



# ecology and environment, inc.

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International Specialists in the Environment

EPA

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SSI SUMMARY MEMO

PROJECT: 17523

CAT. T3 2.1

SUBMITTED TO: Jim Quint, EPA Region IX, Site Assessment Manager

PREPARED BY: Janet Kaps, Ecology and Environment, Inc. *JK*

THROUGH: Howard Edwards, Ecology and Environment, Inc. *HE*

DATE: September 23, 1991

SITE: Old Campus Landfill/U.C. Davis

EPA ID#: CAD982401432

cc: FIT Master Files

FIT REVIEW/CONCURRENCE: *James M. James 9/23/91*

## 1. INTRODUCTION

Under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA) the U.S. Environmental Protection Agency has tasked Ecology and Environment, Inc.'s Field Investigation Team (FIT) to conduct a Screening Site Inspection of Old Campus Landfill/U.C. Davis in Davis, California. This report summarizes FIT's investigative efforts.

## 2. SITE DESCRIPTION

The Old Campus Landfill/U.C. Davis site is located off of Old Davis Road approximately 1 mile south of the campus of the University of California at Davis (T. 8 N., R. 2 E., sec. 21, Mount Diablo Baseline and Meridian; lat. 38°31'10" N., long. 121°45'30" W.) (see Figure 1, Site Location Map). The site covers approximately 15 acres and its northern and eastern boundaries are adjacent to agricultural land. The western boundary of the site is Old Davis Road and the southern boundary of the site is a levee on the north side of the South Fork of Putah Creek (1,2).

The site is owned by the University of California, Davis (U.C. Davis). A large portion of the 15-acre parcel is leased to the Department of Energy (DOE) for radiologic research associated with their Laboratory of Energy-Related Health Research (LEHR) (2). The remainder of the land is currently administered by the U.C. Davis Department of Animal Resources (ARS) (2).

The site consists of DOE laboratory buildings, dog kennels, low-level radioactive waste burial trenches, a strontium-90 leach field, and radium-226 seepage pits. The site also consists of several U.C. Davis old chemical storage/dispensing areas, low-level radioactive waste burial trenches, and three inactive UC Davis disposal areas (2,10) (see Figure 2, Facility Map).

There are six unlined low-level radioactive burial trenches on site associated with DOE activities. Four of the trenches are located in the southwest corner of the site, one is near the radium-226 seepage pits and one of the trenches may be located near the strontium-90 tank system (3,4).

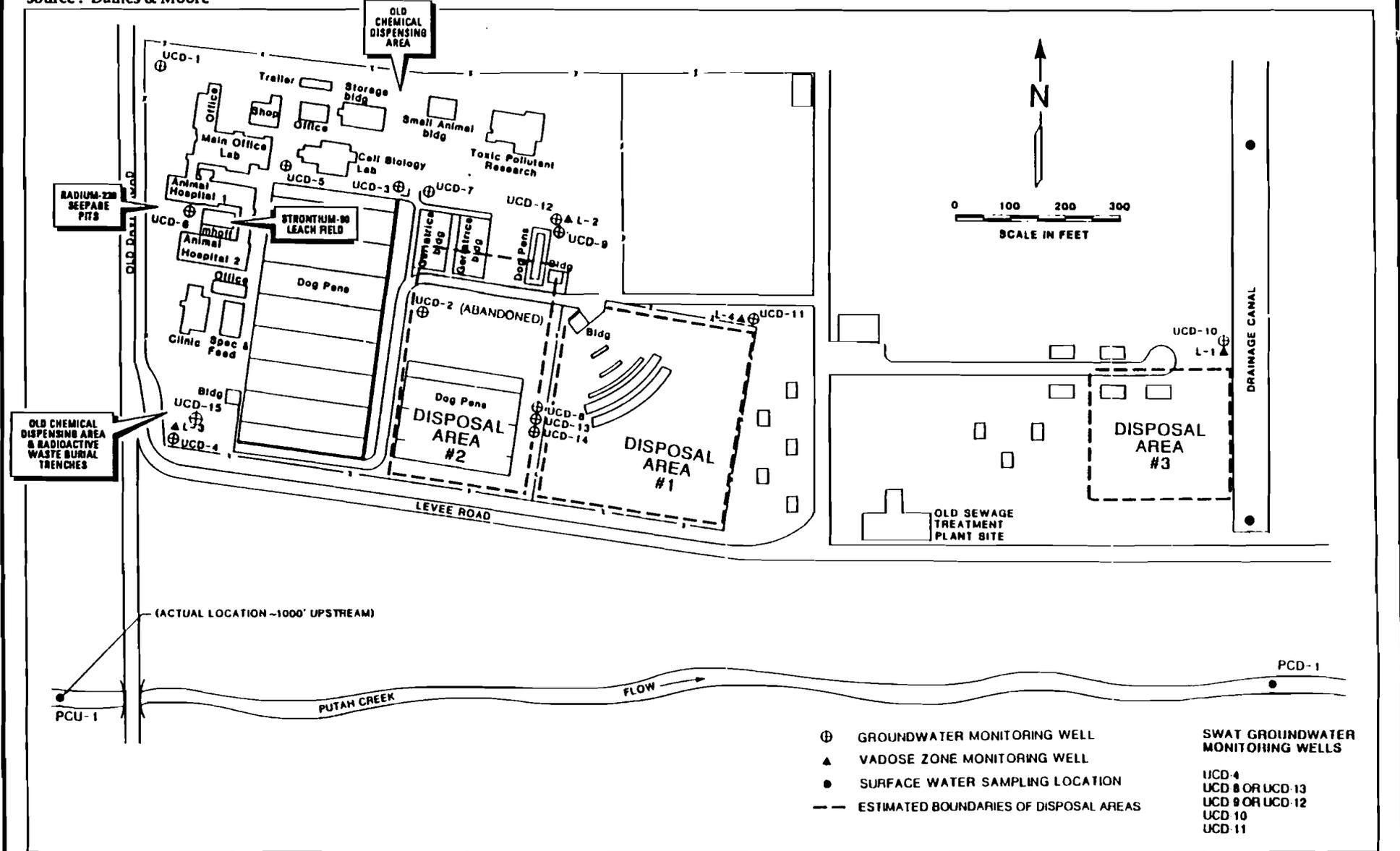
There are 11 underground interconnected concrete tanks which contain approximately 35,000 gallons of sludge effluent (dog feces) contaminated with strontium-90. There is no secondary containment associated with these tanks. The bottom of the tanks are approximately 8 feet below ground surface. There are leach lines associated with these tanks. There is a process within the tanks referred to as the Imhoff System (8). The Imhoff System is a type of settling tank which also involved anaerobic digestion and an ion exchange process (11).

There are two underground tanks used to store radium-contaminated waste. These tanks are dual-chambered septic tanks which have leach lines and seepage pits associated with them. Dog fecal material contaminated with radium-226 was disposed of in these tanks. The waste was not processed in these tanks. These septic tanks operated similar to typical septic systems (9).

There are two former chemical dispensing areas located on site. These chemical areas were used for bulk storage and dispensing of chemicals. It is unknown what type and quantity of chemicals were dispensed in these areas. The type of containment associated with these areas is also unknown (3).

The three disposal areas were each operated during a different time period by U.C. Davis. All three disposal areas have been inactive since the mid-1960s. Two of the disposal areas are partially covered by LEHR facility structures and the other is located underneath unused land administered by the U.C. Davis Department of Animal Resources Services (ARS). The oldest of the three disposal areas (disposal area #1) is presently covered by the Cobalt-60 Irradiation Field (see Figure 2, Facility Map) (2).

source : Dames & Moore



ecology & environment, inc.

Figure 2  
 -- FACILITY MAP --  
 OLD CAMPUS LANDFILL / UC DAVIS  
 Davis, CA

According to U.C. Davis employees, wastes generated by U.C. Davis and deposited in the old landfill areas included municipal wastes, construction wastes, laboratory chemical wastes, sanitary waste, petroleum wastes, campus incinerator ash, and low-level radioactive waste (2,3). Detailed records of all wastes deposited were not maintained by U.C. Davis with the exception of low-level radioactive waste (3).

### 3. APPARENT PROBLEM

Contamination of soil and groundwater have been detected associated with the site. Hexavalent chromium above Maximum Contaminant Levels (MCLs) has been detected in drinking water wells near the site (2).

In 1984 an assessment of the site was conducted for DOE to assess radiological and chemical contamination associated with LEHR activities. It appears that this study was commissioned by DOE and no regulatory agencies were involved. DOE conducted another site assessment in 1988 to assess past site activities so that the site could be priority ranked by DOE for future site investigation (2).

In 1988 and 1989 a consultant to DOE and U.C. Davis investigated potential radioactive contamination in an effort to evaluate the potential impact on soil and groundwater downgradient of the site. A total of 43 soil borings were drilled and 36 backhoe trenches were excavated. Tritium, strontium-90, and radium-226 were detected in soil samples collected beneath the site. Several radioactive burial trenches were also located during the backhoe excavation. It is important to note that not all documented trenches were located. A total of nine wells were constructed for this investigation. Eight wells were completed in the upper aquifer, one well was completed in the deeper aquifer. Analysis of samples collected at this time indicated the presence of chromium and lead above EPA Maximum Contaminant Levels (MCLs) in groundwater beneath the site. Radium-226 was detected in a sample collected from one of the groundwater wells and chloroform and methylene chloride were detected at elevated levels in two other groundwater wells (2).

In March 1990, consultants to U.C. Davis investigated elevated levels of hexavalent chromium and nitrate concentration in off-site private wells used for drinking water. The consultants stated that no definite conclusions could be made regarding the hexavalent chromium contamination due to lack of regional data (2). There appear to be no other possible sources that may be contributing to groundwater contamination between the site and the off-site private wells.

In July 1990 a Solid Waste Assessment Test (SWAT) of the site was completed for U.C. Davis. The SWAT investigation was performed to assess the possibility of leakage from the Old Campus Landfill and the potential for impacts to groundwater, surface water, vadose zone water, and soil. Additional groundwater wells were installed and four rounds of sampling were conducted. Soil, groundwater, and surface water samples were collected. Evaluation of sampling data collected for the SWAT led to the following conclusions made by consultants to U.C. Davis: elevated levels

of heavy metals, primarily chromium and lead, and volatile organic compounds (VOCs) including, chloroform, 1,1-dichloroethane, and 1,1-dichloroethene, were detected in on-site groundwater monitoring wells; VOCs and the radionuclides tritium, strontium-90, and radium-226 were detected in soil. Analysis of surface water samples collected in the South Fork of Putah Creek indicated that no radionuclides above background levels were detected. Metals and VOCs were detected but there are other upstream sources, such as the U.C. Davis Wastewater Treatment Plant, that may be contributing to the contamination (2).

In order to continue their evaluation of the site, DOE installed seven shallow wells at depths between 55 to 70 feet and three deep wells at depths to 120 feet in 1990. To date, there is only data available from two rounds of quarterly sampling. DOE was also involved in surface water sampling from Putah Creek and obtained and analyzed 55 soil borings for a large number of potential contaminants on site (10).

To date, there are a total of 23 groundwater monitoring wells on site. One of the monitoring wells which was installed through a landfill cell, UCD-2, was abandoned in 1990 (10). This well may have acted as a conduit for landfill leachate to reach the shallow aquifer (2).

#### 4. REGULATORY INVOLVEMENT

The Old Campus Landfill is not listed in the RCRA database as of April 12, 1991. A Part A permit application for storage of waste generated by LEHR activities was submitted in 1989. However, LEHR is listed in the RCRA database, EPA ID # CAD982469702, as a generator (10).

The California Department of Health Services (DHS) has not been actively involved at the site since September 1989, when groundwater well sampling was conducted by DHS near the site (5,6).

The California Regional Water Quality Control Board (RWQCB), in its attempt to evaluate all active and inactive landfills in California, required that a SWAT be prepared for the site (7). U.C. Davis hired consultants to evaluate the site and prepare the SWAT (2). The SWAT was completed in July 1990 and has since been approved by RWQCB (7).

According to DOE's consultant, an Agreement in Principle for all on-site work has been established between U.C. Davis, DOE and state agencies. This agreement stipulates that DHS, RWQCB, and the Department of Water Resources (DWR) must agree on all planned work before it is carried out (9).

5. SUMMARY OF HRS CONSIDERATIONS

The following are the significant HRS factors associated with the site:

- o An observed release to groundwater has been documented at the site;
- o Level I concentrations in groundwater have been documented at a drinking water well; and
- o Groundwater within 4 miles of the site serves approximately 81,000 people.

6. EPA RECOMMENDATION

	<u>Initial</u>	<u>Date</u>
No Further Remedial Action Planned under CERCLA	_____	_____
Higher-Priority for Further Site Assessment	<u>JMS</u>	<u>6/25/11</u>
Lower-Priority for Further Site Assessment	_____	_____
Defer to Other Authority (e.g., RCRA, TSCA, NRC)	_____	_____

Notes:

## 7. REFERENCES

1. U.S. Geological Survey, map of Davis, California, 7.5-minute quadrangle, 1952 (photorevised 1981).
2. Dames & Moore, "Final SWAT Report, Old UCD Landfill, University of California, Davis," Sacramento, California, July 1990.
3. Owen, Carolyn, University of California, Davis (U.C. Davis), to Paul La Courreye, U.S. Environmental Protection Agency (EPA), letter re: CERCLA Preliminary Assessment, Old Campus Landfill, Davis, California, EPA ID# CAD982401432, November 9, 1990.
4. Joma, Hannibal, Department of Energy (DOE), to Paul La Courreye, U.S. EPA, letter, February 28, 1990.
5. Hickman, John, California Department of Health Services (DHS), and Janet Kaps, Ecology and Environment, Inc. Field Investigation Team (E & E FIT), telephone conversation, November 9, 1989.
6. Hickman, John, DHS, and Janet Kaps, E & E FIT, telephone conversation, April 26, 1991.
7. Rosenbaum, Steve, California Regional Water Quality Control Board (RWQCB), and Janet Kaps, E & E FIT, telephone conversation, April 29, 1991.
8. Mitchell, Dawn, U.C. Davis, and Janet Kaps, E & E FIT, telephone conversation, July 16, 1991.
9. Attiga, Salem, U.S. DOE, and Janet Kaps, E & E FIT, telephone conversation, July 15, 1991.
10. U.S. DOE, "Annual Site Environmental Report for the Laboratory for Energy-Related Health Research, University of California, Davis", for calendar year 1990.
11. U.C. Davis, Assessment of LEHR Imhoff and Radium Septic Waste: Recommendation for Disposal", December 19, 1989.

## OTHER IMPORTANT REFERENCES

12. Schoech, Bob, City of Davis Public Works, and Janet Kaps, E & E FIT, telephone conversation, April 29, 1991.
13. Eckberg, Steve, U.C. Davis, and Janet Kaps, E & E FIT, telephone conversation, April 29, 1991.
14. Little, Roger, DOE, and Janet Kaps, E & E FIT, telephone conversation, May 6, 1991.
15. Markel, Brad, U.C. Davis, utilities department, and Janet Kaps, E & E FIT, telephone conversation, May 14, 1991.

16. Dames & Moore, "Report Putah Creek Sediment and Water Sampling for University of California, Davis, Environmental Health and Safety," Sacramento, California, December 1990.
17. Roth, Julie, concerned citizen, to Paul La Courreye, U.S. EPA, letter, May 6, 1991.
18. Markel, Brad, U.C. Davis, utilities department, and Janet Kaps, E & E FIT, telephone conversation, April 26, 1991.
19. Attiga, Salem, Batelle Environmental consultant to DOE, and Janet Kaps, E & E FIT, telephone conversation, July 15, 1991.

CONTACT LOG

Facility Name: Old Campus Landfill/UC Davis  
Facility ID: CAD982401432

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Name	Affiliation	Phone #	Date	Information
John Hickman	DHS	916-327-6062	11/9/89	See Contact Report.
Kenneth Landau	RWQCB	916-361-5679	4/26/91	Due to restructuring within the department, Steve Rosenbaum, 916-361-5732, currently has information on the site.
John Hickman	DHS	916-327-6062	4/26/91	See Contact Report.
Brad Markel	UCD Utilities	916-752-1661	4/26/91	See Contact Report.
Steve Rosenbaum	RWQCB	916-361-5732	4/29/91	See Contact Report.
Bob Schoech	City of Davis Public Works	916-757-5686	4/29/91	See Contact Report.
Steve Eckberg	UC Davis	916-752-4959	4/29/91	See Contact Report.
Roger Little	DOE	415-273-6251	5/6/91	See Contact Report.
Brad Markel	UCD Utilities	916-752-1661	5/14/91	See Contact Report.
Gail Griego	cep	800-545-2188	5/22/91	See Contact Report.
Robert Fox	TMA/Norcal	415-235-2633	5/30/91	See Contact Report.
Joe Niland	Dames & Moore	916-364-8698	6/5/91	See Contact Report.
Larry Bidinian	West Davis Community Association (WDCA)	916-758-4751	7/5/91	See Contact Report.
Ralph Virgen	Ex-UC Davis employee	916-372-7299	7/12/91	See Contact Report.
Mike Mosbacher	RWQCB	916-361-5742	7/15/91	The new project manager for RWQCB's involvement with DOE's LEHR facility is Mike Higgins. His number is 916-361-5653.

Salem Attiga	Batelle Env. for DOE	916-752-5459	7/15/91	See Contact Report.
Larry Bidinian	WDCA	916-758-4751	7/16/91	See Contact Report.
Dawn Mitchell	UC Davis	916-752-4023	7/16/91	See Contact Report.
Julie Roth	concerned citizen	916-753-9446	7/24/91	See Contact Report.
Steve Eckberg	UC Davis	916-752-4959	7/29/91	See Contact Report.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> Department of Health Services		
<b>DEPARTMENT:</b> Environmental Radiation Management		
<b>ADDRESS/CITY:</b> Davis		
<b>COUNTY/STATE/ZIP:</b> Yolo, CA 95616		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. John Hickman	Environmental Radiation Mgr.	916 739 4213
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 11/9/89
<b>SUBJECT:</b> off-site well testing		
<b>SITE NAME:</b> Old Campus Landfill		<b>EPA ID#:</b> CAD982401432

Sampling of off-site wells took place in the first part of September 1989. Wells sampled included private wells, university water supply wells (will try to find a map showing locations or addresses).

Samples were tested for tritium and a gross beta test was done also. All samples came up negative except C14. C14 was found in one sample. John believes it may be an indicator of a false positive or a naturally occurring element in the environment.

Not only were dogs buried on site but 5 to 6 cattle were buried here also. Vet-Med Center did research by injecting either tritium or C14.

John would like to sample again but does not know when DHS will be able to.

### CONTACT REPORT

<b>AGENCY/AFFILIATION:</b> DHS		
<b>DEPARTMENT:</b> Environmental Radiation Management		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. John Hickman		916-327-6062
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 4/26/91
<b>SUBJECT:</b> update of DHS activities		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

Since 1989, when the Preliminary Assessment was written, DHS has not been active at the site. DHS is the over-sight agency for DOE's activities.

Mr. Hickman recently received a notice of two annual reports related to the site:

1. LEHR Annual Report, 1980-1990; and
2. Radiobiology Lab Report, 1966-1989.

They can be found in the Health Sciences Library or Shields Library on campus and in the City of Davis Public Library.

Other DHS employees that may have information regarding groundwater testing are Dave Speed, 916-739-4207, and/or Richard McKinley, 916-739-4055.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> U.C. Davis		
<b>DEPARTMENT:</b> Utilities		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Brad Markel	Inspector Planner Estimator	916-752-1661
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 4/26/91
<b>SUBJECT:</b> Well information		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

U.C. Davis Utilities currently maintains twelve wells. Six are drinking water wells which draw from a deep aquifer, the other six wells are utility wells used for irrigation which draw from a shallower aquifer.

The population served by the six drinking water wells includes on campus residents and workers for a 1990/91 total estimate of 33,400. The well water is pumped into an underground reservoir then distributed. On a daily basis one to two wells constantly pump at a rate of 2,000 gpm. At night only one well pumping at 1,000 gpm is adequate. The other 4 wells supply water when demand increases.

The U.C. Davis and the City of Davis municipal wells have no connection with one another. Mr. Markel indicated that as far as he knew, the City of Davis wells drew from the same aquifer as the U.C. Davis utility wells.

Mr. Markel indicated that, because of under staffing, I would have to visit his office for well locations and other information.

Mr. Markel also indicated that a graduate student, Lee Davidson, has been doing some research regarding hydrogeology in the Davis area.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> RWQCB		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Steve Rosenbaum	Project Manager	916-361-5732
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 4/29/91
<b>SUBJECT:</b> site update		
<b>SITE NAME:</b> Old Campus Landfill		<b>EPA ID#:</b> CAD982401432

RWQCB has not installed monitoring wells on site. I should check with U.C. Davis to see whether they have or not. Steve Rosenbaum is working with U.C. Davis on the landfill portion of the site. Mike Mosbacher, 916-361-5742, is working with DOE regarding the LEHR facility.

The SWAT report has been approved. For a copy I either have to come to their office and copy it or possibly request a copy from the university.

Steve has been in contact with Alice Tackett.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> City of Davis		
<b>DEPARTMENT:</b> Public Works		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Bob Schoech	Senior Engineer Assistant	916-757-5686
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 4/29/91
<b>SUBJECT:</b> groundwater information		
<b>SITE NAME:</b> Old Campus Landfill/UC Davis		<b>EPA ID#:</b> CAD982401432

Mr. Schoech will prepare a USGS topo map with municipal well locations for the City of Davis and send it to me.

The total number of people served is 47,500. There are 20 wells in the system, none of which produce greater than 40%.

Water is pumped directly into water mains and then to customers. There is a 200,000 gallon above-ground storage tank which is used as a control mechanism for turning wells on and off.

There is the potential for groundwater from one well to reach the entire population of Davis.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> U.C. Davis		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Steve Eckberg		916-752-4959
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 4/29/91
<b>SUBJECT:</b> Site information		
<b>SITE NAME:</b> Old Campus Landfill/UC Davis		<b>EPA ID#:</b> CAD982401432

Both DOE and U.C. Davis have installed additional monitoring wells and are currently hydropunching to take small quantity groundwater samples.

The SWAT indicates leakage has occurred from the landfill. UCD has begun additional work on site. Mr. Eckberg will send me a copy of the SWAT, the additional workplan, and a report done on Putah Creek.

The DOE project manager is Roger Little. He can be reached in Oakland at 415-273-6439 or 818-586-5415. The DOE contractor is Batelle. The contact in their Environmental Management Operations Department is Salem Attiga.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> Department of Energy		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Roger Little		415-273-6251
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 5/6/91
<b>SUBJECT:</b> activities on site since PA		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

Mr. Little is responsible for the overall project management. Hannibal Joma is a part of his Hydrogeology staff.

For more detailed information call Salem Attiga at 916-752-5459.

Mr. Little took the project over mid-spring 1990. Since then a large number of frozen animal carcasses have been removed and buried in a DOE landfill in Hanford, Washington. A large number of biological specimens have been taken to the Radiological Specimen Library at Pacific Northwest Labs in Richland, Washington.

UCD has had to install more monitoring wells for the SWAT report which has now been completed and distributed. DOE has sampled existing wells and has also installed more monitoring wells for a total of between 6 and 8.

Currently, the sludge from the Imhoff Facility, which consists of a septic tank and ion exchanger, is being analyzed for treatment by solidification.

An environmental assessment is currently being done in association with the decommissioning of the DOE facility.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> U.C. Davis		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Brad Markel		916-752-1661
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 5/14/91
<b>SUBJECT:</b> University well locations		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

The nearest U.C. Davis drinking water well is located a few hundred feet north of the facility. The rest of the U.C. Davis drinking water wells are located greater than one mile but less than 4 miles of the site.

The U.C. Davis drinking water well located a few hundred feet north of the facility is currently classed as a standby well. It is maintained for drinking water purposes.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> Control for Environmental Pollution, Inc.		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Gail Griego	Customer Service Rep.	1-800-545-2188
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 5/22/91
<b>SUBJECT:</b> lab information		
<b>SITE NAME:</b> Old Campus Landfill/ULD		<b>EPA ID#:</b> CAD982401432

U.C. Davis must authorize the release of the raw data from the lab. Authorization via a letter or FAX is o.k. Must be on U.C. Davis letterhead. Once this has occurred and we inform the lab of the Lab Numbers we want then Ms. Griego can let us know how much it will cost. Prices begin at \$500.00 for a raw data package which will include QA/QC information.

The lab is not a CLP lab, but can do CLP work. If CLP protocol is not requested the lab will do their own internal QA/QC.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> TMA/Norcal		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Robert Fox		415-235-2633
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 5/30/91
<b>SUBJECT:</b> sample data ownership		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

After a preliminary search, Mr. Fox noted that the client for samples beginning with #4943 is Dames & Moore. I need to contact Joe Niland for release approval.

He also mentioned that this data has, to date, not been paid for and the issue of ownership will come up.

The usual cost of information being requested is 25% of the total analysis price.

The turn around time is from 6 to 10 weeks once the order is received.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> Dames & Moore		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Joe Niland		916-364-8698
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 6/5/91
<b>SUBJECT:</b> Sample numbers 4943		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

The issue of Dames & Moore being the owner for samples beginning with #4943 is due to the fact that the lab exceeded holding times rendering the samples invalid. Since Dames & Moore could not use the information they have not paid for it. Mr. Niland believes I may not need the information either.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> West Davis Community Association		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b> 635 Arthur Street, Davis		
<b>COUNTY/STATE/ZIP:</b> Yolo		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Larry Bidinian	Co-Director	916-758-4751
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 7/5/91
<b>SUBJECT:</b>		
<b>SITE NAME:</b> Old Campus Landfill/UC Davis		<b>EPA ID#:</b> CAD982401432

Mr. Bidinian wanted to let me know that the dump tender for the UC Davis landfill had been identified. [REDACTED]

Mr. Virgen's job was to record the license plate numbers of dump trucks, note the contents dumped, and which campus department the waste came from. The reason this information was recorded was to prevent non-University personnel from dumping. Mr. Virgen's immediate supervisors were Buddy Lilly and Bud Hale. The supervisors received the records of information Mr. Virgen recorded. The supervisors in turn gave their records to Bobbi Koehler, a current UCD employee.

Regarding the fecal matter issue, Mr. Bidinian recommended I talk to Mr. Virgen. Apparently there were employees on site termed "Pooper Scoopers" whose job was to deposit dog feces directly into the open Campus Landfill. Mr. Virgen may know other people involved with this activity. Mr. Bidinian also mentioned that Lee Hurdle recalls open trenches leading into Putah Creek.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b>		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Ralph Virgen	Ex-UCD employee	916-372-7299
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 7/12/91
<b>SUBJECT:</b>		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

[REDACTED] Mr. Virgen remembers documenting the burial of research animals (cows, dogs, mice, rabbits, and horses), animal feces (from LEHR and ARS), all types of chemicals from campus departments, radioactive materials from campus departments and from the LEHR facility. Mr. Virgen knew the materials were radioactive because of the labels on the cans. These cans came from LEHR and other departments on campus.

Mr. Virgen's job was to keep a log which indicated who was dumping, which department the refuse came from and the type of refuse dumped.

Bud Lilly was Mr. Virgen's immediate supervisor. The records were kept in an office at the Physical Plant.

Mr. Virgen remembers that trucks from the LEHR facility drove to the dump on several occasions to dispose of beagle dogs. Other animals from campus departments were also disposed of in the landfill.

Mr. Virgen remembers that when the landfill, currently identified as disposal site #3, was closed a farm was built adjacent to it. Apparently the farm grew corn and tomatoes directly adjacent to the closed landfill.

[REDACTED]

Mr. Virgen also remembers employees on site termed "Pooper Scoopers" who were responsible for picking up the dog feces at the LEHR facility and dumping them at the landfill.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> Batelle Environmental Management Operations		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Salem Attiga	Project Manager	916-752-5459
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 7/15/91
<b>SUBJECT:</b> update DOE activities		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

Salem Attiga works for Batelle Environmental Management Operations. This consulting firm is one of the primary contractors to DOE.

DOE has identified 5 potentially contaminated buildings on site. The prime contaminants are strontium-90 and radium-226. DOE is currently in the process of characterizing the buildings. The survey will include the walls, floors, drains, piping, ventilation ducts, ceilings, and cages. The objective of this survey is to determine the extent of contamination. DOE intends to release the buildings to the University for non-restricted use. The two largest buildings are scheduled to be cleaned before the end of fiscal year 1992 (October 1992).

DOE has scheduled the removal of approximately 35,000 gallons of sludge from underground concrete tanks to be completed by the end of fiscal year 1991 (October 1991).

The sludge removal activities include pumping the sludge from the tanks, solidifying the sludge, packaging the sludge and transporting it to the DOE facility in Hanford, Washington.

Note: the sludge mentioned above is the dog feces contaminated with strontium-90 and radium-226.

There are approximately 11 concrete interconnected tanks which are being used to store the sludge. Once the sludge has been removed the tanks they will be inspected. The soils beneath and surrounding the tanks will be analyzed for potential leakage. There is no secondary containment associated with these rectangular shaped tanks. Dawn Mitchell will call me back with information regarding tank history. Mr. Attiga also mentioned that the liquid level in the tanks is monitored. There has

been no volume change and therefore, he concludes, no leakage. When asked if DOE was going to seek DHS clean closure status for the tanks Mr. Attiga told me about DOE's Agreement in Principle. All work at the site must be agreed upon by DHS, RWQCB, and the Department of Water Resources (DWR) before it can begin.

DOE's site investigation has included 50 soil borings and the installation of 23 monitoring wells.

The 50 soil borings were collected from surface to approximately 25 to 30 feet below ground surface. Soil samples were analyzed for nitrates, chlordane, strontium-90 and radium-226. Chlordane was used as a pesticide which the dogs were periodically dipped in. Some of the data indicated elevated levels of chlordane and nitrates near the dog pens.

DOE installed 23 monitoring wells on site. Three deep wells, screened at about 120 feet, and 7 shallow wells have recently been installed. Three rounds of sampling have been conducted. The latest round was collected in May and the data is currently unavailable. The data for the soil samples and the first two rounds of groundwater sampling are contained in the Annual Environmental Monitoring Report. Mr. Attiga will send this to me.

Mr. Attiga also mentioned that the soil cuttings collected due to monitoring well installation were analyzed. Most of the samples came up clean except for the detection of hexavalent chromium in some of the samples. It is unknown what the source of chromium is. Tritium was detected in one or two of the wells. The source of the tritium may be related to the University's past waste management practices.

There are trenches on site which appear to be the responsibility of U.C. Davis. These trenches may contain low-level radioactive waste and may include some lab type waste. Mr. Attiga will send me a map with the trench locations outlines.

There are also two chemical dispensing areas on site. These areas have sheds which contained chemicals for storage.

There are discussions occurring between DOE and U.C. Davis regarding incorporating the site into a whole; not fragmenting the site as is currently being done.

Mr. Attiga encouraged me to visit the site and believes it would be a benefit.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> U.C. Davis		
<b>DEPARTMENT:</b> Environmental Health and Safety		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Dawn Mitchell		916-752-4023
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 7/16/91
<b>SUBJECT:</b> tank history and specs		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

The eleven concrete interconnected tanks were the disposal tanks for the dog feces contaminated with strontium-90. These tanks were actually process tanks. The tanks were built, installed, and began use in the 1960s. They stopped being used in the 1980s. Ms. Mitchell will call back with specific years. The process that occurred in the tanks is called the Imhowff Process. These tanks do have leach lines associated with them. The bottom of these tanks are located approximately 8 feet below ground surface.

The radium tanks are dual chamber septic tanks. No process occurs in these tanks. Fecal material contaminated with radium-226 was disposed of in these tanks. There are leach lines and seepage pits associated with these tanks. There are two of these tanks on site.

Ms. Mitchell will also send me the maps outlining both the DOE and U.C. Davis burial pits and trenches.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> West Davis Community Association		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Larry Bidinian	Co-director	916-758-4751
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 7/16/91
<b>SUBJECT:</b> Citizen group involvement		
<b>SITE NAME:</b> Old Campus Landfill/UC Davis		<b>EPA ID#:</b> CAD982401432

The West Davis Community Association (WDCA) has filed a lawsuit against UC Davis for "failure to mention anything about radiological or chemical contamination in the public hearings or text associated with the drafts and final EIR associated with UC Davis's Long Range Development Plan, July 1989."

UC Davis and DOE are not providing WDCA with any information regarding current on-site activities.

The membership of this organization ranges at approximately 300 to 400 people.

The other citizen group Mr. Bidinian was aware of is called University Downwinders. Julie Roth and Ernie Pfanner are members of this organization.

At one time the Natural Resources Advisory Committee, City of Davis voted unanimously to monitor DOE and UC Davis activities. Approximately one month later, the City Council reversed the decision.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b>		
<b>DEPARTMENT:</b>		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Julie Roth		916-753-9446
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 7/24/91
<b>SUBJECT:</b> Community involvement		
<b>SITE NAME:</b> Old Campus Landfill/UC Davis		<b>EPA ID#:</b> CAD982401432

For the last two years an informal group of residents near the LEHR facility have met with UC Davis and DOE representatives. These neighbors meet on campus and public meetings are held to inform the neighbors of groundwater analysis results from their wells.

Although these meetings occur and UC Davis and DOE have tested the residents wells, Ms. Roth feels that UC Davis and DOE "have not been above board" with the residents regarding everything that has happened on site.

Ms. Roth expressed frustration regarding the investigation associated with the cobalt-60 irradiator. There is a public meeting scheduled in October where the West Davis Community Association, Julie Roth and her neighbors, and Ernie Pfanner and his neighbors, who live next to the primate center (where more environmental problems are reportedly occurring) will meet with a radiological waste specialist, an oncologist, and the state radiation officer to discuss the risk they have been or are being exposed to.

**CONTACT REPORT**

<b>AGENCY/AFFILIATION:</b> U.C. Davis		
<b>DEPARTMENT:</b> Environmental Health & Safety		
<b>ADDRESS/CITY:</b>		
<b>COUNTY/STATE/ZIP:</b>		
<b>CONTACT(S)</b>	<b>TITLE</b>	<b>PHONE</b>
1. Steve Eckberg		916-752-4959
2.		
<b>E &amp; E PERSON MAKING CONTACT:</b> Janet Kaps		<b>DATE:</b> 7/29/91
<b>SUBJECT:</b> bottled water population		
<b>SITE NAME:</b> Old Campus Landfill/U.C. Davis		<b>EPA ID#:</b> CAD982401432

U.C. Davis and DOE supply bottled water to 6 homes near the LEHR facility due to the detection of hexavalent chromium above MCLs. A total of 32, 5-gallon bottles are distributed every two weeks. This number was arrived at by extrapolating.

Total number of people served results in approximately 15 to 20.