

**2018 Annual Land-Use Covenant
Inspection Report
for DOE Areas at the Laboratory
for Energy-Related Health
Research/Old Campus Landfill
Superfund Site
University of California, Davis**

January 2019



U.S. DEPARTMENT OF
ENERGY

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Abbreviations

bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOE	U.S. Department of Energy
DSS	Domestic Septic System
DTSC	California Department of Toxic Substances Control
EDPs	Eastern Dog Pens
EH&S	Environmental Health and Safety
EPA	U.S. Environmental Protection Agency
LEHR	Laboratory for Energy-Related Health Research
Ra/Sr	Radium/Strontium
RD/RA	Remedial Design/Remedial Action
SMP	Soil Management Plan
SWT	Southwest Trenches
UC Davis	University of California, Davis
Weiss	Weiss Associates

1.0 Introduction

This report documents inspection of land-use restrictions implemented by the U.S. Department of Energy (DOE) to control exposure to residual soil contaminants at DOE areas of the Laboratory for Energy-Related Health Research/Old Campus Landfill Superfund Site (LEHR site) located at the University of California, Davis (UC Davis) (Figure 1). By controlling land use at the LEHR site, DOE meets the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) to protect human health and the environment from any potential effects of contamination remaining at the DOE areas at the LEHR site. The selection of land-use controls for eight DOE areas at the LEHR site is documented in the *Record of Decision for DOE Areas at the Laboratory for Energy-Related Health Research, University of California, Davis* (DOE 2009). The land-use restrictions were recorded in the *Covenant to Restrict Use of Property, Environmental Restriction (Land-Use Covenant)* (DTSC 2014). Methods for implementation of the land-use restrictions are provided in the *Remedial Design/Remedial Action Work Plan for the Former Laboratory for Energy-Related Health Research Federal Facility, University of California, Davis* (RD/RA Work Plan) (DOE 2010).

The DOE areas subject to land-use restrictions (Figure 2) are the Radium/Strontium (Ra/Sr) Treatment Systems Area, Domestic Septic System (DSS) 3 and DSS 4 Areas, Dry Wells A–E Area, Eastern Dog Pens (EDPs) Area, and Southwest Trenches (SWT) Area. The DSS 2 Area is located within the Ra/Sr Treatment Systems Area. The DSS 4 Area contains a portion subject to a prohibition on residential use.

The Western Remediation Support Area and Eastern Remediation Support Area shown in Figure 2 do not contain residual contamination but are designated for the staging of equipment and supplies if contingent remedial actions were to be implemented at the Ra/Sr Treatment Systems Area, DSS 3 and DSS 4 Areas, Dry Wells A–E Area, EDPs Area, or SWT Area.

The Land-Use Covenant states that:

- Residential use, use for day care for children, and cultivation of crops for human consumption are prohibited at the location in the DSS 4 Area shown in Figure 2.
- Soil management at the Ra/Sr Treatment Systems Area, DSS 3 Area, DSS 4 Area, Dry Wells A–E Area, EDPs Area, and SWT Area must be implemented in accordance with the Soil Management Plan (SMP) included as Appendix A in the RD/RA Work Plan (DOE 2010).
- Interference, tampering with, or destruction of the groundwater monitoring system is prohibited.
- The California Department of Toxic Substances Control (DTSC) and the U.S. Environmental Protection Agency (EPA) Region 9 shall have reasonable right of entry and access to the property for periodic inspections to ensure compliance with land-use restrictions.
- Access must be granted to DOE for the purpose of collecting samples and maintaining groundwater monitoring wells.
- An annual inspection verifying compliance with the Land-Use Covenant shall be conducted.

These restrictions shall be maintained until the concentrations of contaminants in the soil are at or below cleanup levels specified in the Record of Decision (DOE 2009).

1.1 Inspection and Reporting Requirements

Annual inspection for compliance with the Land-Use Covenant is required (DTSC 2014). The inspection must include verification of permits obtained for any soil-disturbing activities, a review of soil-disturbing activities for compliance with the SMP (DOE 2010), review of disposal practices for waste generated during soil-disturbing activities, and suggested changes to the SMP.

The inspection report is required to contain:

- The dates and times of inspection and names of those who conducted the inspection and reviewed the report.
- An explanation of how the observations that were the basis for the statements and conclusions were performed (e.g., drive by, flyover, walkthrough).
- The annual inspection results.
- A review of compliance with the requirements of the SMP.
- A certification of compliance with the Land-Use Covenant.
- A discussion of any soil-disturbing activities and wastes generated.

If violations are noted, the annual inspection report must detail the steps taken to return to compliance. The inspection report is due to DTSC and EPA on or before January 15.

1.2 Period Covered

This report covers the period from December 10, 2017, to December 9, 2018.

1.3 Activities Conducted During the Reporting Period

Activities conducted during the reporting period included:

- Inspections of groundwater monitoring wells, land survey monuments, and DOE areas subject to land-use restrictions (Section 2.0).
- Annual training to communicate soil management requirements to appropriate units performing or contracting work (Section 3.1).
- New pumps installed in wells UCD1-018, UCD1-023, and UCD1-071 (Section 2.4).
- Permit close out for soil-disturbing activities conducted in 2017 (Section 3.3).
- Permit application approval (Section 2.3.2) and close out (Section 3.3) for soil-disturbing activities conducted in 2018.
- Updates to the SMP for the handling and disposal of fallen trees and associated soil (Section 3.4).

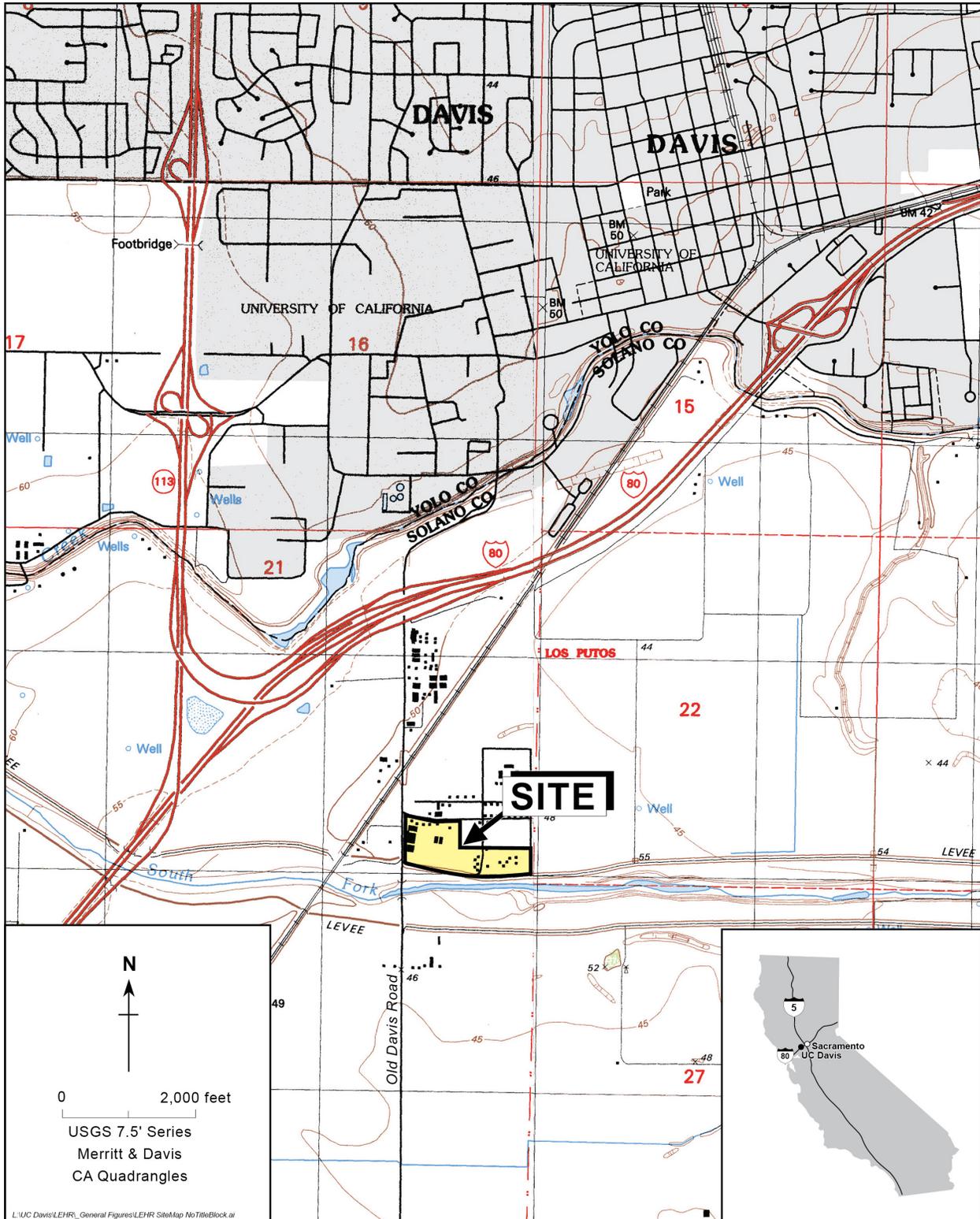


Figure 1. Location of the LEHR Superfund Site, UC Davis, Solano County, California



Figure 2. Areas of the LEHR Superfund Site Subject to Land-Use Restrictions

2.0 Inspections

On November 7, 2018, between 8:30 a.m. and 5:30 p.m., Tim Utterback of Weiss Associates (Weiss) performed walkthrough inspections of 23 survey monuments, 6 DOE areas, and 8 groundwater monitoring wells at the LEHR site. On November 12, 2018, between 11:00 a.m. and 1:30 p.m., Tim Utterback of Weiss performed inspections of four groundwater monitoring wells and one survey monument. The dedicated sample collection pump in each well was tested for proper function. The inspections are discussed below.

2.1 Inspection of Survey Monuments

A total of 23 survey monuments were found in good condition during the November 7, 2018, inspection. A dumpster was located on top of Survey Monument 24, making it inaccessible for inspection. The dumpster was moved, and on November 12, 2018, Survey Monument 24 was inspected and found to be in good condition. Figure 3 shows the locations of the survey monuments, Appendix A provides the survey monument inspection checklists completed on November 7 and 12, 2018, and Appendix B provides the photographs of the survey monuments.

2.2 Inspection of Domestic Septic System 4 Area for Prohibited Land Uses

On November 7, 2018, Tim Utterback of Weiss performed walkthrough inspections of the DSS 4 Area. No residential use, use for day care for children, cultivation of crops for human consumption, or indications of a change in land use were observed in the DSS 4 Area.

2.3 Inspections of DOE Areas for Compliance with Requirements of the Soil Management Plan

On November 7, 2018, Tim Utterback of Weiss performed walkthrough inspections of the DOE areas subject to land-use restrictions to look for signs of soil disturbance. No indication of soil disturbance was found except for decommissioned soil gas wells described in Section 3.2 and a small animal burrow and small area of soil subsidence in the Ra/Sr Treatment Systems Area as described in Section 2.3.2. Appendix A provides the inspection checklists, and Appendix C provides photographs documenting the inspections.

2.3.1 Soil Management Compliance Interview

On December 7, 2018, at 4:00 p.m., Bob Devany of Weiss interviewed Rachel Lauesen of the UC Davis Environmental Health and Safety (EH&S) Unit. Ms. Lauesen reported that no soil-disturbing activities except the permitted soil gas well decommissioning (see Section 2.3.2) occurred within the DOE areas subject to the SMP.

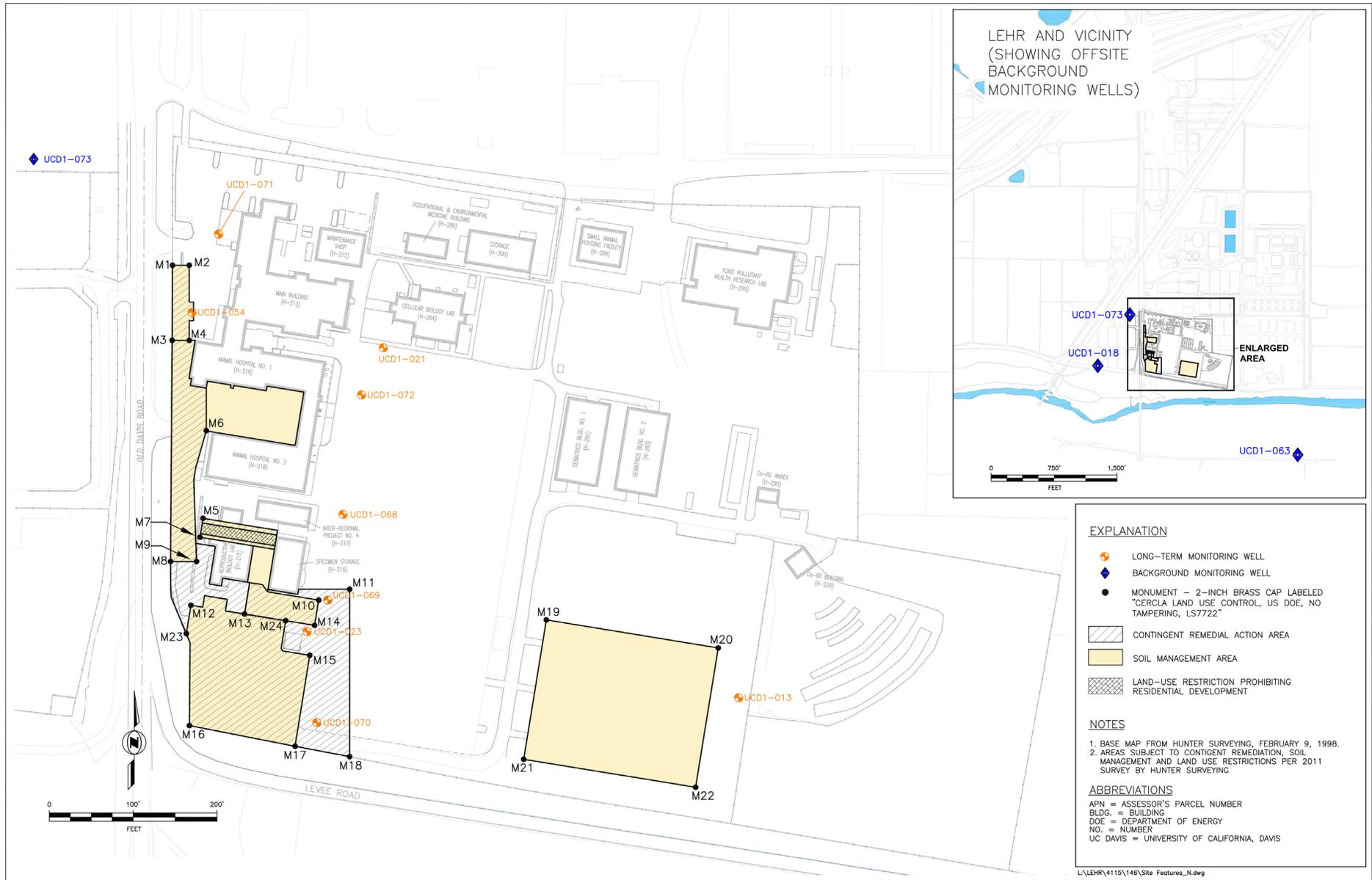


Figure 3. Monitoring Wells and Survey Monuments at the LEHR Superfund Site

2.3.2 Inspection of DOE Areas for Evidence of Soil-Disturbing Activities

During this reporting period, one permit-required soil-disturbing activity occurred within the DOE areas subject to land-use restrictions. The soil-disturbing activity occurred upon completion of the vapor intrusion evaluation (DOE 2018b) and involved decommissioning soil gas wells as described in Section 3.2. On August 2, 2018, prior to the soil gas well decommissioning activities, Rachel Lauesen of the UC Davis EH&S Unit conducted an inspection of the DOE areas and approved the permit application for soil disturbance. The waste generated from decommissioning activities was disposed offsite as described in Section 3.3, and the permit was closed out.

During the November 7, 2018, walkthrough inspection, Tim Utterback of Weiss observed and photographed one small animal burrow and one small area of soil subsidence in the Ra/Sr Treatment Systems Area (photographs 3693 and 3694 in Appendix C). The animal burrow was photographed in 2017. Comparison of 2017 and 2018 photographs indicates no change to the burrow and no soil disturbance between photographs. Animal burrows photographed in the EDPs area during the 2017 inspection were not found in the 2018 inspection. The area of soil subsidence in the Ra/Sr Treatment Systems Area does not indicate soil removal, but that a small area of ground surface has subsided slightly. A pile of asphalt not previously observed within the Eastern Dog pens was observed during the November 7, 2018, walkthrough inspection, but no soil disturbance due to the asphalt placement was observed. Thus, no soil disturbance was observed in 2018 other than the permitted activity described above.

2.4 Inspections of Groundwater Monitoring Wells

On November 7 and 12, 2018, Tim Utterback of Weiss performed walkthrough inspections of groundwater monitoring wells UCD1-013, UCD1-018, UCD1-021, UCD1-023, UCD1-054, UCD1-063, and UCD1-068 through UCD1-073 (Figure 3). None of the wells showed evidence of tampering. Wells with standpipe completions (UCD1-013, UCD1-018, UCD1-063, UCD1-070, and UCD1-073) were observed to be secured with functioning padlocks. Wells UCD1-021, UCD1-054, UCD1-068, UCD1-069, UCD1-071, and UCD1-072 have surface completions and were observed to be secured with bolts. Well UCD1-023 has a surface completion and screw-on lid. All well completions were structurally sound, and the wells were in good condition. Appendix D provides photographs of the groundwater monitoring wells.

The plaque on the lid of well UCD1-054 was difficult to read. DOE plans to clean this plaque.

Cable connections between the cap and plaque inside wells UCD1-021 and UCD1-068 were rusted and frayed or broken. DOE plans to replace these cables.

Dedicated discharge tubing stored in the vault of flush mount well UCD1-072 was coated with dust on the outer surface. Dedicated tubing will no longer be stored in flush mount well vaults.

On November 7 and 12, 2018, the dedicated pumps in all 12 wells were tested to assess if they were functioning properly for groundwater sample collection. The tests indicated all pumps produced water within the target flow rate range of 0.1 to 0.5 liter per minute as specified in the RD/RA Work Plan (DOE 2010). The pumps in wells UCD1-063, UCD1-070, and UCD1-072 pumped at the low end of the target flow range and did not improve after adjusting pump

controller settings. DOE plans to replace the pumps at wells UCD1-063, UCD1-070, and UCD1-072.

On February 21, 2018, because of diminished pump performance observed during flow rate tests in 2017, new pumps were installed in wells UCD1-018, UCD1-023, and UCD1-071. Appendix E provides photographs of the well vault interiors before and after pump replacement.

On November 30, 2018, decals were applied to the delineators at flush-mounted wells UCD1-068, UCD1-069, and UCD1-072 in the Western Dog Pens Area to communicate the need for caution when working at these locations.

DOE plans to install plugs in the air and discharge ports of pumps replaced in 2018 and those planned for replacement in 2019.

The lids on wells UCD1-063, UCD1-070, and UCD1-073 might be allowing water into the standpipe completions. DOE plans to drill a small hole above the grout in each standpipe to allow drainage.

3.0 Soil Management Plan Implementation

In accordance with an agreement with DOE, the EH&S Unit at UC Davis is responsible for implementation of the SMP (DOE 2010).

3.1 Training

The EH&S Unit conducted annual training to communicate soil management requirements to applicable units that may perform, manage, or contract for work at and near the project site. Additionally, personnel working in departments located on the project site or near it received annual training.

Information on the following topics was provided:

- Roles and responsibilities for soil management in the DOE areas
- Areas and contaminants subject to soil management requirements
- Soil management during excavation or construction
- Permits for soil-disturbing activities
- Plans and documentation
- Soil management during emergency work
- Waste management
- Waste characterization and disposal
- Inspections

3.2 Soil-Disturbing Activities

In 2018, soil-disturbing activities were executed as planned to decommission soil gas wells installed for the vapor intrusion evaluation (DOE 2017). The activities involved decommissioning 11 soil gas wells and 3 subslab vapor pins. Of the 11 wells, 9 were in DOE areas subject to the requirements of the SMP (DOE 2010). Vapor pins did not penetrate subsurface soil and were not subject to SMP requirements. On August 8 and 9, 2018, the nine soil gas wells subject to SMP requirements were decommissioned by removing the well heads and hand-augering a 3.25-inch-diameter hole to remove the tubing/bentonite grout annulus of each well to 3 feet below ground surface (bgs). The remaining hole was filled with cement grout to near surface, and the surface was restored to the surrounding condition. Materials and soil removed to depths shallower than 1 foot bgs were disposed as municipal waste, and materials and soil removed below 1 foot were added to one of two 55-gallon drums containing waste generated in 2017 from the installation of soil gas wells and vapor points. Appendix F provides a copy of the approved soil disturbance permit application and a map showing the former locations of the soil gas wells and subslab vapor pins.

All soil-disturbing activities conducted in support of the soil gas investigation were performed according to the requirements of the SMP (DOE 2010).

On the basis of site inspections and the December 7, 2018, interview with Rachel Lauesen of the EH&S Unit at UC Davis, no other permit-required soil-disturbing activities (routine or emergency) occurred in any of the DOE areas subject to the requirements of the SMP during this reporting period.

3.3 Soil Disposal

On August 13, 2018, Clean Harbors transported waste generated by soil gas investigation activities in 2017 and 2018 to their Wilmington, California, facility for disposal as nonhazardous waste at a facility approved by the EPA to receive waste from CERCLA sites. UC Davis was identified as the generator of the waste. Disposal of the soil gas investigation waste soil was documented in the Soil Disturbance Report (Weiss 2018) submitted to the EH&S Unit at UC Davis as required in the SMP (DOE 2010). Appendix F provides copies of the approved and closed permits for soil-disturbing activities conducted in 2017 and 2018.

On the basis of site inspections, soil gas investigation records, and the interview documented in this report, only the soil gas investigation waste transported offsite on August 13, 2018, was disposed of during this reporting period. No other soil from the DOE areas subject to the requirements of the SMP was disposed of during this reporting period. Review of activities associated with the storage, characterization, and disposal of the waste soil generated from the soil gas investigation indicates that disposal was in conformance with the requirements of the SMP (DOE 2010).

3.4 Soil Management Plan Changes

As recommended in the First Five-Year Review (DOE 2016), the SMP is under revision to:

- Require high-visibility delineators at survey monuments.
- Require high-visibility delineators at flush-mount wells located in fields.
- Specify procedures for handling and disposing of fallen trees.

The high-visibility delineators were installed as documented in the *2017 Annual Land-Use Covenant Inspection Report for DOE Areas at the Laboratory for Energy-Related Health Research/Old Campus Landfill Superfund Site, University of California, Davis* (DOE 2018a), and the above-listed SMP revisions are anticipated for completion in 2019.

4.0 Certification

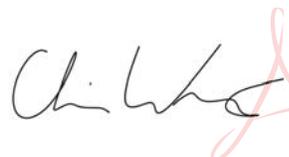
The U.S. Department of Energy hereby certifies to the best of its knowledge that the information contained in this inspection report is true and accurate and no exceptions to the Land-Use Covenant terms and conditions occurred during this reporting period.

 Digitally signed by Jeffrey N. Murl
DN: c=us, o=u.s. government, ou=department
of energy, ou=Energy IT Services, ou=Legacy
Management, ou=People, cn=Jeffrey N. Murl
Date: 2018.12.20 09:18:57 -07'00'

Date: 12/20/2018

Jeffrey Murl
Site Manager
U.S. Department of Energy
Office of Legacy Management
11035 Dover Street, Suite 600
Westminster, CO 80021

The University of California hereby certifies to the best of its knowledge that the information contained in this inspection report is true and accurate and no exceptions to the Land-Use Covenant terms and conditions occurred during this reporting period.

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email=cvwright@ucdavis.edu, c=US
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Date: 1/2/19

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UC Davis Environmental Health and Safety
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5.0 References

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Weiss (Weiss Associates), 2018. *Soil Disturbance Report – 2017–2018 DOE Areas Vapor Intrusion Investigation for the Laboratory for Energy-Related Health Research Federal Facility*, University of California, Davis, October 4, Rev. 0.

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Appendix A

Inspection and Maintenance Checklists

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LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

Survey Monuments

Inspection Period December 10, 2017 – December 9, 2018

Monument No.	Close-up Photo ¹	Setting Photo ²	Damaged or missing? (Y/N) If Y, explain	Comments
1	3588	3589	N	
2	3590	3591	N	
3	3592	3593	N	
4	3594	3595	N	
5	3613	3614	N	
6	3615	3616	N	
7	3617	3618	N	
8	3619	3620	N	
9	3621	3622	N	
10	3636	3638	N	
11	3639	3640	N	
12	3641	3642	N	
13	3643	3644	N	
14	3645	3646	N	
15	3662	3663	N	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

Survey Monuments

Inspection Period December 10, 2017 – December 9, 2018

Monument No.	Close-up Photo ¹	Setting Photo ²	Damaged or missing? (Y/N) If Y, explain	Comments
16	3664	3665	N	
17	3667	3668	N	
18	3670	3671	N	
19	3681	3680	N	
20	3684	3685	N	
21	3675	3676	N	
22	3688	3689	N	
23	3672	3673	N	
24	TRU 11-7-18	3721 3722	TRU 11-7-18	Covered by dumpster. Called and requested dumpster move.

Notes:

¹ Take zoom photograph of monument. Record photograph number.

² Place orange ring marker around monument and step back to take photo of monument location with recognizable site features (ex. buildings, fence, road, etc) in view. Record photograph number.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 12, 2018

Survey Monuments

Inspection Period December 10, 2017 – December 9, 2018

Monument No.	Close-up Photo ¹	Setting Photo ²	Damaged or missing? (Y/N) If Y, explain	Comments
24	3732	3733	N	

Notes:

¹ Take zoom photograph of monument. Record photograph number.

² Place orange ring marker around monument and step back to take photo of monument location with recognizable site features (ex. buildings, fence, road, etc) in view. Record photograph number.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Areas Monitoring Wells

Inspection Period December 10, 2017 – December 9, 2018

Well ID and Completion Type	Photographs		Evidence of tampering? (Y/N) If Y, explain	Locks/Bolts Secure? ³ (Y/N) If N, explain	ID Plaques OK? ⁴ (Y/N) If N, explain	Vault and Seal Sound? ⁵ (Y/N) If N, explain	Pump OK? ⁶ (Y/N) If N, explain	Comments
	Wellhead / tag ¹	Vault / tag ²						
UCD1-013 standpipe	3696 3697	3698 3699	N	Y	Y	Y	Y	
UCD1-018 standpipe								TRY 11-7-18
UCD1-021 flush	3717 3718	3719 3720	N	Y	N	Y	Y	Cable connection between Plaque and well cap rusted and Frayed. Removed cable
UCD1-023 flush	3723 3724	3725 3726	N	Y	Y	Y	Y	
UCD1-054 flush	3727 3728	3729 3731	N	Y	N	Y	Y	Plaque on vault lid worn and covered with TRY obscured 11-7-18
UCD1-063 standpipe								TRY 11-7-18
UCD1-068 flush	3709 3710	3711 3712	N	Y	N	Y	Y	Cable connection between plaque and well cap broken
UCD1-069 flush	3705 3706	3707 3708	N	Y	Y	Y	Y	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Areas Monitoring Wells

Inspection Period December 10, 2017 – December 9, 2018

Well ID and Completion Type	Photographs		Evidence of tampering? (Y/N) If Y, explain	Locks/Bolts Secure? ³ (Y/N) If N, explain	ID Plaques OK? ⁴ (Y/N) If N, explain	Vault and Seal Sound? ⁵ (Y/N) If N, explain	Pump OK? ⁶ (Y/N) If N, explain	Comments
	Wellhead / tag ¹	Vault / tag ²						
UCD1-070 standpipe	3700 3701	3703 3704	N	Y	Y	Y	Y	Pumped a bit slow
UCD1-071 flush								TRY 11-7-18
UCD1-072 flush	3713 3714	3715 3716	N	Y	Y	Y	Y	Pumped Slow dedicated tubing unclean
UCD1-073 standpipe								TRY 11-7-18

Notes:

- ¹ Take photograph inclusive of wellhead features including concrete pad. Take zoom photograph of wellhead identification plaque (tag). Record photograph numbers.
- ² Open well vault and take photograph inclusive of vault inner features. Take zoom photograph of identification plaque (tag) stored in vault. Record photograph numbers.
- ³ Verify that standpipe well locks are present, in good condition, and secured with the lock at the time of inspection. Verify that flush mount well bolts are present, in good condition, and properly secured at the time of inspection. Document any issues.
- ⁴ Verify that well identification plaques fixed to the outside of the well and stored inside the well are legible and in good condition. Document any issues.
- ⁵ Verify that concrete pads are structurally sound. Document any issues.
- ⁶ Connect pump to controller and discharge approximately 300 milliliters of water to bucket. Document any issues.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 12, 2018

DOE Areas Monitoring Wells

Inspection Period December 10, 2017 – December 9, 2018

Well ID and Completion Type	Photographs		Evidence of tampering? (Y/N) If Y, explain	Locks/Bolts Secure? ³ (Y/N) If N, explain	ID Plaques OK? ⁴ (Y/N) If N, explain	Vault and Seal Sound? ⁵ (Y/N) If N, explain	Pump OK? ⁶ (Y/N) If N, explain	Comments
	Wellhead / tag ¹	Vault / tag ²						
UCD1-018 standpipe	3742 3746	3747 3748	N	Y	Y	Y	Y	
UCD1-063 standpipe	3738 3739	3740 3741	N	Y	Y	Y	N	Weak pumping
UCD1-071 flush	3734 3735	3736 3737	N	Y	Y	Y	Y	well cap not accomodating transducer cable. Vault lid gasket missing
UCD1-073 standpipe	3750 3751	3752 3753	N	Y	Y	Y	Y	

Notes:

- ¹ Take photograph inclusive of wellhead features including concrete pad. Take zoom photograph of wellhead identification plaque (tag). Record photograph numbers.
- ² Open well vault and take photograph inclusive of vault inner features. Take zoom photograph of identification plaque (tag) stored in vault. Record photograph numbers.
- ³ Verify that standpipe well locks are present, in good condition, and secured with the lock at the time of inspection. Verify that flush mount well bolts are present, in good condition, and properly secured at the time of inspection. Document any issues.
- ⁴ Verify that well identification plaques fixed to the outside of the well and stored inside the well are legible and in good condition. Document any issues.
- ⁵ Verify that concrete pads are structurally sound. Document any issues.
- ⁶ Connect pump to controller and discharge approximately 300 milliliters of water to bucket. Document any issues.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Urterback

Inspection Date November 7, 2018

DOE Area: Dry Wells A – E Area

Inspection Period December 10, 2017 – December 9, 2018

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. ^{1,2}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> <u>3</u>
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> <u>3</u>
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> <u>3</u>
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2017, were the activities in compliance with the Soil Management Plan? If no, explain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> <u>3</u>
If waste was generated due to soil disturbing activities since December 10, 2017, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> <u>3</u>
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> <u>3</u>

Notes:

¹ Soil disturbing activities include, but are not limited to excavation, grading, trenching, utility installation or repair, and any other human activities that could potentially bring contaminated soil to the surface.

² Does not apply to landscaping, fire protection, or maintenance work that is conducted at depths less than 1 foot below ground surface and less than 5 cubic yards of soil waste is significantly displaced (e.g., stockpiled, placed in containers) and all soil is returned to the disturbed area. Such work may proceed without restriction.

3 Interview conducted by Bob Devany on 12-7-18.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Dry Wells A – E Area

Inspection Period December 10, 2017 – December 9, 2018

Photograph Description	Photo No.	Comments
View north over Dry Wells A through E Area; Old Davis Road to left.	3596	
View south over Dry Wells A through E Area; Building H-219 in background/left; facility entrance gate in foreground/right.	3597	
View west over Dry Wells A through E Area; site entrance gate to right; Old Davis Road behind.	3598	
View southwest over Dry Wells A through E Area; Old Davis Road behind.	3599	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Radium/Strontium Treatment Systems Area
Inclusive of Domestic Septic System 2

Inspection Period December 10, 2017 – December 9, 2018

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. ^{1,2}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2017, were the activities in compliance with the Soil Management Plan? If no, explain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If waste was generated due to soil disturbing activities since December 10, 2017, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³

Notes:

¹ Soil disturbing activities include, but are not limited to excavation, grading, trenching, utility installation or repair, and any other human activities that could potentially bring contaminated soil to the surface.

² Does not apply to landscaping, fire protection, or maintenance work that is conducted at depths less than 1 foot below ground surface and less than 5 cubic yards of soil waste is significantly displaced (e.g., stockpiled, placed in containers) and all soil is returned to the disturbed area. Such work may proceed without restriction.

³ Interview conducted by Bob Devany on 12-7-18.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Radium/Strontium Treatment Systems Area
Inclusive of Domestic Septic System 2

Inspection Period December 10, 2017 – December 9, 2018

Photograph Description	Photo No.	Comments
View north over southern portion of Radium/Strontium Treatment Systems Area. Building H-215 to right; Building H-218 back/right.	3600	
View north over middle portion of Radium/Strontium Treatment Systems Area. Building H-218 to right; Building H-219 back/right.	3601	
View south over southern portion of Radium/Strontium Treatment Systems Area. Building H-215 to left.	3602	
View north over northern portion of Radium/Strontium Treatment Systems Area. Building H-219 to right.	3603	
View south over middle/south portion of Radium/Strontium Treatment Systems Area. Building H-218 to left; Old Davis Road to right.	3604	
View east over middle portion of Radium/Strontium Treatment Systems Area. Building H-218 to right; Building H-219 to left.	3605	
View west over Domestic Septic System 2 area within middle-west portion of Radium/Strontium Treatment Systems Area, west perimeter fence, and Old Davis Road.	3695	
Roof-level view west over middle portion of Radium/Strontium Treatment Systems Area. Building H-219 to right; Building H-218 to left; Old Davis Road in background.	3607	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Radium/Strontium Treatment Systems Area
Inclusive of Domestic Septic System 2

Inspection Period December 10, 2017 – December 9, 2018

Photograph Description	Photo No.	Comments
Roof-level view southwest over middle portion of Radium/Strontium Treatment Systems Area; Building H-218 behind.	3608	
Roof-level view northwest over middle portion of Radium/ Strontium Treatment Systems Area; Building H-219 behind.	3609	
View south over northern portion of Radium/Strontium Treatment Systems Area.	3610	
Demolished soil gas well RASRSG-01	3611	
Demolished soil gas well RASRSG-02	3612	
Demolished soil gas well RASRSG-03	3692	
Burrowing animal hole previously observed in 2017	3693	
Subsidence at slab edge; courtyard east	3694	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Domestic Septic System 4

Inspection Period December 10, 2017 – December 9, 2018

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. ^{1,2}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were any indications of a residence, growing plants for human consumption, or a day care center for children observed during walk-thru inspection? If yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Did UC Davis Environmental Health and Safety (EH&S) Unit observe or receive report of any indications of a residence, growing plants for human consumption, or a day care center for children in this DOE Area since December 10, 2017.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ③
Were any indications of a change in land use observed during walk-thru inspection? If yes, explain. ²	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ③
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ③
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ③

Notes:

¹ Soil disturbing activities include, but are not limited to excavation, grading, trenching, utility installation or repair, and any other human activities that could potentially bring contaminated soil to the surface.

² Does not apply to landscaping, fire protection, or maintenance work that is conducted at depths less than 1 foot below ground surface and less than 5 cubic yards of soil waste is significantly displaced (e.g., stockpiled, placed in containers) and all soil is returned to the disturbed area. Such work may proceed without restriction.

³ Interview conducted by Bob Devany on 12-7-18.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Domestic Septic System 4

Inspection Period December 10, 2017 – December 9, 2018

Inspection Item	Y	N	NA	Comments
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2017, were the activities in compliance with the Soil Management Plan? If no, explain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> (3)
If waste was generated due to soil disturbing activities since December 10, 2017, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> (3)
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> (3)

Photograph Description	Photo No.	Comments
View north over Domestic Septic System 4 septic tank location and east end of leach field; Building H-215 to left, Building H-216 to right; Building H-217 in background.	3623	
View west over east end of Domestic Septic System 4 leach field; Building H-215 in background.	3624	
View east over Domestic Septic System 4 septic tank location. Building H-216 in background.	3625	
View east over western portion of Domestic Septic System 4 Area; Building H-215 in background.	3626	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Domestic Septic System 3

Inspection Period December 10, 2017 – December 9, 2018

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. ^{1,2}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2017, were the activities in compliance with the Soil Management Plan? If no, explain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If waste was generated due to soil disturbing activities since December 10, 2017, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³

Notes:

¹ Soil disturbing activities include, but are not limited to excavation, grading, trenching, utility installation or repair, and any other human activities that could potentially bring contaminated soil to the surface.

² Does not apply to landscaping, fire protection, or maintenance work that is conducted at depths less than 1 foot below ground surface and less than 5 cubic yards of soil waste is significantly displaced (e.g., stockpiled, placed in containers) and all soil is returned to the disturbed area. Such work may proceed without restriction.

³ Interview conducted by Bob Devany on 12-7-18.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Domestic Septic System 3

Inspection Period December 10, 2017 – December 9, 2018

Photograph Description	Photo No.	Comments
View east over former leach field part of Domestic Septic System 3 Area; Building H-216 to left; storage unit to right; Western Dog Pens Area in background.	3627	
View east over eastern half of Domestic Septic System 3 Area.	3628	
View west over former leach field part of Domestic Septic System 3 Area; Buildings H-215 and H-216 to right; Southwest Trenches Area to left; shoulder of Old Davis Road in background.	3629	
View south over septic tank part of Domestic Septic System 3 Area; Building H-216 to left; Building H-215 to right.	3630	
View north over septic tank part of Domestic Septic System 3 Area; Building H-215 to left, Building H-216 to right; Domestic Septic System 4 Area in background.	3631	
View south over east end of Domestic Septic System 3 leach field; trailer in background.	3632	
View east; Building H-216 in background, standing north/left of tree.	3633	
View east; Building H-216 in background, standing south/right of tree.	3634	
Demolished well DSS3SG-01	3635	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Uttenback

Inspection Date November 7, 2018

DOE Area: Southwest Trenches

Inspection Period December 10, 2017 – December 9, 2018

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. ^{1,2}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2017?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2017, were the activities in compliance with the Soil Management Plan? If no, explain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If waste was generated due to soil disturbing activities since December 10, 2017, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³

Notes:

¹ Soil disturbing activities include, but are not limited to excavation, grading, trenching, utility installation or repair, and any other human activities that could potentially bring contaminated soil to the surface.

² Does not apply to landscaping, fire protection, or maintenance work that is conducted at depths less than 1 foot below ground surface and less than 5 cubic yards of soil waste is significantly displaced (e.g., stockpiled, placed in containers) and all soil is returned to the disturbed area. Such work may proceed without restriction.

³ Interview conducted by Bob Devany on 12-7-18.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Southwest Trenches

Inspection Period December 10, 2017 – December 9, 2018

Photograph Description	Photo No.	Comments
View southeast over Southwest Trenches Area; North levee in background.	3647	
View east over Southwest Trenches Area; Storage shed to left; north levee to right; Western Dog Pens Area and UC Davis Southern Trenches Area in background.	3650	
View north over northwest corner of Southwest Trenches Area.	3651	
View south over Southwest Trenches Area; North levee in background; shoulder of Old Davis Road to right.	3648	
View southeast over Southwest Trenches Area.	3649	
View west over Southwest Trenches Area; shoulder of Old Davis Road in background.	3652	
View northwest over Southwest Trenches Area.	3653	
View north over Southwest Trenches Area.	3654	
View north from center of Southwest Trenches Area.	3655	
View west from center of Southwest Trenches Area.	3656	
View south from center of Southwest Trenches Area.	3657	
View east from center of Southwest Trenches Area.	3658	
Demolished soil gas well SWTSG-01	3659	
Demolished soil gas wells SWTSG-02A and -02B	3660	
Demolished soil gas well SWTSG-03	3661	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Eastern Dog Pens Area

Inspection Period December 10, 2017 – December 9, 2018

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. ^{1,2}	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2017?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2017, were the activities in compliance with the Soil Management Plan? If no, explain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
If waste was generated due to soil disturbing activities since December 10, 2017, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	EH&S person contacted: <u>Rachel Lauesen</u> ³

Notes:

¹ Soil disturbing activities include, but are not limited to excavation, grading, trenching, utility installation or repair, and any other human activities that could potentially bring contaminated soil to the surface.

² Does not apply to landscaping, fire protection, or maintenance work that is conducted at depths less than 1 foot below ground surface and less than 5 cubic yards of soil waste is significantly displaced (e.g., stockpiled, placed in containers) and all soil is returned to the disturbed area. Such work may proceed without restriction.

³ Interview conducted by Bob Devany on 12-7-18.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback

Inspection Date November 7, 2018

DOE Area: Eastern Dog Pens Area

Inspection Period December 10, 2017 – December 9, 2018

Photograph Description	Photo No.	Comments
View northeast over Eastern Dog Pens Area from southwest corner.	3674	
View east over Eastern Dog Pens Area.	3677	
View southeast over Eastern Dog Pens Area from northwest corner.	3678	
View south over Eastern Dog Pens Area.	3682	
View southwest over Eastern Dog Pens Area from northeast corner.	3683	
View west over Eastern Dog Pens Area.	3686	
View northwest into Eastern Dog Pens Area from southeast corner	3687	
View north over Eastern Dog Pens Area from north levee.	3691	
Asphalt debris pile	3690	

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Appendix B

Photographs of Survey Monuments at Permanent Reference Points for Areas Subject to Land-Use Restrictions

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Survey Monument 1: Northwest corner of Dry Wells A-E Area (photo No. 3588).



View northwest: Survey Monument 1, within orange ring (outside diameter is 14 inches) in foreground; entrance sign in background (photo No. 3589).



Survey Monument 2: Northeast corner of Dry Wells A-E Area (photo No. 3590).



View northwest: Survey Monument 2, within orange ring; entrance and retracted entrance gate in background (photo No. 3591).



Survey Monument 3: Southwest corner of Dry Wells A–E Area (photo No. 3592).



Survey Monument 4: Southeast corner of Dry Wells A–E Area (photo No. 3594).



View southwest: Survey Monument 3, within orange ring; west perimeter fence behind survey monument; delineator left of survey monument (photo No. 3593).



View east: Survey Monument 4, within orange ring; Building H-219 in background (photo No. 3595).



Survey Monument 5: Northwest corner of Domestic Septic System 4 Area (photo No. 3613).



View east: Survey Monument 5, within orange ring; Building H-215 in background (photo No. 3614).



Survey Monument 6: Adjacent to northwest corner of Building H-218; Radium/Strontium Treatment Systems Area (photo No. 3615).



View east: Survey Monument 6, within orange ring; corner of Building H-218 in background (photo No. 3616).



Survey Monument 7: Southwest corner of Domestic Septic System 4 Area (photo No. 3617).



View east: Survey Monument 7, within orange ring; Building H-215 in background (photo No. 3618).



Survey Monument 8: Southwest corner of radium-226 leach trench; Radium/Strontium Treatment Systems Area (photo No. 3619).



View southwest: Survey Monument 8, within orange ring; west perimeter fence right of survey monument; delineator left of survey monument (photo No. 3620).



11.07.2018 09:40

Survey Monument 9: Southeast corner of radium-226 leach trench; Radium/Strontium Treatment Systems Area (photo No. 3621).



11.07.2018 09:40

View east: Survey Monument 9, within orange ring; Building H-215 in background (photo No. 3622).



11.07.2018 10:23

Survey Monument 10: Northeast corner of former leach field in Domestic Septic System 3 Area (photo No. 3636).



11.07.2018 10:23

View east: Survey Monument 10, within orange ring in foreground; delineator behind survey monument; well UCD1-069 in background (photo No. 3638).



Survey Monument 11: Northeast corner of Eastern Remediation Support Area (photo No. 3639).



View west: Survey Monument 11, within orange ring; delineator right of survey monument; Building H-216 in background (photo No. 3640).



Survey Monument 12: Northwest corner of Southwest Trenches Area (photo No. 3641).



View south: Survey Monument 12, within orange ring in foreground; water hydrant in background (photo No. 3642).



Survey Monument 13: Southwest corner of Domestic Septic System 3 Area, at northern perimeter of Southwest Trenches Area (photo No. 3643).



View south: Survey Monument 13, within orange ring at edge of concrete swale; Southwest Trenches Area in background (photo No. 3644).



Survey Monument 14: Southeast corner of Domestic Septic System 3 Area (photo No. 3645).



View north: Survey Monument 14, within orange ring; delineator right of survey monument; Building H-216 in background (photo No. 3646).



Survey Monument 15: Eastern corner of Southwest Trenches Area (photo No. 3662).



View northwest: Survey Monument 15, within orange ring; delineator right of survey monument, trailer storage unit in left of background (photo No. 3663).



Survey Monument 16: Southwest corner of Southwest Trenches Area (photo No. 3664).



View southwest: Survey Monument 16, within orange ring; delineator left of survey monument; southwest corner post of perimeter fence behind survey monument (photo No. 3665).



Survey Monument 17: Southeast corner of Southwest Trenches Area (photo No. 3667).



Survey Monument 18: Southeast corner of Eastern Remediation Support Area (photo No. 3670).



View southeast: Survey Monument 17, within orange ring; delineator left of survey monument; south perimeter fence behind survey monument; foot of North Levee in background (photo No. 3668).



View southeast: Survey Monument 18, within orange ring; delineator left of survey monument; south perimeter fence behind survey monument; foot of North Levee in background (photo No. 3671).



Survey Monument 19: Northwest corner of Eastern Dog Pens Area (photo No. 3681).



View southeast: Survey Monument 19, within orange ring; delineator right of survey monument; Eastern Dog Pens Area in background (photo No. 3680).



Survey Monument 20: Northeast corner of Eastern Dog Pens Area (photo No. 3684).



View west: Survey Monument 20, within orange ring; delineator right of survey monument; Eastern Dog Pens Area in background (photo No. 3685).



Survey Monument 21: Southwest corner of Eastern Dog Pens Area (photo No. 3675).



View northeast: Survey Monument 21, within orange ring; delineator left of survey monument; Eastern Dog Pens Area in background (photo No. 3676).



Survey Monument 22: Southeast corner of Eastern Dog Pens Area (photo No. 3688).



View northwest: Survey Monument 22, within orange ring; delineator right of survey monument; Eastern Dog Pens Area in background (photo No. 3689).



Survey Monument 23: Western perimeter point of Southwest Trenches Area (photo No. 3672).



View northwest: Survey Monument 23, within orange ring; delineator right of survey monument; west perimeter fence behind and left of survey monument (photo No. 3673).



Survey Monument 24: Northeast corner of Southwest Trenches Area, at southern perimeter of Domestic Septic System 3 Area (photo No. 3732).



View south: Survey Monument 24, within orange ring on edge of concrete swale; trailer storage unit behind survey monument (photo No. 3733).

Appendix C

Photographs of DOE Areas Subject to Land-Use Restrictions

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*View southeast over Southwest Trenches Area:
North Levee in background (photo No. 3647).*



*View east over Southwest Trenches Area: Western Dog Pens
Area and UC Davis Southern Trenches Area in background
(photo No. 3650).*



Northwest corner of Southwest Trenches Area (photo No. 3651).



*View south over Southwest Trenches Area:
North Levee in background (photo No. 3648).*



View southeast over Southwest Trenches Area (photo No. 3649).



View west over Southwest Trenches Area: Shoulder of Old Davis Road in background (photo No. 3652).



View northwest over Southwest Trenches Area (photo No. 3653).



View north over Southwest Trenches Area (photo No. 3654).



*View north from center of Southwest Trenches Area
(photo No. 3655).*



*View west from center of Southwest Trenches Area
(photo No. 3656).*



*View south from center of Southwest Trenches Area
(photo No. 3657).*



*View east from center of Southwest Trenches Area
(photo No. 3658).*



View of decommissioned soil gas well SWTSG-01 near southeast corner of Southwest Trenches Area (photo No. 3659).



View of decommissioned soil gas wells SWTSG-02A and SWTSG-02B: South perimeter fence in background (photo No. 3660).



View of decommissioned soil gas well SWTSG-03 near center of Southwest Trenches Area (photo No. 3661).



View east over former leach field part of Domestic Septic System 3 Area: Building H-216 to left; storage unit to right; Western Dog Pens Area in background (photo No. 3627).



View east over eastern half of Domestic Septic System 3 Area (photo No. 3628).



View west over former leach field part of Domestic Septic System 3 Area: Buildings H-215 and H-216 to right; shoulder of Old Davis Road in background (photo No. 3629).



View south over septic tank part of Domestic Septic System 3 Area: Building H-216 to left; Building H-215 to right (photo No. 3630).



View north over septic tank part of Domestic Septic System 3 Area: Building H-215 to left; Building H-216 to right; Domestic Septic System 4 Area in background (photo No. 3631).



View south over east end of Domestic Septic System 3 Area leach field: Trailer storage unit in background (photo No. 3632).



View east in Domestic Septic System 3 Area: Building H-216 in background, standing north/left of tree (photo No. 3633).



View east in Domestic Septic System 3 Area: Building H-216 in background, standing south/right of tree (photo No. 3634).



View of decommissioned soil gas well DSS3SG-01 near center of Domestic Septic System 3 Area leach field (photo No. 3635).



View north over Domestic Septic System 4 Area septic tank location and east end of leach field: Building H-215 to left; Building H-216 to right; Building H-217 in background (photo No. 3623).



View west over east end of Domestic Septic System 4 Area leach field; decommissioned soil gas well DSS3SG-02 in upper left of photo: Building H-215 in background (photo No. 3624).



View east over Domestic Septic System 4 Area septic tank location: Building H-216 in background (photo No. 3625).



View east over western portion of Domestic Septic System 4 Area: Building H-215 in background (photo No. 3626).



View north over southern portion of Radium/Strontium Treatment Systems Area: Building H-215 to right; Buildings H-218 and H-219 in background (photo No. 3600).



View north over middle portion of Radium/Strontium Treatment Systems Area: Building H-218 to right; Building H-219 in background (photo No. 3601).



View south over southern portion of Radium/Strontium Treatment Systems Area: Building H-215 to left (photo No. 3602).



View north over northern portion of Radium/Strontium Treatment Systems Area: Building H-219 to right (photo No. 3603).



View south over the middle-south portion of Radium/Strontium Treatment Systems Area: Building H-218 to left (photo No. 3604).



View east over middle portion of Radium/Strontium Treatment Systems Area: Building H-218 to right; Building H-219 to left (photo No. 3605).



View west over Domestic Septic System 2 Area within middle-west portion of Radium/Strontium Treatment Systems Area (photo No. 3695).



Roof-level view west over middle portion of Radium/Strontium Treatment Systems Area: Building H-219 to right; Building H-218 to left (photo No. 3607).



Roof-level view southwest over middle portion of Radium/Strontium Treatment Systems Area: Building H-218 in background (photo No. 3608).



Roof-level view northwest over middle portion of Radium/Strontium Treatment Systems Area: Building H-219 in background (photo No. 3609).



View south over northern portion of Radium/Strontium Treatment Systems Area: Building H-219 to left; west perimeter fence and Old Davis Road to right (photo No. 3610).



Radium/Strontium Treatment Systems Area: Decommissioned soil gas well RASRSG-01 (photo No. 3611).



Radium/Strontium Treatment Systems Area: Decommissioned soil gas well RASRSG-02 (photo No. 3612).



Radium/Strontium Treatment Systems Area: Decommissioned soil gas well RASRSG-03 center; Building H-218 above (photo No. 3692).



Radium/Strontium Treatment Systems Area: Burrowing animal hole in southeast corner of unpaved courtyard (photo No. 3693).



Small subsidence adjacent to sidewalk at east end of unpaved courtyard of Radium/Strontium Treatment Systems Area (photo No. 3694).



View north over Dry Wells A-E Area: Old Davis Road to left (photo No. 3596).



View south over Dry Wells A-E Area: Building H-219 in background/left (photo No. 3597).



View west over Dry Wells A-E Area: Retracted site entrance gate and Old Davis Road in background (photo No. 3598).



View southwest over Dry Wells A-E Area (photo No. 3599).



View northeast over Eastern Dog Pens Area from southwest corner (photo No. 3674).



View east over Eastern Dog Pens Area (photo No. 3677).



View southeast over Eastern Dog Pens Area from northwest corner (photo No. 3678).



View south over Eastern Dog Pens Area (photo No. 3682).



View southwest over Eastern Dog Pens Area from northeast corner (photo No. 3683).



View west over Eastern Dog Pens Area (photo No. 3686).



View northwest into Eastern Dog Pens Area from southeast corner (photo No. 3687).



View north over Eastern Dog Pens Area from North Levee (photo No. 3691).



Asphalt pile within south boundary of Eastern Dog Pens Area (photo No. 3690).

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Appendix D

Photographs of Groundwater Monitoring Wells

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UCD1-013 Wellhead (photo No. 3696).



UCD1-013 Wellhead plaque (photo No. 3697).



UCD1-013 Interior (photo No. 3698).



UCD1-013 Interior plaque (photo No. 3699).



UCD1-018 Wellhead (photo No. 3742).



UCD1-018 Wellhead plaque (photo No. 3746).



UCD1-018 Interior (photo No. 3747).



UCD1-018 Interior plaque (photo No. 3748).



UCD1-021 Wellhead (photo No. 3717).



UCD1-021 Wellhead plaque (photo No. 3718).



UCD1-021 Interior (photo No. 3719).



UCD1-021 Interior plaque (photo No. 3720).



UCD1-023 Wellhead (photo No. 3723).



UCD1-023 Wellhead plaque (photo No. 3724).



UCD1-023 Interior (photo No. 3725).



UCD1-023 Interior plaque (photo No. 3726).



UCD1-054 Wellhead (photo No. 3727).



UCD1-054 Wellhead plaque (photo No. 3728).



UCD1-054 Interior (photo No. 3729).



UCD1-054 Interior plaque (photo No. 3731).



UCD1-063 Wellhead (photo No. 3738).



UCD1-063 Wellhead plaque (photo No. 3739).



UCD1-063 Interior (photo No. 3740).



UCD1-063 Interior plaque (photo No. 3741).



UCD1-068 Wellhead (photo No. 3709).



UCD1-068 Wellhead plaque (photo No. 3710).



UCD1-068 Interior (photo No. 3711).



UCD1-068 Interior plaque (photo No. 3712).



UCD1-069 Wellhead (photo No. 3705).



UCD1-069 Wellhead plaque (photo No. 3706).



UCD1-069 Interior (photo No. 3707).



UCD1-069 Interior plaque (photo No. 3708).



UCD1-070 Wellhead (photo No. 3700).



UCD1-070 Wellhead plaque (photo No. 3701).



UCD1-070 Interior (photo No. 3703).



UCD1-070 Interior plaque (photo No. 3704).



UCD1-071 Wellhead (photo No. 3734).



UCD1-071 Wellhead plaque (photo No. 3735).



UCD1-071 Interior (photo No. 3736).



UCD1-071 Interior plaque (photo No. 3737).



UCD1-072 Wellhead (photo No. 3713).



UCD1-072 Wellhead plaque (photo No. 3714).



UCD1-072 Interior (photo No. 3715).



UCD1-072 Interior plaque (photo No. 3716).



UCD1-073 Wellhead (photo No. 3750).



UCD1-073 Wellhead plaque (photo No. 3751).



UCD1-073 Interior (photo No. 3752).



UCD1-073 Interior plaque (photo No. 3753).

Appendix E

Photographs of Completed Maintenance Work

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Well UCD1-018 vault before pump replacement.



Well UCD1-018 vault after pump replacement.



Well UCD1-023 vault before pump replacement.



Well UCD1-023 vault after pump replacement.



Well UCD1-071 vault before pump replacement.



Well UCD1-071 vault after pump replacement.



Decal on delineator at well UCD1-068.



Well UCD1-068 and delineator with decal.



Decal on delineator at well UCD1-069.



Well UCD1-069 and delineator with decal.



Decal on delineator at well UCD1-072.



Well UCD1-072 and delineator with decal.

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Appendix F

Copy of Closed Permits and Map

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**PERMIT APPLICATION FOR SOIL DISTURBANCE AT LEHR
SUPERFUND SITE**

This section to be completed by unit performing work.

Work requested by: Weiss Associates, subcontractor to Navarro Research and Engineering
(Contractor to the Department of Energy)

Work to be performed by: Weiss Associates and its subcontractors, with Navarro oversight

Schedule: May 22 through August 2017

Describe proposed work, or attach documents describing scope: Passive and active soil gas
sampling as described in the attached *Vapor Intrusion Evaluation Work Plan for the Former
Laboratory for Energy-Related Health Research Federal Facility, University of California,
Davis* (Work Plan).

Anticipated depth of soil disturbance: 2 to 3 feet below surface at approximately 45 locations; 5
or 6 feet below surface at approximately 9 locations; 8 to 15 feet below surface in approximately
4 locations

Map indicating project location(s) and anticipated area(s) of soil disturbance is attached.
(in Work Plan)

List project plans submitted with application: Work Plan, which includes a Waste
Management Plan (Section 8.0); Health and Safety Plan

Requestor Signature: 

Unit: Weiss Associates

Name/Title: Tim Utterback/Project Chemist/Engineer

Date: May 17, 2017

PERMIT CONDITIONS

This section to be completed by EH&S Unit.

- Soil disturbed is in areas not subject to SMP for DOE areas. No SMP conditions apply.

STOP HERE.

- Work to be performed in areas subject to SMP for DOE areas.

- Site inspection conducted (date) 5/17/17

- Possible to relocate work to avoid soil disturbance in area subject to SMP. Discussed with project requestor. Describe, and attach site map with alternate location(s): _____

Relocation is not possible.

- Requestor agrees to relocate work to area not subject to the SMP. Attach new map showing new project location. **STOP HERE.**

- Project will disturb soil in area(s) subject to the SMP per survey maps and legal descriptions of DOE areas subject to land-use restrictions. The conditions checked below will be in effect:

- All project staff must be trained on aspects of the SMP relevant to their work.

- Soil disturbed at 0–10 feet below ground surface will be sampled for constituents in attached table. (attach Table A–1 and indicate sections applicable to area being disturbed.)

- Soil disturbed at 0–10 feet below ground surface contaminated above site background may not be reused on site without a risk assessment approved by DTSC and EPA. Soil with contaminant concentrations at or below background will be considered clean and may be reused on site.

- Soil disturbed at >10 feet below ground surface will be sampled for constituents determined by professional judgment to be potentially present in the soil in concentrations above site background (source: Attachment C of the SMP).

- Soil disturbed at >10 feet below ground surface will not be reused on site without a risk assessment approved by DTSC and EPA if it contains contaminant concentrations above the site background. Soil with contaminant concentrations below background values will be considered clean and may be reused on site.

- Non-soil waste (e.g., personal protective equipment) contaminated from contact with site soil must be characterized and managed according to its designation.

- The characterization of all waste is the responsibility of the requesting party.

- Results of any soil scan/sampling/characterization activities associated with this soil disturbance will be submitted to the EH&S Unit.

- Provide map of soil excavation, soil reuse locations, volumes of soil reused, and/or volumes of soil disposed of, and documentation of disposal.

- Oversight by an environmental professional is required on a/an [frequency] At all times basis.

- Inspection by the EH&S Unit to be conducted on a/an [frequency] Weekly basis, to be adjusted as work progresses basis.

- If unusual or unexpected conditions are discovered, such as discoloration or unexpected contamination, during this soil disturbance, the project requestor will immediately notify the

EH&S Unit. The EH&S Unit will coordinate the notification of DOE and the regulatory agencies concerning the unexpected conditions.

Environmental Professional Review. (List documents reviewed and comments on the project's compliance with the SMP; the ROD; and all applicable laws, regulations, and standards.)

Requestor is familiar with the site and is the author of all site documents.

Signature:



Name/Title: Robert O. Devany/Weiss Associates Principal

Date: May 17, 2017

PERMIT APPROVAL

- Project Approved
 Project Denied (Explain rationale.)

EH&S Unit Representative Signature:



Name/Title: Chris Wright/Environmental Manager

Date: 5/17/17

Comments on this package are noted below and retained in the file:

PERMIT CLOSE OUT

- Required Project Documents Received
- Missing Documents and Remedy/Date/Responsible Party

EH&S Unit Representative Signature: 

Chris Wright
cn=Chris Wright, o=University of California -
Davis, ou=Environmental Manager,
email=cwright@ucdavis.edu, c=US
2018.10.09 16:26:31 -0700
2019.008.20071

Name/Title: Chris Wright, Environmental Manager

Date: 10-8-18

**PERMIT APPLICATION FOR SOIL DISTURBANCE AT LEHR
SUPERFUND SITE**

This section to be completed by unit performing work.

Work requested by: Weiss Associates, subcontractor to Navarro Research and Engineering
(Contractor to the U.S. Department of Energy)

Work to be performed by: Weiss Associates with Navarro oversight

Schedule: August-November 2018 including offsite waste disposal

Describe proposed work, or attach documents describing scope: Decommission 9 soil gas wells, which were installed as described in *Vapor Intrusion Evaluation Work Plan for the Former Laboratory for Energy-Related Health Research Federal Facility University of California, Davis* (Work Plan, May 2017), following decommissioning guidance in CalEPA's *Advisory Active Soil Gas Investigations* (July 2015). Soil generated during the decommissioning will be returned to the resulting hole, and any incidental soil and concrete properly disposed of offsite.

Anticipated depth of soil disturbance: maximum of 3 feet below surface at 9 locations.

- Map indicating project location(s) and anticipated area(s) of soil disturbance is attached.
- List project plans submitted with application: Protocol for soil gas well

decommissioning that follows CalEPA guidance and includes an attached activity hazard analysis (AHA)

Requestor Signature: 

Unit: Weiss Associates

Name/Title: Tim Utterback/Project Chemist/Engineer

Date: July 27, 2018

PERMIT CONDITIONS

This section to be completed by EH&S Unit.

Soil disturbed is in areas not subject to SMP for DOE areas. No SMP conditions apply.

STOP HERE.

Work to be performed in areas subject to SMP for DOE areas.

Site inspection conducted (date) 7/31/2018

Possible to relocate work to avoid soil disturbance in area subject to SMP. Discussed with project requestor. Describe, and attach site map with alternate location(s): _____

Relocation is not possible.

Requestor agrees to relocate work to area not subject to the SMP. Attach new map showing new project location. **STOP HERE.**

Project will disturb soil in area(s) subject to the SMP per survey maps and legal descriptions of DOE areas subject to land-use restrictions. The conditions checked below will be in effect:

All project staff must be trained on aspects of the SMP relevant to their work.

Soil disturbed at 0–10 feet below ground surface will be sampled for constituents in attached table. (attach Table A–1 and indicate sections applicable to area being disturbed.)¹

Soil disturbed at 0–10 feet below ground surface contaminated above site background may not be reused on site without a risk assessment approved by DTSC and EPA. Soil with contaminant concentrations at or below background will be considered clean and may be reused on site.

Soil disturbed at >10 feet below ground surface will be sampled for constituents determined by professional judgment to be potentially present in the soil in concentrations above site background (source: Attachment C of the SMP).

Soil disturbed at >10 feet below ground surface will not be reused on site without a risk assessment approved by DTSC and EPA if it contains contaminant concentrations above the site background. Soil with contaminant concentrations below background values will be considered clean and may be reused on site.

Non-soil waste (e.g., personal protective equipment) contaminated from contact with site soil must be characterized and managed according to its designation.

The characterization of all waste is the responsibility of the requesting party.

Results of any soil scan/sampling/characterization activities associated with this soil disturbance will be submitted to the EH&S Unit.

Provide map of soil excavation, soil reuse locations, volumes of soil reused, and/or volumes of soil disposed of, and documentation of disposal.

Oversight by an environmental professional is required on a/an [frequency] At all times basis.

¹ Soil will be from same locations as soil characterized under the previous SMP permit executed May 17, 2017, and will be limited to small amounts that cannot be returned to well excavation; therefore, constituent results for the soil generated under the previous permit are considered representative of the soil generated under this permit, and soil (and grout) generated under both permits will be disposed of together.

- Inspection by the EH&S Unit to be conducted on a/an [frequency] one-time basis.
- If unusual or unexpected conditions are discovered, such as discoloration or unexpected contamination, during this soil disturbance, the project requestor will immediately notify the EH&S Unit. The EH&S Unit will coordinate the notification of DOE and the regulatory agencies concerning the unexpected conditions.

Environmental Professional Review. (List documents reviewed and comments on the project's compliance with the SMP; the ROD; and all applicable laws, regulations, and standards.)

Requestor is familiar with the site and is the author of related site documents. Waste (grout and incidental soil) volumes generated will be small (estimated at 2 cubic feet including void space) and from same locations as soil generated and characterized under previous permit executed 5/17/17. Existing analytical data from the adjacent soil will be used to profile the chemical characteristics of the waste for disposal purposes. The waste will be disposed of at a facility that is currently approved by EPA to receive CERCLA waste. One SMP permit report (which will include all documentation specified above) will be submitted for the close-out of both the 5/17/17 permit and this permit.

Signature: Robert O. Devany
Name/Title: Robert O. Devany/Weiss Associates Principal
Date: July 27, 2018

PERMIT APPROVAL

- Project Approved
- Project Denied (Explain rationale.)

EH&S Unit Representative Signature: Rachel Lauesen
Name/Title: Rachel Lauesen/Environmental Specialist
Date: 8/2/2018

Comments on this package are noted below and retained in the file: _____

PERMIT CLOSE OUT

- Required Project Documents Received
- Missing Documents and Remedy/Date/Responsible Party

EH&S Unit Representative Signature: Rachel Laursen

Name/Title: Rachel Laursen/Environmental Specialist
Date: 10/8/18

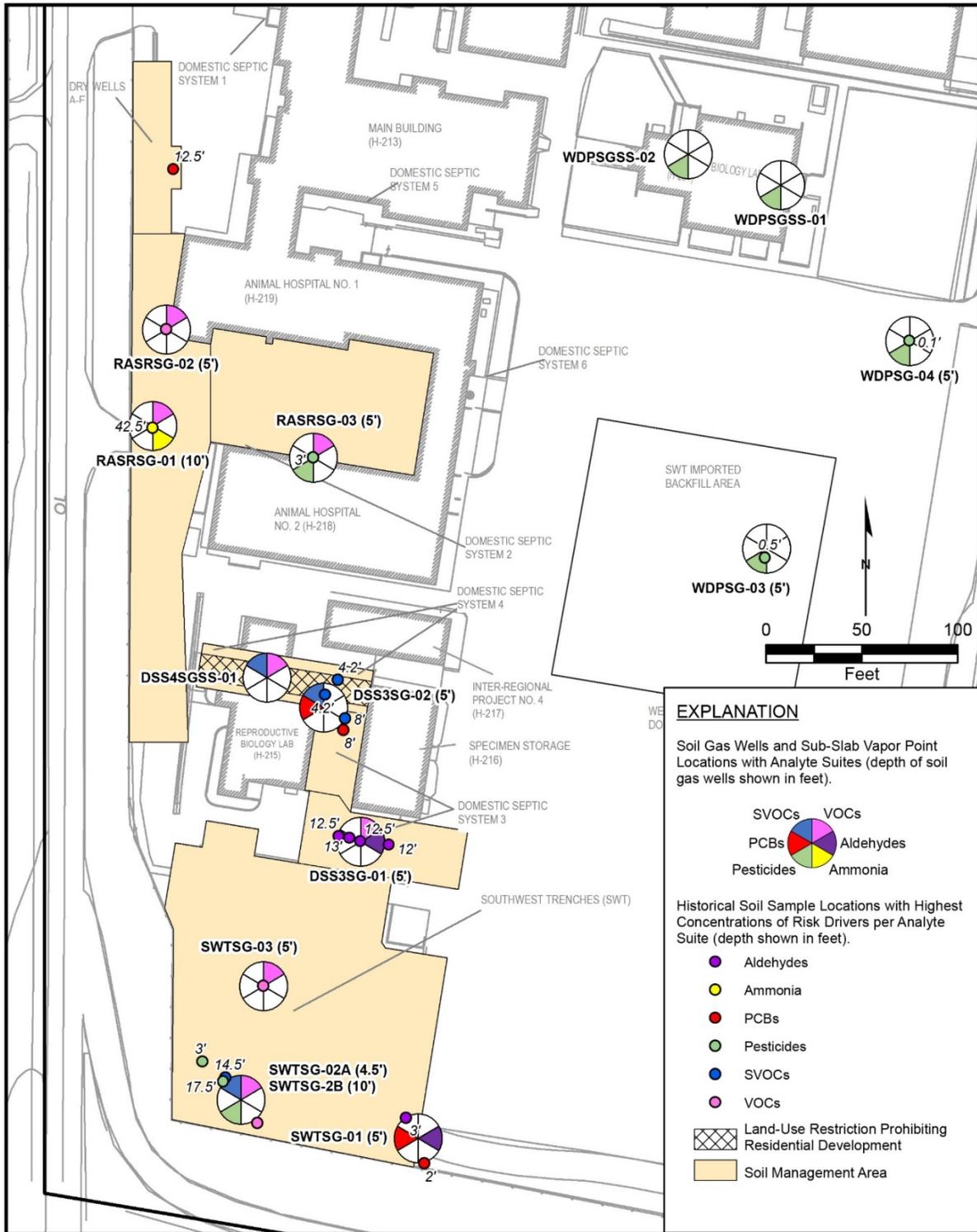


Figure 4. Soil Gas Well and Subslab Vapor Pin Locations and Analytic Suites

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