APPENDIX C

Covenant to Restrict Use of Property

Department of Toxic Substances Control

Dan Skopec
Acting Secretary
Cal/EPA

Maureen F. Gorsen, Director
5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

May 12, 2006

Margaret Souder
Environmental/Hazardous Materials Specialist
Environmental Health & Safety
University of California, Riverside
Riverside, CA 92521-0306

DEED RESTRICTION AND OPERATION &MAINTENANCE AGREEMENT
DOCKET NUMBER HSA-A 05/06-163, UNIVERSITY OF CALIFORNIA RIVERSIDE,
900 UNIVERSITY AVENUE, PESTICIDE PITS, PARCEL #253-090-008-5

Dear Ms. Souder:

Enclosed for your files are the fully executed Deed Restriction and the Operation and Maintenance Agreement for the subject Site.

Once the Deed Restriction has been recorded, please mail to:

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630
Attention: Thomas M. Cota, Chief
Southern California Cleanup Operations Branch – Cypress Office

Should you have any questions, please call me at (714) 484-5461.

Sincerely,

Greg Holmes
Unit Chief
Southern California Cleanup Operations - Cypress Office

Enclosure

cc: See next page.

cc: Thomas M. Cota, Chief
Department of Toxic Substances Control
Southern California Cleanup Operations – Cypress Office

Bonnie Wolstoncroft
Senior Staff Counsel
Department of Toxic Substances Control
Office of Legal Affairs
P.O. Box 806
Sacramento, 95812-0806

RECORDING REQUESTED BY:
The Regents of the University of California
University of California Riverside
900 University Avenue
Riverside, California 92521

WHEN RECORDED, MAIL TO:

Department of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630
Attention: Thomas M. Cota, Chief
Southern California Cleanup Operations Branch
Cypress Office

SPACE ABOVE THIS LINE RESERVED FOR RECORDER'S USE

COVENANT TO RESTRICT USE OF PROPERTY
(Health and Safety Code section 25222.1)

ENVIRONMENTAL RESTRICTION

The Regents of the University of California, University of California Riverside, 900 University Avenue, Riverside, County of Riverside, California 92521,Assessor Parcel No. 253-090-008-5.

This Covenant and Agreement ("Covenant") is made by and between The Regents of the University of California, 900 University Avenue, Riverside, California, and assigns (the "Covenantor"), the current owner of property situated in the City of Riverside, County of Riverside, State of California, depicted in Exhibit "A", attached hereto and incorporated herein by this reference (the "Property"), and the Department of Toxic Substances Control (DTSC). Pursuant to Civil Code section 1471(c), DTSC has determined that this Covenant is reasonably necessary to protect present or future human health or safety or the environment as a result of the presence on the land of hazardous materials as defined in Health and Safety Code ("H&SC") section 25260. The Covenantor and DTSC, collectively referred to as the "Parties", hereby agree pursuant to Civil Code Section 1471 (c) and H&SC section 25222.1 that the use of the Property be restricted as set forth in this Covenant.

ARTICLE I
STATEMENT OF FACTS

1.01. The Property, totaling approximately 3.25 acres, is more particularly described and depicted in Exhibit "A". Exhibit "A" depicts property that is a portion of the property located at 1060 Martin Luther King Jr. Avenue, Riverside, California. The Property is a small part of a large University of California Agriculture Experiment Station area which is bounded by Canyon Crest Drive on the east, Chicago Avenue on the west, Martin Luther King Boulevard on the north, and LeConte Drive on the south. The Gage aqueduct canal is located between Chicago Avenue and

the property. The property is identified as Riverside County Assessor's Parcel No. 235-090-008-5. The Property's survey coordinates are included in Exhibit "A".

1.02. Covenantor has remediated the Property under the supervision and authority of DTSC pursuant to the Remedial Action Plan approved on May 16, 1996, and is following the Operation and Maintenance Agreement (OMA) (Exhibit C). The Covenantor entered into the OMA with DTSC, on May 1, 2006. The OMA includes a Soil Management Implementation and Enforcement Plan (SMIEP). Hazardous substances, as defined in H&SC section 25316, which are also hazardous wastes as defined in H&SC section 25117, and hazardous materials as defined in H&SC section 25260, including organochlorine pesticides, volatile organic compounds, organophosphate pesticides, and /or herbicides remain in the soil and groundwater in and under portions of the Property. The Remedial Action Plan (RAP) provides that a deed restriction be required as part of the site remediation. DTSC circulated the draft RAP, which contains a Final Health Risk Assessment, together with a draft negative declaration pursuant to the California Environmental Quality Act, Public Resources Code section 21000 et seq., for public review and comment. Pursuant to approval of the RAP the Property was excavated to varying depths ranging from 4 feet to 20 feet, depending on the location of contamination and the types of contamination present. The excavation was then backfilled with either imported soil or soil cleaned at site with the use of a low temperature thermal desorption (LTTD) unit. All backfilled soil was compacted and final graded to its original grade levels.

Remediation includes operation of groundwater monitoring wells ("monitoring wells"). The locations of the monitoring wells are shown in Exhibit "B". The operation and maintenance of the monitoring wells will be conducted pursuant to the OMA and SMIEP.

1.03. Groundwater in the vicinity of the Property is found at approximately 45 to 80 feet below ground surface. Contaminants in the groundwater include carbamate and urea pesticides, organochlorine pesticides, volatile organics and semi-volatile organic compounds. DTSC concludes that the groundwater has at times exceeded acceptable health risk-based levels for the following contaminants: chloroform, dichloroethane, benzene, bis (2-ethylhexyl) phthalate, naphthalene, diuron, urea pesticides, and organochlorine pesticides. However, these exceedences have been sporadic. There are five groundwater monitoring wells located at or near this site (MW-1, MW-2, MW-3A, MW-4B, and MW-7). The locations of these monitoring wells are identified in Exhibit "B". Since 1997, DTSC has required the University of California, Riverside to conduct semi-annual groundwater monitoring. The last semi-annual sampling report (the 25th semi-annual) was reviewed by DTSC on December 13, 2005.

Based on the Health Risk Assessment (which includes soil, air, and groundwater), and OMA dated May 1, 2006, DTSC has concluded that use of the Property as remediated, and subject to the restrictions of this Covenant, would not present an unacceptable threat to human health safety or the environment if limited to commercial and industrial uses, parks, open space, or as an agriculture research station. No cap is necessary for such uses of the Property. However, until such time as contaminant concentrations in the groundwater no longer exceed health risk-based levels, use of groundwater will be restricted as described in Section 4.03(c).

1.04. As detailed in the Revised Health Risk Assessment Calculation contained in the January 2006 Site Remediation and Closure Report, Appendix I, all or a portion of the surface and subsurface soils within 10 feet of the surface of the Property contain hazardous substances as defined in H&SC section 25316, which include the following contaminants of concern: organochlorine pesticides, polychlorinated biphenyls, organophosphate pesticides, polyaromatic hydrocarbon compounds, volatile organic compounds, and semi-volatile organic compounds.

The following metals were found in soil at the site: arsenic (0.3 to 38.1 parts per million ("ppm")), beryllium (2.6 ppm), copper (4.6 to 756 ppm), and nickel (7.3 to 105 ppm). There are also low pH soils at the site. Based on the Final Risk Assessment, DTSC concluded that use of the Property as a residence, hospital, school or indoor classroom(s) for persons under the age of 18, or a children's day care center would pose an unacceptable cancer and/or chronic health risk. DTSC further concludes that the Property, as remediated using industrial/commercial site occupancy standards, and subject to the restrictions of this Covenant, does not present an unacceptable threat to human health or the environment if limited to commercial and industrial uses, parks, open space, or as an agriculture research station, and if no food produced on the site is consumed by humans.

ARTICLE II
DEFINITIONS

2.01. DTSC. "DTSC" means the California Department of Toxic Substances Control and includes its successor agencies, if any.

2.02. Owner. "Owner" means the Covenantor, its successors in interest, and their successors in interest, including heirs and assigns, which at any time hold title to all or any portion of the Property.

2.03. Occupant. "Occupant" means Owners and any person or entity entitled by ownership, leasehold, or other legal relationship to the right to occupy any portion of the Property.

ARTICLE III
GENERAL PROVISIONS

3.01. Restrictions to Run with the Land. This Covenant sets forth protective provisions, covenants, restrictions, and conditions (collectively referred to as "Restrictions"), subject to which the Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. Each and every Restriction: (a) runs with the land pursuant to H&SC section 25230(a)(1) and Civil Code section 1471; (b) inures to the benefit of and passes with each and every portion of the Property, (c) is for the benefit of, and is enforceable by DTSC, and (d) is imposed upon the entire Property unless expressly stated as applicable only to a specific portion thereof.

3.02. Binding upon Owners/Occupants. Pursuant to H&SC section 25230(a)(1), this Covenant binds all Owners of the Property, their heirs, successors, and assignees, and the agents, employees, and lessees of the Owners, their heirs, successors, and assignees. Pursuant to Civil Code section 1471(b), all successive Owners of the Property are expressly bound hereby for the benefit of DTSC.

3.03. Written Notice of the Presence of Hazardous Substances. Prior to the sale, lease or sublease of the Property, or any portion thereof, the Owner, lessor, or sub-lessor shall give the buyer, lessee, or sub-lessee notice that hazardous substances are located on or beneath the Property, as required by H&SC section 25359.7

3.04. Incorporation into Deeds and Leases. The Restrictions set forth herein shall be incorporated by reference in each and all deeds and leases for any portion of the Property.

3.05. Conveyance of Property. The Owner shall provide notice thereof to DTSC not later than thirty (30) days after any conveyance of any ownership interest in the Property (excluding mortgages, liens, and other non-possessory encumbrances). DTSC shall not, by reason of this Covenant, have authority to approve, disapprove, or otherwise affect any proposed conveyance, except as otherwise provided by law, by administrative order, or by a specific provision of this Covenant.

ARTICLE IV

RESTRICTIONS

4.01. Prohibited Uses. The Property shall not be used for any of the following purposes:

(a) A residence, including any mobile home or factory-built housing, constructed or installed for use as residential human habitation.

(b) A hospital for humans.

(c) Indoor classroom for persons under 18 years of age

(d) A day care center for children.

4.02. Soil Management The soil at the Property shall be managed in accordance with the Operation and Maintenance Agreement (Exhibit C) which requires soil at the Property to be managed in accordance with the Soil Management, Implementation and Enforcement Plan.

4.03. Prohibited Activities. The following activities shall not be conducted at the Property:

(a) Raising of food for human or animal consumption.

(b) Drilling for water, oil, or gas leaving exposed soil at the site which may migrate to other locations by weather or human action.

(c) Extraction of groundwater for purposes other than site remediation or construction dewatering.

(d) Classroom activities for persons under the age of 18.

4.04. Access for DTSC. DTSC shall have reasonable right of entry and access to the Property for inspection, monitoring, and other activities consistent with the purposes of this Covenant as deemed necessary by DTSC in order to protect the public health or safety, or the environment.

4.05. Access for Implementing Operation and Maintenance. The entity or person responsible for implementing the Operation and Maintenance Agreement shall have reasonable right of entry and access to the Property for the purpose of implementing the Operation and Maintenance Agreement until DTSC determines that no further Operation and Maintenance is required.

4.06. Non-interference with Groundwater Monitoring Wells. The Covenantor, Owner or Occupant shall protect groundwater monitoring wells on the Property from all interference. DTSC shall have reasonable right of entry and access to the Property for inspection, monitoring, and other activities consistent with the purposes of inspection and monitoring of the groundwater wells as deemed necessary by DTSC in order to protect the public health or safety, or the environment.

ARTICLE V

ENFORCEMENT

5.01. Enforcement. Failure of the Covenantor, Owner or Occupant to comply with any of the Restrictions specifically applicable to it shall be grounds for DTSC to require that the Covenantor or Owner modify or remove any improvements ("Improvements" herein shall mean all buildings, roads, driveways, and paved parking areas) constructed or placed upon any portion of the Property in violation of the Restrictions.

ARTICLE VI

VARIANCE, TERMINATION, AND TERM

6.01. Variance. Covenantor, or any other aggrieved person, may apply to DTSC for a written variance from the provisions of this Covenant. Such application shall be made in accordance with H&SC section 25233.

6.02 Termination. Covenantor, or any other aggrieved person, may apply to DTSC for a termination of the Restrictions or other terms of this Covenant as they apply to all or any portion of the Property. Such application shall be made in accordance with H&SC section 25234.

6.03 Term. Unless ended in accordance with the Termination paragraph above, by law, or by DTSC in the exercise of its discretion, this Covenant shall continue in effect in perpetuity.

ARTICLE VII

MISCELLANEOUS

7.01. No Dedication Intended. Nothing set forth in this Covenant shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Property or any portion thereof to the general public or anyone else for any purpose whatsoever.

7.02. DTSC References. All references to DTSC include successor agencies/departments or other successor entity.

7.03. Recordation. The Covenantor shall record this Covenant, with all referenced Exhibits, in the County of Riverside within ten (10) days of the Covenantor's receipt of a fully executed original.

7.04 Notices. Whenever any person gives or serves any Notice ("Notice" as used herein includes any demand or other communication with respect to this Covenant), each such Notice shall be in writing and shall be deemed effective: (1) when delivered, if personally delivered to the person being served or to an officer of a corporate party being served, or (2) three (3) business days after deposit in the mail, if mailed by United States mail, postage paid, certified, return receipt requested, to such party at the following address:

To Owner: Director, Environmental Health & Safety
University of California Riverside
900 University Avenue
Riverside, California 92521

To Owner: Director of Real Estate Services
University of California, Riverside
Office of Real Estate Services
B-206 Highlander Hall
Riverside, California 92521

To Owner: Director – Real Estate Services Group
UC Office of the President
Real Estate Services Group
1111 Franklin, 6th Floor
Oakland, CA 94607-5200

To DTSC: Chief, Southern California Cleanup Operations Branch
Department of Toxic Substances Control
Cypress Office
5796 Corporate Avenue
Cypress, California 90630

Any party may change its address or the individual to whose attention a Notice is to be sent by giving written Notice in compliance with this paragraph.

7.05 Partial Invalidity. If any portion of the Restrictions or other term set forth herein is determined by a court of competent jurisdiction to be invalid for any reason, the surviving portions of this Covenant shall remain in full force and effect as if such portion found invalid had not been included herein.

7.06 Statutory References. All statutory references include successor provisions.

IN WITNESS WHEREOF, the Parties execute this Covenant.

Covenantor: The Regents of the University of California

By: Lawrence C. Hershman

Name: Lawrence C. Hershman

Title: Vice President for Budget

Date: April 26, 2006

Department of Toxic Substances Control

By: Thomas M. Cota

Name: Thomas M. Cota

Title: Chief, Southern California Cleanup Operations Branch – Cypress Office.

Date: May 12, 2006

STATE OF CALIFORNIA)

)

COUNTY OF Alameda)

On this 26TH day of APRIL, in the year 2006,

before me JAY VALANCY, NOTARY PUBLIC, personally appeared

LAWRENCE C. HERSHMAN,

personally known to me (~~or proved to me on the basis of satisfactory evidence~~) to be the person(~~s~~) whose name(~~s~~) is /~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/her/their signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

WITNESS my hand and official seal.

Signature

JAY VALANCY
Commission # 1622770
Notary Public - California
Alameda County
My Comm. Expires Dec 5, 2009

ACKNOWLEDGMENT

State of : California

County of Orange

On May 12, 2006 (Date), before me Deborah R. Saito (Name and Title of Officer (e.g., "Jane Doe, Notary Public")),

personally appeared Thomas M. Cota (Name(s) of Signer (s)),

[X] personally known to me
[ ] proved to me on the basis of satisfactory evidence

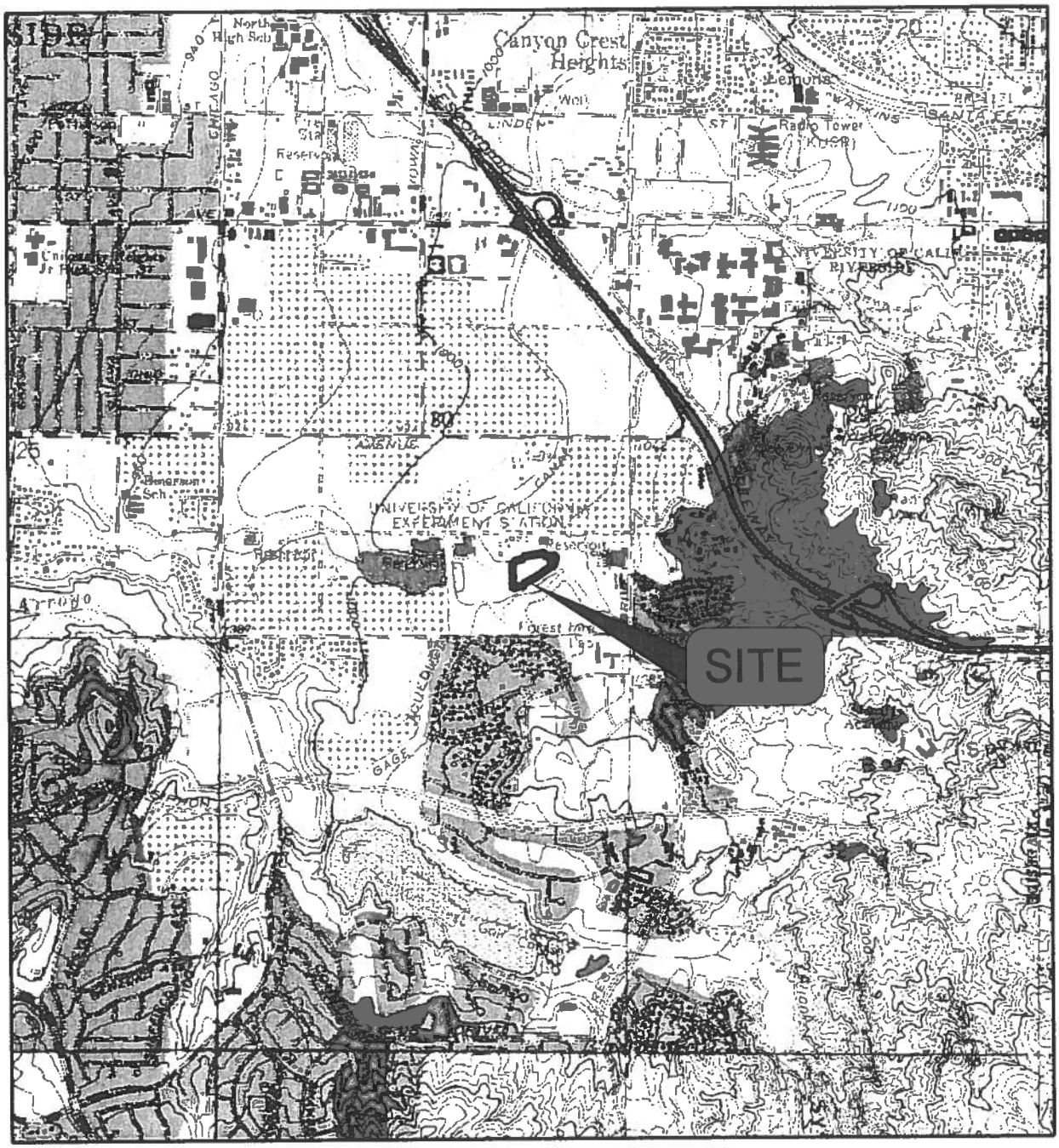
to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/ they~~ executed the same in his/~~her/their authorized~~ capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal

DEBORAH R. SAITO
COMM. #1571083
Notary Public - California
Orange County
My Comm. Expires Apr. 19, 2009
NRO1 NRO1

Deborah R. Saito
Signature of Notary Public

Place Notary Seal Above



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APPROXIMATE SCALE IN FEET

BASEMAP MODIFIED FROM U.S.G.S. 7 5 MINUTE QUADRANGLE MAP RIVERSIDE EAST 1967, CALIFORNIA. PHOTO-REVISED 1980.

GEOMATRIX

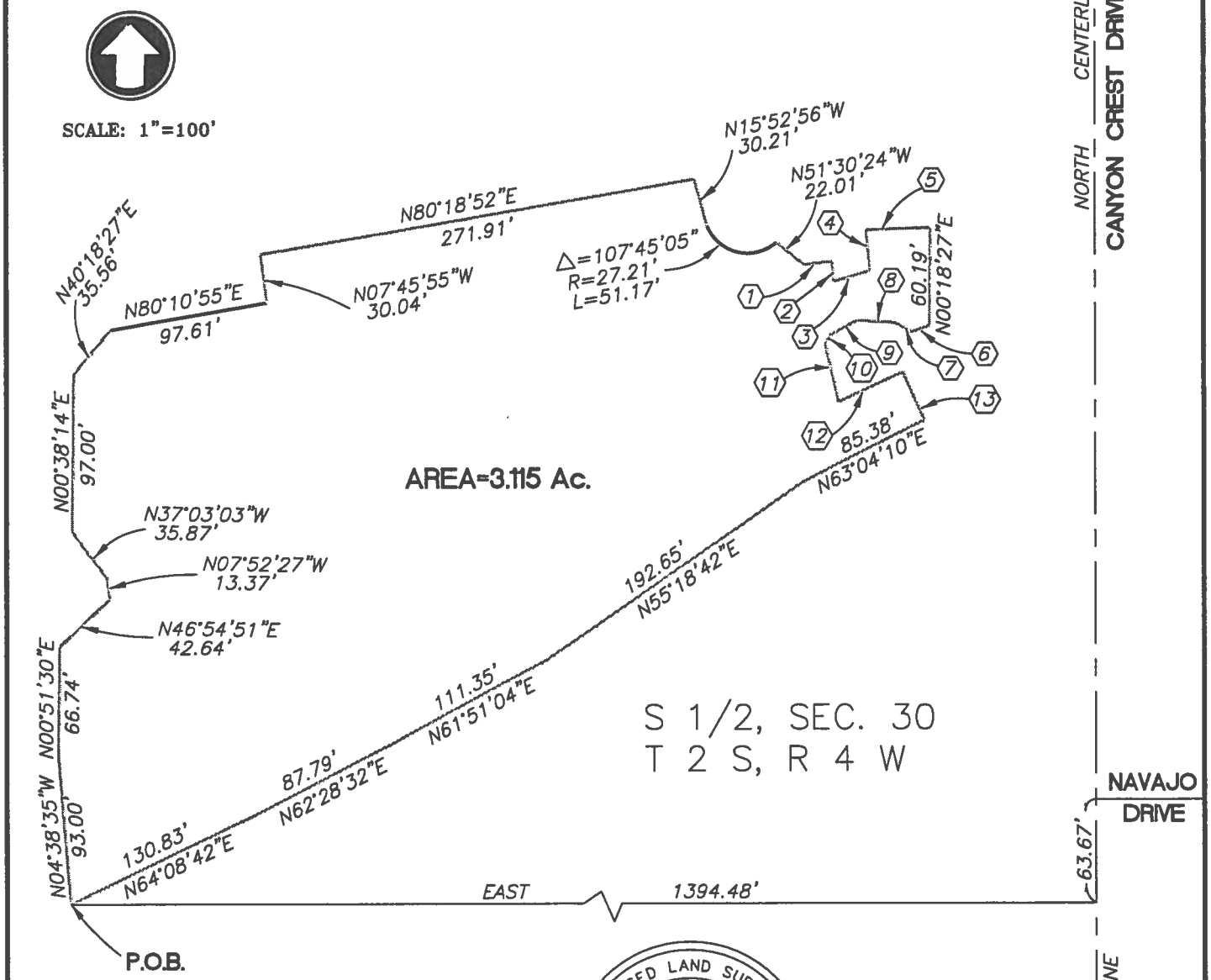
SITE LOCATION MAP

UC RIVERSIDE PESTICIDE WASTE PITS
Riverside, California

Figure By	Project No.
pah	4528.002
	Figure
Date	1
8/31/05	

p:\s4528\cgn\dgn\4528.002\0\site_location_tb_v4_pdf.dgn

EXHIBIT "A"



LINE DATA:

No.	BEARING	DISTANCE
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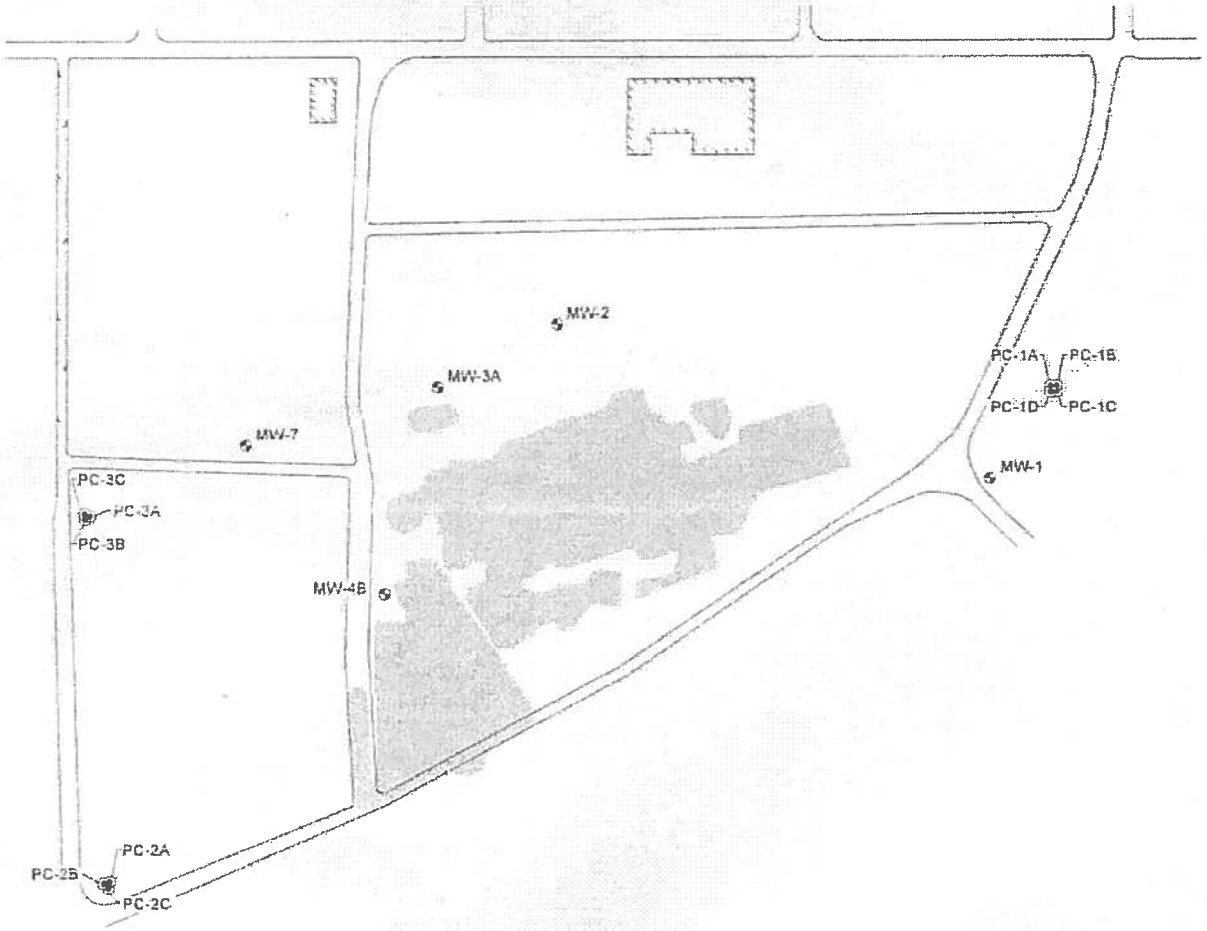
2	N04°26'26"W	12.56'
3	N73°11'47"E	23.62'
4	N05°35'30"W	25.10'
5	N87°51'27"E	39.31'
6	N70°05'14"E	11.64'
7	N60°42'19"W	12.10'
8	N87°09'05"W	23.20'
9	N61°29'56"E	18.75'
10	N29°34'49"E	6.49'
11	N12°56'29"W	36.63'
12	N64°51'57"E	43.74'
13	N24°16'31"W	32.47'

LICENSED LAND SURVEYOR
HENRY C. POQUIZ
No. 6048
Exp. 6-30-05
STATE OF CALIFORNIA

HP ENGINEERING, INC.
CIVIL ENGINEERING • LAND SURVEYING
1465 CRESTVIEW ROAD, REDLANDS, CA. 92374
Tel. (909) 799-6797 Fax (909) 799-1508

E:\JOBS\UCR_LEG 03/20/03 07:43



EXPLANATION

MW-1 MONITORING WELL LOCATION

PC-1A PIEZOMETER WELL LOCATION

APPROXIMATE LIMIT OF REMEDIATION EXCAVATION

NOTE:

ALL LOCATIONS ARE APPROXIMATE.

N

0 80 160

APPROXIMATE SCALE IN FEET

BASEMAP MODIFIED FROM NINYO & MOORE SITE PLAN DATED AUGUST 2001

EXHIBIT B

GEOMATRIX

WELL LOCATION MAP

UC RIVERSIDE PESTICIDE WASTE PITS
Riverside, California

Figure By	Project No.
pah	4528.002
Date	Figure
9/1/05	2

APPENDIX D

Soil Management, Implementation, and Enforcement Plan

Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

Department of Toxic Substances Control

5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

August 18, 2005

Ms. Maggie Souder
Health and Safety Department
University of California Riverside
900 University Avenue
Riverside, California 92521-0306

APPROVAL OF SOIL MANAGEMENT, IMPLEMENTATION AND ENFORCEMENT PLAN, FORMER PESTICIDE WASTE PITS SITE, UNIVERSITY OF CALIFORNIA RIVERSIDE

Dear Ms. Souder:

The Department of Toxic Substances Control (DTSC) has completed the review of UCR's Soil Management, Implementation and Enforcement Plan (SMIEP). Enclosed is a copy of the final plan dated August 2005.

If you have any questions, please contact me at (714) 484-5461.

Sincerely,

Greg Holmes
Unit Chief
Southern California Cleanup Operations Branch – Cypress Office

Enclosure

cc: See next page

Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

Department of Toxic Substances Control

5796 Corporate Avenue
Cypress, California 90630

Arnold Schwarzenegger
Governor

August 18, 2005

Ms. Maggie Souder
Health and Safety Department
University of California Riverside
900 University Avenue
Riverside, California 92521-0306

APPROVAL OF SOIL MANAGEMENT, IMPLEMENTATION AND ENFORCEMENT PLAN, FORMER PESTICIDE WASTE PITS SITE, UNIVERSITY OF CALIFORNIA RIVERSIDE

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Sincerely,

Greg Holmes
Unit Chief
Southern California Cleanup Operations Branch – Cypress Office

Enclosure

cc: See next page

cc: Ms. Eileen Bailiff
Geomatrix Consultants
510 Superior Avenue
Newport Beach, California 92663

Ms. Bonnie Wolstoncroft, Esq.
Senior Staff Counsel
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

Mr. Frank Gonzales, C. Hg.
Project Geologist
Geological Services Unit
Cypress Office

UNIVERSITY OF CALIFORNIA RIVERSIDE

FORMER PESTICIDE WASTE PITS SITE

SOIL MANAGEMENT, IMPLEMENTATION AND ENFORCEMENT PLAN

AUGUST 2005

TABLE OF CONTENTS

FIGURES

SOIL MANAGEMENT, IMPLEMENTATION AND ENFORCEMENT PLAN FORMER PESTICIDE WASTE PITS SITE

University of California
Riverside, California

1.0 INTRODUCTION

Geomatrix Consultants, Inc. (Geomatrix) on behalf of the University of Riverside (UCR) and the Department of Toxic Substances Control (DTSC) has prepared this Soil Management, Implementation and Enforcement Plan, (SMIEP) for the former pesticide waste pits site located within the UCR Agricultural Experiment Station at 1060 Martin Luther King Jr. Avenue, in Riverside, California (the site; Figure 1). This SMIEP is prepared pursuant to the requirements of the Land Use Covenant between UCR and DTSC. The Land Use Covenant prohibits certain land uses at the site. The SMIEP is intended to supplement the Land Use Covenant by providing instructions for the safe handling, reuse, and disposal of soil at the site, and describing measures necessary to implement and enforce this SMIEP. The limit of the area subject to the requirements of the SMIEP is shown on Figure 2. This plan does not address groundwater management issues because groundwater is present at depths greater than 50 feet and is not likely to be encountered in site construction or maintenance activities.

This SMIEP provides a framework to manage residual concentrations of potentially harmful chemicals in soil at the site in a manner that is: (1) protective of human health and the environment; and (2) consistent with DTSC requirements for the Site. The following sections of the SMIEP present a description of the site background, a summary of environmental investigations and remedial activities, a discussion of the human health screening risk evaluation, a description of the soil management measures that make up the SMIEP, and methods to implement and enforce this SMIEP.

The protocols specified in this SMIEP are based on a current understanding of environmental conditions at the site. If environmental conditions are found to differ from those described herein, then the management protocols may have to be modified to accommodate those differing conditions. If differing environmental conditions are encountered, DTSC and other involved agencies should be notified and appropriate adjustments to the protocols specified herein should be made. The SMIEP applies to all UCR employees and contractors who conduct

activities which may disturb soil at the site. All such persons will be required to implement the SMIEP in performing their work.

2.0 BACKGROUND

The site encompasses an area an estimated 3.25 acres (Figure 2) and is located within the UCR Agricultural Experimental Station, approximately 3/4 of a mile southwest of the main UCR campus (Figure 1). Research has been conducted at the Agricultural Experimental Station in laboratories, greenhouses and in small field plots. Prior to 1972, some of the waste generated by this research was buried in pits dug at the site. Waste reportedly disposed at the site consisted of variety of organic and inorganic wastes, including agricultural plant wastes, plant containers, pesticides, chemical containers, and miscellaneous equipment.

2.1 INVESTIGATIONS AND REMEDIAL ACTIONS

Extensive investigations at the site were conducted by various consultants under DTSC oversight. The investigations resulted in the identification of several areas of potential environmental concern. Soil in these areas was further characterized to define the lateral and vertical extent of chemically-impacted soil and debris. Remedial action at the site consisted of excavation, removal of debris from the soil, and where necessary, treatment of soil containing chemicals of potential concern (COPCs) including chlorinated pesticides and herbicides, polychlorinated biphenyls (PCBs), and polynuclear aromatic hydrocarbons (PNAs), volatile and semi-volatile organic compounds (VOCs and SVOCs), organophosphorous, carbamate and urea pesticides, and off-site disposal of chemicals, chemicals containers, and debris. Cleanup goals for the site were based on a human health risk assessment assuming future non-residential use for the site.

Approximately 38,400 cubic yards of soil was excavated during remediation of the site of which approximately 21,200 cubic yards of soil were treated on-site using low temperature thermal desorption (LTTD). The remaining soil either met the approved site cleanup criteria or was transported off-site to a licensed disposal facility. Approximately 732 tons of hazardous chemical waste was transported off-site for incineration, approximately 846 tons of hazardous debris was transported off-site for land disposal, and approximately 18 tons of municipal waste was transported to a local municipal landfill for disposal.

Following thermal treatment at the site, soil was re-used as backfill in the excavated areas. The remaining excavated soil met human health risk assessment goals without treatment and was used as backfill at the site. The treated backfill material extends to depths ranging between

4 and 20 feet below ground surface. Future excavations at the site for construction may encounter backfilled materials to a depth of 20 feet and should be managed in accordance with this SMIEP and all appropriate OSHA regulations for excavations or trenches.

Approximately 2074 tons of clean soil was imported to the site for use as backfill in the excavation areas. The site was graded such that rainfall precipitation will not cause significant ponding in the remediation areas. The limits of the remediation area has been surveyed and delineated by survey markers that are to remain in place. Planned future use of the site includes construction of greenhouse structures on concrete pads.

2.2 Human Health Screening Risk Evaluation

A human health screening risk evaluation was conducted to assess the potential risks from possible exposures to residual chemicals in soil following the removal of debris and chemicals from soil and LTTD treatment soil when needed. The screening risk evaluation was prepared in general accordance with risk assessment guidance provided by both the California EPA (Cal-EPA) and U.S. EPA.

The potential health risks for the COPCs at the site were assessed assuming potential exposures to future workers at the site through incidental soil ingestion, dermal contact with soil, and inhalation of fugitive dusts or volatile organic compounds (VOCs) in ambient air. Representative concentrations of chemicals in soil were estimated as the lesser of the maximum concentration detected or the 95 percent upper confidence limit (95% UCL) of the mean, assuming a normal distribution. Representative concentrations were based on sampling of treated and untreated soil piles performed in accordance with "Test Methods for Evaluating Solid Waste, SW-846" (U.S.EPA, 1986 updated July 1992).

Human health effects are divided into two broad categories: non-carcinogenic and carcinogenic effects. Non-carcinogenic effects are assumed to be of concern if the calculated Hazard Index (HI), the ratio of the estimated chemical exposure dose to a reference dose level (RfD), exceeds unity (one). When the HI is less than one, adverse health effects are not expected to occur in the exposed population.

Risk characterization for carcinogens includes estimating the incremental probability of developing cancer over a lifetime of 70 years. The incremental carcinogenic risk is calculated as the product of the estimated chemical exposure dose and the cancer slope factor. The U.S. EPA National Contingency Plan specifies an acceptable incremental carcinogenic risk range between $1x10^{-6}$ and $1x10^{-4}$. For this site, a cumulative target carcinogenic risk of $1x10^{-4}$ for the

hypothetical onsite resident was approved by DTSC and used in this risk evaluation. However, the site will not be used for residential or other purposes prohibited by the Land Use Covenant.

The results of the screening evaluations indicated that low concentrations of COPCs in soil should not pose an unacceptable non-carcinogenic or carcinogenic risk to future workers at the site under the conditions evaluated. Although the results indicate that potential exposure to chemicals present in soil at the site do not pose a threat to future workers at the site, standard safety precautions as described herein should be followed if intrusive activities are planned.

3.0 PROPOSED SOIL MANAGEMENT PROCEDURES

The following sections describe the soil management procedures that should be implemented. This SMIEP is intended as a guideline for the handling, reuse, and disposal of soil at the site. If soil within the site is to be disturbed, UCR's Director of Environmental Health and Safety should be contacted prior to the start of work to provide consultation regarding the handling, reuse or final disposition of the soil. Possible reuse and disposal of affected soil are discussed later in this document.

Potential exposures to soil should be minimized by implementing soil management controls that restrict site access and disturbance of soil. The site is located within a larger agricultural research facility which is surrounded by a gated fence (see Figure 2). Public access is restricted. Soil management controls at the site should consist of the following:

- As appropriate, apply water or a non-toxic soil stabilizer to the site surface as stated below in Section 3.1 to control dust emissions;
- Minimize traffic across the site;
- If soil is to be disturbed at the site, the responsible individual (UCR employee or contractor) is required to notify UCR EH&S representatives as soon as possible to initiate a preconstruction site evaluation;
- For those individuals entering the site, provide clear guidance as to the location of treated soil, provide instructions to limit disturbance of soil, and implement required safety notices, training, and procedures, and;
- Maintain surface drainage improvements at the site.

The site should be inspected and documented semi-annually to verify that management controls are being implemented and that they are effective in preventing potential exposures to soil, or until the Department authorizes the University in writing to discontinue the inspections. Corrective actions should be taken to address any such conditions. See sections 4 and 5 for further details.

3.1 SOIL MANAGEMENT PROCEDURES DURING SITE CONSTRUCTION

Soil management measures that should be implemented to mitigate potential exposures to soil during future earthwork and/or construction at the site include the following:

- During construction, workers should use basic health and safety precautions when handling or disturbing soil within the remediation area. Precautions should include:
  - wearing gloves when handling site soil and
  - washing face and hands before eating, drinking, or smoking when working in the former remediation area.
- Implementation of construction impact mitigation measures, including:
  - control of dust generated at the site,
  - decontamination of equipment, and
  - prevention of storm water runoff using best management practices (BMPs).

3.1.1 Dust Control

Measures should be implemented during construction activities at the site to control wind blown soil from being carried away from the property and correspond to the PM_{10} control measures recommended by the South Coast Air Quality Management District (SCAQMD) in their California Environmental Quality Act Guidelines. These measures consist of:

- Exposed soil at the site should be lightly sprayed with water to minimize dust during site construction activities, including construction and site grading.
- Water all active construction areas at least twice daily or as necessary to prevent visible dust plumes from migrating outside of the site limits.
- Pave, apply water or non-toxic soil stabilizers on access roads, parking areas, and staging areas. If water is used, it should be applied at least twice daily. Soil stabilizers should be applied as appropriate to minimize dust emissions
- If applicable, sweep all paved access routes parking areas and staging areas daily, if visibly soiled.

- Sweep street daily if visible soil material is carried onto public streets from the site.

3.1.2 Stormwater and Erosion Control

Storm water pollution controls should be implemented to minimize offsite sediment transport during storm events. An Erosion Control Plan should be developed by the contractor or authorized agent prior to initiating construction activities at the site that details procedures for minimizing erosion. The plan should be based on appropriate Best Management Practices (BMPs), such as silt traps and hay bales to prevent sediment-laden water runoff during construction, berms to control site runoff, and covering soil piles during rain events to minimize erosion potential. Specific BMPs should be described in the plan and must be approved by UCR Department of Environmental Health & Safety.

3.1.3 Soil Pile Management

Temporary piling of soil may be necessary during construction at the site. Soil excavated in the site may have residual concentrations of chemicals and should be handled appropriately. Soil piled at the site should be lightly sprayed with water as needed to minimize dust. To the extent practical, the soil piles should be covered with plastic sheeting or similar material of appropriate thickness when not being used. Soil piles should be surrounded by hay bales and/or silt traps to minimize sediment runoff during times of precipitation and/or during rain events.

3.1.4 Soil Disposal

Soil excavated at the site for off-site disposal, may be considered a hazardous waste, unless shown otherwise by analysis. The soil should be segregated, placed on plastic sheeting or other impervious material and stored apart from construction activities. Soil piles should be managed as outlined in Section 3.1.3. No soil should be removed from the site until it has been sampled in accordance with U.S.EPA, SW-846 and tested for the presence of hazardous materials according to the profiling requirements of the facility where the soil will be disposed. Soil sampling and analysis should be conducted under the direction of EH&S and EH&S should make the determination for appropriate soil disposal options. Initial field screening using a photo-ionization detector or flame-ionization detector may be conducted to assess if VOCs are present in soil. Analytical tests for soil samples may include one of more of the following EPA Methods:

- EPA Method 8081/8082 for organochlorine pesticides and PCBs,
- EPA Method 8310 for poly-nuclear aromatic hydrocarbons,

- EPA Methods 5035 and 8260B for volatile organic compounds.

DTSC must be notified in writing at least 15 days prior to off-site shipment of any soil excavated from the site. Soil analytical data should be provided to DTSC with each written notification.

3.1.5 Discovery of Affected Soil and Debris During Construction

Although the site has been adequately characterized to the satisfaction of DTSC, chemicals, affected soil, and debris could be encountered unexpectedly during excavation. The contractor or authorizing agent is required to notify the UCR Director of Environmental Health and Safety immediately when items such as those listed below are encountered during excavation:

- drums
- boxes
- cans
- bottles
- chemical-appearing substances
- unusual colored soil or odors, and
- other debris

Upon receipt of full information regarding the finding of any of the above-listed items, the Director of Environmental Health and Safety will notify the DTSC project manager of any new findings (not previously known) at the site. All excavation and construction-related activities should be stopped immediately and the area should be covered with plastic sheeting and cordoned off until an evaluation of site conditions can be made by UCR EH&S and/or a qualified environmental professional. No further work should be conducted without verbal or written approval from the Director of EH&S and the DTSC project manager.

3.2 Post-Construction Soil Management Procedures

Following site construction, it is assumed that the majority of area will be occupied by greenhouse structures and it is unlikely that underlying soil will be accessed, with the possible exception of future maintenance work on subsurface utilities. In the event underlying soils will be accessed, the site should be inspected by EH&S personnel to evaluate that risk management controls are being implemented and that cover materials, if present, are not damaged or eroded to the extent that underlying soil is disturbed. Damage of cover materials, if present, should be repaired as needed.

Inspections should be conducted on a semi-annual basis and include photographic and written documentation of site conditions, including any abnormal site conditions observed during the inspection, or until the Department authorizes the University in writing to discontinue the inspections. A copy of the inspection report and photographs should be filed in the EH&S office. Damage should be reported to the Director of EH&S and may consist of erosion due to site runoff or ponding of water due to settlement of fill materials or blockage of drainage pipes with sediment or debris. Repairs should be completed within 30 days of the inspection.

4.0 DUTIES OF THE DIRECTOR OF EH&S

4.1 SIGNS

The Director of EH&S shall post signs in the former pesticide pits site stating that soil in the area may be contaminated with hazardous substances, and that no excavation shall be performed without the permission of the Director of EH&S. Further, the signs should state that any crops grown in the soil from the former pesticide pits site shall not be used for human consumption. Such signs shall be approved by DTSC.

4.2 CROPS AT THE SITE

The Director of EH&S shall ensure that any crops grown in the soil from within the limits of the land use covenant area will not be used for human or animal consumption, with the exception of animal consumption for research purposes.

4.3 RESTRICTIONS ON MINORS

The Director of EH&S shall ensure that occupancy of the former pesticide pits site is limited to UCR personnel 18 years or older engaging in non-classroom activities.

4.4 ANNUAL REPORT

An annual report shall be prepared and signed by the Director of EH&S, or the Director's designee, and sent to the DTSC project manager by January 31 of each year. It shall describe the condition of the soil cover in the former pesticide pits area, all construction and excavation activities, and certify that: (1) no crops grown in the soil from that area have been used for human consumption and (2) that the former pesticide pits area has been limited to use by authorized UCR personnel 18 years or older engaging in non-classroom activities. It shall also describe any corrective measures made to preserve the integrity of the soil cover, and to

measures to correct any violations of the SMIEP. Copies of annual reports shall be available in the EH&S office for inspection by DTSC during normal business hours.

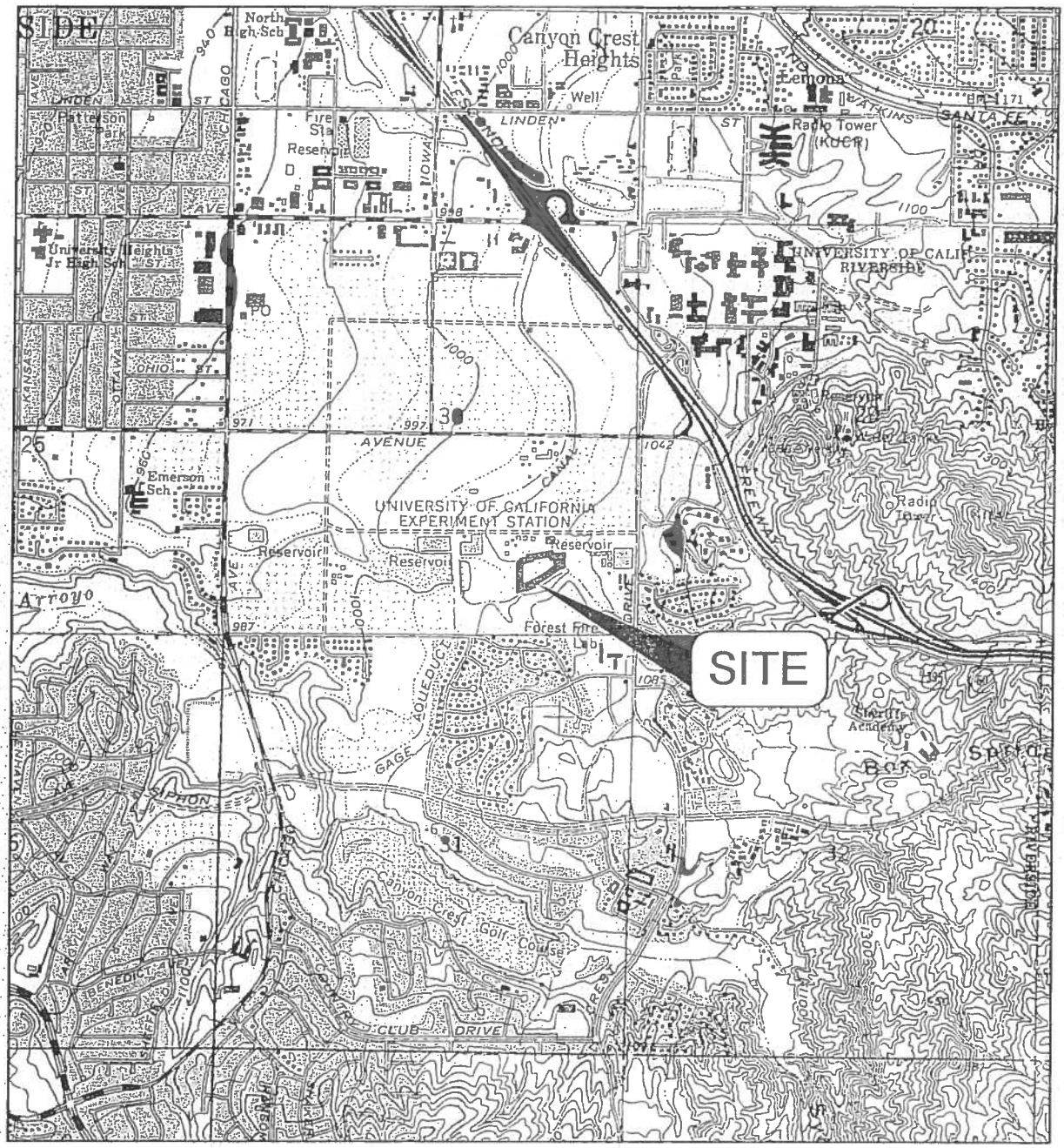
5.0 ENFORCEMENT

DTSC will conduct annual O&M inspections to verify compliance with this SMIEP. Failure by any party to comply with the provisions of the SMIEP shall be cause for DTSC to file civil or criminal actions as provided by law.

6.0 IMPLEMENTATION

Any questions regarding the implementation of this SMIEP should be directed to the UCR Director of Environmental Health and Safety. Work at the site should only be conducted during EH&S working hours.

University of California Riverside
Environmental Health and Safety
900 University Avenue
Riverside, California 92521
(909) 787-5528



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APPROXIMATE SCALE IN FEET

BASEMAP MODIFIED FROM U.S.G.S. 7.5 MINUTE QUADRANGLE MAP RIVERSIDE EAST 1967, CALIFORNIA. PHOTO-REVISED 1980.

GEOMATRIX

SITE LOCATION MAP

UC RIVERSIDE
PESTICIDE WASTE PITS
Riverside, California

Figure By	Project No.
res	4528.001
Date	Figure
5/4/03	1