesa	DOE
NM	Los Alamos Medical Center	Los Alamos	DOE
NM	Los Alamos National Laboratory	Los Alamos	DOE
NM	Lovelace Respiratory Research Institute	Albuquerque	DOE
NM	Project Gasbuggy Nuclear Explosion Site	Farmington	DOE
NM	Project Gnome Nuclear Explosion Site	Carlsbad	DOE
NM	Sandia National Laboratories	Albuquerque	DOE
NM	South Albuquerque Works	Albuquerque	DOE
NM	Trinity Nuclear Explosion Site	White Sands Missile Range	DOE
NM	Waste Isolation Pilot Plant	Carlsbad	DOE
NY	Allegheny-Ludlum Steel	Watervliet	AWE
NY	American Machine and Foundry	Brooklyn	AWE
NY	Ashland Oil	Tonawanda	AWE/DOE

NY	Baker and Williams Warehouses	New York	AWE/DOE
NY	Bethlehem Steel	Lackawana	AWE
NY	Bliss & Laughlin Steel	Buffalo	AWE/DOE
NY	Brookhaven National Laboratory	Upton	DOE
NY	Burns & Roe, Inc.	Maspeth	BE
NY	Colonie Site (National Lead)	Colonie	AWE/DOE
NY	Columbia University	New York City	AWE/DOE
NY	Electro Metallurgical	Niagara Falls	AWE
NY	General Astro Metals	Yonkers	BE
NY	Hooker Electrochemical	Niagara Falls	AWE
NY	International Rare Metals Refinery, Inc.	Mt. Kisko	AWE
NY	Ithaca Gun Co.	Ithaca	AWE
NY	Lake Ontario Ordnance Works	Niagara Falls	DOE
NY	Ledoux and Co.	New York	AWE
NY	Linde Air Products	Buffalo	AWE
NY	Linde Ceramics Plant	Tonawanda	AWE/DOE
NY	New York University	New York	AWE
NY	Peek Street Facility**	Schenectady	DOE
NY	Radium Chemical Co.	New York	AWE
NY	Rensselaer Polytechnic Institute	Troy	AWE
NY	Sacandaga Facility**	Glenville	DOE
NY	Seaway Industrial Park	Tonawanda	AWE/DOE
NY	Seneca Army Depot	Romulus	AWE
NY	Separations Process Research Unit (at Knolls Lab.)**	Schenectady	DOE
NY	Simonds Saw and Steel Co.	Lockport	AWE
NY	Staten Island Warehouse	New York	AWE
NY	Sylvania Corning Nuclear Corp.	Hicksville	AWE/DOE
NY	Sylvania Products Corp.	Bayside	AWE/BE
NY	Titanium Alloys Manufacturing	Niagara Falls	AWE
NY	Trudeau Foundation	Saranac Lake	BE
NY	University of Rochester Medical Laboratory	Rochester	AWE/DOE
NY	Utica St. Warehouse	Buffalo	AWE
NY	West Valley Demonstration Project	West Valley	DOE
NC	Beryllium Metals and Chemical Corp.	Bessemer City	BE
NC	University of North Carolina	Chapel Hill	BE
OH	Air Force Plant 36	Evandale	AWE
OH	Ajax Magnathermic Corp.	Youngstown	AWE
OH	Alba Craft	Oxford	AWE/DOE
OH	Associated Aircraft Tool and Manufacturing Co.	Fairfield	AWE/DOE
OH	B & T Metals	Columbus	AWE/DOE
OH	Baker Brothers	Toledo	AWE/DEL
OH	Battelle Columbus Laboratories	Columbus	AWE
OH	Battelle Memorial Institute	Columbus	AWE/BE/DOE
OH	Beryllium Production Plant (Brush)	Luckey	BE/DOE
OH	Brush Beryllium Co.	Elmore	AWE/BE
OH	Brush Beryllium Co.	Cleveland	AWE/BE
OH	Brush Beryllium Co.	Loraine	AWE/BE
OH	Cincinnati Milling Machine Co.	Cincinnati	AWE
OH	Clifton Products Co.	Clifton	BE
OH	Clifton Products Co.	Painesville	BE

OH	Copperweld Steel	Warren	AWE
OH	Du Pont-Grasselli Research Laboratory	Cleveland	AWE
OH	Extrusion Plant	Ashtabula	DOE
OH	Feed Materials Production Center	Fernald	DOE
OH	General Electric Company	Cincinnati/Evendale	AWE/BE/DOE
OH	Gruen Watch	Norwood	AWE
OH	Harshaw Chemical Co.	Cleveland	AWE
OH	Herring-Hall Marvin Safe Co.	Hamilton	AWE/DOE
OH	Horizons, Inc.	Cleveland	AWE
OH	Kettering Laboratory, University of Cincinnati	Cincinnati	BE
OH	Magnus Brass Co.	Cincinnati	AWE
OH	McKinney Tool and Manufacturing Co.	Cleveland	AWE
OH	Mitchell Steel Co.	Cincinnati	AWE
OH	Monsanto Chemical Co.	Dayton	AWE
OH	Mound Plant	Miamisburg	DOE
OH	Painesville Site (Diamond Magnesium Co.)	Painesville	AWE/DOE
OH	Piqua Organic Moderated Reactor	Piqua	DOE
OH	Portsmouth Gaseous Diffusion Plant	Piketon	DOE
OH	R. W. Leblond Machine Tool Co.	Cincinnati	AWE
OH	Tech-Art, Inc.	Milford	AWE
OH	Tocco Induction Heating Div.	Cleveland	AWE
OH	Vulcan Tool Co.	Dayton	AWE
OK	Kerr-McGee	Guthrie	AWE
OR	Albany Research Center	Albany	AWE/DOE
OR	Wah Chang	Albany	AWE
PA	Aeroprojects, Inc.	West Chester	AWE
PA	Aliquippa Forge	Aliquippa	AWE/DOE
PA	Aluminum Co. of America (Alcoa)	New Kensington	AWE
PA	Babcock & Wilcox	Parks Township	AWE
PA	Beryllium Corp. of America	Hazleton	BE
PA	Beryllium Corp. of America	Reading	BE
PA	Birdsboro Steel & Foundry	Birdsboro	AWE
PA	C.H. Schnoor	Springdale	AWE/DOE
PA	Carnegie Mellon Cyclotron Facility	Saxonburg	AWE
PA	Carpenter Steel Co.	Reading	AWE
PA	Chambersburg Engineering Co.	Chambersburg	AWE
PA	Footo Mineral Co.	East Whiteland Twp.	AWE
PA	Frankford Arsenal	Philadelphia	AWE
PA	Heppenstall Co.	Pittsburgh	AWE
PA	Jessop Steel Co.	Washington	AWE
PA	Koppers Co., Inc.	Pittsburgh	AWE
PA	Landis Machine Tool Co.	Waynesboro	AWE
PA	McDaniel Refractory Co.	Beaver Falls	BE
PA	Nuclear Materials and Equipment Corp.	Apollo	AWE/BE
PA	Penn Salt Co.	Philadelphia	AWE
PA	Philadelphia Naval Yard	Philadelphia	AWE
PA	Shippingport Atomic Power Plant	Shippingport	DOE
PA	Superior Steel Co.	Carnegie	AWE
PA	U.S. Steel Co., National Tube Division	McKeesport	AWE
PA	Vitro Manufacturing	Cannonsburg	AWE/BE

PA	Westinghouse Atomic Power Development Plant	East Pittsburgh	AWE
PR	BONUS Reactor Plant	Punta Higuera	DOE
PR	Puerto Rico Nuclear Center	Mayaguez	DOE
RI	C.I. Hayes, Inc.	Cranston	AWE
SC	Savannah River Site	Aiken	DOE
TN	Clarksville Facility	Clarksville	DOE
TN	Oak Ridge Gaseous Diffusion Plant (K-25)	Oak Ridge	DOE
TN	Oak Ridge Hospital	Oak Ridge	DOE
TN	Oak Ridge Institute for Science Education	Oak Ridge	DOE
TN	Oak Ridge National Laboratory (X-10)	Oak Ridge	DOE
TN	Vitro Corp. of America	Chattanooga	AWE/BE
TN	W. R. Grace	Erwin	AWE
TN	Y-12 Plant	Oak Ridge	DOE
TX	AMCOT	Forth Worth	AWE
TX	Mathieson Chemical Co	Pasadena	AWE
TX	Medina Facility	San Antonio	DOE
TX	Pantex Plant	Amarillo	DOE
TX	Sutton, Steele and Steele Co.	Dallas	AWE
TX	Texas City Chemicals, Inc.	Texas City	AWE
VA	Babcock & Wilcox Co.	Lynchburg	AWE
VA	Thomas Jefferson National Accelerator Facility	Newport News	DOE
VA	University of Virginia	Charlottesville	AWE
WA	Hanford	Richland	DOE
WA	Pacific Northwest National Laboratory	Richland	DOE
WV	Huntington Pilot Plant	Huntington	AWE/DOE
WI	Allis-Chalmers Co.	West Allis, Milwaukee	AWE
WI	Besley-Wells	South Beloit	AWE
WI	LaCrosse Boiling Water Reactor	LaCrosse	DOE
WI	Ladish Co.	Cudahy	BE

* Marshall Islands

** Consistent with the Act, coverage is limited to activities not performed under the responsibility of the Naval Nuclear Propulsion program.

Issued in Washington, D.C. January 10, 2001

Signature

David M. Michaels, PhD, MPH
Assistant Secretary
Environment, Safety and Health

From: <RElder@kdhe.state.ks.us>
To: <vxv@nrc.gov>
Date: Tue, Oct 31, 2000 12:14 PM
Subject: Jayhawk Chemical (Spencer) PLEASE READ

As dicussed FYI

----- Forwarded by Rob Elder/Kdhe on 10/31/00 12:12 PM -----

Sharon Watson

To: Rob Elder/Kdhe@Kdhe, William
Bider/Kdhe@Kdhe
10/31/00 11:55 AM cc: Victor Cooper/Kdhe@Kdhe, Tom
Conley/Kdhe@Kdhe
Subject: Jayhawk Chemical (Spencer) PLEASE
READ

SOME OF YOU MAY GET CALLS ON THIS, AND PROBABLY ALREADY HAVE, BUT
JUST SO WE'RE ALL ON THE SAME PAGE WITH THIS CONTINUING NEWS STORY:

Joann Smith with the Joplin Globe continues to get calls from the community and here rumors about Jayhawk. As most of you know, the county emergency management director, Jerry Eckhardt, has been complaining that this place still has nuclear contamination that needs to be cleaned up. NRC came down last week, and apparently couldn't substantiate his claims. However, Jerry is telling the reporter that NRC did find something and did substantiate his claims. Yesterday, a question about 55 gallon drums being pulled from a dewatered pond (by KDHE) came up when someone called the reporter and told her this had happened. After talking to al of you, I learned it wasn't us.

Anyway, I suggested the reporter tell Jerry to call Bill Bider if he thought there was hazardous waste that wasn't being properly stored, disposed of, etc. I told her to check with the plant to see if they were doing any pond draining. She's planning to do that, as well as to call NRC, and to also call EPA to see if they are doing anything.

Jerry has given her many phone numbers of people he has had contact with in these organizations, including KDHE phone #'s. If you don't want to talk to her when and if she calls you, please refer her to me. I basically told her yesterday that no one from waste management, environmental remediation, or air & radiation was involved in a pond dewatering project in recent weeks.

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THE JOPLIN GLOBE • ONLINE EDITION

THURSDAY, OCTOBER 19, 2000

Jayhawk plant appealing penalty

By J.C. Smith
Globe Staff Writer

CRESTLINE, Kan. — Jayhawk Fine Chemicals Co. is appealing a \$22,400 civil penalty handed down by the Kansas Department of Health and Environment this week for improper management of hazardous wastes.

Jayhawk and the KDHE agree that the company now is in compliance with regulations, with state officials noting that the penalties are for past violations. Company officials say the citations mostly are a result of different interpretations of the regulations in the first place.

"We believe one thing, and they are saying another thing," said Jeff Cassidy, plant manager.

The Jayhawk plant property also is listed on a U.S. Department of Energy's review of sites where there had once been activities related to nuclear weapons and nuclear energy. The KDHE also is reviewing that listing, but says no threat to the public is posed.

Among the violations documented during an inspection Feb. 17, the KDHE said that hazardous waste was stored in open containers, that acidic and alkaline hazardous waste was stored in the same secondary containment area, and that hazardous waste was stored in a leaking container.

It also said that daily tank inspection records were not kept, that hazardous tanks and satellite containers were not marked with the words "Hazardous Waste," that there was a not a complete contingency plan, and that tanks were not properly tested and inspected before their use for storage of hazardous waste.

Jayhawk filed an administrative appeal on Sept. 23 to address the issues with KDHE. A hearing date has not been set.

As for the leaking container, the chemical stored in it was not hazardous waste, said Cassidy.

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He said the company is working with the KDHE to clarify the interpretation of regulations concerning several of the violations, including marking storage tanks, and storing acidic and alkaline materials in the same area.

Cassidy said the company does have a contingency plan, and that it conducts necessary tests and inspections before using tanks for hazardous waste. He said the company retains daily tank inspection records.

"We are in full compliance," said Cassidy. "Complying is part of doing business, and we are absolutely set on making sure we are following the rules."

The KDHE said the company came into compliance Aug. 11. That, however, was nearly four months after the deadline. The notice of compliance was issued Feb. 17, and the company had 45 days to meet KDHE standards.

Cassidy said Jayhawk had asked for clarification of some of the KDHE requests and regulations, and that exchanging correspondence caused the delay in the plant's becoming fully in compliance.

"Some of the things we have appealed," Cassidy said.

Cassidy said at no time were the employees or the public at risk.

All of the chemicals are contained within the plant, Cassidy said.

Jayhawk, which employs about 160 people, manufactures and handles a broad variety of chemicals. Cassidy said the company manufactures chemicals that are used in different applications, including fragrance, flavors and chemicals for the rubber industry.

"As far as the inspection itself, the items are really pretty minor items," said Cassidy.

The site, at the northwest corner of the Jayhawk Plant property on Highway 400-69, was the location of Spencer Chemical Co. in 1964.

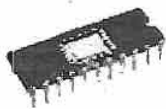
Radioactive ash, the result of Spencer Chemical's test building being dismantled and burned, is thought to be buried on the property.

Spencer was testing ways to make nuclear fuels out of uranium, according to the KDHE.

Gerald Eckhardt, Cherokee County emergency management director, said he was told by the Nuclear Regulatory Commission and the KDHE that they were continuing to look into the possibility of any lingering contamination. He said he would know more by the end of next week.

The recent violations at Jayhawk are not related to the possible nuclear contamination.

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Tom Conley

To: Victor Cooper/Kdhe

10/10/2000 08:57 AM

cc:

Subject: Jayhawk Chemical Site

Just talked to Vivian Campbell.

The NRC is treating this as an allegation that they or the old AEC may not have closed out the site properly and since a cursory review of their files indicates they may have had highly enriched uranium on site they have put this into their allegation investigation process.

She said that since they may have had highly enriched uranium on site that it may (she stressed may) put it under their jurisdiction as opposed to ours.

Will keep us informed.

Tom

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Division of Environment
Bureau of Air and Radiation
Radiation Control Program

LICENSEE/REGISTRANT TELEPHONE CALL RECORD

Instructions: Complete this form when contacting or contacted by a licensee/registrant regarding significant information about the license, registration or inspections. When complete the form is to be filed in the appropriate section of the license/registration file.

Date	Lic/Reg #	Phone #	Lic/Reg Individual	Staff Name
October 2, 2000	NA	316-429-1857	Gerald Eckhardt	<i>[Signature]</i>
Facility Name:	Cherokee county emergency management			
Subject:	Follow-up on Jayhawk investigation			

Notes:
Mr. Eckhardt ask if KDHE had made any decisions yet based on the information obtained from the visit on 9/25/00. Response - Not at this time. Contact has been made with the NRC since Jayhawk was a NRC licensee at the time fuel was being produced. KDHE is waiting on documents to be provided by the NRC before making any decisions. Mr. Eckhardt offered additional information from his sources that Jayhawk was producing fuel in 1965. Mr. Eckhardt requested he be notified when KDHE returns to Jayhawk. Response - This would be considered but the return may be by other agencies and this office may not have any knowledge or control over notifications, timing etc.

Follow-up Needed?	No	Date:
Notes:		



DandD Residential Scenario

DandD Version: 2.1.0

Run Date/Time: 10/2/2000 11:11:42 AM

Site Name: jayhawk Works

Description: Assuming the ram in the pit by the airstrip is uniformly distributed in the soil instead of contained in a clay sealed pit

FileName: C:\DandD_Docs\jayhawk.mcd

Options:

Implicit progeny doses NOT included with explicit parent doses

Nuclide concentrations are distributed among all progeny

Number of simulations: 109

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Agricultural Pathway is ON

Drinking Water Pathway is ON

Irrigation Pathway is ON

Surface Water Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
238U+C	UNLIMITED	CONSTANT(pCi/g)
<u>Justification for concentration:</u> Based on sample data collected by Gulf Oil October 9, 1981 of the burial pit east of the airstrip between the air strip and road.		<u>Value</u> 5.00E-01
232Th+C	UNLIMITED	CONSTANT(pCi/g)
<u>Justification for concentration:</u> Based on sample data collected by Gulf Oil October 9, 1981 of the burial pit east of the airstrip between the air strip and road.		<u>Value</u> 2.00E-01

Site Specific Parameters:

General Parameters:None**Element Dependant Parameters**None**Correlation Coefficients:**None**Summary Results:**

90.00% of the 109 calculated TEDE values are $< 2.03\text{E}+00$ mrem/year .

The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $1.94\text{E}+00$ to $2.17\text{E}+00$ mrem/year



DandD Residential Scenario

DandD Version: 2.1.0

Run Date/Time: 10/2/2000 11:38:43 AM

Site Name: Jayhawk Works Spencer Lake

Description: Sediment samples as reported in the Gulf Oil letter dated August 7, 1984. The analysis uses the residential scenario assuming the activity is uniformly distributed in soil.

FileName: C:\DandD_Docs\Spencer Lake.mcd

Options:

Implicit progeny doses NOT included with explicit parent doses

Nuclide concentrations are distributed among all progeny

Number of simulations: 100

Seed for Random Generation: 8718721

Averages used for behavioral type parameters

External Pathway is ON

Inhalation Pathway is ON

Secondary Ingestion Pathway is ON

Agricultural Pathway is ON

Drinking Water Pathway is ON

Irrigation Pathway is ON

Surface Water Pathway is ON

Initial Activities:

Nuclide	Area of Contamination (m ²)	Distribution
234U	UNLIMITED	CONSTANT(pCi/g)
<u>Justification for concentration:</u> Based on data reported in Gulf Oil letter dated August 7, 1984.		<u>Value</u> 1.03E+01
238U+C	UNLIMITED	CONSTANT(pCi/g)
<u>Justification for concentration:</u> Based on data reported in Gulf Oil letter dated August 7, 1984.		<u>Value</u> 4.90E+00

Site Specific Parameters:

General Parameters:None**Element Dependant Parameters**None**Correlation Coefficients:**None**Summary Results:**

90.00% of the 100 calculated TEDE values are $< 3.31\text{E}+01$ mrem/year .
The 95 % Confidence Interval for the 0.9 quantile value of TEDE is $2.81\text{E}+01$ to $2.08\text{E}+02$ mrem/year

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Search text: **Jayhawk**
Collection: pit_2000 1/100



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Web posted **Sunday, October 1, 2000**

NRC report claims site 'adequately' cleaned up

By **HAROLD CAMPBELL**
Morning Sun Staff Writer

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Decontamination of the former Spencer Chemical Corp. **Jayhawk Works** site south of Crestline in 1982 was sufficient to remove any radiation hazard, a U.S. Nuclear Regulatory Commission report prepared in 1992 stated.

"The **Jayhawk** site appears to have been adequately decontaminated such that unrestricted occupation of the site will not result in significant radiation exposure," the report, dated Nov. 24, 1992, said.

"Within the scope of this visit, no measurements or observations indicated or suggested that any portion of the site is contaminated by NRC-regulated radioactive material."

The NRC's report also recommended removing the chemical plant from the Oak Ridge National Laboratory's list of sites potentially contaminated by nuclear wastes.

The report was written following an inspection of the location in September 1992 by NRC and KDHE representatives. The Morning Sun received a copy of the 14-page report this week through the Kansas Department of Health and Environment.

House of the Week
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RADIATION
New Streaming Audio
Movie Listings
Area TV Listings
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Sun Festures
Forever Young
Celebrate 2000
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The Cherokee County site, now the location of the **Jayhawk** Fine Chemicals Corp. plant, was included last week in a Department of Energy listing of 577 locations that may have been involved in the federal government's nuclear weapons program.

At the time of the 1992 report, the location was owned by Allco Chemical Corp., Koch Refining Co. and Chevron Chemical Co.

KDHE officials and Gerald Eckhardt, Cherokee County emergency management director, disagree over whether nuclear materials are buried at the location. The KDHE stands by the 1992 inspection results, while Eckhardt maintains he believes statements from former employees of the plant who said nuclear fuels are buried in two locations at the site.

According to the NRC report, Wesley Holley, an inspector with the NRC's Region IV office in Arlington, Texas; Harold Spiker, chief of the KDHE's Environmental Radiation and Emergency Preparedness Section; and Pam Chaffee, KDHE environmental geologist, performed the 1992 inspection.

In 1993, Spiker issued a memorandum stating that Holley called him in August 1992 about previous Gulf Oil Chemical Co. operations at the **Jayhawk** Plant. Holley indicated the NRC was interested in the plant because of problems discovered at Gulf Oil facilities in Oklahoma around the same time.

Spiker said the KDHE supervised decontamination efforts at the plant in 1982 and was satisfied with the results. However, Holley insisted on a survey of the site.

The report said that because the site is so large -- about 1,200 acres -- only those areas where radioactive materials were known or suspected of being used or stored were surveyed with radiation detection equipment. Areas used for any kind of dumping were also examined.

In total, four buildings where **Jayhawk** personnel thought radioactive material might have been stored during the Spencer Chemical era were surveyed, as well as seven potential and actual sites where waste and trash might have been dumped or buried.

A sample analyzed by a state laboratory indicated the slight amount of radioactivity detected originated from

"natural, nonlicensable" sources. In a letter to Howard Ryser, Allco vice president of manufacturing, included in the report, Spiker said one of the samples contained small quantities of naturally occurring uranium and radium-226.

According to the NRC report, Spencer was licensed by the U.S. Atomic Energy Commission to possess enriched uranium and thorium. The AEC licenses allowed Spencer to process the materials into fused ceramic pellets and finely divided powder consisting of enriched uranium oxides and uranium carbides.

Spencer ceased operations and had disposed of its licensed material by May 12, 1961. During decontamination of the site, a process building was decontaminated, dismantled, burned and buried. Other areas of the site were decontaminated, surveyed and returned to unrestricted use.

In 1982, the state issued a license to Gulf Oil Corp., owner of the **Jayhawk** Works at the time, requiring Gulf to decontaminate the site, if needed, and to perform a thorough final survey.

The report said Gulf performed radiation and contamination surveys according to NRC regulations in areas where Spencer had used uranium and thorium.

Where the dismantled process building had been burned and buried, core samples were taken in 12 spaces in an evenly spaced grid. The samples revealed a clay bed had been placed 6 feet under the material that was burned, a 1-foot clay and rock mixture had been placed over the burned material and a foot of topsoil had been placed over the area.

After Gulf completed its survey, the KDHE performed a final inspection confirming findings from the Gulf report.

Meanwhile, the NRC report indicated that Oak Ridge National Laboratory had been contracted to evaluate about 17,000 retired licenses for potential to have significant contamination.

Holley said that using criteria Oak Ridge developed and not knowing about the decommissioning and surveys of the **Jayhawk** site, Spencer was ranked ninth in the nation because of the large amounts of licensed materials possessed and processed and because of the burned and buried building.

However, the 1992 NRC report indicates the commission recommended removal of the site from the Oak Ridge list.

"In learning of the activities of the state of Kansas concerning (Spencer Chemical Corp.) and in reviewing the decommissioning and survey activities documented by Kansas, NRC identified nothing to indicate that (the site) had not been decommissioned adequately," the report said.

Rob Elder, Kansas Department of Health and Environment licensed environmental geologist, this week said the KDHE inspected the site about 10 years ago and found nothing to indicate nuclear wastes were buried on the property.

"We talked to quite a few former employees and former residents of the area, but we weren't able to find anything," Elder said.

He said the KDHE representatives drilled thousands of test wells in the area where the former employees said a building which supposedly housed nuclear fuels had been situated in the 1940s. **Jayhawk** Fine Chemicals, which is now owned by Laporte PLC, said it had no involvement with the site when it was owned by Spencer Chemical Co. and was not aware of the site's possible inclusion on the list.

"Spencer hasn't been out here for 30 years," said Amber Obloj, a **Jayhawk** official, said last week. "We as a company have no knowledge of that whatsoever."

Laporte is a specialty chemicals company headquartered in London and owns 42 companies in several countries, according to its Web site. **Jayhawk** Fine Chemicals produces "fine chemicals," which include p-cresol methyl ether, anisic aldehyde for use in sunscreens, heart drugs and perfumes, and anisic alcohol for fragrances and cough medicines, according to the Web site.

Eckhardt discounted the KDHE inspection.

"I really don't think they knew where to look," Eckhardt said. "It's about one-quarter, one-half a mile off the road."

Eckhardt said the former employees, whom he refused to identify, told him the nuclear fuels were buried in two separate locations. At one burial site on the property, he said, no vegetation is growing.

"There's bare ground out there in some places," he said.

In addition to concerns that some of the fuel already has seeped into the county's groundwater, Eckhardt also worries about the possibility of the fuel falling into the wrong hands.


"If it's buried out there, it's got to be in the groundwater," he said. "I'm just worried about some terrorist getting hold of it."

Elder, who serves as KDHE project manager for the **Jayhawk** site, said the agency has received about 15 anonymous and signed complaints -- including several complaints from Eckhardt -- about possible contamination at the location. However, Elder said the KDHE has never been able to verify any of the information contained in the complaints.

Because of the long history of chemical testing and manufacturing at the location, the KDHE has also been involved in long-term monitoring of soil and water quality at the **Jayhawk** plant.

About a year ago, Elder said, soils shown to be contaminated with dioxin, PCBs and other compounds were excavated from the location and hauled to a hazardous waste landfill in Oklahoma.

Extra Sections:

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Kansas Department of Health and
Environment
Clyde D. Graeber, Secretary
Division of Environment
Bureau of Air and Radiation
Forbes Field, Bldg. 283, Topeka, KS 66620

M E M O R A N D U M

DATE: Friday, September 29, 2000
TO: Case Number: KS000019
License/Reg No: NON LICENSEE
FROM:
SUBJECT: Preliminary Investigation Report

Case Number: KS000019
09/29/2000

Event Details

Abstract:

Received a phone call through the EPA (George Hess - 913-551-7540). The Cherokee County Emergency Coordinator (Gerald Eckhardt - 316-429-1857) had information of radioactive material buried at the Jayhawk Chemical facility North of Riverton Kansas.

Mr. Eckhardt was interviewed on 9/25/00. As a result of the interview, it was discovered the material involved was DOE/DOD fuel cycle and weapons production material. The original property owners were NRC licensees during the 1940's while this activity was in progress. The use of radioactive materials was terminated and the buildings demolished and burned with the ashes buried on site. KDHE management was notified and the decision was made to not visit the site but to return with the collected information and make contact with the NRC as this was not within KDHE jurisdiction.

Event Date/Time	Discovery Date/Time	Report Date/Time
		09/13/2000 1500 CDT

Licensee/Registrant Information:

Agreement State?:	no	Reciprocity:	
License No:	NON LICENSEE	Licensee:	NR
Docket:	NA	City:	NR
Program Code:	NA	State:	NR
Other License No:		NRC Region Office:	4

Site of Event:

License No:	Site Name:
	State:
Additional Involved Party:	Name:
License No:	City:
	State:

Other Information:

Reportable Event: N
Agreement State Reportability: N
Atomic Energy Act Material: Y
Consultant Hired: N

Abnormal Occurrence: N
Investigation: I
NRC Report: N

OTH

Cause: UNKNOWN

Post Event Evaluation

NRC Notified? (check if yes) ☐ Date:

Event Closed (check if yes) ☐ Date:

Notification: (How were we notified and how did we notify others - timely and accurate?)

Notified by telephone from the EPA

Communication: (What methods were used and were they adequate?)

Resources: (What resources were available and used and were some needed but not available? Consider people, equipment and information?)

Supervisor EREP _____ Date: _____

Supervisor RMXRay _____ Date: _____

Section Chief _____ Date: _____



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FAMILY LIVING

House of the Week

Sunland

Dear Abby

Web posted Wednesday, September 27, 2000

Officials disagree on plant's nuclear past

By **HAROLD CAMPBELL**
Morning Sun Staff Writer

COLUMBUS -- A state environmental official and Cherokee County's emergency management director disagree over whether nuclear fuels may be buried at the Jayhawk Fine Chemicals Corp. plant south of Crestline.

In an interview Monday, Gerald Eckhardt, Cherokee County emergency management director, said former employees of the Jayhawk plant told him nuclear fuels were buried on the property in the 1940s.

He also said he has known about the buried hazardous materials for about the last 10 to 12 years, but since any nuclear fuels projects at the plant were under federal government jurisdiction, it was not in his authority to say anything about it.

"I'm happy as all get-out to start cleaning that place up out there," Eckhardt said. "I'm glad it's finally out in the open."

However, Rob Elder, Kansas Department of Health and Environment licensed environmental geologist, disputes Eckhardt's assertion. Elder said the KDHE inspected the site about 10 years ago and found nothing to indicate nuclear wastes were buried on the property.

"We talked to quite a few former employees and former residents of the area, but we weren't able to find anything," Elder said.

He said the KDHE representatives drilled thousands of test wells in the area where the former employees said a building which supposedly housed nuclear fuels had been situated in the 1940s. The KDHE official who supervised the inspection, Harold Spiker, died several years ago.

Editorial

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Last week, the U.S. Department of Energy included the Cherokee County chemical plant on a list of 577 sites that may have been involved in the U.S. government's nuclear weapons program. The site was listed as "Spencer Chemical Co., Jayhawk Works," the name of the location when it was owned by Spencer Chemical Co.

Jayhawk Fine Chemicals, which is now owned by Laporte PLC, said it had no involvement with the site when it was owned by Spencer Chemical Co. and was not aware of the site's possible inclusion on the list.

"Spencer hasn't been out here for 30 years," said Amber Obloj, a Jayhawk official, said last week. "We as a company have no knowledge of that whatsoever."

Ambloj could not be reached for comment Tuesday.

Laporte is a specialty chemicals company headquartered in London and owns 42 companies in several countries, according to its Web site. Jayhawk Fine Chemicals produces "fine chemicals," which include p-cresol methyl ether, anisic aldehyde for use in sunscreens, heart drugs and perfumes, and anisic alcohol for fragrances and cough medicines, according the Web site.

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"There's bare ground out there in some places," he said.

In addition to concerns that some of the fuel already has seeped into the county's groundwater, Eckhardt also worries about the possibility of the fuel falling into the wrong hands.

"If it's buried out there, it's got to be in the groundwater," he said. "I'm just worried about some terrorist getting hold of it."

Elder, who serves as KDHE project manager for the Jayhawk site, said the agency has received about 15 anonymous and signed complaints -- including several complaints from Eckhardt -- about possible contamination at the location. However, Elder said the KDHE has never been able to verify any of the information contained in the complaints.

Because of the long history of chemical testing and manufacturing at the location, the KDHE has also been involved in long-term monitoring of soil

and water quality at the Jayhawk plant.

About a year ago, Elder said, soils shown to be contaminated with dioxin, PCBs and other compounds were excavated from the location and hauled to a hazardous waste landfill in Oklahoma.


The DOE began reviewing sites that may have been involved in nuclear weapons-related activities in the 1970s.

According to a notation on the "Jayhawk" list entry, the site was licensed by the Nuclear Regulatory Commission. It was the only site in Kansas on the list.

The list may be viewed in its entirety at www2.em.doe.gov/sitelist. It must be viewed through Adobe Acrobat Reader.

Representatives from the Denver DOE regional office and the Environmental Protection Agency Region 7 office in Kansas City, Kan., could not be reached for comment Tuesday.

Extra Sections:

Jock's Nitch Softball Tournament 

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FROM THE OFFICE OF:

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Division of Environment
Bureau of Air and Radiation
Radiation Control Program
Forbes Field, Bldg. 283
Topeka, KS 66620

FOR INFORMATION ON:

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Radiation Control Program
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Radiation Control Program FAX
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V. Cooper

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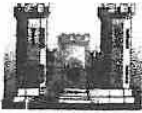
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Comments:

also if am sending the
FUSAP List as well

V. C.



US Army Corps of Engineers FUDS Program Inventory

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UP NEXT PREVIOUS

KANSAS

STATE	COUNTY	PROJECT NUMBER	PROJECT NAME	USACE DISTRICT	HAZARDS FOUND	INPR STATUS
KS	BARTON, KANSAS	B07KS0217	GREAT BEND AAF	NWK	Y	C
KS	BARTON, KANSAS	B07KS0218	GREAT BEND A-G GNRY R	NWK	Y	C
KS	BOURBON, KANSAS	B07KS0141	FT SCOTT NATL CEM	NWK	N	C
KS	BOURBON, KANSAS	B07KS0213	GARLAND G F ANX P-72A	NWK	Y	C
KS	BUTLER, KANSAS	B07KS0016	EL DORADO	NWK	N	C
KS	CHEROKEE, KANSAS	B07KS0135	BAXTER SPR SOLD-R LOT	NWK	N	C
KS	CHEROKEE, KANSAS	B07KS0142	JAYHAWK ORD WORKS	NWK	Y	C
KS	CLOUD, KANSAS	B07KS0137	CONCORDIA POW CP	NWK	Y	C
KS	CLOUD, KANSAS	B07KS0269	SCHILLING AFB-FAC S-11	NWK	Y	C
KS	COFFEY, KANSAS	B07KS0201	FORBES AFB ATLAS S-3	NWK	Y	C
KS	COWLEY, KANSAS	B07KS0278	STROTHER AAF EAUXFLD#1	NWK	Y	C
KS	COWLEY, KANSAS	B07KS0279	STROTHER AAF NAUXFLD#2	NWK	Y	C
KS	COWLEY, KANSAS	B07KS0277	STROTHER FLD	NWK	Y	C
KS	COWLEY, KANSAS	B07KS0293	WINFLD G F ANX P-77D	NWK	N	C
KS	DICKINSON, KANSAS	B07KS0260	SCHILLING AFB-FAC S-2	NWK	Y	C
KS	DICKINSON, KANSAS	B07KS0261	SCHILLING AFB-FAC S-3	NWK	Y	C
KS	DICKINSON, KANSAS	B07KS0262	SCHILLING AFB-FAC S-4	NWK	Y	C
KS	DOUGLAS, KANSAS	B07KS0200	FORBES AFB ATLAS S-2	NWK	Y	C
KS	DOUGLAS, KANSAS	B07KS0004	LAWRENCE	NWK	N	C
KS	EDWARDS, KANSAS	B07KS0248	PRATT PBR #3	NWK	Y	C
KS	ELLIS, KANSAS	B07KS0219	GREAT BEND PBR #1	NWK	Y	C
KS	ELLIS, KANSAS	B07KS0980	HAYS SAT POW CAMP	NWK	N	C
KS	ELLIS, KANSAS	B07KS0286	WALKER AAF	NWK	Y	C
KS	ELLSWORTH, KANSAS	B07KS0195	E-WORTH G F ANX P-47A	NWK	N	C
KS	ELLSWORTH, KANSAS	B07KS0220	GREAT BEND PBR #2	NWK	Y	C
KS	ELLSWORTH, KANSAS	B07KS0266	SCHILLING AFB FAC S-8	NWK	Y	C
KS	ELLSWORTH, KANSAS	B07KS0265	SCHILLING AFB-FAC S-7	NWK	Y	C
KS	FINNEY, KANSAS	B07KS0209	GARDEN CITY AAF	NWK	Y	C
KS	FINNEY, KANSAS	B07KS0212	GARDEN CITY AUX FLD #3	NWK	Y	C
KS	FORD, KANSAS	B07KS0193	DODGE CITY AAF	NWK	Y	C
KS	FORD, KANSAS	B07KS0246	PRATT PBR #1	NWK	Y	C
KS	GRAY, KANSAS	B07KS0210	GARDEN CITY AUX FLD #1	NWK	Y	C
KS	GRAY, KANSAS	B07KS0211	GARDEN CITY AUX FLD #2	NWK	Y	C
KS	HARVEY, KANSAS	B07KS0989	HUTCHINSON NAS FIELD 2	NWK	N	C
KS	HASKELL, KANSAS	B07KS0936	SUBLETTE TEST SITE	NWK	N	C
KS	HODGEMAN, KANSAS	B07KS0230	JETMORE AUX FLD #4	NWK	Y	C
KS	INSTALLATION NOT	B07KS0927	MANHATTAN TEST SITE	NWK	N	C

STATE	COUNTY	LOCATION	NAME	TYPE	STATUS	DATE
KS	JACKSON, KANSAS	B07KS0207	FORBES AFB ATLAS FACS9	NWK	Y	C
KS	JACKSON, KANSAS	B07KS0206	FORBES AFB-AF FAC S-8	NWK	Y	C
KS	JEFFERSON, KANSAS	B07KS0199	FORBES AFB-AF FAC S-1	NWK	Y	C
KS	JEFFERSON, KANSAS	B07KS0928	FORBES MEDICAL STO AX	NWK	N	C
KS	JEWELL, KANSAS	B07KS0236	MANKATO GFA SM-133A	NWK	N	C
KS	JOHNSON, KANSAS	B07KS0150	KCDA NIKE BAT 60	NWK	Y	C
KS	JOHNSON, KANSAS	B07KS0148	KCDA NIKE BTN HQ	NWK	N	C
KS	JOHNSON, KANSAS	B07KS0029	OLATHE NAS	NWK	Y	C
KS	JOHNSON, KANSAS	B07KS0986	OLATHE NAS FIELD #2	NWK	N	C
KS	JOHNSON, KANSAS	B07KS0267	SCHILLING AFB-FAC S-9	NWK	Y	C
KS	JOHNSON, KANSAS	B07KS0276	STILLWELL COMM FAC ANX	NWK	Y	C
KS	KIOWA, KANSAS	B07KS0247	PRATT PBR #2	NWK	Y	C
KS	LABETTE, KANSAS	B07KS0156	CHERRYVALE AUX FLD 9	NWK	Y	C
KS	LABETTE, KANSAS	B07KS0188	COFFEYVILLE AUX FLD #1	NWK	Y	C
KS	LABETTE, KANSAS	B07KS0189	COFFEYVILLE AUX FLD #2	NWK	Y	C
KS	LABETTE, KANSAS	B07KS0190	COFFEYVILLE AUX FLD #4	NWK	Y	C
KS	LABETTE, KANSAS	B07KS0229	INDEPENDENCE AUX FLD#3	NWK	Y	C
KS	LABETTE, KANSAS	B07KS0982	KAAP	NWK	Y	C
KS	LEAVENWORTH, KANSAS	B07KS0139	FT LEAVENWORTH NAT CEM	NWK	N	C
KS	LEAVENWORTH, KANSAS	B07KS0154	MIDWEST REL/RADIO TRAN	NWK	N	C
KS	LEAVENWORTH, KANSAS	B07KS0990	NIKE-80-RADAR	NWK	Y	C
KS	LINN, KANSAS	B07KS0157	MOUND CITY SOLDIER LOT	NWK	N	C
KS	LYON, KANSAS	B07KS0204	FORBES AFB ATLAS FACS5	NWK	Y	C
KS	MARSHALL, KANSAS	B07KS0001	CHEMICAL SITE	NWK	Y	C
KS	MCPHERSON, KANSAS	B07KS0263	SCHILLING AFB-FAC S-5	NWK	Y	C
KS	MIAMI, KANSAS	B07KS0988	OLATHE NAS FIELD #7	NWK	N	C
KS	MIAMI, KANSAS	B07KS0987	OLATHE NAS FIELE #4	NWK	N	C
KS	MITCHELL, KANSAS	B07KS0008	CAWKER CTY SAT POW CP	NWK	Y	C
KS	MONTGOMERY, KANSAS	B07KS0187	COFFEYVILLE AAF	NWK	Y	C
KS	MONTGOMERY, KANSAS	B07KS0194	ELK CITY AUX FLD #4	NWK	N	C
KS	MONTGOMERY, KANSAS	B07KS0227	INDEPENDENCE AAF	NWK	Y	C
KS	MONTGOMERY, KANSAS	B07KS0228	INDEPENDENCE AUX FLD#7	NWK	Y	C
KS	MORRIS, KANSAS	B07KS0011	COUNCIL GR SAT POW CP	NWK	N	C
KS	MORRIS, KANSAS	B07KS0223	HERINGTON AAF	NWK	Y	C
KS	MORRIS, KANSAS	B07KS0224	HERINGTON RIFLE RNG	NWK	Y	C
KS	MORRIS, KANSAS	B07KS0292	WILSEY G F ANX P-47B	NWK	N	C
KS	MORTON, KANSAS	B07KS0013	ELKHART	NWK	N	C
KS	NESS, KANSAS	B07KS0288	WALKER AIR-GRND GNRY R	NWK	Y	C
KS	OSAGE, KANSAS	B07KS0202	FORBES AFB FAC S-4	NWK	Y	C
KS	OSAGE, KANSAS	B07KS0938	FORBES SUR TRG AX	NWK	Y	C
KS	OSAGE, KANSAS	B07KS0241	OSAGE PBR #3	NWK	Y	C
KS	OTTAWA, KANSAS	B07KS0221	GREAT BEND PBR #3	NWK	Y	C
KS	OTTAWA, KANSAS	B07KS0006	OTTAWA SAT POW CP	NWK	N	C
KS	OTTAWA, KANSAS	B07KS0259	SCHILLING AFB-AF FAC	NWK	N	C

KS	OTTAWA, KANSAS	B07KS0236	SCHILLING AFB AF FAC C	NWK	Y	C
KS	OTTAWA, KANSAS	B07KS0270	SCHILLING AFB FAC S-12	NWK	Y	C
KS	OTTAWA, KANSAS	B07KS0259	SCHILLING AFB-FAC S-1	NWK	Y	C
KS	OTTAWA, KANSAS	B07KS0268	SCHILLING AFB-FAC S-10	NWK	N	C
KS	OTTAWA, KANSAS	B07KS0163	SCHILLING DEF-NIK SC01	NWK	N	C
KS	POTTAWATOMIE, KANSAS	B07KS0205	FORBES AFB-AF FAC S-7	NWK	Y	C
KS	POTTAWATOMIE, KANSAS	B07KS0243	POTTAWATOMIE PBR #1	NWK	Y	C
KS	PRATT, KANSAS	B07KS0244	PRATT AAF	NWK	Y	C
KS	PRATT, KANSAS	B07KS0249	PRATT AIR-GRND GUN RNG	NWK	Y	C
KS	PRATT, KANSAS	B07KS0245	PRATT GRND GNRY RNG	NWK	Y	C
KS	PRATT, KANSAS	B07KS0250	PRATT RIFLE RNG	NWK	Y	C
KS	RENO, KANSAS	B07KS0935	AF PLT NO 13	NWK	Y	C
KS	RENO, KANSAS	B07KS0979	HUTCHINSON NAS	NWK	Y	C
KS	RENO, KANSAS	B07KS0014	HUTCHINSON SAT POW CP	NWK	Y	C
KS	RENO, KANSAS	B07KS0978	MUN AP-HUTCHINSON	NWK	Y	C
KS	RICE, KANSAS	B07KS0264	SCHILLING AFB-FAC S-6	NWK	Y	C
KS	RILEY, KANSAS	B07KS0005	CP/FT FUNSTON	NWK	N	C
KS	RILEY, KANSAS	B07KS0010	RILEY SATELLITE POW CP	NWK	N	C
KS	SALINE, KANSAS	B07KS0136	CP PHILLIPS	NWK	N	C
KS	SALINE, KANSAS	B07KS0255	SALINA WASTE ANX	NWK	N	C
KS	SALINE, KANSAS	B07KS0256	SCHILLING AFB	NWK	Y	C
KS	SALINE, KANSAS	B07KS0162	SCHILLING DEF-GM FLD	NWK	N	C
KS	SALINE, KANSAS	B07KS0164	SCHILLING DEF-NIK SC50	NWK	N	C
KS	SALINE, KANSAS	B07KS0271	SCHILLING FAM HOUSG	NWK	N	C
KS	SALINE, KANSAS	B07KS0009	SMOLAN SATELLITE POWCP	NWK	Y	C
KS	SEDGWICK, KANSAS	B07KS0180	AF PLT #11	NWK	N	C
KS	SEWARD, KANSAS	B07KS0233	LIBERAL AAF	NWK	Y	C
KS	SHAWNEE, KANSAS	B07KS0198	FORBES AFB	NWK	Y	C
KS	SHAWNEE, KANSAS	B07KS0943	TINKER WAREHOUSE AX	NWK	N	C
KS	SHAWNEE, KANSAS	B07KS0283	TOPEKA AAF RIFLE RNG	NWK	Y	C
KS	SHAWNEE, KANSAS	B07KS0282	TOPEKA AFSTA	NWK	Y	C
KS	SHAWNEE, KANSAS	B07KS0179	WINTER GEN HOSP	NWK	N	C
KS	SUMNER, KANSAS	B07KS0281	STROTHER AAF SAUXFLD#5	NWK	Y	C
KS	SUMNER, KANSAS	B07KS0280	STROTHER AAF WAUXFLD#3	NWK	Y	C
KS	TREGO, KANSAS	B07KS0289	HAYS-WALKER PBR #1	NWK	Y	C
KS	TREGO, KANSAS	B07KS0290	HAYS-WALKER PBR #2	NWK	Y	C
KS	WABAUNSEE, KANSAS	B07KS0012	ESKRIDGE	NWK	N	C
KS	WABAUNSEE, KANSAS	B07KS0203	FORBES AFB-AF FAC S-6	NWK	Y	C
KS	WABAUNSEE, KANSAS	B07KS0287	WABAUNSEE PBR #2	NWK	Y	C
KS	WILSON, KANSAS	B07KS0017	NEODESHA	NWK	N	C
KS	WYANDOTTE, KANSAS	B07KS0197	FAIRFAX FLD & AF PLT#2	NWK	N	C
KS	WYANDOTTE, KANSAS	B07KS0158	ORC ARMORY SITE	NWK	N	C

**FAX COMMUNICATION**

Date: September 15, 2000

Please deliver this fax to the CRCPD program manager/acting program manager in your agency whose name is below.

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Arkansas	David Snellings, Jr.	New Jersey	Jill Lipoti, Ph.D.
California	Edgar D. Bailey	New Mexico	William Floyd
Colorado	Jake Jacobi	New York City	Gene Miskin
Connecticut	Edward Wilds	New York State Hlth. ..	Karl R. Rimawi, Ph.D.
Delaware	Jeff Beaman	New York State Env. ..	Paul Merges
District of Columbia ..	Norma Stewart	New York State Labor ..	Vacant
Florida	William Passetti	North Carolina	Richard Fry
Georgia	Tom Hill	North Dakota	Jeffrey Burgess
Hawaii	Russell S. Takata	Ohio	Roger Suppes
Idaho	David Eisentrager	Oklahoma	Mike Broderick
Illinois	Paul Eastvold	Oregon	Ray Paris
Indiana	John Ruyack	Pennsylvania	David Allard
Iowa	Don Flater	Rhode Island	Marie Stoeckel
Kansas	Vick Cooper	South Carolina	Pearce O'Kelley
Kentucky	John Volpe, Ph.D.	South Dakota	John Robertson
Louisiana	Ronald Wascom	Tennessee	Edward Nanney
Maine	Jay Hyland	Texas Dept. of Hlth. ..	Richard Ratliff
Maryland	Roland G. Fletcher	Texas Nat. Res. Comm.	Alice Hamilton Rogers
Massachusetts	Bob Hallisey	Utah	William Sinclair
Michigan	David Minnear	Vermont	Paul Clemons
Michigan	James Camburn	Virginia	Leslie Foldesi
Minnesota	Susan McClanahan	Washington	John Erickson
Mississippi	Robert Goff	West Virginia	Beattie DeBord
Missouri	Gary W. McNutt	Wisconsin	Paul Schmidt
Montana	Vacant		

From: Pat Gorman, Deputy Director
Conference of Radiation Control Program Directors, Inc.
205 Capital Ave., Frankfort, KY 40601

Phone: 502/227-4543

pages sent: (including this page): 18

MESSAGE**FUSRAP SITES LIST BY STATE**

Due to the recent articles in USA TODAY, Paul Merges requested and received the attached US Department of Energy list of Formerly Utilized Sites Remedial Action Program (FUSRAP) sites. It is the most extensive list DOE has released to date. However, on 9/13/00 USA TODAY quoted that Energy Secretary William Richardson that DOE will release the names of hundreds of private companies/sites that processed radioactive and toxic material for the US nuclear weapons program in the 1940s and '50s. It is believed that the attached list will include most of these to-be-announced sites. The list is being sent to you to assist you in preparing for the many press inquiries that could result when DOE issues their new list.

cc: CRCPD Board of Directors (State & Federal)
Otha Linton

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
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GRAPHIC:
Nuclear contracting
sites across the USA

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Companies and research sites where radioactive and toxic materials might have been processed secretly

This is a list of more than 550 sites where the Department of Energy either knows work was performed for the nuclear weapons program or where questions have been raised about whether such work was done. At some of these sites, past investigations have concluded that no radioactive material was handled. At other sites, past investigations have concluded that weapons work was not done.

However, there are questions about whether the conclusions reached at some sites during previous investigations are accurate. DOE is reexamining records at many sites. Officials also say they are developing a plan to address worker safety and environmental questions at many of the sites.

As it becomes available, more information will be posted on a public database that Energy Secretary Bill Richardson has ordered be created on the DOE's Web site: www.doe.gov. The DOE provided no information about Oklahoma and Vermont. Sites are presented in the order they appear on the DOE's list:

ALABAMA

Tennessee Valley Authority, Muscle Shoals
Alabama Oralmence Works, Sylacauga
Southern Research Institute, Birmingham

ALASKA

Amchitka Island Test Center

ARIZONA

Monument Valley Mill
Tuba City Mill and AEC Ore Buying Station
University of Arizona, Tucson
Cameron StationGlobe (Cutter) AEC Ore Buying Station

- ARKANSAS

T
Tech

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• [Up to through you can](#)

• [How invisible](#)

• [Repa home](#)

• ["We was com park ran](#)

• [Thin clean? T](#)

• [No o the worl suction.](#)

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none

CALIFORNIA

Mare Island Navy Yard
 Northrap Aircraft, Hawthorne
 Shannon Luminous Metals, Hollywood
 Stanford University, Microwave Laboratory
 University of California, Davis
 Arthur D. Little, San Francisco
 Dow Chemical, Walnut Creek
 University of California-Berkeley (Gilman Hall)
 California Institute of Technology Lab. For Energy Related-Health
 Research, Davis
 Univ. of California-Berkeley
 Naval Ordnance Test Station, Inyokend/China Lake
 North American Aviation, Downey
 Electro Circuits, Pasadena
 Santa Susana Field Lab, Canoga Park
 Burris Park Field Station, Kingsburg
 Hunter Douglas Aluminum Division of Bridgeport Brass,
 Riverside
 Stauffer Metals, Richmond
 General Electric, San Jose

COLORADO

American Smelting and Refining, Grand Junction
 Bureau of Mines, Denver
 Climax Uranium, Grand Junction
 Denver Equipment
 Durango Mill
 Gunnison Mill
 Maybell Mill
 Naurita Mill
 Project Rio Blanco
 Project Rulison, Garfield County
 Rifle Mill
 Colorado School of Mines, Golden
 Uravan Mill
 Loma Mill
 Gateway Mill
 Vanadium Mill
 Rocky Mountain Research, Denver
 Hendricks Mill
 Slick Rock
 Marion Mill Site, Boulder
 Colonial Uranium
 Shattuck Chemical, Denver
 Coors Porcelain, Golden
 University of Denver Research Institute

CONNECTICUT

Metals Selling, Putnam
 New England Lime, Canaan
 Olin Matheson, New Haven
 Anaconda, Waterbury
 Seymour SpecialtyWire
 Combustion Engineering, Windsor
 Pratt & Whitney CANEL Facility, Middletown
 Yale Heavy Ion Linear Accelerator
 Bridgeport Brass Havens Lab
 Sperry Products, Branbury
 New Canaan
 Torrington
 Nelco Metals, Canaan
 Fenn Machinery, Hartford
 Wesleyan University, Middletown
 American Cyanamid, Stamford
 Dorr, Stamford
 American Chain and Cable, Bridgeport

DISTRICT OF COLUMBIA

Naval Gun Factory and Bureau of Ordnance
 National Bureau of Standards, Van Ness
 Naval Research Laboratory

DELAWARE

Allied Chemical and Dye, North Claymont

FLORIDA

University of Miami
 U. S. Steel, USS Agrichemical Div., Ridgewood
 International Minerals and Chemical, Mulberry
 C. F. Industries, Bartow
 W. R. Grace Co., Agricultural Chemical Div., Ridgewood
 Gardinier, Tampa
 Conserv, Nichols
 General Electric, St. Petersburg
 Humphreys Gold, Jacksonville
 University of Florida, Gainesville

GEORGIA

none

HAWAII

none

IDAHO

Lommon Mill

ILLINOIS

Allied Chemical, Metropolis
ELMCO, Palatine
Granite City Army Depot
Hydroblast, Chicago
Midwest Manufacturing, Galesbury
Morse Chemical, Chicago
Sciaky Brothers, Chicago
Swenson Evaporator
Wycoff Drawn Steel, Chicago
Billings Hospital, Small Animal Facility, Chicago
GSA 39TH Street Warehouse, Chicago
Museum of Science and Industry, Chicago
Palos Park Forest Preserve Site, Chicago
National Guard Armory, Chicago
University of Chicago
Olin Mathieson, Joliet
Argonne National Laboratory, Chicago
Rock Island Arsenal
Lindsay Light and Chemical, w. Chicago
Quality Hardware and Machine, Chicago
W. E. Pratt Manufacturing, Joliet
Crane, Chicago
Heavy Minerals, Chicago
International Register, Chicago
Fansteel Metallurgical, N. Chicago
Armour Research Foundation, Chicago
International Mineral & Chemical, Chicago
Kaiser Aluminum, Dalton
Precision Extrusion, Bensenville
Great Lakes Carbon, Chicago
Podbelniac, Chicago
Swenson Evaporator
American Machine and Metals, E. Moline
Vapofier, Blue Island
Spectrulite Consortium, Madison
R. Krasburg and Sons, Chicago
Granite City Steel, Granite City
ERA Tool and Engineering, Chicago
Max Zuckerman & Sons, Chicago
C-B Tool Products, Chicago
Kankakee Ordnance Plant, Kankakee
Allied Chemical, Metropolis

INDIANA

University of Notre Dame, South Bend
Joslyn Manufacturing and Supply, Ft. Wayne
Purdue University Van der Graaf Lab, Ames
Wabash River Ordnance Works, Terra Haute
Standard Oil of Indiana, Whiting
Indiana Steel Products, Valparaiso
University of Indiana, Bloomington
General Electric Plant, Shelbyville
Washrite, Indianapolis
American Bearing, Indianapolis

IOWA

Iowa State University, Ames Lab.
Burlington Ordnance Plant, Burlington
Ames Laboratory Research Reactor Facility, Ames
Titus Metals, Waterloo
Bendix Aviation, Pioneer Div., Davenport

KANSAS

Spencer Chemical Jayhawks Works, Pittsburg

KENTUCKY

Paducah Gaseous Diffusion Plant, Paducah

LOUISIANA

none

MAINE

none

MARYLAND

Bendix Frieze Div., Baltimore
Glenn L. Martin, Middle River
Naval Ordnance Lab, Silver Spring
Public Health Service, NIH, Bethesda
W.R. Grace, Curtis Bay
Johns Hopkins University, Baltimore
Armco-Rustless Iron & Steel, Baltimore
Max Zuckerman & Sons, Baltimore
Maryland Disposal site, location unknown

MASSACHUSETTS

E.B. Badger, Boston
Edgerton Germeshausen & Gierr, Boston
Englehard Industries, Plainville
Manufacturing Labs, Boston
TracerLab, Boston
Tufts College, Medford
Massachusetts Institute of Technology, Cambridge
Watertown Arsenal, Watertown
Winchester Engineering and Analytical Center, Winchester
Ventron, Beverly
Harvard University Electron Accelerator, Cambridge

Shpack Landfill, Norton
Woburn Landfill, Woburn
Chapman Valve Manufacturing, Indian Orchard
Nuclear Metals, Cambridge
National Research, Boston
TracerLab, Boston
Norton, Worcester
American Forash & Chemical, West Hanover
Fenwal, Ashland
Heald Machine, Worcester
La Pointe Machine and Tool, Hudson
C. G. Sargent & Sons, Graniteville
Reed Rolled Thread, Worcester
NRC Equipment, Newton
New England Materials Laboratory, Medford
Metals and Controls, Attleboro

MICHIGAN

AMEX Specialty, Coldwater
DOW-Detroit Edison Project
Naval Ordnance Plant, Centerline
General Motors, Adrian
Westinghouse Naval Ordnance, Detroit
Velsicol Chemical, St. Louis
Revere Copper and Brass, Detroit
Wolverine Tube Division, Detroit
Dow Chemical, Midland
General Motors Plant, Flint
University of Michigan, Ann Arbor
Gerity-Michigan, Adrian
Detrex, Detroit
Oliver, Battle Creek
Carboloy, Detroit
Baker-Perkins, Saginaw
Mitts & Merrel, Saginaw
Star Cutter, Farmington
Extruded Metals, Grand Rapids
4400 Piehl Rd, Ottawa Lake

MINNESOTA

Twin Cites Ammunition Plant, New Brighton
Elk River Reactor, Elk River

MISSISSIPPI

Tatum Dome Test Site, Hattiesburg

MISSOURI

Spencer Chemical, Kansas City
St. Louis University
United Nuclear, Hematite
St. Louis Airport Storage site
St. Louis Downtown site
Weldon Spring Chemical, St. Charles
Latty Avenue, St. Louis
West Lake Landfill, Bridgeton
Bendix Aviation, Kansas City
Washington University, St. Louis
Petrolite, St. Louis
Medart, St. Louis
Roger Iron, Joplin
Tyson Valley Powder Farm, St. Louis

MONTANA

Montana State University, Bozeman

NEBRASKA

Hallam Nuclear Power Facility, Hallam

NEVADA

University of Nevada, Reno
Central Nevada Test Site
Shoal Test Site, Fallon
Nellis Air Force Base
Nuclear Rocket Development Station
U. S. Bureau of Mines, Reno Station
Titanium Metals, Henderson

NEW HAMPSHIRE

R. Brew, Concord

NEW JERSEY

International Pulverizing, Morristown
I. T. Baker Chemical, Phillipsburg
Metals Disintegrating, Verona
Princeton University, Princeton
Vitro Corp. of America, West Orange
Westinghouse Electric, Bloomfield
Middlesex Sampling Plant, Middlesex
Middlesex Municipal Landfill Site, Middlesex
DuPont, Deepwater
Kellex/Pierpont, Jersey City
Princeton University, Princeton
U. S. Radium Maywood Site
Tube Reducing, Wallington
Chemical Construction, Linden
Baker and Williams, Newark
New Brunswick Lab, New Brunswick
Navy Ammunition Depot, Earle
Wayne site, Wayne

International Nickel Bayonne Laboratories
Standard Oil Development Co. of NJ, Linden
Heyden Chemical, Princeton
Wykoff Steel, Newark
Bloomfield Tool, Bloomfield
DuPont, Dyeworks, Carney's Point
U. S. Pipe and Foundry, Burlington
Alcoa, Garwood
Fairmont Chemical, Newark
Colonial Chemical, Engelwood
Harrison Manufacturing, Rahway
Pfaltz and Bauer, Richfield
United Lead, Middlesex
Eclipse-Pioneer, Tetterboro
Picatinny Arsenal, Dover
Raritan Arsenal
Bowen Lab, North Branch
New York Shipbudding, Camden
Bakelite, Bound Brook
Callite Tungsten, Union City
New Jersey Disposal Site

NEW MEXICO

Ambrosia Lake Mill, Ambrosia Lake
Blue Water AEC Ore Buying Station, Blue Water
Naval Office at the Univ. of New Mexico, Albuquerque
Shiprock AEC Ore Buying Station, Shiprock
Bayo Canyon, Los Alamos
Los Alamos Underground MED Pipelines, Los Alamos
Acid/Pueblo Canyon, Los Alamos
Chupadera Mesa, White Sands
ACF Industries, Albuquerque
LASL Tract, Los Alamos
LASL Parcels, Los Alamos
LASL Pipeline facility, Los Alamos
LASL Tracks Eastern Area, Los Alamos
LASL Tracks Eastern Area No. 3, Los Alamos
TA-1-Manhattan Lab, Los Alamos
Project Gnome Site, Carlsbad
Jackpile, Paquate
Project Gas Buggy
Church Rock
Mariano Lake
Trinity Test Site, White Sands
Grants AEC Ore Buying Station, Grants

NEW YORK

African Metals, New York
Al-Tech Specialty Steel, Dunkirk
American Railway Express Office, New York
Bell Telephone Labs, New York
BoyceThompson Institute for Plant Research, Yonkers
Canadian Radium and Uranium, New York
Carnegie Institute of Washington (Dept of Genetics), Cold Spring Harbor
Colorado Fuel and Iron, Watervliet
Eastman Kodak Laboratory, Rochester
Enterprise Metal Products,
Floyd Bennett Field, Brooklyn
Fordham University, New York
Frederick Flader, Tonawanda
Long Island College of Medicine, New York
Lucius Pitkin, New York
Memorial Hospital, New York
National Research, New York
Pier 38, New York
Polytechnic Institute of Brooklyn
Pyroferic, New York
Rockefeller Institute for Medical Research, New York
Union Mines Development, New York
Utica St. Warehouse, Buffalo
Al-Tech Specialty Steel, Watervliet
Bethlehem Steel, Lackawana
Columbia University, New York
Electromet, Niagara
Hooker Chemical, Niagara Falls
Colonie Site
Sylvania Corning Nuclear, Bayside
Linde Air Products Divisin, Tonawanda
Seaway Industrial Park, Tonawanda
Ashland Oil, Tonawanda
Seneca Army Depot, Romulus
Simonds Saw and Steel, Lockport
ACF Industries, Buffalo
Brookhaven National Lab buildings, New York
DuPont, Watervliet
Knolls Atomic Power Lab of General Electric, Schenectady
Niagara Fall Storage site, Lewiston
Rensslear Polytechnic Institute, Troy
Sylvania-Corning Plant, Hicksville
University of Rochester Medical Lab
West Milton Reactor site, Schenectady
Staten Island Warehouse, New York
West Valley Demonstration Project
Love Canal, Niagara Falls
Federal Repository, Elmira

American Machine and Foundry, Brooklyn
Tonawanda Office, Export. Import, Niagara Falls
Cornell University Medical College, Ithica
Syracuse University
Wolff-Alport , Brooklyn
Carborundum, Buffalo Ave. Plant, Niagara Falls
Nuclear Development Corp. Of America, White Plains
Hana-Newer, New York
Crucible Steel Co. of America, Syracuse
Simmons Machine and Tool, Albany
Naval Supply Depot, Scotia
Ledoux , New York
International Rare Metals Refinery, Mt. Kisko
Utica Drop Forge & Tool
Curtis Wright Metals Processing Div., Buffalo
Titanium Alloy Mfg, Niagara Falls
Ferro Metal & Chemical, New York
Kennecott Copper, New York
Belmont Smelting & Refining Works, Brooklyn
Pfaltz & Bauer, New York
Charles Handy, New York
B. L. Lernke, New York
National Carbon, New York
Markite, New York
New York University, New York
Sacandaga, Glenville
Niagara Smelting
Ithaca Gun
B & L Steel, Buffalo
Gteason Works, Rochester
Bufiovak, Buffalo
Radiation Applications, New York
American Machine and Foundry, New York
Radium Chemical, New York
Baker & Williams Warehouses, New York
Carbonneau Site, Malta
American Machine and Foundry, Buffalo
Wilson Warehouse, Buffalo
Linde Air Products, Buffalo
Phohl Brothers Landfill, Tonawanda

NORTH CAROLINA

North Carolina State University, Raleigh

NORTH DAKOTA

Belfield Mill
Bowman Mill

OHIO

Case School of Applied Science, Ohio State University, Columbus
Cyrus Foote Mineral, Cambridge
Fosdick Machine Shop, Oxford
National ACME Machine, Cleveland
Ohio State University, Columbus
Ohmart, Cincinnati
University of Cincinnati
Wright Air Development Center, Dayton
Battelle Memorial Institute, Columbus
Brush Beryllium, Cleveland
DuPont, Grasselli Plant, Cleveland
Harshaw Chemical, Cleveland
Horizons, Cleveland
Air Force Plant 36, Evandale
Dayton Plants No. 1 and 3
Piqua Nuclear Power Facility, Piqua
Brush Beryllium, Elmore
RMI Extrusion, Ashtabula
OARDC, Wooster
Feed Materials Production Center, Fernald
Cooper Metallurgical Associates, Cleveland
Tech-Art, Milford
Battelle Columbus Labs, Columbus
Baker Brothers, Toledo
McKinney Tool and Mfg., Cleveland
Luckey Site
MOUND plant, Miamisburg
National Smelting & Refining, Cleveland
Magnus Brass, Cincinnati
Alba Craft, Oxford
Associate Aircraft Tool and Mfg., Fairfield
Lodge and Shipley, Cincinnati
Cincinnati Milling Machine, Cincinnati
B&T Metals, Columbus
Herring-Hall Marvin Safe, Hamilton
Etna Machine, Toledo
Clifton Products, Painesville
Monsanto Chemical, Dayton
General Electric, Cincinnati
Western Reserve University, Cleveland
Copper Weld Steel, Warren
Osborne, Cleveland
Clevite, Cleveland
American Steel Foundries, Cincinnati
Gruen Watch, Norwood
R. W. Leblond Machine Tool, Cincinnati
Duhnis Chemical, Cincinnati
John Van Range, Cincinnati
Queen City Barrel, Cincinnati

Tocco Induction Heating Div., Cleveland
Ajax Magnathermic, Youngstown
Process Research, Cincinnati
Matlon Engineer Depot, Marion
Motch & Merryweather, Cleveland
Brush Beryllium, Lorain
Painesville
Duriron, Dayton
Charles Taylor and Sons, Cincinnati
Robbins & Myers, Springfield

OREGON

Lakeview Mill
Oregon Metallurgical, Albany
Wah Chang, Albany
Albany Research Center, Albany

PENNSYLVANIA

American Chain and Cable, Wilkes-Barre
Bartol Research Foundation, Swathmore
Hygrade Sylvania
Meill & Worthington, Hatboro
Paul & Beekman, Philadelphia
University of Pennsylvania, Philadelphia
University of Pittsburgh
Teledyne-Columbia-Summerville, Pittsburgh
Rohm & Haas, Philadelphia
Superior Steel, Carnegie
Westinghouse Atomic Power Dev, Forest Hills
Canonsburg Industrial Park
PennCentral Transportation, Blairsville
Aliquippa Forge
Philadelphia Navy Yard
Carnegie-Mellon Cyclotron Facility, Saxonburg
Westinghouse Astronuclear, Cheswick
C. A. Schnorr, Springdale
Carpenter Steel, Reading
Shippingport Atomic Power Station
Try Street Terminal, Pittsburgh
Vanadium Corp. of America, Bridgeville
Westinghouse Atomic Power Div., Homestead
Jeasop Steel, Washington
Babcox & Wilcox, Beaver Falls
Heppanstill, Pittsburgh
Penn Salt, Chestnut Hill
Frankford Arsenal, Philadelphia
Aeroprojects, West Chester
Alcoa, New Kensington
Summerill Tubing, Bridgeport
Koppers, Pittsburgh
Philadelphia Naval Yard

Foote Mineral, Philadelphia
Roberts & Manders, Hatboro
Sharpies, Philadelphia
Minneapolis-Honeywell Regulator, Philadelphia
Brown Instrument Div.
Birdsboro Steel & Foundry, Birdsboro
Pennsylvania Ordnance Works, Williamsport
Palmerton Ore Buying Site
Landis Machine Tool, Waynesboro
U. S. Steel National Tube Div., McKeesport
Bureau of Mines, Bruceton
Curtis-Wright, Quehanno
Duriron
Beryllium, Reading
Catalytic, Philadelphia
Nuclear Materials and Equipment, Apollo
Chambersburg Engineering
Pennsylvania Disposal Site
Westinghouse Electric, East Pittsburgh
Babcox & Wilcox, Parks Township

RHODE ISLAND

Brown University
Brown University
C. L Hayes, Inc.

SOUTH CAROLINA

Savannah Rivet Swamp

SOUTH DAKOTA

Edgemom Mill

TENNESSEE

Parcel 228
Oak Ridge Gaseous Diffusion Plant
Tennessee Eastman Corp.
Vitro Corp. of America
W. R. Grace
Clinton Laboratories
Knoxville Iron Co.
Clarksville Foundry & Machine Co.
Elza Gate Warehouse
Union Carbide and Carbon Corp.

TEXAS

Pasadena Chemical Corp., Pilot Plant
Texas City Chemicals, Inc.
Paritex Sewage Reservoir
Falls City Uranium Mill
Kearns City
Kennedy
Three Rivers
AIMCOT

Sutton, Steele and Steele Co.

UTAH

Green River Mill
Mexican Hat AEC Ore Buying
Station
Salt Lake City Mill
Salt Lake City AEC Ore Buying Station
U. S. Bureau of Mines
University of Utah
Monticello Ore Buying Station and Mill
White Canyon AEC Ore Buying Station
Matysville AEC Ore Buying Station
Moab AEC Ore Buying Station

VIRGINIA

Naval Proving Ground
Reactor Site - Fort Belvoir
Mobil Oil Corp.
Babcock & Wilcox Co
University of Virginia
Reynolds Metals Co.
Norfolk Naval Station
American Machine and Foundry Co.

WASHINGTON

Globe Steel Tubes
Tranes Co.
University of Washington
Hartford Engineer Works

WEST VIRGINIA

Reduction Pilot Plant
Amax Corp.
Morgantown Ordnance Works
Food Machinery and Chemical Corp.

WISCONSIN

Allis-Chalmers Co
Research Products Corp
Besley-Wells
Milwaukee Airport

WYOMING

Converse County Mill
Crooks Gap AEC Ore Buying Station
Riverton AEC Ore Buying Station
Rivenon Mill
Shirley Basin AEC Ore Buying Station
Lost Creek

PUERTO RICO

Boiling Water Nuclear Facility
Superheat Reactor

UNITED STATES (UNKNOWN LOCATIONS)

Queen City Barrel Co.
Transcontinental Machine and Tool Co.
Bistro Manufacturing Co.
Layton Brothers Drum
Cania Laboratories
Alimous Process, Inc.
Transcontinental
Midland Machine Co.
Metcut Research Site
Vulcan Tool Co.

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**1995 LIST OF SITES REVIEWED FOR POSSIBLE PAST INVOLVEMENT
IN NUCLEAR WEAPONS AND NUCLEAR ENERGY RELATED ACTIVITIES**

(Also known as the "FUSRAP LIST")

Ted Smith

BACKGROUND

As part of its review of agency records to identify sites for possible inclusion in the Formerly Utilized Sites Remedial Action Program (FUSRAP), the Department of Energy (DOE) compiled an internal working list in 1995 of 577 site entries that date back to the Manhattan Engineer District (MED). The MED is the original precursor to the Atomic Energy Commission (AEC), the Energy Research and Development Administration (ERDA) and the DOE.

The FUSRAP review sought to identify sites that may have been involved in nuclear weapons and nuclear energy related activities and determine which of these sites would require environmental cleanup.

THE FUSRAP REVIEW

File and field reviews of these sites -- some of which date back to the 1940's -- began in the early 1970's by the AEC, continued under ERDA and then the DOE. After the DOE's reviews were completed, and with instructions from Congress to include several sites, forty-six sites were identified for clean-up as part of the FUSRAP program. By 1997, when Congress transferred the FUSRAP program to the Army Corps of Engineers, the DOE had completed cleanup at twenty-five of the forty-six FUSRAP sites. The FUSRAP list of 577 site entries remained an internal working document of the DOE and the Army Corps of Engineers until September 21, 2000.

A HISTORICAL NOTE ON THE 1995 FUSRAP LIST

The FUSRAP list, compiled in 1995, reflects a snapshot of records related to these sites that had been reviewed at that time. It is an historical document and, therefore, the information is not up-to-date. The DOE has begun working to update, correct and clarify the information contained in the list. Revised information will be periodically posted to the DOE web sites.

UNDERSTANDING THE FUSRAP LIST

The list includes the following types of sites:

- *Private contractor sites* that performed nuclear weapons and nuclear energy-related work for the Government;
- *Government sites* being cleaned up by government programs other than the FUSRAP program;
- Private or government sites that were involved in nuclear weapons and nuclear energy activities, but where no radioactive material was released to the environment;
- Private or government sites that were involved in defense activities, but did not receive any radioactive materials (sites that carried out engineering, contracting or administrative operations); and
- Sites with no involvement in nuclear weapons and nuclear energy activities, but were reviewed in response to allegations, inquiries or concerns.

NOTE: Not all of the sites on the list were involved in nuclear weapons and nuclear energy production or have been contaminated with radioactive materials. Nonetheless, to address questions raised about this list of sites, and to help provide a publicly accessible source of information to answer questions in the future, the DOE is posting this internal working list from 1995 on the DOE and DOE-EM web sites.

In addition to the operations at the sites identified on the internal working list, the AEC conducted operations at certain military installations that are currently classified and not included in the FUSRAP list. These sites were referred to the Department of Defense in 1982.

The hand written markings on this 1995 document were on the original file copy and do not reflect any recent effort to alter the historical document.

THE FUSRAP LIST: A COLUMN BY COLUMN LOOK

"File #"	Refers to record-keeping used at that time. In most cases, this file number is no longer being used.
"Site Name"	Refers to the name used in 1995 and may no longer be the most commonly used name for the site.
"Location"	Based on information available in 1995.
"Alternative Name"	In some cases, the site was also known by a different name.
"Status"	Indicates whether a site was: (a) in a Department of Energy program, (b) under the jurisdiction of another Federal Agency, or (c) eliminated from further consideration for the FUSRAP program. The status of many of these sites has changed since this list was compiled in 1995.

NOTE: The 1995 list included the names of individuals that have been redacted to protect those individuals' privacy in accordance with Freedom of Information Act rules and procedures.

KEY TO COMMONLY USED TERMS

The terms used to indicate status in the FUSRAP list are notations of whether the site required cleanup and, if so, to which agency the DOE referred the site for further action. Where a Government agency other than DOE is listed in the "status" column, the results of DOE's review were provided to that agency. In most of these cases the site was already being managed by the other agency and DOE notified that agency that it had completed its file review of that particular site.

Eliminated	The site was "eliminated" from further consideration because it was found not to be contaminated under screening criteria. Some of these sites were determined to have never received radioactive materials (e.g., served as engineering, contracting or administrative operations). Others were found to have no higher than acceptable levels of radioactivity because any radioactive material was handled in small quantities or kept in a contained state. In still
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other cases, sites were eliminated because DOE lacked legal authority to conduct cleanup operations. In these cases DOE notified the appropriate federal and state agencies.

DOE

The site was placed in a DOE program for cleanup (as summarized below).

- * **Argonne**: Argonne Laboratory, Chicago
- * **WSSSRAP**: Weldon Spring Site Remedial Action Program
- * **Los Alamos**: Los Alamos site, New Mexico
- * **BCLDP**: Battelle Columbus Laboratory, Columbus, Ohio
- * **Mound**: Mound Site, Miamisburg, Ohio
- * **Pantex**: Pantex Facility, Amarillo, Texas
- * **Hanford**: Hanford site, Richland, Washington

Naval Reactors

The site was addressed by the Naval Reactors Program.

FUSRAP site

The site was placed in the Formerly Utilized Sites Remedial Action Program (FUSRAP) for cleanup

- * TBD: "To be Determined"
- * VP: "Vicinity Property"

UMTRAP site

The site was placed in the Uranium Mill Tailing Remedial Action Program (UMTRAP) for cleanup.

TVA

The site was owned or operated by the Tennessee Valley Authority (TVA).

NRC

The site was licensed by the Nuclear Regulatory Commission (NRC).

DOD

Results of the review were provided to the Department of Defense (DOD).

State

Results of the review were provided to a relevant state agency.

EPA

Results of the review were provided to the Environmental Protection Agency (EPA). NPL is an acronym for the Superfund National Priority List.

USGS

The site was owned or operated by the U.S. Geological Survey.

BIA

The site was owned or operated by the Bureau of Indian Affairs.

File #	Site Name	Location	Alternative Names	Status
IN.06	University of Indiana	Bloomington		NRC
IN.07	General Electric Co.	Shelbyville	GE; General Electric Plant	NRC
IN.08	Wash-Rite Co. [Former name at site.]	Indianapolis		State
IN.09	American Bearing Corp. [Former name at site.]	Indianapolis		NRC
Kentucky				
KY.01	Paducah Gaseous Diffusion Plant	Paducah		DOE-Paducah
KY.02	Commercial (Burial) Disposal Site (unnamed, closed 1979)	Moorehead		DOE EPA/State
Massachusetts				
MA.0-01	E. B. Badger	Boston		Eliminated
MA.0-02	Edgerton Germeshausen & Gierr, Inc.	Boston		NRC
MA.0-03	Englehard Industries	Plainville	Makepeace, D.E. Div.	NRC
MA.0-04	Manufacturing Laboratories, Inc. [Former name at site.]	Boston		Eliminated
MA.0-05	Tufts College	Medford		NRC
MA.01	Massachusetts Institute of Technology, Hood Building [Former name at site.]	Cambridge	MIT, Hood Building	NRC
MA.02	Watertown Arsenal (Bldgs 421, 34, 41 and GSA Site (on the arsenal grounds)	Watertown		DOD
MA.03	Winchester Engineering and Analytical Center	Winchester	U. S. Public Health Service, N. E. Radiological Laboratory; Formerly run by American Cyanimid Co. [1952-54]; Formerly run by National Lead Co. [1954-	Eliminated
MA.04	Ventron Corp.	Beverly	The former Metal Hydrides Corp.; Ventron Div., Morton Thiokol, Inc.	FUSRAP site
MA.05	Harvard University Electron Accelerator	Cambridge	Cambridge Electron Accelerator	DOE

The Morning Sun

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Area plant may have nuclear past

By JACK DIMOND
Morning Sun Staff Writer

CRESTLINE A chemical plant near Crestline may be on the U.S. Department of Energy's list of sites that may have been involved in the U.S. government's nuclear weapons program.

This 577-site list includes "Spencer Chemical Co., Jayhawk Works" of Merriam, a suburb of Kansas City. However, a list published Thursday in *USA Today* listed the site's location as Pittsburg.

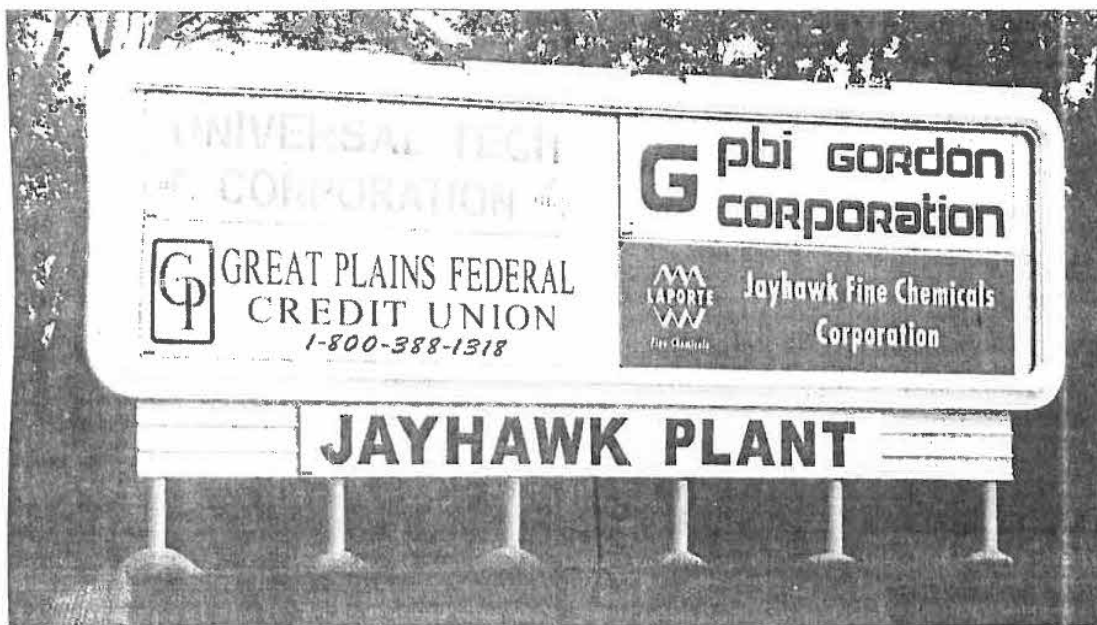
The site referred to on the list could be what is now known as Jayhawk Fine Chemicals Corp., located east of U.S. Highway 69 south of Crestline. It is believed that Spencer Chemical's corporate offices were in Merriam, but the production facility was at the current Jayhawk site.

The DOE's "1995 List of Sites Reviewed for Possible Past Involvement in Nuclear Weapons Related Activities" was released to the public Thursday. The DOE notes that the list is "a snapshot of records related to these sites and is not up-to-date."

Inclusion on the list does not necessarily mean the sites where contaminated, only that the DOE at some point investigated the sites.

Jayhawk Fine Chemicals, which is now owned by Laporte PLC, said it had no involvement with the site when it was owned by Spencer Chemical Co. and was not aware of the site's possible inclusion on the list.

"Spencer hasn't been out here for 30 years," said Amber Ohlaj, a Jayhawk official. "We as a company have no knowledge of that whatsoever."



The Jayhawk Plant chemical facility near Crestline may have been involved in "nuclear weapons related activities," according to information supplied by the U.S. Department of Energy.

Jack Dimond/The Morning Sun

Laporte is a specialty chemicals company headquartered in London and owns 42 companies in several countries, according to its Web site. Jayhawk Fine Chemicals produces "fine chemicals," which include p-

cresol methyl ether, anisic aldehyde for use in sunscreens, heart drugs and perfumes, and anisic alcohol for fragrances and cough medicines, according to the Web site.

The DOE began reviewing sites that may have been involved in

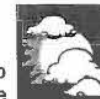
nuclear weapons-related activities in the 1970s. According to the report, some of the site's nuclear involvement dates back to the 1940s.

According to a notation on the "Jayhawk" list entry, the site was licensed by the Nuclear Regulatory

Commission. It was the only site in Kansas on the list.

The list may be viewed in its entirety at www2.em.doe.gov/sitelist. It must be viewed through Adobe Acrobat Reader.

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Market in brief

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Front Page

Web posted Friday, September 22, 2000

Area plant may have nuclear past

By JACK DIMOND
Morning Sun Staff Writer



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Memorandum

Kansas Department of Health and Environ

Vic Cooper
BAR

FHI

Date: September 6, 2000

to: File, HW, Jayhawk Plant

from: Charley Bowers, DWE, SED *CB*

from:
R. Smith

Re: Sites of alleged pre-RCRA waste burial, Jayhawk Plant, Riverton, Cherokee Co., KS

July 12, 2000 Victoria O'Brien and I met with Mr. Jerry Eckhardt, Cherokee County Emergency Coordinator, so Mr. Eckhardt could present sites where he has stated hazardous wastes were buried. The objective was to pin Mr. Eckhardt to locations where drums of cyanide and semi-trailer bodies full of nuclear (assumed radioactive) materials were allegedly buried in the past. Per Mr. Eckhardt past searches for these wastes looked in the wrong locations. Per Mr. Eckhardt, any wastes buried at the site were buried prior to Gulf Oil obtaining the site, i.e. pre-1964 and possibly legal at the time.

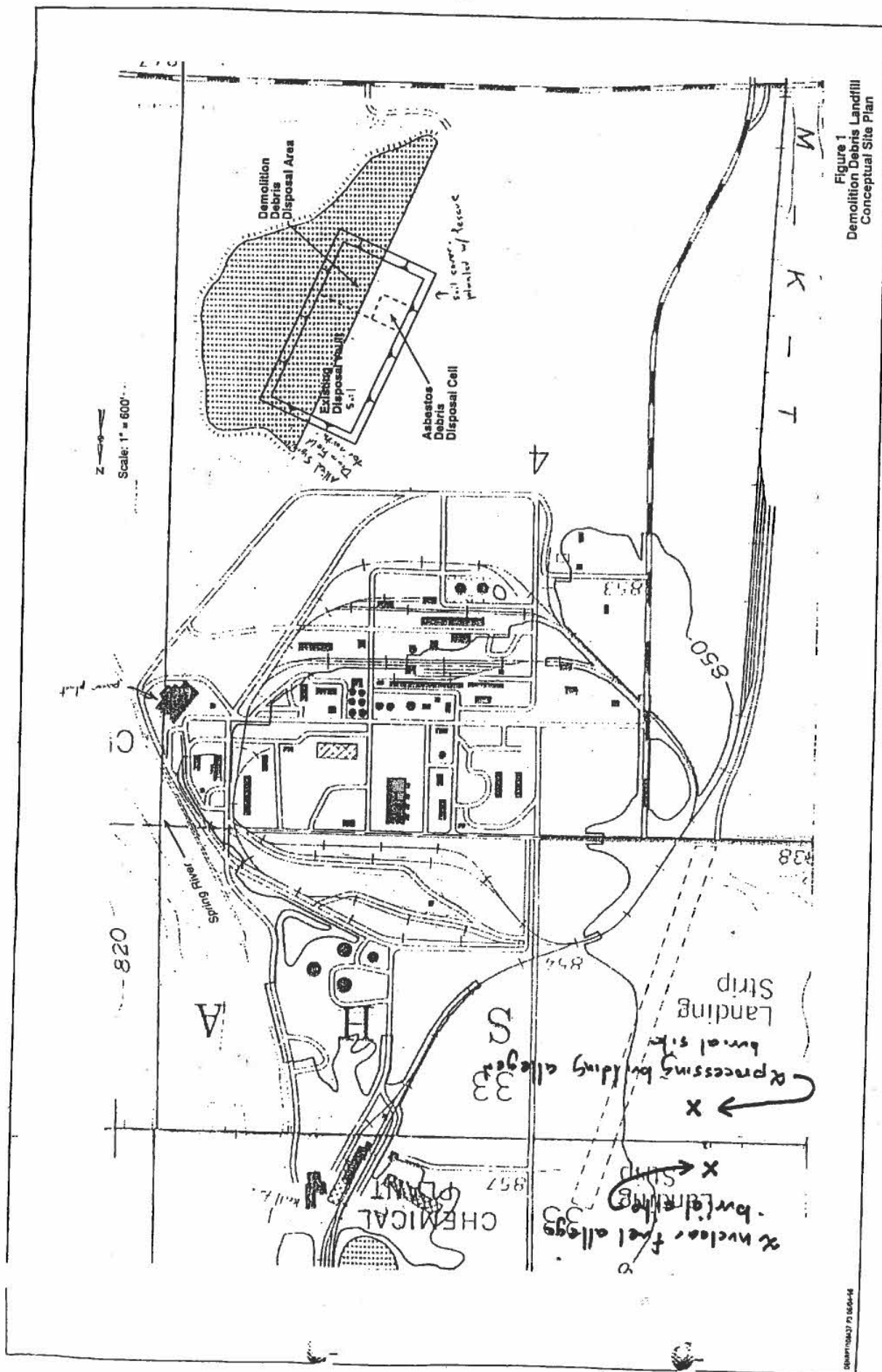
Per Mr. Eckhardt the nuclear materials were buried in a wooded area west of the northeast corner of the field in SE/4 NW/4 Section 33, Township 33 South, Range 25 East (see attached map). Per Mr. Eckhardt, this site has four monitor wells installed for the KDHE by Mr. Jimmy Beachner, who per Mr. Eckhardt also buried the wastes. Per Mr. Eckhardt, these wells were drilled under KDHE auspices, but never monitored.

Per Mr. Eckhardt, the drums of cyanide wastes were buried east of the landing strip, approximately due west of the road to the krilling tower area from the north-south road connecting the Jayhawk plant site to Highway 400. Per Mr. Eckhardt, the wastes are buried in the field adjacent to the north-south road, just east of the tree line marking the field's western border (see attached map). Per Mr. Eckhardt, at one time he excavated at the site exposing tarp-covered drums. Per his story, which I did not properly pursue to get full details, he was instructed to re-cover the drums. At other times during the interview Mr. Eckhardt said remains from a nuclear fuel processing building were buried at this site. Per Mr. Eckhardt, the past search for this material looked in the field in the vicinity of a tree northeast of the actual burial site.

Per Mr. Eckhardt, there also were old landfills east of the old metal building immediately south of Puritan Bennet, and back along or at the end of the krilling tower drive. Also, In the area where the railroad tracks to the krilling tower split in NE/4, NW/4, SE/4 Section 33 Township 33 South, Range 25 East, nuclear plant water cooling tower slats were burned in a pit and buried between the tracks.

cc: Ron Smith, BWM, Topeka
John Mitchell, BWM, Topeka

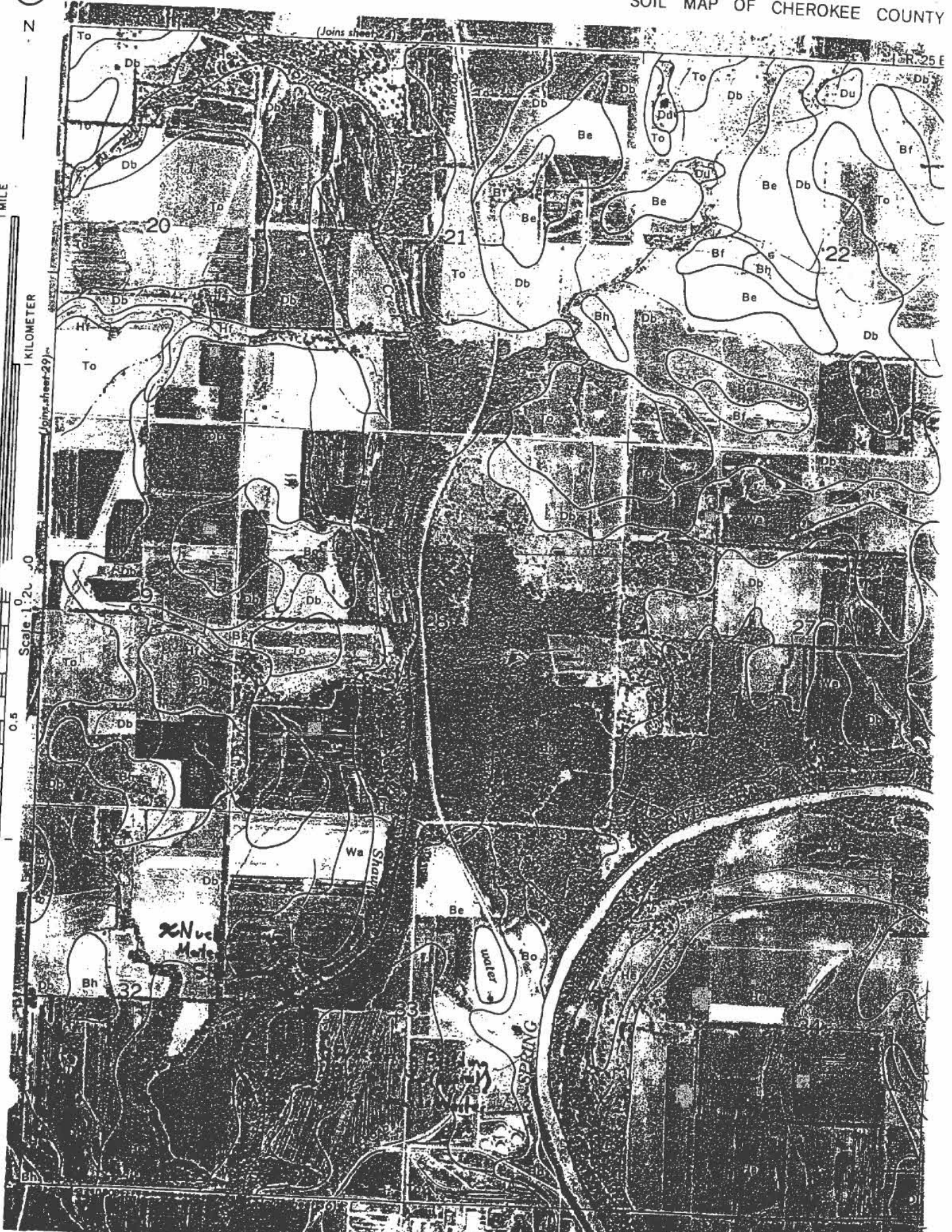
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R. 25 E





UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

JUL 28 1995

SPENCER CHEMICAL COMPANY
JAYHAWK PLANT
PITTSBURGH, KANSAS 66762

Re: License No. SNM-329, SNM-154, C-4352, R-218
State of Kansas 22-C-229-01

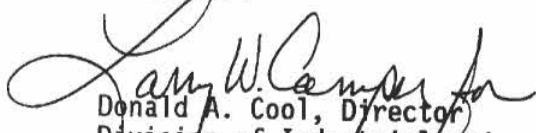
Dear Sir or Madam:

This letter is in reference to the property listed at the above address. The U.S. Nuclear Regulatory Commission has undertaken a review of over 31,000 previously terminated radioactive materials licenses throughout the United States. The purpose of the review is to confirm that there is documentation to show that licenses terminated before 1985 were terminated in accordance with current NRC criteria. The review has identified over 600 licenses for which there was insufficient documentation, in NRC's archived files to conclude that the license was terminated in accordance with today's criteria.

The property identified above was listed on such a license. Although NRC was initially unable to find a clearly documented basis to support the license termination, a search of our records, along with site surveys where necessary resolved our concerns about this property. To date, we have been able to find records for 233 sites of the 622 sites sufficient to close out our concerns about them. The above listed property is one of the 233 sites for which we have now been able to conclude that we have no remaining concerns on any residual contamination.

It is important for you to know that the entire list of licenses has been provided to Congress at its request and we understand that there are no current plans to release it to the public. You should also know that we will place a copy of this letter in our Public Document Room where it will be publicly available. As a result, you may be contacted by members of the news media. If you have questions about this letter, you may get in touch with the NRC contact listed below.

Sincerely,


Donald A. Cool, Director
Division of Industrial and
Medical Nuclear Safety, NMSS

CONTACT: Robert Evans
(817) 860-8234

cc: Gerald W. Allen, KS Dept. of Health
& Environment

Work Plan and Field Sampling Plan
Magnetic Anomaly Investigation
for the
Jayhawk, Kansas Site

Submitted by
Chevron Chemical Company

Prepared by
CH2M HILL

July 3, 1995

SITE DESCRIPTION AND HISTORY: The table below presents the Jayhawk chronology, from U.S. government operations to present.

Jayhawk Site Chronology

1941 to 1945	U.S. Government establishes an ordinance plant, operated by the Military Chemical Works of Kansas City, Missouri, to produce liquid anhydrous ammonia. Total ammonia produced through 1945 was about 295,000 tons; total ammonium nitrate production was about 152,000 tons. The plant employed 795 people.
1948	The War Assets Administration conveys the facility to Spencer Chemical Company.
1964	Spencer Chemical Company is sold to Gulf Oil Chemical Company (GOCC).
1983	GOCC terminates production activities; sells 52 acres to Allco Chemical Company.
1984	GOCC begins closure of evaporation ponds. Gulf merges with Chevron; Chevron sells 938 acres to Thermex Energy Corporation. Allco Chemical Company restarts production of 3,4,3,4'-Benzophenone Tetracarboxylic Dianhydride (BTDA).
1985	Allco Chemical Company sells 25 acres to Koch Refining Company. Koch restarts specialty chemicals production.
1992 to Present	Koch sells 25 acres to Allied Signal, Inc. (ASI). ASI continues specialty chemicals production. Allco exercises option on 176 acres; sells 1/2 to Koch. Chevron forecloses on Thermex. ASI buys Koch's 2.5 acres.

This section discusses plant operations during the period the U.S. Government Spencer Chemical Company and Gulf Oil Chemical Company (GOCC) occupied the site.

U.S. Government

According to the Department of Defense (DOD, 1990), a number of buildings once owned by DOD have been destroyed. These buildings included five of seven administrative buildings, most of the synthesis departments, the ammonium nitrate plant, and an unknown number of storage buildings. DOD has accepted responsibility for remediating contamination from Cooling Tower "C." The structure, which has been demolished, was allegedly the source of contamination.

Spencer Chemical Company

Spencer Chemical Company, which officially assumed control of the site from the U.S. Government in 1948, produced the following at the site:

- Anhydrous ammonia
- Nitric acid

- Liquid ammonium nitrate
- Finished fertilizer grade ammonium nitrate
- Ammoniating solutions (Spensol)
- Dry ice
- Methanol
- Carbamate-based pesticide (Carbyne)
- Uranium dioxide

Gulf Oil Chemicals Company (GOCC)

GOCC purchased Spencer Chemical Company in 1963. GOCC closed the ammonia and gas reforming plants in 1969 and the methanol production facilities in 1970. In 1976, GOCC started operation of a new crop protection facility to manufacture pesticides (herbicides and rodenticides) and a plant to produce 3,4,3'4'-Benzophenone Tetracarboxylic Dianhydride (BTDA) in 1975. BTDA is an epoxy additive and semiconductor coating. In the late 1970s, GOCC constructed a nitric acid plant at the facility that operated for 6 months before production stopped.

GOCC continued production of Carbyne, explosives, ammonium nitrate, nitric acid, and other specialty chemicals unit 1983. In addition to Carbyne, pesticide production included:

- Shoxin*
- Clobber*
- Prefox*
- Calfox*
- Outfox*

The production of Carbyne involved using 1,2-dichloroethane (1,2-DCA or ethylene dichloride).

In 1983, GOCC terminated production activities and sold 52 acres of the plant to Allco. Chevron Chemical Company merged with GOCC in 1984. Chevron sold 983 acres of the site to Thermex Energy Corporation. In 1985, Allco sold 25 acres of their 52 acres at the Jayhawk Plant to Koch Chemical Company. In 1990, Allco purchased an additional 196 acres from Chevron and sold approximately half of this property to Koch. The following section discusses current operations by those parties.

Current Plant Operations—KDHE regulates current environmental programs at the Jayhawk Plant. Present plant operations meet state and federal environmental standards under the RCRA and the Clean Water Act (CWA).

Currently, Allco and Koch Chemical each have operations at the plant. Thermex Energy Corporation has recently discontinued operations at the Jayhawk Plant.

Universal Technical Corporation has operations on 4 acres of the plant.

Allco Chemical Operations—Allco operations are limited to production of BTDA and PMA (pyromellitic acid). BTDA, a semiconductor coating and epoxy additive, generates a nitric acid waste stream that Allco neutralizes with ammonium hydroxide. Allco discharges nonhazardous stormwater to the 120-acre lake.

Koch Chemical Operations—Koch Chemical produces, among other things, fragrances and PXE (phenyl xylol ethane). They occupy the GOCC's former crop protection facilities. In 1987, Koch replaced the GOCC chemical sewer lines with above ground piping. They abandoned all old manholes and floor drains

by filling/plugging them with concrete. The former GOCC chemical sewer system is no longer used in Koch's area of the plant. Koch discharges nonhazardous stormwater to the 120-acre lake.

Thermex Energy Operations—Thermex operated a small commercial explosives research facility at the Jayhawk Plant. This operation started in November 1984. Materials produced at the Jayhawk operation were transported to an offsite facility for testing. On March 6, 1992, Chevron foreclosed on, and became the owners of, the Thermex property. No operations have taken place by Chevron on this property since the foreclosure.

Universal Technical Corporation—Universal operates an analytical laboratory. Universal was formed in 1990 when they purchased the 4-acre property from Thermex.

**SCREENING SITE INSPECTIONS
at the
JAYHAWK PLANT, CRESTLINE, KANSAS
FOR**

**ALLCO CHEMICAL CORPORATION; KSD984974071
CHEVRON CHEMICAL COMPANY; KSD984974089
KOCH CHEMICAL COMPANY; KSD981121197
THERMEX ENERGY CORPORATION; KSD984974063**



**Kansas Department of Health and Environment
Bureau of Environmental Remediation
Pre-Remedial Unit/Remedial Section**

August 1993

SECTION 1: INTRODUCTION

1.1 Introduction

The Kansas Department of Health and Environment (KDHE) has entered into a cooperative agreement with the Environmental Protection Agency (EPA) under which KDHE will perform investigations of selected contaminated sites in Kansas. The investigations are conducted in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), collectively known as "Superfund". The purpose of the investigations is to determine if sites qualify for listing on the National Priority List (NPL), thus making them eligible for a federally mandated cleanup.

1.2 Site Problem Statement

A 1990 Preliminary Assessment (PA), conducted at the approximate 2500 acre former Gulf Oil Chemicals Company (Gulf) - Jayhawk Plant site, determined that significant contamination of ground water, surface water runoff and soil existed.

Shallow ground water at the site was shown to be contaminated by volatile organic compounds (VOCs) that exceed federal maximum contaminant levels (MCLs) which have been established for public water supplies. The VOCs included xylene, trichloromethane (chloroform) and trichloroethylene. Concentrations of nitrate, cadmium, sulfate, total hardness and manganese also exceed MCLs. The PA also confirmed ongoing contamination by the VOC 1,2-dichloroethane (1,2-DCA) in the on-site deep industrial well that supplies non-drinking domestic and various industrial uses at the Jayhawk Plant.

Surface water runoff to the nearby Spring River contained excessive levels of nitrate that exceeded both the MCL for nitrate-nitrogen and Gulf's former National Pollution Discharge Elimination System (NPDES) permit limitation for total nitrogen. Surface water runoff in some areas of the site contained cadmium at concentrations exceeding the MCL. Secondary standards for sulfate, manganese and zinc were also exceeded in the surface water runoff.

On-site soil samples contained heavy metal concentrations of cadmium, chromium, lead and mercury above levels found in background soil samples. There were also several priority pollutant base/neutral and acid extractable organic compounds, polychlorinated biphenyls (PCBs), the pesticide chlordane, and xylene present in the on-site soil samples.

Contamination at the Jayhawk Plant site is probably a result of past activities of the U.S. Government, Department of Defense and Spencer Chemical Company (which operated prior to Gulf), Gulf (now Chevron Chemical Company), as well as the more recent activities of the subsequent operators at the plant: ALLCO Chemical Corporation (ALLCO), Koch Chemical Company (Koch), and Thermex Energy Corporation (Thermex).

1.3 Summary of Screening Site Investigations

Based on the PA report for the former Gulf Jayhawk Plant site, which included information on known ground water contamination resulting in part from subsequent ALLCO activities, further investigation was recommended. Four screening site investigations (SSIs) were recommended based on current ownership by ALLCO, Koch, Thermex and Chevron Chemical Company (Chevron). The purpose of the SSIs was to obtain and analyze environmental samples, and to investigate human and environmental exposure to hazardous substances at the ALLCO and other facilities at the Jayhawk Plant. The SSIs included sampling of ground water, surface water, soil and sediment at the Jayhawk Plant, interviews with facility representatives and a review of KDHE files.

Property and facilities in the westernmost portion of the former Gulf Jayhawk Plant site are currently owned by the PBI/Gordon Corporation. Based on observations made during the PA and its distance from operations at the main plant, further investigation of this portion of the former plant site was not recommended.

SECTION 2: JAYHAWK PLANT GENERAL INFORMATION

2.1 Site Location and Description

The Jayhawk Plant is situated approximately one mile northwest of the city limits of Galena, Kansas, in the southeastern part of Cherokee County in southeast Kansas (Figure 2-1). It is located approximately three miles south of Crestline, Kansas, three miles north of Riverton, Kansas, and one mile east of Alternate Highway 69. The area of investigation consists mainly of land bordered by Spring River on the east and south and Shawnee Creek on the west in Sections 33 and 34, Township 33 South, Range 25 East and in Sections 3, 4, 5, 9 and 10, Township 34 South, Range 25 East (Figure 2-2).

2.2 Site History Summary

The Jayhawk Ordnance Works was built in 1942 by the U.S. Government, Department of Defense for the production of ammonium nitrate explosives. The Spencer Chemical Company (SCC) purchased the facility in 1948 and expanded the existing nitric acid production capacity and added herbicide manufacturing facilities (*KDHE/BER, Jayhawk Plant Sites files*). SCC was also involved in the research and processing of nuclear fuels from 1958 to 1962 (*KDHE/BEHS, Radiation Control Section - Gulf files*).

The Gulf Oil Corporation purchased the site and its subsidiary, Gulf Oil Chemicals, Company operated at the facility from 1964 to 1983. Gulf manufactured explosives, and expanded the herbicide, ammonium nitrate, nitric acid and other specialty chemical operations. In early 1983, Gulf began to shut down manufacturing operations at the plant.

Gulf sold the central industrial complex at the Jayhawk plant to ALLCO in 1983. In 1984, Gulf sold the ammonium nitrate storage facility in the westernmost portion of the former plant site to Bunker Properties, Inc. (*KDHE/BER, Jayhawk Plant Sites files*). This facility was not included in the current screening site investigations (see Figure 2-1). Also in 1984, Gulf sold a considerable portion of the former plant property to Thermex Energy Corporation. Included were the ammonium nitrate prilling towers, coal-fired power plant, 120-acre oxbow lake, and a technical laboratory on the west side of the main complex. In 1985, ALLCO sold the southern half its property to Koch Chemical Company (a subsidiary of Koch Industries, Inc.). Both ALLCO and Koch operate at the central industrial complex at the Jayhawk Plant.

Gulf retained land west and south of the main plant. The southern parcel contained two evaporation ponds which had been used by Gulf for the disposal of process wastewater. Chevron Corporation merged with Gulf Oil Corporation in 1984 and under its subsidiary, Chevron Chemical Company, assumed operational responsibilities for the retained Gulf property, including closure of the two evaporation ponds (*ERT, 1987*). During 1990,

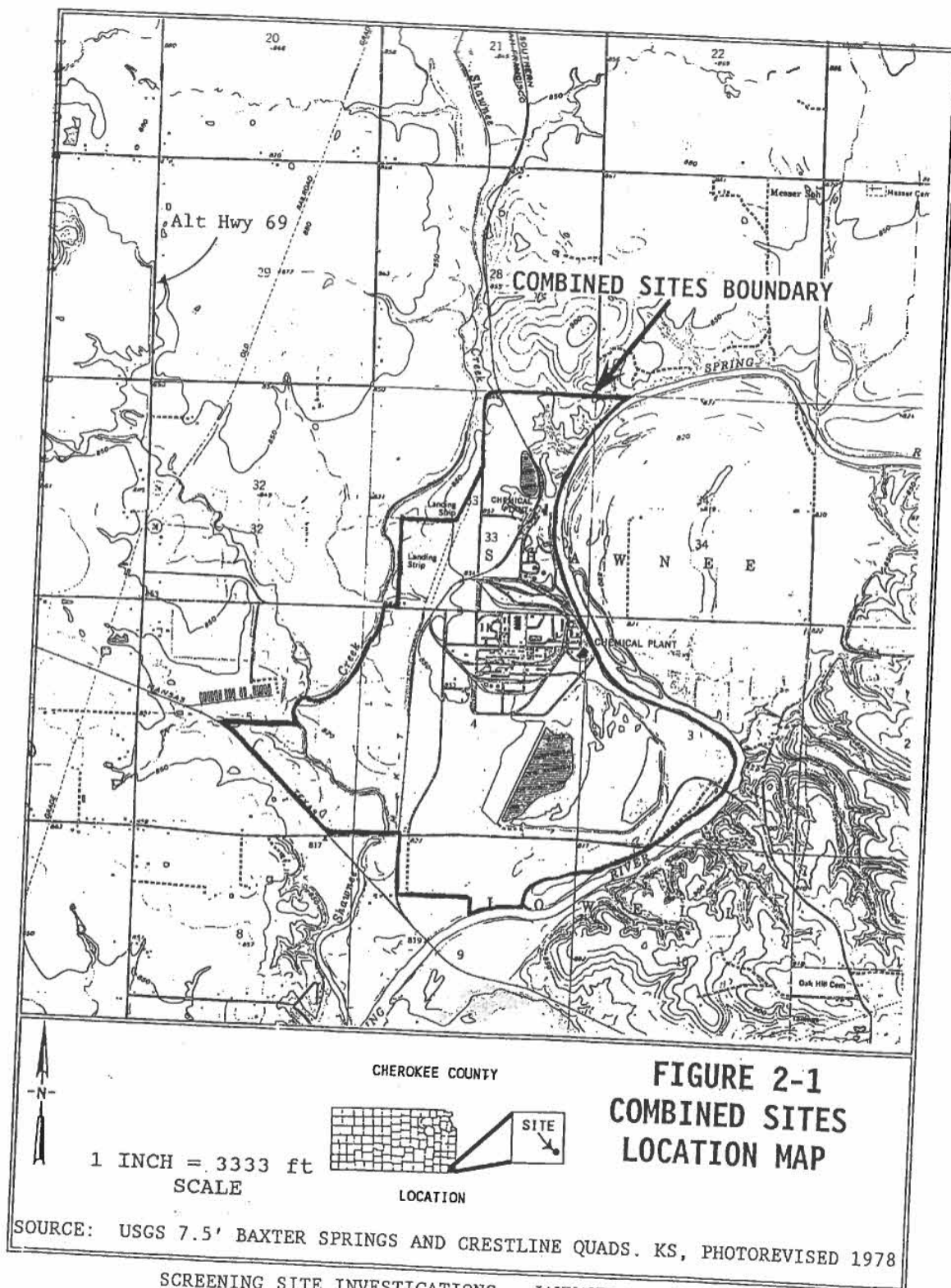
Thermex sold four acres to Universal Tech Corporation who began operation of a laboratory. On March 6, 1992, Chevron foreclosed on, and became owners of, the Thermex real property.

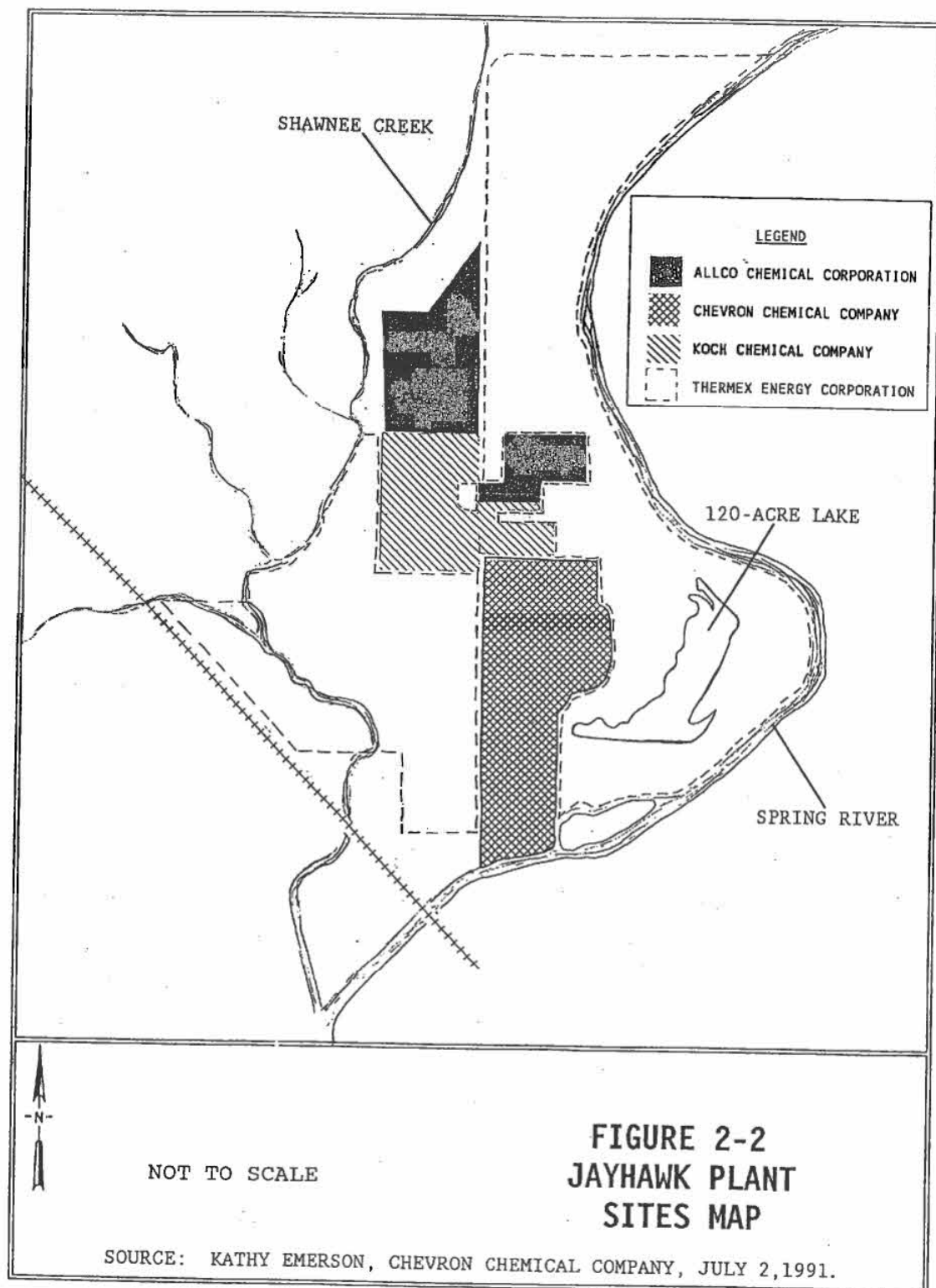
In 1991, ALLCO exercised an option to purchase the western parcel of Gulf property and immediately sold the southern half of this parcel to Koch Industries, Inc. (see Figure 2-2). In early 1993, Allied-Signal purchased the Koch Chemical Company operations at the Jayhawk Plant.

At the present time, the following own property and/or operate in the area of investigation at the Jayhawk Plant:

- Lenzing USA Corporation (dba ALLCO Chemical Corp.)
- Chevron Chemical Company
- Allied-Signal (formerly Koch Chemical Company)
- Universal Tech Corporation
- Puritan Bennett Corporation
- Great Plains Federal Credit Union

Puritan Bennett Corporation leases property at the Jayhawk Plant and manufactures nitrous oxide.





SCREENING SITE INVESTIGATIONS - JAYHAWK PLANT SITES

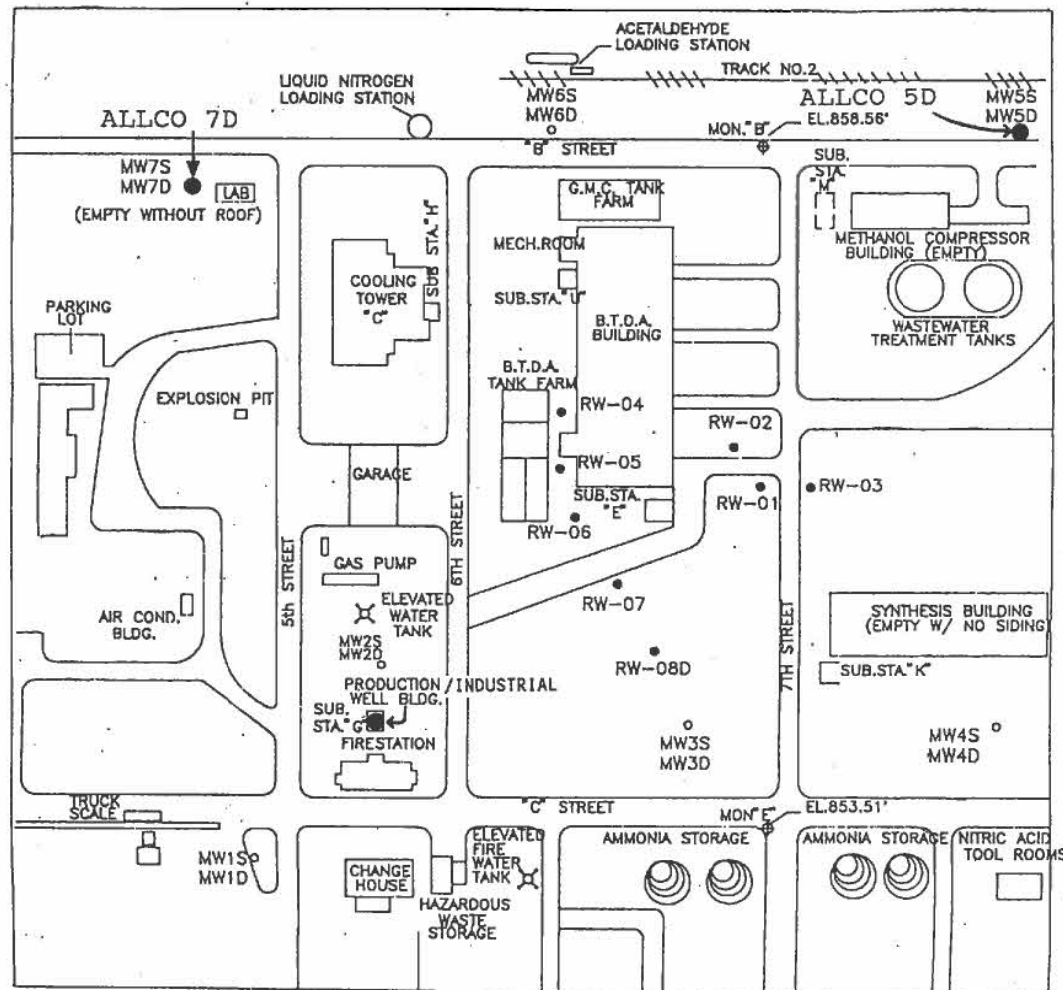
AUGUST 1993

chloroform and trichloroethene. Ground water samples from the deep wells had VOC contamination by chloroform, carbon tetrachloride, tetrachloroethene, trichloroethene, methylene chloride, and acetone. The ALLCO production well continued to indicate the presence of 1,2-DCA at levels ranging from 24 to 62 $\mu\text{g/L}$ (Weston, 1991).

Because of its location with respect to former buildings that had been used for research and processing of nuclear fuels, ALLCO monitoring well 7D was also sampled for radiological analysis of gross alpha and radium-226 activities. The measured activities were 6 and 1.3 picocuries per liter (pCi/L) respectively (Table 6-4). These levels are below established MCLs and are typical of ground water in Mississippian aquifers in the area of the site (Macfarlane and Hathaway, 1987).

6.3 Conclusions

As a result of both historical and current operations at the Jayhawk facility, environmental contamination exists including soil and ground water impacts by inorganic and organic chemicals above regulatory limits. The responsible parties identified including Allco Chemical Corporation, Chevron Chemical Company, which is the successor to Gulf Chemical Company, Koch Chemical Company, and Universal Tech Corporation have entered into a Consent Order with the Kansas Department of Health and Environment (KDHE) to conduct a Remedial Investigation and Feasibility Study (RI/FS) consistent with the National Contingency Plan (NCP).



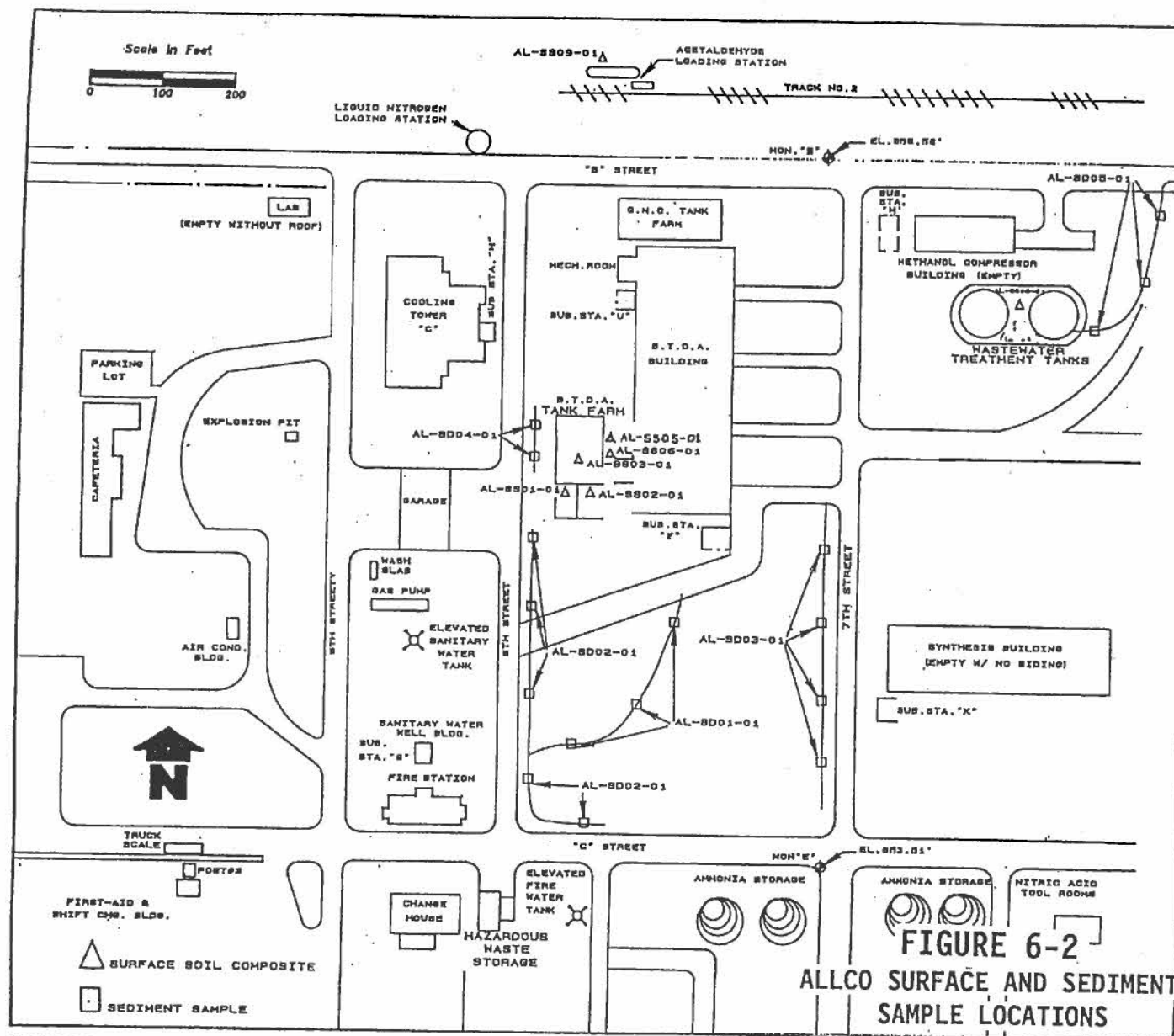
- LEGEND**
- RW-01 RECOVERY WELL
 - MW4S MONITOR
MW4D WELL NEST

SOURCE:



Groundwater Investigation
and Proposed Remedial Action
ALLCO Chemical Corporation,
March 1991

FIGURE 6-1: ALLCO WELL LOCATION MAP



WESTON

SOURCE: HOWARD RYSER, ALLCO CHEMICAL CORP., APRIL 1990.

SCREENING SITE INVESTIGATION - ALLCO CHEMICAL CORPORATION, JAYHAWK PLANT

AUGUST 1992

Table 6-3
Base Neutral and Acid Extractable Analyses
Groundwater, July 1991
ALLCO-Jayhawk Plant Site
Crestline, Kansas
(units in $\mu\text{g/l}$)

BNA	ALLCO 5D	ALLCO 7D	KAL
Benzoic Acid	2.6	ND	-
Di-N-Ocetyl Phthalate	ND	11.2	-

Source: Kansas Health and Environmental Laboratory Analytical Data, 1991.

ABBREVIATIONS:

$\mu\text{g/L}$ = micrograms per liter BNA = Base Neutral and Acids extractable compounds
 ND = Not Detected KAL - Kansas Action Level
 - = No KAL has been established.

Note: Only detected BNAs reported.

Table 6-4
Radiation Analytical Data
Groundwater, July 1991
ALLCO-Jayhawk Plant Site
Crestline, Kansas
(units in picocuries/liter)

Parameter	ALLCO 7D	Error
Gross Alpha	6	2
Radium 226	1.3	0.4

Source: Radiation Chemistry Laboratory Analytical Data, 1991

9.2 Field Activities and Analytical Results

Groundwater, surface water and soil samples were collected from the Thermex site at the Jayhawk Plant. Analytical results are summarized in Tables 9-1 through 9-5. Sample locations are shown in Figures 8-1 and 9-1.

One ground water sample (GW 8) was collected at a location between the Spring River and the area where discharge from the plant stormwater sewer system enters the 120-acre lake basin. Analyses detected no priority pollutant pesticides, PCBs, VOCs or BNAs. Analysis for standard inorganic chemistry revealed that the filtered sample contained an excessive concentration of manganese and was moderately hard.

A sample of drainage water discharging into the Spring River (SW 4), was collected from Gulf's former ammonium nitrate production facility (prilling towers), filtered and analyzed for inorganics. This sample was found to contain very high concentrations of nitrate and manganese. A sample collected at the same location for radiological analysis contained 5 and 1.5 picocuries per liter (pC/L), respectively, of gross alpha and radium 226, which are below applicable drinking water standards. A sample collected from this location during the preliminary assessment contained 12 pC/L gross alpha (KDHE/BER, *Gulf-Jayhawk Plant PA Report*, 1990).

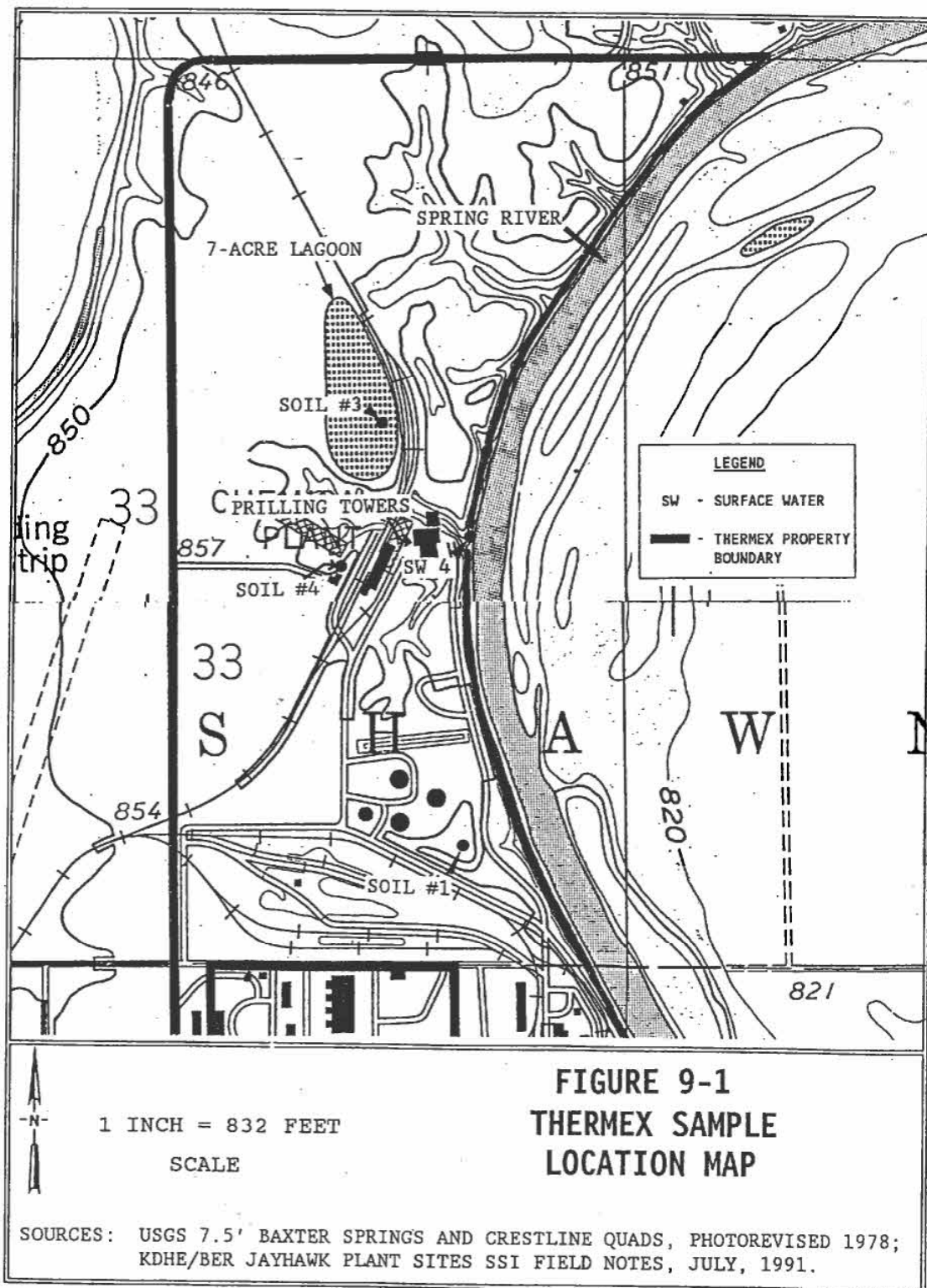
Liquid waste discharging from the stormwater sewer system into a concrete-lined drainage way to the 120-acre lake was sampled and analyzed for pesticides, PCBs, VOCs, BNAs and standard inorganic chemistry (SW 5 in Figure 8-1). Two VOCs were detected in the sample: 1,2-DCA and acetone. The former was detected at a level below drinking water limits and the latter was reported to be present in a large quantity, although not quantified by the laboratory. The KAL for acetone has been established at 1,000 $\mu\text{g/L}$. A low level of benzoic acid also detected in sample SW 5. Manganese was present at a level exceeding the KAL. (Refer to Tables 9-1, 9-2, and 9-3).

Three composite soil samples were collected at a depth interval of 0-1 foot from the northern portion of the Thermex property and analyzed for standard inorganic chemistry (Soil 1, Soil 3 and Soil 4 in Figure 9-1). Soil 1 was collected from the bed of a shallow erosional drainage ditch situated inside the former ammonium nitrate 'liquor' tank farm, just west of an outlet culvert in the tank farm berm that allows drainage to the Spring River. A composite sample was collected from this area (0-1 feet) and was shown to contain 2,250 mg/kg nitrate-nitrogen. A thin, white precipitate covered the drainage ditch where the sample was collected and the area resembled the description of an area where dumping of liquid chemical wastes by the ALLCO Chemical Company had allegedly occurred (Anonymous, 1991). Analysis of the sample showed it to have a pH of 4.5.

Soil 3 was a composite sample (0-1 foot depth) collected from the bed of the 7-acre pond north of the former ammonium nitrate production facility. Soil 4 was collected from an area southeast of a storage building at the facility. Nitrate concentrations in both samples were below Kansas Regulatory Guidelines for nitrate in soil.

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SCREENING SITE INVESTIGATION - THERMEX ENERGY CORPORATION, JAYHAWK PLANT
AUGUST 1993

Table 9-3
Base Neutral and Acid Extractable Organic
Surface Water, July 1991
Thermex-Jayhawk Plant Site
Crestline, Kansas
(units in ug/l)

BNA	SW 5	KAL
Benzoic Acid	2.4	-

* Several unidentified peaks were indicated as present

Source: Kansas Health and Environmental Laboratory Analytical Data, 1991

ABBREVIATIONS:

BNA = Base Neutral and Acid Extractable Compounds

µg/l = micrograms per liter

SW = Surface Water KAL = Kansas Action Level

Note: Only detected BNAs reported.

Table 9-4
Radiation Analytical Data
Surface Water, July 1991
Thermex-Jayhawk Plant Site
Crestline, Kansas
(units in picocuries/liter)

Parameter	SW 4	Error
Gross Alpha	5	2
Radium 226	1.5	0.4

Source: KDHE Radiation Chemistry Laboratory Analytical Data, 1991

ABBREVIATION:

SW = Surface Water

SECTION 10. SCREENING SITE INVESTIGATIONS SUMMARY

The Jayhawk Plant site was once a major US Government defense factory for the manufacture of explosives in the 1940's. Then it became a private enterprise explosive and fertilizer plant facility through the 1950's and 1960's by Spencer Chemical Company. Some additional US government defense related nuclear work was carried out in the 1960's by Spencer Chemical. Specialty chemical manufacturing was carried out as well, particularly in the 1970's and 1980's by Gulf (now Chevron). Large evaporation ponds, lagoons and landfills were used to process all the process wastes, storm water runoff and related by-products of this major manufacturing facility. In the 1980's the Jayhawk Plant site was sold off into four parcels comprised of ALLCO, Koch, Thermex and Chevron properties. Koch carries out significant chemical manufacturing activities on both ALLCO and Koch properties. ALLCO is also involved in specialized chemical manufacturing on its property. Thermex attempted to carry on the original Spencer and Gulf explosive and fertilizer work, but is no longer active on the site. Chevron has not carried out any industrial activity on the site since its merger and purchase of Gulf.

The nearly half century of industrial activity at the Jayhawk Plant facility has resulted in contamination of the ground and surface waters and the soils. The purpose of the SSIs was to obtain and analyze environmental samples, and to investigate human and environmental exposure to hazardous substances at the ALLCO and other facilities at the Jayhawk Plant.

The ground water is contaminated by the following VOCs, which exceeded KALs: ortho &/or para xylene, tetrachloroethylene (tetrachloroethene), trichloroethylene (trichloroethene), 1,2-dichloroethane (1,2-DCA), carbon tetrachloride, methylene chloride, chloroform, and acetone. Concentrations of nitrate, cadmium, sulfate, manganese and total hardness also exceed KALs. Ongoing VOC contamination by 1,2-DCA in the deep industrial well has also been documented.

Surface water samples have excessive levels of manganese while the NPDES samples have a very high nitrate concentration that exceeds the KAL and former NPDES permit limitations. Cadmium, sulfate and zinc concentrations also exceed KALs.

Soil samples have heavy metal concentrations of cadmium, chromium, lead and mercury above background levels. There are several priority pollutant BNAs, PCBs and ortho &/or para xylene indicated in soil samples. There are also small quantities of VOCs present in the soils.

The site needs further review by the responsible parties to determine the full extent of the pockets of contamination and clean up the site.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
Division of Environment
Bureau of Air and Radiation
Radiation Control Program

M E M O R A N D U M

DATE: August 5, 1993

TO: Investigation File
Ref. Previous Investigation #82-25 Jayhawk Plant (Gulf Chemical) and
Gulf Oil Chemical Co. License # 26-C229-02

FROM: Harold Spiker *HS*

SUBJECT: Site Survey At The Jayhawk Plant By The Nuclear Regulatory Commission

Early in August 1992, the author received a telephone call from Mr. Wesley Holley of the NRC Region IV office (817/860-8198) inquiring about the Gulf Oil Chemical Co. operations at the Jayhawk Plant, near Crestline, Kansas. He indicated that, based upon some recent problems discovered at Gulf Oil facilities in Oklahoma, they thought they should look at other Gulf Oil facilities in the region. I explained about the decontamination activities which we regulated at that facility back in 1982 and sent him a copy of the investigation report (#82-25) and subsequent licensing documentation from the Gulf Oil Chemical Co. license (#26-C229-02) file.

Mr. Holley telephoned later and asked if we would arrange for a site survey at the Jayhawk Plant and plan to accompany him during such. I agreed.

Since the Jayhawk Plant facilities are currently owned in part by three different companies, the author contacted the following individuals and made arrangements for a site survey to be conducted on September 29, 1992:

1. Mr. Howard Ryser, Vice President (Tele. 9-16-92)
Manufacturing
Allco Chemical Corporation
P.O. Box 247
Galena, KS 66739
316/783-1321
2. Mr. Thomas Segar, Environmental Manager (Tele. 9-18-92)
External Affairs
Koch Refining Co.
P.O. Box 64596
St. Paul, Minnesota 55164
612/437-0701

3. Ms. Kathy Emerson, P.E. (Tele. 9-16-92)
Environmental Projects Engineer
Environment & Health Protection
Chevron Chemical Company
6001 Bollinger Canyon Road
San Ramon, California 94583-0947
510/842-5890

All three of the individuals contacted gave their approval for the site survey and Mr. Segar and Ms. Emerson indicated that they would defer to Mr. Ryser or his staff to accompany us on the site survey.

I also visited with Mr. Rob Elder and Ms. Pam Chaffee, of KDHE's Bureau of Environmental Remediation, regarding the Jayhawk Plant since they have been involved in an ongoing site screening investigation at that facility. Ms. Chaffee agreed to accompany me on the site survey.

Arrangements were made for the author and Ms. Chaffee to meet Mr. Holley at the junction of Hwy. 69 ALT and the Jayhawk Plant access road at approximately 10:30 AM on September 29, 1992 and then to proceed to the site to meet Mr. Ryser.

The author, Ms. Chaffee and Mr. Holley met with Mr. Ryser and Steve Mahaffey at the Allco site office building. It was agreed that Mr. Mahaffey would serve as a guide/escort for our site survey. The survey was conducted by the author using a Ludlum Model 19 Micro-R Meter, Serial #37446. Mr. Holley, of the NRC, also used a Ludlum Model 19 Micro-R Meter.

The Jayhawk Plant property and facilities surveyed are indicated on Attachment 1. Since the site is so large (approx. 1200 acres), only those areas and facilities where radioactive materials were known or suspected of being used or stored were surveyed. Areas used for any kind of dumping were also surveyed. These locations were determined on the basis of information contained in KDHE files, provided by Jayhawk Site personnel, and obtained from old Jayhawk Site photographs. No radioactivity above background readings of approximately 5 uR/hr were detected at any of the areas and facilities surveyed except for a pile (approximately 18' in diameter and 5' in height) of what appeared to be a catalyst material. See Attachment 2. Readings obtained at contact with the pile were approximately 20 uR/hr. The location of this material is indicated on Attachment 1, apparently on property owned by Chevron Chemical Co. A sample of this material was collected and returned to the KDHE Radiation Laboratory for analysis. See attached lab reports. The findings of the survey were discussed by the survey team (Holley, Spiker and Chaffee) at an exit interview with Mr. Ryser and Mr. Mahaffey at approximately 3:30 PM. The author discussed the pile of material found on the Chevron Chemical Co. property and indicated that we would report our findings to him regarding our evaluation of the material. See Attachment 4.

Unless the concentration of radioactive material in the catalyst requires further action, this investigation is considered closed.

A copy of the NRC report on this survey will be attached to this report. See Attachment 5.

C Mr. Wesley Holley
Ms. Pam Chaffee

**LISTING OF AREAS SURVEYED
JAYHAWK PLANT SITE
September 29, 1992**

See Attached Map

1. Land area where sludge was pumped and spread - void of vegetation. Apparently the sludge contained Ammonium Nitrate. Allco Chemical Corp.
2. Area where a large pit was dug for the disposal of debris from the demolition of the nuclear fuels building. The debris was placed in the pit, burned, and the pit filled. Allco Chemical Corp.
- 3.a. Old landfill. Allco Chemical Corp.
- 3.b. Old sanitary landfill (newer). Allco Chemical Corp.
4. Area where trash was dumped and burned at one time. Allco Chemical Corp.
5. Remaining foundation of the old nuclear fuels building. Allco Chemical Corp.
6. Old Cafeteria building. Allco Chemical Corp.
7. New Allco office building. Not surveyed.
8. Quality Control Building. Possible use if this facility in the uranium nuclear fuels process. Koch Refining Co.
9. Plant #1 - Possible use if this facility in the uranium nuclear fuels process. Koch Refining Co.
10. Old dump and burning areas. Koch Refining Co.
11. Open drainage trench to evaporation ponds. Process chemicals were dumped here. Koch Refining Co.
12. Old lateral field. Koch Refining Co.
13. Pile of catalyst material (NORM). Koch Refining Co.
14. Quaker Valley salvage area. Chevron Chemical Co./Koch Refining Co.

**AREAS SURVEYED
JAYHAWK PLANT SITE
September 29, 1992**

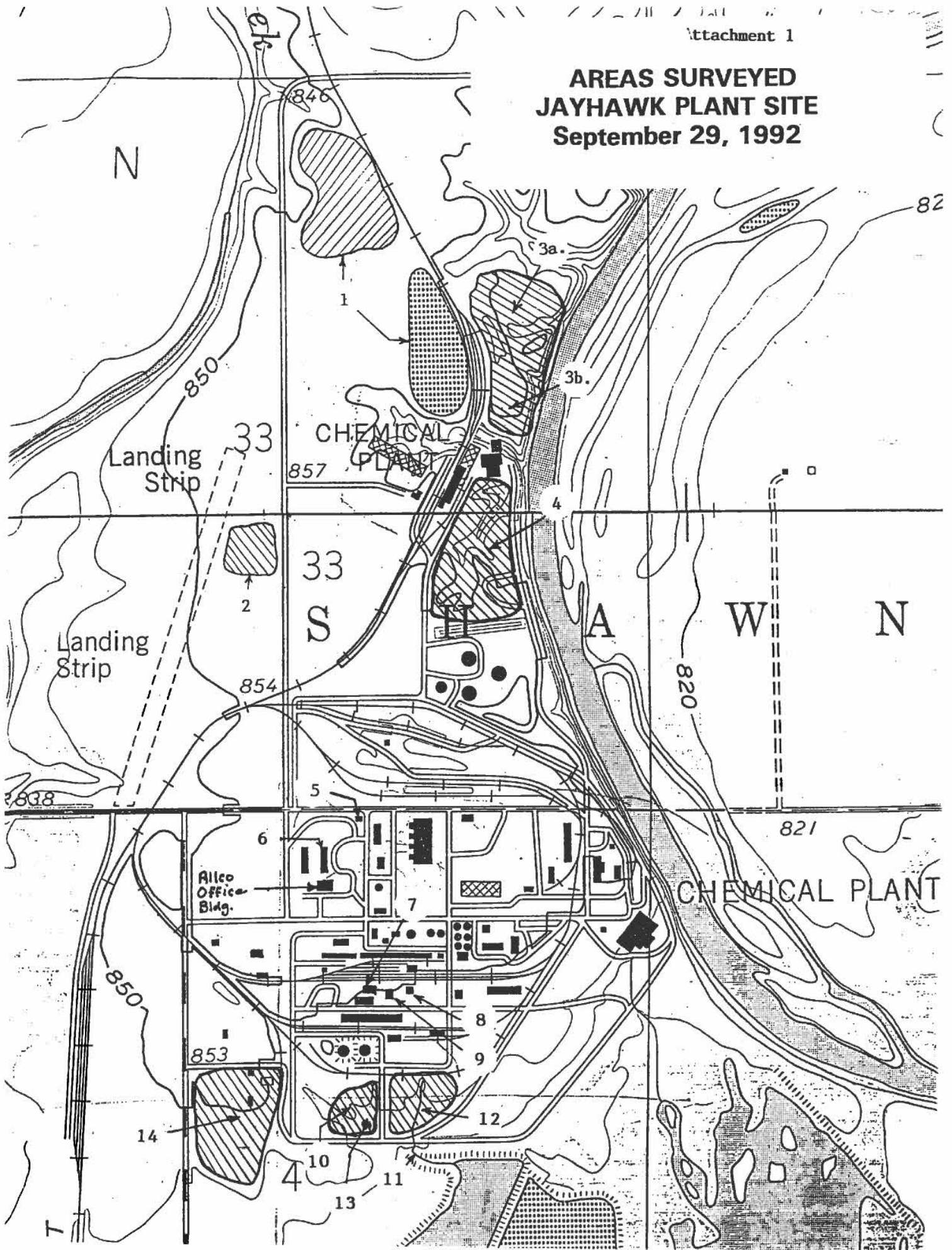




Figure 1
Pile of catalyst material in Area 10.



Figure 2
Catalyst material in Area 10.

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
 Division of Laboratories and Research
 Radiation Chemistry Laboratory
 Bldg. 740, Forbes Field, Topeka, KS 66620-8420
 (913) 296-1630

Attachment 3

REPORT OF LABORATORY ANALYSES

Report To: Radiation Control Acct Code: RT Sample ID:

Location: JAYHAWK PLANT PROPERTY
 Source:
 Type: ~~Soil~~ CATALYST MATERIAL
 Coll By: H.SPIKER
 Del By: ~~BY HAND~~ DAVE WHITEFILL

Lab Number: 306611RC

Date Collected: 9-29-92
 Date Received: 10- 6-92
 Date Reported: 10-30-92

Remarks: RESULT=PCI/KG.

* * * * *

ANALYTICAL RESULTS

Results are in Units of Picocuries per Kilogram

Parameter	Concentration	Error	Det. Limit	Confidence Level
Gross Alpha	NA			
Gross Beta	NA			
Tritium	NA			
Total Solid	NA			
Chromium-51	ND		35	
Manganese-54	ND		44	
Iron-55	NA			
Iron-59	ND		51	
Cobalt-57	ND		17	
Cobalt-58	ND		45	
Cobalt-60	ND		56	
Nickel-63	NA			
Zinc-65	ND		48	
Gallium-67	NA			
Strontium-89	ND		200	
Strontium-90	ND		200	
Zirconium-95	ND		35	
Molybdenum-99	ND		73	
Technetium-99m	NA			
Ruthenium-103	ND		29	
Ruthenium-106	ND		269	
Indium-111	ND		12	
Iridium-192	ND		12	
Iodine-123	NA			
Iodine-125	NA			

Sample Number:

Lab Number: 306611RC

Parameter	Concentration	Error	Det. Limit	Confidence Level
Iodine-129	NA			
Iodine-131	ND		33	
Cesium-134	ND		44	
Cesium-137	ND		49	
Barium-140	ND		26	
Ytterbium-169	ND		24	
Carbon-14	NA			
Phosphorus-32	NA			
Radium-226	18700	589		
Radium-228	NA			
Radon-222	NA			
Gross Uranium	653	47		
Potassium	NA			

All results are expressed at the 95% confidence level except as noted.

NA - Not Analyzed

ND - Not Detected

Analyst: HC

Copy: RAD.CONTROL

COPY



Department of Health and Environment

Robert C. Harder, Secretary

Reply to (913) 296-1561

September 28, 1993

HOWARD RYSER
VICE PRESIDENT MANUFACTURING
ALLCO CHEMICAL CORPORATION
P O BOX 247
GALENA KS, 66739

Dear Mr. Ryser:

This is in reference to the tour and radiation survey of the Jayhawk Plant facilities, which was conducted by the author and Ms. Pam Chaffee of KDHE's Bureau of Environmental Remediation on September 29, 1992. Our participation in the survey was requested by Mr. Wesley Holley of the Nuclear Regulatory Commission (NRC) Region IV Office, who participated in the survey. Mr. Steve Mahaffey of Allco Chemical Corp. served as our guide and escort during the survey.

The areas surveyed are indicated in Attachment 1. No radioactivity above background levels were detected at any of the areas and facilities surveyed except for a pile (approximately 18' in diameter and 5' in height) of what appeared to be a catalyst material located at the south end of the facility on property apparently belonging to Chevron Chemical Co. at the time of the survey, identified as #13 in area #10 on Attachment 1. A sample of this material was collected and returned to KDHE's Radiation Chemistry Laboratory for analysis. The sample was found to contain small quantities of naturally occurring Uranium and Radium-226. See attached laboratory report. This material does not appear to present a hazard in its present location and configuration, and no further actions are required at this time. However, it is recommended that KDHE be consulted prior to disposing of this material to determine what the current regulatory requirements are for naturally occurring radioactive material (NORM).

We appreciate the courtesy and cooperation extended to the survey team regarding this effort.

If you have questions regarding this matter, please do not hesitate to contact me at the number above.

Sincerely,



Harold L. Spiker, Chief
Environmental Radiation & Emergency Preparedness Section
Bureau of Air and Radiation
Radiation Control Program

HLS/psw

Attachments

C Wesley Holley, USNRC
Pamela Chaffee, KDHE
Thomas Segar, Koch Refining Co.
Ms. Kathy Emerson, Chevron Chemical Co.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

Attachment 5

NOV 24 1992

RECEIVED

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RADIATION CONTROL
PROGRAM

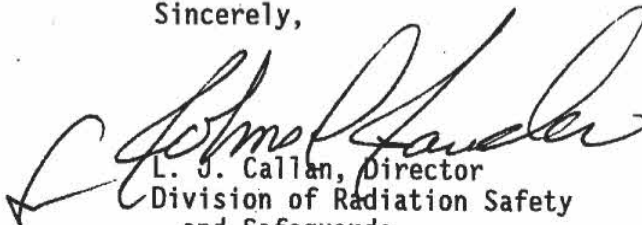
State of Kansas Department of
Health and Environment
ATTN: Harold L. Spiker, Chief
Environmental Radiation and
Emergency Preparedness Section
Bureau of Environmental Health Services
Division of Health
109 S.W. 9th
Mills Building, Suite 602
Topeka, Kansas 66612

Dear Mr. Spiker:

This forwards are the findings of a visit to the Jayhawk Works site made by yourself and Mr. Wesley L. Holley of the U.S. Nuclear Regulatory Commission (NRC), Region IV office, on September 29, 1992. This visit was part of an NRC review of potentially contaminated sites throughout the nation. Within the scope of this visit, no measurements or observations indicated or suggested that any portion of the site is contaminated by NRC-regulated radioactive material.

If you have any questions concerning the visit or this letter, please call Mr. Holley at (817) 860-8198.

Sincerely,


L. J. Callan, Director
Division of Radiation Safety
and Safeguards

Enclosure: As stated

ATTACHMENT

BACKGROUND:

The former 1200-acre Spencer Chemical Corporation Jayhawk Works site is located in the extreme southeast corner of the state of Kansas, approximately 6 miles north of Oklahoma and 7 miles west of Missouri. Spencer Chemical Corporation (SCC) had a shipping designation of Military, Kansas. The site is still known as the Jayhawk Works even though SCC no longer owns it. Currently the site is divided and has several owners.

SCC was licensed by U.S. Atomic Energy Commission (AEC) to possess enriched uranium and thorium. The AEC licenses allowed SCC to receive UF₆ and to process it into enriched uranium oxides and uranium carbides in the physical form of fused ceramic pellets and finely divided powder. License SNM-329, which authorized this process for production, expired on September 30, 1962. License SNM-154, which authorized a pilot plant for this process, was terminated on December 28, 1964.

SCC had ceased operations and had disposed of its licensed material by May 12, 1961. During the decontamination of the site, a process building was decontaminated, dismantled, burned, and buried. Other areas of the site were decontaminated, surveyed, and returned to unrestricted use.

After the termination of SCC's AEC license SNM-154 in 1964, Kansas became an Agreement State. On September 29, 1982, the state issued a license to Gulf Oil Corporation (owner of the Jayhawk Works at that time) requiring Gulf to decontaminate the site, if needed, and to perform a thorough final survey. Gulf Oil Corporation (GOC) performed radiation and contamination/smear surveys of the areas where uranium and thorium had been used by SCC. GOC used nitric acid, hammer and chisel, and jackhammer to clean up residual radioactivity. The areas were decontaminated according to the criteria in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material"; U.S. Nuclear Regulatory Commission, Division of Fuel Cycle and Material Safety; July 1982. The waste from these decontamination activities was shipped to a waste vendor for burial.

Where the dismantled process building had been burned and buried, an area approximately 40 feet by 200 feet, GOC core sampled in 12 places in an evenly spaced grid. Samples were taken from the surface to a 10-foot depth at 1 to 2-foot intervals. The maximum concentrations were 0.5 pCi per gram of soil for both uranium and thorium. These samples also revealed that a clay bed had been placed at 6 feet under the material that was burned, a 1-foot clay/rock mixture had been placed over the burned material, and 1 foot of topsoil had been placed over the area.

After GOC performed the final survey, the state of Kansas, Department of Health and Environment, performed a final confirmatory survey and subsequently terminated GOC's license.

Presently the Jayhawk Works site has been divided and is owned by Allco Chemical Corporation, Koch Refining Company, and Chevron Chemical Company.

ORNL POTENTIALLY CONTAMINATED SITE ACTIVITIES

Oak Ridge National Laboratory (ORNL) was contracted by NRC to evaluate approximately 17,000 retired licenses for potential to have significant contamination. Using the criteria that ORNL developed and not knowing about the decommissioning and surveys of the Jayhawk site performed under auspices of the state of Kansas, SCC was ranked ninth in the nation because of the large amounts of licensed material possessed and processed, and because of the burned and buried building.

REGION IV ACTIVITIES

Upon learning of the high rank of SCC on the ORNL list, Region IV gave high priority to determining the history and condition of the Jayhawk site. After reviewing the available docket files on SCC, Region IV contacted the state of Kansas to determine their knowledge about the site. In learning of the activities of the state of Kansas concerning SCC and in reviewing the decommissioning and survey activities documented by Kansas, NRC identified nothing to indicate that SCC had not been decommissioned adequately.

However, in view of its size and sketchy history, Region IV arranged to visit the Jayhawk site.

On September 29, 1992, a Region IV inspector accompanied 2 State of Kansas (Agreement State) personnel on a tour of the Jayhawk site. One of the Kansas personnel had been involved in the GOC cleanup of the site and the final confirmatory survey. Our guide during this tour was an employee of Allco Chemical Corporation.

The NRC inspector and Kansas personnel performed a cursory survey utilizing micro R meters. Four buildings were surveyed where Jayhawk personnel thought radioactive material might have been during the SCC era. Also, 7 potential and actual waste/trash/burial/dump sites were surveyed. These sites were determined from information provided by State of Kansas personnel, Jayhawk site personnel, and old photographs.

The approximate average background of the Jayhawk site was 6-8 micro R per hour. All exposure rates were determined at approximately 3 feet from the surface of the area surveyed. The exposure rates measured at 3 feet and at the surface were approximately the same. Exposure rates generally varied from 4-13 micro R per hour, although in a former waste dump area (Quaker Valley) a small area (approximately 6 inches by 6 inches) was found to read 14 micro R per hour with the general area average exposure rate of approximately 7-8 micro R per hour.

In another former SCC trash dump area, there was a 4-foot high by 15-foot diameter pile of what appeared to be black catalytic beads. The maximum exposure rate was approximately 30 micro R per hour at 3 feet from the surface and about 50 micro R per hour at the surface of the pile. A sample analyzed by the State of Kansas indicated the radioactivity to be from natural,

nonlicensable sources. In this trash dump area the exposure rate varied from 5-9 micro R per hour except for the pile of beads.

CONCLUSIONS

Because of the decommissioning efforts of GOC and the final confirmatory survey performed by the State of Kansas, Region IV concludes that the licensed material process areas at the Jayhawk site probably were decontaminated adequately for unrestricted use. Surveys performed by the NRC Region IV inspector and the State of Kansas on September 29, 1992, of the buildings and waste/trash/burial/dump sites of potential contamination resulted in exposure rates of such low magnitude that further investigation appears not to be warranted. The Jayhawk site appears to have been adequately decontaminated such that unrestricted occupation of the site will not result in significant radiation exposure from this material.

We recommend that the SCC/Jayhawk site be removed from the ORNL list of potentially contaminated sites.