LMS/LEH/S18011

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

January 2018

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Abbreviations

bgs	below ground surface
DOE	U.S. Department of Energy
DSS	Domestic Septic System
DTSC	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
TCLP	toxicity characteristic leaching procedure
UC Davis	University of California–Davis

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 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, 2016, to December 9, 2017.

1.3 Activities Conducted During the Reporting Period

Inspections of groundwater monitoring wells, land survey monuments, and DOE areas subject to land-use restrictions were conducted. The UC Davis Environmental Health and Safety (EH&S) Unit conducted annual training to communicate soil management requirements to appropriate units performing or contracting work.

High-visibility delineators were installed adjacent to 15 monuments and three wells to address recommendations in the First Five-Year Review (DOE 2016).

Repairs were made to wells UCD1-021 and UCD1-070 to address maintenance items identified in the 2016 Land-Use Covenant Inspection Report (DOE 2017a).

A permit application for soil disturbance was approved for soil gas investigation activities associated with a vapor intrusion evaluation in the DOE areas (DOE 2017b). Subsurface soil in DOE areas subject to land-use restrictions was brought to the surface during these activities. The soil was placed in drums and sampled for waste characterization purposes in late 2017. A report documenting the vapor intrusion evaluation and waste disposal is in progress.

An update to the SMP for the handling and disposal of fallen trees and associated soil as recommended in the First Five-Year Review (DOE 2016) is in progress.

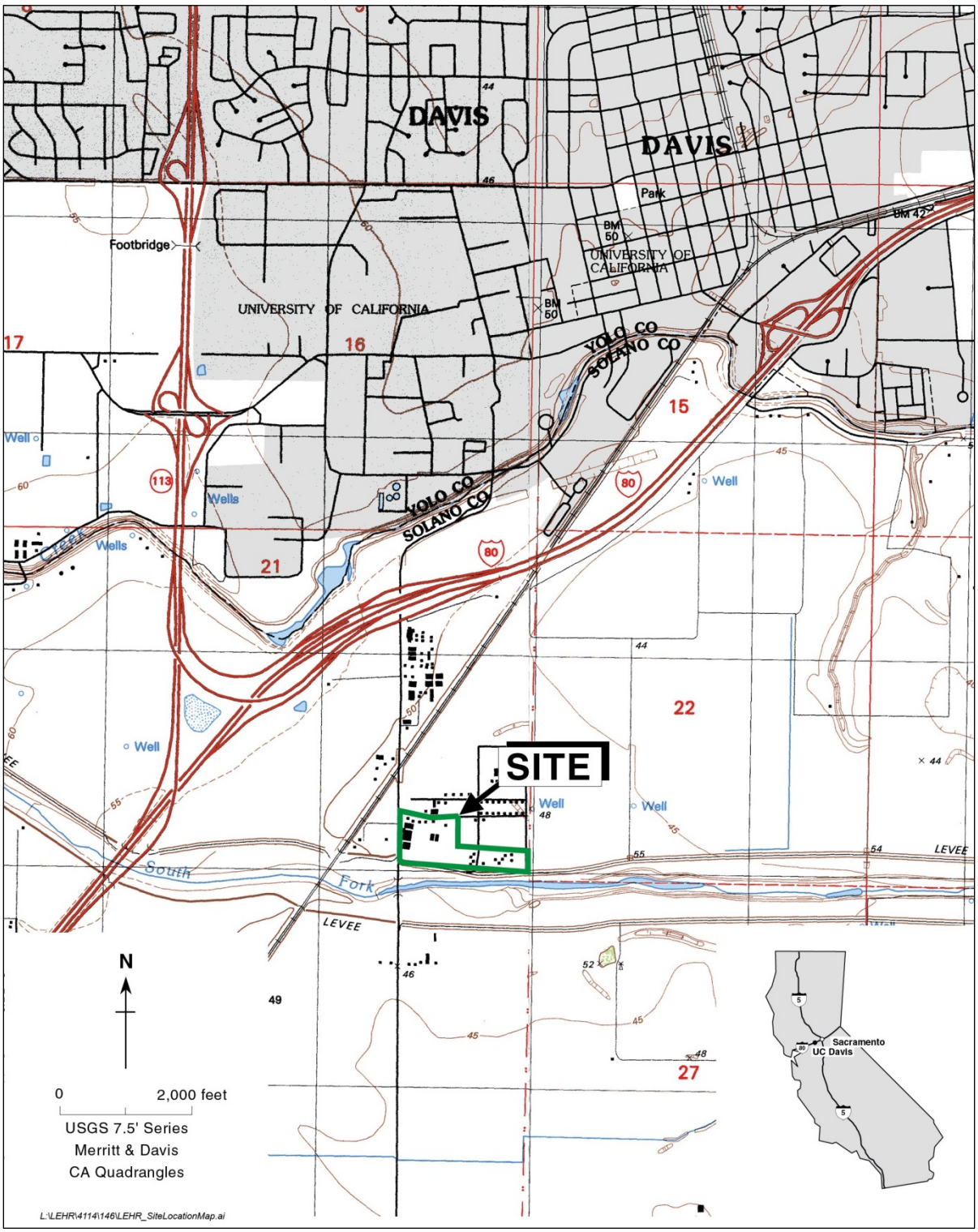

Figure 1. Location of the LEHR Superfund Site, UC Davis, Solano County, California

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

2.0 Inspections

On November 2, 2017, between 10:00 a.m. and 4:00 p.m., Tim Utterback of Weiss Associates (Weiss) performed walkthrough inspections of 24 monuments, 6 DOE areas, and 1 groundwater monitoring well at the LEHR site. On November 6, 2017, between 10:30 a.m. and 3:00 p.m., Tim Utterback of Weiss performed inspections of 11 groundwater monitoring wells. The dedicated sample collection pump in each well was tested for proper function. The inspections are discussed below.

2.1 Inspection of Monuments

All 24 monuments were found in good condition during the November 2, 2017, inspection. Appendix A provides the monument inspection checklists completed on November 2, 2017, and Appendix B provides the photographs of the monuments. Appendixes B and C provide photographs with the high-visibility delineators installed on March 1 and 2, 2017, adjacent to monuments 1, 3, 8, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, and 23 (Figure 3). High-visibility delineators were not installed adjacent to monuments 2, 4, 5, 6, 7, 9, 12, 13, and 24 because they are set in paved areas where they are protected by the surrounding asphalt or concrete, and the delineators would hinder traffic flow.

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

On November 2, 2017, Tim Utterback of Weiss performed walkthrough inspections of the DSS 4 Area. No residential use, use for day care for children, or cultivation of crops for human consumption was observed in the DSS 4 Area.

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

On November 2, 2017, 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 permitted soil gas points and wells described in Section 3.2 and small animal burrows in the Ra/Sr Treatment Systems Area and the EDPs Area 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 1, 2017, at 5:00 p.m., Bob Devany of Weiss interviewed Christopher Wright of the UC Davis EH&S Unit. Mr. Wright reported that no soil disturbing activities except the permitted DOE vapor intrusion investigation (see Section 2.3.2) occurred within the DOE areas subject to the SMP.

Figure 3. Monitoring Wells and Corner Point 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 during the soil gas investigation phase of the vapor intrusion evaluation (DOE 2017b) and involved the installation of soil gas points and wells as described in Section 3.2. On May 17, 2017, prior to the soil gas investigation, Christopher Wright of the UC Davis EH&S Unit conducted an inspection of the DOE areas and approved the permit application for soil disturbance. A permit closeout request will be submitted to the UC Davis EH&S Unit upon completion of the Soil Disturbance Report documenting the soil management and disposal.

During the November 2, 2017, walkthrough inspection, Tim Utterback of Weiss observed and photographed one small animal burrow in the Ra/Sr Treatment Systems Area and three small animal burrows in the EDPs Area (photographs 3353, 3354, and 3425 in Appendix C). The volume of material displaced in each area is less than a cubic foot, indicating the soil disturbance is not likely an exposure risk to site workers or the public.

2.4 Inspections of Groundwater Monitoring Wells

On November 2 and 6, 2017, 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.

On November 2 and 6, 2017, the dedicated pumps in all 12 wells were tested to assess if they are functioning properly for groundwater sample collection. The tests indicated all pumps produced water within the target flow rate range of 0.1 liter/minute to 0.5 liter/minute as specified in the RD/RA Work Plan (DOE 2010). The pumps in wells UCD1-018, UCD1-023, and UCD1-071 were slow to start pumping. Pump replacement is recommended if performance continues to decline.

On March 1 and 2, 2017, high-visibility delineators were installed adjacent to wells UCD1-068, UCD1-069, and UCD1-072 to deter accidental damage. Delineators were not installed adjacent to the other nine groundwater monitoring wells because they are visible or protected by bollards or flush surface vaults in paved areas. Appendix E provides photographs of the delineators.

On April 6 and 7, 2017, the vault was replaced at well UCD1-021 and the concrete apron was replaced at well UCD1-070 as recommended in the 2016 Land-Use Covenant Inspection Report (DOE 2017a). Appendix E provides photographs of the wellhead repairs.

Wells UCD1-054 and UCD1-071 were missing pump discharge port plugs. DOE plans to replace the missing discharge plugs and install plugs in the pump air ports.

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

Between May 22, 2017, and July 19, 2017, soil disturbing activities were executed as planned in the soil gas investigation phase of the vapor intrusion evaluation (DOE 2017b). The activities involved installing 43 soil gas points, 11 soil gas wells, and 3 sub-slab vapor pins. Of the 43 points and 11 wells, 34 and 9, respectively, were in DOE areas subject to the requirements of the SMP. Vapor pins did not penetrate subsurface soil and were not subject to SMP requirements. In May and June 2017, the 34 soil gas points subject to SMP requirements were installed to a depth of 3 feet below ground surface (bgs) with a roto-hammer drill and filled with concrete grout upon sample retrieval. In July 2017, the nine soil gas wells subject to SMP requirements were installed to depths ranging from 6 to 11 feet bgs using a hand auger. The soil gas wells temporarily remain in place to enable additional soil gas sample collection if needed. Soil brought to the surface was placed in two 55-gallon drums and stored in a secure location so the waste can be characterized for disposal. Disposal is scheduled to occur in early 2018. Appendix F provides a copy of the approved soil disturbance permit application and maps of the soil gas passive, well, and sub-slab sample locations.

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 1, 2017, interview with Christopher Wright 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

Disposal of the soil gas investigation waste soil will be documented in the Soil Disturbance Report.

On the basis of site inspections, soil gas investigation records, and the interview documented in this report, no 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 planned disposal of the waste soil generated from the soil gas investigation indicates that disposal is in conformance with the requirements of the SMP (DOE 2010). Disposal of the waste soil is anticipated to occur during the next reporting period.

3.4 Soil Management Plan Changes

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

- Installing new high-visibility delineators at monuments.
- Installing new high-visibility delineators at flush-mount wells located in fields.
- Specifying procedures for handling and disposing of fallen trees.

The high-visibility delineators were installed as documented in this report and the above-listed SMP revisions are anticipated for completion in 2018.

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.

for

Date: 1/3/18

Jeffrey Murl
Site Manager
U.S. Department of Energy
Office of Legacy Management
11025 Dover Street, Suite 1000
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.

Date: 1-3-18

Christopher Wright
Environmental Manager
UC Davis Environmental Health and Safety
One Shields Avenue
Davis, CA 95616

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5.0 References

DOE (U.S. Department of Energy), 2009. *Record of Decision for DOE Areas at the Laboratory for Energy-Related Health Research, University of California, Davis*, LMS/LEH/S05069, Office of Legacy Management, September.

DOE (U.S. Department of Energy), 2010. *Remedial Design/Remedial Action Work Plan for the Former Laboratory for Energy-Related Health Research Federal Facility, University of California, Davis*, LMS/LEH/S05822, Office of Legacy Management, November.

DOE (U.S. Department of Energy), 2016. *First Five-Year Review for the Laboratory for Energy-Related Health Research Federal Facility*, University of California, Davis, LMS/LEH/S13284, Office of Legacy Management, September.

DOE (U.S. Department of Energy), 2017a. *2016 Annual Land-Use Covenant Inspection Report for DOE Areas at the Laboratory for Energy-Related Health Research/Old Campus Landfill Superfund Site, Davis*, University of California, Davis, LMS/LEH/S15536, Office of Legacy Management, January.

DOE (U.S. Department of Energy), 2017b. *Vapor Intrusion Evaluation Work Plan for the Former Laboratory for Energy Related Health Research Federal Facility*, University of California, Davis, LMS/LEH/S15536, Office of Legacy Management, April.

DTSC (California Department of Toxic Substances Control), 2014. *Covenant to Restrict Use of Property, Environmental Restriction (Re: Portions of County of Solano Assessor's Parcel No. 110-05-04 UC Davis, Laboratory for Energy-related Health Research/Old Campus Landfill (LEHR/OCL) Superfund Site*, Site Code 100424), Solano County Recorder's Office Document Number 201400051822, July 11.

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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 2, 2017

Survey Monuments Inspection Period December 10, 2016 – December 9, 2017

Monument No.	Close-up Photo [1]	Setting Photo [2]	Damaged or missing? (Y/N) If Y, explain	Comments
1 TRL 11-2-17	3296 ~~3283~~	3297	N	
2	3299	3300	N	
3	3301	3302	N	
4	3303	3304	N	
5	3312	3313	N	
6	3314	3315	N	
7	3317	3318	N	
8	3319	3320	N	
9	3321	3322	N	
10	3323	3324	N	
11	3325	3326	N	
12	3327	3328	N	
13	3329	3330	N	
14	3331	3332	N	
15	3333	3334	N	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

Survey Monuments Inspection Period December 10, 2016 – December 9, 2017

Monument No.	Close-up Photo [1]	Setting Photo [2]	Damaged or missing? (Y/N) If Y, explain	Comments
16	3401	3402	N	
17	3404	3405	N	
18	3406	3407	N	
19	3413	3414	N	
20	3417	3419	N	
21	3409	3410	N	
22	3421	3422	N	
23	3399	3400	N	
24	3382	3383	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 2, 2017~~ 11-6-17

DOE Areas Monitoring Wells Inspection Period December 10, 2016 – December 9, 2017

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	3461 3462	3463 3464	N	Y	Y	Y	Y	
UCD1-018 standpipe	3470 3471	3473 3474	N	Y	Y	Y	Y	Pump a little slow to start pumping. Flow OK
UCD1-021 flush	3437 3439	3440 3442	N	Y	Y	Y	Y	Depth to water at approximately 43 feet
UCD1-023 flush	3432 3433	3434 3435	N	Y	Y	Y	Y	Pump a little slow to start pumping. Flow OK
UCD1-054 flush	3427 3428	3429 3430	N	Y	Y	Y	Y	
UCD1-063 standpipe	3466 3467	3468 3469	N	Y	Y	Y	Y	
UCD1-068 flush	3452 3453	3454 3455	N	Y	Y	Y	Y	
UCD1-069 flush	3448 3449	3450 3451	N	Y	Y	Y	Y	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017, 11-6-17

DOE Areas Monitoring Wells Inspection Period December 10, 2016 – December 9, 2017

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	3443 3444	3446 3447	N	Y	Y	Y	Y	11-6-17
UCD1-071 flush	3377 3378	3379 3380	N	Y	Y	Y	Y	11-2-17 pump a little slow to start pumping. Flow OK
UCD1-072 flush	3456 3457	3458 3460	N	Y	Y	Y	Y	11-6-17
UCD1-073 standpipe	3476 3477	3478 3479	N	Y	Y	Y	Y	11-6-17

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 2, 2017

DOE Area: Dry Wells A – E Area Inspection Period December 10, 2016 – December 9, 2017

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. [1,2]	☒	☐	☐	Passive soil vapor points, Photos 3310 and 3311 show grouted holes
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2016, were the activities in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If waste was generated due to soil disturbing activities since December 10, 2016, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	☐	☒	☐	EH&S person contacted: Christopher Wright (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 December 1, 2017

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Dry Wells A – E Area Inspection Period December 10, 2016 – December 9, 2017

Photograph Description	Photo No.	Comments
View north over Dry Wells A through E Area; Old Davis Road to left.	3305	
View south over Dry Wells A through E Area; Building H-219 in background/left; facility entrance gate in foreground/right.	3306	
View west over Dry Wells A through E Area; site entrance gate to right; Old Davis Road behind.	3307	
View southwest over Dry Wells A through E Area; Old Davis Road behind.	3308	
View southeast over Drywells A-E area	3309	
Vapor point, passive north	3310	Point 02
Vapor point, passive south	3311	Point 03

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Radium/Strontium Treatment Systems Area Inclusive of Domestic Septic System 2 Inspection Period December 10, 2016 – December 9, 2017

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. [1,2]	☒	☐	☐	Passive soil gas points and active soil gas wells. Photos taken
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2016, were the activities in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If waste was generated due to soil disturbing activities since December 10, 2016, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	☐	☒	☐	EH&S person contacted: Christopher Wright (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 12-1-2017

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Radium/Strontium Treatment Systems Area Inclusive of Domestic Septic System 2 Inspection Period December 10, 2016 – December 9, 2017

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.	3335	
View north over middle portion of Radium/Strontium Treatment Systems Area. Building H-218 to right; Building H-219 back/right.	3336	
View south over southern portion of Radium/Strontium Treatment Systems Area. Building H-215 to left.	3337	
View north over northern portion of Radium/Strontium Treatment Systems Area. Building H-219 to right.	3338	
View south over middle/south portion of Radium/Strontium Treatment Systems Area. Building H-218 to left; Old Davis Road to right.	3339	
View east over middle portion of Radium/Strontium Treatment Systems Area. Building H-218 to right; Building H-219 to left.	3340	
View southeast ~~over Domestic Septic System 2 area~~ within Radium/Strontium Treatment Systems Area; Building H-218 behind. TRU 11-13-17	~~3341~~ NA TRU 11-13-17	incorrect location of DSS 2
View west over middle-west portion of Radium/Strontium Treatment Systems Area, west perimeter fence, and Old Davis Road.	3342	and Domestic Septic System 2
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.	3343	

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Radium/Strontium Treatment Systems Area Inclusive of Domestic Septic System 2 Inspection Period December 10, 2016 – December 9, 2017

Photograph Description	Photo No.	Comments
Roof-level view southwest over ~~Domestic Septic System 2 area within~~ middle portion of Radium/Strontium Treatment Systems Area; Building H-218 behind. TRU 11-13-17	3344	
Roof-level view northwest over middle portion of Radium/ Strontium Treatment Systems Area; Building H-219 behind.	3345	
View south over northern portion of Radium/Strontium Treatment Systems Area.	3346	
RASR SG02 Active Soil Gas well	3347	
RASR SG03 Active Soil Gas well	3348	
RASR SG01 Active Soil Gas well	3349	
Passive soil gas point, grouted	3350	Point 06
Passive soil gas point, grouted	3351	Point 13
" "	3352	Point 14
Burrowing Animal hole	3353	
Burrowing Animal hole in Foreground Bldg H-218 in Background	3354	
Passive Soil gas point, grouted	3373	point 10
" "	3374	point 09
" "	3375	point 08
" "	3376	point 07

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Domestic Septic System 4 Inspection Period December 10, 2016 – December 9, 2017

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. [1,2]	☒	☐	☐	Grouted passive soil gas point
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.	☐	☑	☐	
Were any indications of a change in land use observed during walk-thru inspection? If yes, explain. [2]	☐	☑	☐	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2016, were the activities in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If waste was generated due to soil disturbing activities since December 10, 2016, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (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 12-1-2017

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Domestic Septic System 4 Inspection Period December 10, 2016 – December 9, 2017

Inspection Item	Y	N	NA	Comments
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	☐	☒	☐	EH&S person contacted: Christopher Wright Interview Conducted by Bob Devaney on 12-1-2017

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.	3355	
View west over east end of Domestic Septic System 4 leach field; Building H-215 in background.	3356	
View east over Domestic Septic System 4 septic tank location. Building H-216 in background.	3357	
View east over western portion of Domestic Septic System 4 Area; Building H-215 in background.	3358	
Grouted passive soil gas point, West of Bldg H-215	3359	Point 18

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Domestic Septic System 3 Inspection Period December 10, 2016 – December 9, 2017

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. [1,2]	X	☐	☐	grouted passive soil gas points and active soil gas well. Photos taken
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2016?	X	☐	☐	EH&S person contacted: Christopher Wright (3)
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2016?	X	☐	☐	EH&S person contacted: Christopher Wright (3)
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2016?	X	☐	☐	EH&S person contacted: Christopher Wright (3)
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2016, were the activities in compliance with the Soil Management Plan? If no, explain.	X	☐	☐	EH&S person contacted: Christopher Wright (3)
If waste was generated due to soil disturbing activities since December 10, 2016, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	X	☐	☐	EH&S person contacted: Christopher Wright (3)
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	☐	X	☐	EH&S person contacted: Christopher Wright (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 12-1-2017

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Domestic Septic System 3 Inspection Period December 10, 2016 – December 9, 2017

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.	3362	
View east over eastern half of Domestic Septic System 3 Area.	3363	
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.	3364	
View south over septic tank part of Domestic Septic System 3 Area; Building H-216 to left; Building H-215 to right.	3365	
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.	3366	
View south over east end of Domestic Septic System 3 leach field; trailer in background.	3367	
View east; Building H-216 in background, standing north/left of tree.	3368	
View east; Building H-216 in background, standing south/right of tree.	3369	
Active Soil gas well DSS35G01, Bldg #216 in background	3370	
Passive soil gas point, Bldg #216 in background	3371	grouted point 22
Passive Soil gas point, Southwest corner of Bldg #216 in Bgd	3372	grouted point 21

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Southwest Trenches Inspection Period December 10, 2016 – December 9, 2017

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. [1,2]	☒	☐	☐	Active Soil gas wells
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2016?	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2016, were the activities in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
If waste was generated due to soil disturbing activities since December 10, 2016, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	☒	☐	☐	EH&S person contacted: Christopher Wright (3)
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	☐	☒	☐	EH&S person contacted: Christopher Wright (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 12-1-2017

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Southwest Trenches Inspection Period December 10, 2016 – December 9, 2017

Photograph Description	Photo No.	Comments
View southeast over Southwest Trenches Area; North levee in background.	3384	
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.	~~3388~~ ~~3488~~ TRU 11-10-17	
View north over northwest corner of Southwest Trenches Area. TRU 11-10-17	3389	Soil gas well to right
View south over Southwest Trenches Area; North levee in background; shoulder of Old Davis Road to right.	3386	
View southeast over Southwest Trenches Area.	3385	
View west over Southwest Trenches Area; shoulder of Old Davis Road in background.	3390	
View northwest over Southwest Trenches Area.	3391	
View north over Southwest Trenches Area.	3392	
View north from center of Southwest Trenches Area.	3393	
View west from center of Southwest Trenches Area.	3394	
View south from center of Southwest Trenches Area.	3395	
View east from center of Southwest Trenches Area.	3396	
Soil gas wells in south end of Southwest Trenches Area	3397	
Grouted passive soil gas point	3431	photo taken on 11-6-17

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Eastern Dog Pens Area Inspection Period December 10, 2016 – December 9, 2017

Inspection Item	Y	N	NA	Comments
Were any indications of soil disturbance observed during walk-thru inspection? If yes, explain. [1,2]	☐	☒	☐	
Were any soil disturbance permit requests filed with UC Davis Environmental Health and Safety (EH&S) Unit for this DOE Area since December 10, 2016?	☐	☒	☐	EH&S person contacted: Christopher Wright (3)
Were any soil disturbance permits issued by the EH&S Unit for this DOE Area since December 10, 2016?	☐	☒	☐	EH&S person contacted: Christopher Wright (3)
Were permitted soil disturbing activities conducted in this DOE Area since December 10, 2016?	☐	☒	☐	EH&S person contacted: Christopher Wright (3)
If permitted soil disturbing activities were conducted in this DOE Area since December 10, 2016, were the activities in compliance with the Soil Management Plan? If no, explain.	☐	☒	☐	EH&S person contacted: Christopher Wright (3)
If waste was generated due to soil disturbing activities since December 10, 2016, was the soil managed and/or disposed in compliance with the Soil Management Plan? If no, explain.	☐	☒	☐	EH&S person contacted: Christopher Wright (3)
Are there any suggested changes to the Soil Management Plan at this time? If yes, explain.	☐	☒	☐	EH&S person contacted: Christopher Wright (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 12-1-2017.

LAND USE CONTROL INSPECTION CHECKLIST

Inspector Tim Utterback Inspection Date November 2, 2017

DOE Area: Eastern Dog Pens Area Inspection Period December 10, 2016 – December 9, 2017

Photograph Description	Photo No.	Comments
View northeast over Eastern Dog Pens Area from southwest corner.	3408	
View east over Eastern Dog Pens Area.	3411	
View southeast over Eastern Dog Pens Area from northwest corner.	3412	
View south over Eastern Dog Pens Area.	3415	
View southwest over Eastern Dog Pens Area from northeast corner.	3416	
View west over Eastern Dog Pens Area.	3420	
View northwest into Eastern Dog Pens Area from southeast corner	3423	
View north over Eastern Dog Pens Area from north levee.	3426	
Animal burrow holes in southwest	3425	

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Appendix B

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

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Monument 1: Northwest corner of Dry Wells A–E Area (photo No. 3296).

View northwest: Monument 1, within orange ring (outside diameter is 14 inches) in foreground; entrance sign in background (photo No. 3297). (Delineator shown in Appendix C, photo No. 3309 on page C-15.)

Monument 2: Northeast corner of Dry Wells A–E Area (photo No. 3299).

View northwest: Monument 2, within orange ring; entrance and retracted entrance gate in background (photo No. 3300).

Monument 3: Southwest corner of Dry Wells A–E Area (photo No. 3301).

View southwest: Monument 3, within orange ring; west perimeter fence above right; delineator left of monument (photo No. 3302).

Monument 4: Southeast corner of Dry Wells A–E Area (photo No. 3303).

View east: Monument 4, within orange ring; Building H-219 in background (photo No. 3304).

Monument 5: Northwest corner of Domestic Septic System 4 Area (photo No. 3312).

View east: Monument 5, within orange ring; Building H-215 in background (photo No. 3313).

Monument 6: Adjacent to northwest corner of Building H-218; Radium/Strontium Treatment Systems Area (photo No. 3314).

View east: Monument 6, within orange ring; corner of Building H-218 in background (photo No. 3315).

Monument 7: Southwest corner of Domestic Septic System 4 Area (photo No. 3317).

View east: Monument 7, within orange ring; Building H-215 in background (photo No. 3318).

Monument 8: Southwest corner of radium-226 leach trench; Radium/Strontium Treatment Systems Area (photo No. 3319).

View southwest: Monument 8, within orange ring; west perimeter fence right of monument; delineator left of monument (photo No. 3320).

Monument 9: Southeast corner of radium-226 leach trench; Radium/Strontium Treatment Systems Area (photo No. 3321).

View east: Monument 9, within orange ring; Building H-215 in background (photo No. 3322).

Monument 10: Northeast corner of former leach field in Domestic Septic System 3 Area (photo No. 3323).

View northwest: Monument 10, within orange ring in foreground; delineator right of monument; Building H-216 in background (photo No. 3324).

Monument 11: Northeast corner of Eastern Remediation Support Area (photo No. 3325).

View west: Monument 11, within orange ring; delineator right of monument; Building H-216 in background (photo No. 3326).

Monument 12: Northwest corner of Southwest Trenches Area (photo No. 3327).

View south: Monument 12, within orange ring in foreground; water hydrant in background (photo No. 3328).

Monument 13: Southwest corner of Domestic Septic System 3 Area, at northern perimeter of Southwest Trenches Area (photo No. 3329).

View north: Monument 13, within orange ring at edge of concrete swale; Buildings H-215 and H-216 in background (photo No. 3330).

Monument 14: Southeast corner of Domestic Septic System 3 Area (photo No. 3331).

View northwest: Monument 14, within orange ring; delineator right of monument; Building H-216 in background (photo No. 3332).

Monument 15: Eastern corner of Southwest Trenches Area (photo No. 3333).

View southeast: Monument 15, within orange ring; delineator left of monument; former Western Dog Pens silt fence in left of background; trailer shed fence in right of background (photo No. 3334).

Monument 16: Southwest corner of Southwest Trenches Area (photo No. 3401).

View southwest: Monument 16, within orange ring; delineator left of monument; southwest corner post of perimeter fence behind monument (photo No. 3402).

Monument 17: Southeast corner of Southwest Trenches Area (photo No. 3404).

View southeast: Monument 17, within orange ring; delineator left of monument; south perimeter fence behind monument; foot of North Levee in background (photo No. 3405).

Monument 18: Southeast corner of Eastern Remediation Support Area (photo No. 3406).

View southwest: Monument 18, within orange ring; delineator near foot of North Levee (photo No. 3407).

Monument 19: Northwest corner of Eastern Dog Pens Area (photo No. 3413).

View southeast: Monument 19, within orange ring; delineator right of monument; Eastern Dog Pens Area in background (photo No. 3414).

Monument 20: Northeast corner of Eastern Dog Pens Area (photo No. 3417).

View southwest: Monument 20, within orange ring; delineator left of monument; Eastern Dog Pens Area in background (photo No. 3419).

Monument 21: Southwest corner of Eastern Dog Pens Area (photo No. 3409).

View northeast: Monument 21, within orange ring; delineator right of monument; Eastern Dog Pens Area in background (photo No. 3410).

Monument 22: Southeast corner of Eastern Dog Pens Area (photo No. 3421).

View northwest: Monument 22, within orange ring; delineator right of monument; Eastern Dog Pens Area in background (photo No. 3422).

Monument 23: Western perimeter point of Southwest Trenches Area (photo No. 3399).

View northwest: Monument 23, within orange ring; delineator right of monument; west perimeter fence in background (photo No. 3400).

Monument 24: Northeast corner of Southwest Trenches Area, at southern perimeter of Domestic Septic System 3 Area (photo No. 3382).

View southeast: Monument 24, within orange ring on edge of concrete swale; waste bin behind monument (photo No. 3383).

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. 3384).

View east over Southwest Trenches Area: Western Dog Pens Area and UC Davis Southern Trenches Area in background (photo No. 3388).

Northwest corner of Southwest Trenches Area: soil gas well SWTSG-03 to right (photo No. 3389).

View south over Southwest Trenches Area: North Levee in background (photo No. 3386).

View southeast over Southwest Trenches Area (photo No. 3385).

View west over Southwest Trenches Area: Shoulder of Old Davis Road in background (photo No. 3390).

View northwest over Southwest Trenches Area (photo No. 3391).

View north over Southwest Trenches Area (photo No. 3392).

View north from center of Southwest Trenches Area (photo No. 3393).

View west from center of Southwest Trenches Area (photo No. 3394).

View south from center of Southwest Trenches Area (photo No. 3395).

View east from center of Southwest Trenches Area (photo No. 3396).

Soil gas wells SWTSG-02A and SWTSG-02A in southwest quadrant of Southwest Trenches Area (photo No. 3397).

View of grouted passive soil gas point 43 at north end of Southwest Trenches Area (photo No. 3431).

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. 3362).

View east over eastern half of Domestic Septic System 3 Area (photo No. 3363).

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. 3364).

View south over septic tank part of Domestic Septic System 3 Area: Building H-216 to left; Building H-215 to right (photo No. 3365).

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. 3366).

View south over east end of Domestic Septic System 3 Area leach field: Trailer in background (photo No. 3367).

View east in Domestic Septic System 3 Area: Building H-216 in background, standing north/left of tree (photo No. 3368).

View east in Domestic Septic System 3 Area: Building H-216 in background, standing south/right of tree (photo No. 3369).

View north in Domestic Septic System 3 Area: Active soil gas well DSS3SG-01 in foreground; Building H-216 in background (photo No. 3370).

View northeast in Domestic Septic System 3 Area: Grouted passive soil gas point 22 in foreground; Building H-216 in background, (photo No. 3371).

View north in Domestic Septic System 3 Area: Grouted passive soil gas point 21 in foreground; Building H-216 in upper right (photo No. 3372).

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. 3355).

View west over east end of Domestic Septic System 4 Area leach field: Building H-215 in background (photo No. 3356).

View east over Domestic Septic System 4 Area septic tank location: Building H-216 in background (photo No. 3357).

View east over western portion of Domestic Septic System 4 Area: Building H-215 in background (photo No. 3358).

View east in Domestic Septic System 4 Area: Grouted passive soil gas point 18 in center; Building H-215 above (photo No. 3359).

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. 3335).

View north over middle portion of Radium/Strontium Treatment Systems Area: Building H-219 in background (photo No. 3336).

View south over southern portion of Radium/Strontium Treatment Systems Area: Building H-215 to left (photo No. 3337).

View north over northern portion of Radium/Strontium Treatment Systems Area: Building H-219 to right (photo No. 3338).

View south over the middle-south portion of Radium/Strontium Treatment Systems Area: Building H-218 to left (photo No. 3339).

View east over middle portion of Radium/Strontium Treatment Systems Area: Building H-218 to right; Building H-219 to left (photo No. 3340).

View west over Domestic Septic System 2 Area within middle-west portion of Radium/Strontium Treatment Systems Area (photo No. 3342).

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. 3343).

Roof-level view southwest over middle portion of Radium/Strontium Treatment Systems Area: Building H-218 in background (photo No. 3344).

Roof-level view northwest over middle portion of Radium/Strontium Treatment Systems Area: Building H-219 in background (photo No. 3345).

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. 3346).

Radium/Strontium Treatment Systems Area: Active soil gas well RASRSG-01 (photo No. 3349).

Radium/Strontium Treatment Systems Area: Active soil gas well RASRSG-02 (photo No. 3347).

Radium/Strontium Treatment Systems Area: Active soil gas well RASRSG-03 center; Building H-218 above (photo No. 3348).

Radium/Strontium Treatment Systems Area: Grouted passive soil gas point 06 (photo No. 3350).

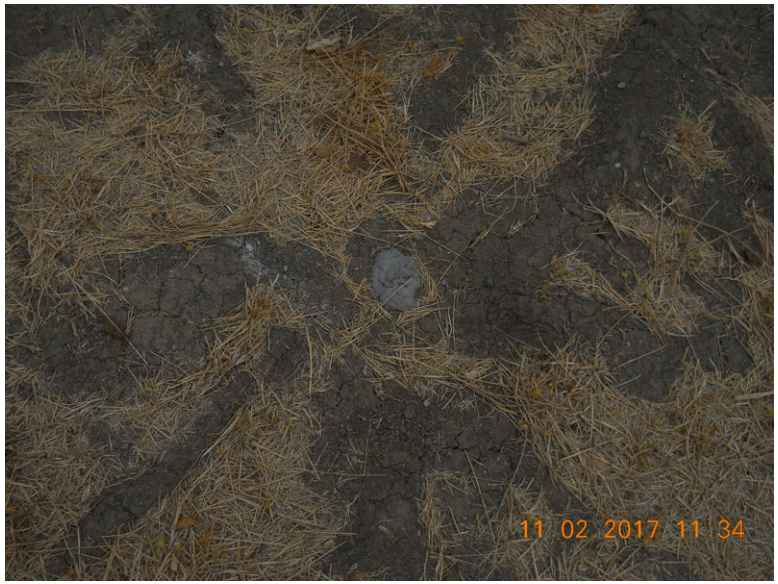
Radium/Strontium Treatment Systems Area: Grouted passive soil gas point 07 (photo No. 3376).

Radium/Strontium Treatment Systems Area: Grouted passive soil gas point 08 (photo No. 3375).

Radium/Strontium Treatment Systems Area: Grouted passive soil gas point 09 (photo No. 3374).

Radium/Strontium Treatment Systems Area: Grouted passive soil gas point 10 (photo No. 3373).

Radium/Strontium Treatment Systems Area: Grouted passive soil gas point 13 (photo No. 3351).



Radium/Strontium Treatment Systems Area: Grouted passive soil gas point 14 (photo No. 3352).

Radium/Strontium Treatment Systems Area: Burrowing animal hole in southeast corner of unpaved courtyard (photo No. 3353).

View southeast in unpaved courtyard of Radium/Strontium Treatment Systems Area: Burrowing animal hole in foreground; Building H-218 in background (photo No. 3354).

View north over Dry Wells A–E Area: Old Davis Road to left (photo No. 3305).

View south over Dry Wells A–E Area: Building H-219 in background/left; retracted site entrance gate to right (photo No. 3306).

View west over Dry Wells A–E Area: Retracted site entrance gate and Old Davis Road in background (photo No. 3307).

View southwest over Dry Wells A–E Area (photo No. 3308).

View southeast over Dry Wells A–E Area; Monument 1 delineator in left portion of frame (photo No. 3309).

Dry Wells A–E Area: Grouted passive soil gas point 02 (photo No. 3310).

Dry Wells A–E Area: Grouted passive soil gas point 03; part of UCD1-054 wellhead visible in lower right corner (photo No. 3311).

View northeast over Eastern Dog Pens Area from southwest corner (photo No. 3408).

View east over Eastern Dog Pens Area (photo No. 3411).

View southeast over Eastern Dog Pens Area from northwest corner (photo No. 3412).

View south over Eastern Dog Pens Area (photo No. 3415).

View southwest over Eastern Dog Pens Area from northeast corner (photo No. 3416).

View west over Eastern Dog Pens Area (photo No. 3420).

View northwest into Eastern Dog Pens Area from southeast corner (photo No. 3423).

View north over Eastern Dog Pens Area from North Levee (photo No. 3426).

Burrowing animal holes in Southwest region of Eastern Dog Pens Area (photo No. 3425).

Appendix D

Photographs of Groundwater Monitoring Wells

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UCD1-013 Wellhead (photo No. 3461).

UCD1-013 Wellhead plaque (photo No. 3462).

UCD1-013 Interior (photo No. 3463).

UCD1-013 Interior plaque (photo No. 3464).

UCD1-018 Wellhead (photo No. 3470).

UCD1-018 Wellhead plaque (photo No. 3471).

UCD1-018 Interior (photo No. 3473).

UCD1-018 Interior plaque (photo No. 3474).

UCD1-021 Wellhead (photo No. 3437).

UCD1-021 Wellhead plaque (photo No. 3439).

UCD1-021 Interior (photo No. 3440).

UCD1-021 Interior plaque (photo No. 3442).

UCD1-023 Wellhead (photo No. 3432).

UCD1-023 Wellhead plaque (photo No. 3433).

UCD1-023 Interior (photo No. 3434).

UCD1-023 Interior plaque (photo No. 3435).

UCD1-054 Wellhead (photo No. 3427).

UCD1-054 Wellhead plaque (photo No. 3428).

UCD1-054 Interior (photo No. 3429).

UCD1-054 Interior plaque (photo No. 3430).

UCD1-063 Wellhead (photo No. 3466).

UCD1-063 Wellhead plaque (photo No. 3467).

UCD1-063 Interior (photo No. 3468).

UCD1-063 Interior plaque (photo No. 3469).

UCD1-068 Wellhead (photo No. 3452).

UCD1-068 Wellhead plaque (photo No. 3453).

UCD1-068 Interior (photo No. 3454).

UCD1-068 Interior plaque (photo No. 3455).

UCD1-069 Wellhead (photo No. 3448).

UCD1-069 Wellhead plaque (photo No. 3449).

UCD1-069 Interior (photo No. 3450).

UCD1-069 Interior plaque (photo No. 3451).

UCD1-070 Wellhead (photo No. 3443).

UCD1-070 Wellhead plaque (photo No. 3444).

UCD1-070 Interior (photo No. 3446).

UCD1-070 Interior plaque (photo No. 3447).

UCD1-071 Wellhead (photo No. 3377).

UCD1-071 Wellhead plaque (photo No. 3378).

UCD1-071 Interior (photo No. 3379).

UCD1-071 Interior plaque (photo No. 3380).

UCD1-072 Wellhead (photo No. 3456).

UCD1-072 Wellhead plaque (photo No. 3457).

UCD1-072 Interior (photo No. 3458).

UCD1-072 Interior plaque (photo No. 3460).

UCD1-073 Wellhead (photo No. 3476).

UCD1-073 Wellhead plaque (photo No. 3477).

UCD1-073 Interior (photo No. 3478).

UCD1-073 Interior plaque (photo No. 3479).

Appendix E

Photographs of Completed Maintenance Work

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Well UCD1-068 delineator.

Well UCD1-069 delineator center. Monument 10 delineator foreground left. Monument 11 delineator background right.

Well UCD1-072 delineator.

Well UCD1-021 wellhead before vault replacement (photo No. 3218 from 2016 inspection report).

Well UCD1-021 wellhead after vault replacement (photo No. 3437).

Well UCD1-021 vault interior before replacement (photo No. 3220 from 2016 inspection report).

Well UCD1-021 vault interior after replacement (photo No. 3440).

Well UCD1-070 before concrete apron replacement (photo No. 3222 from 2016 inspection report).

Well UCD1-070 after concrete apron replacement (photo No. 3443).

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Appendix F

Copy of Approved Permit Application and Maps

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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

1

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: Robt O. Devany

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: Chris Wright

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

_____

_____

_____

_____

_____

_____

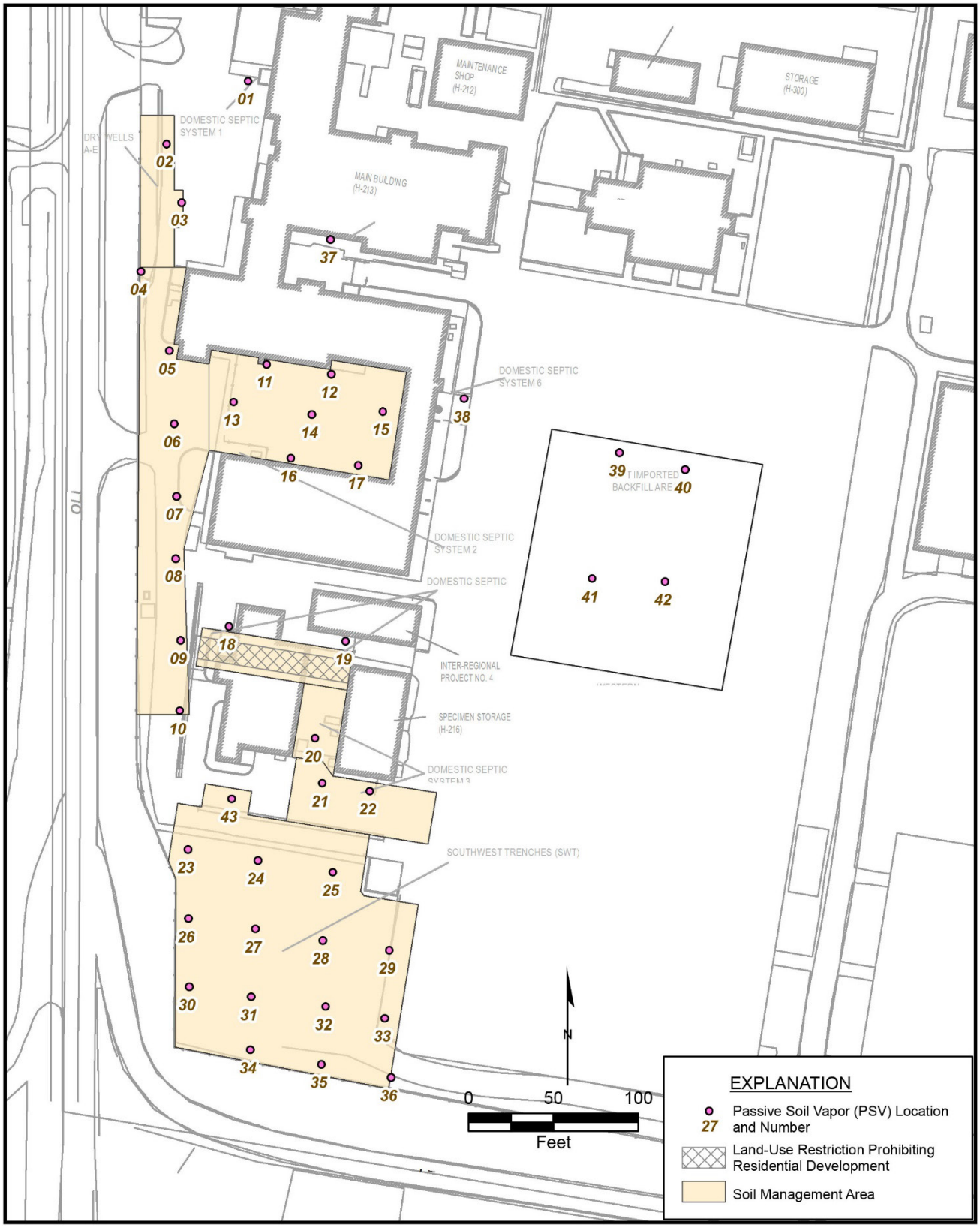
EH&S Unit Representative Signature:_____

_____

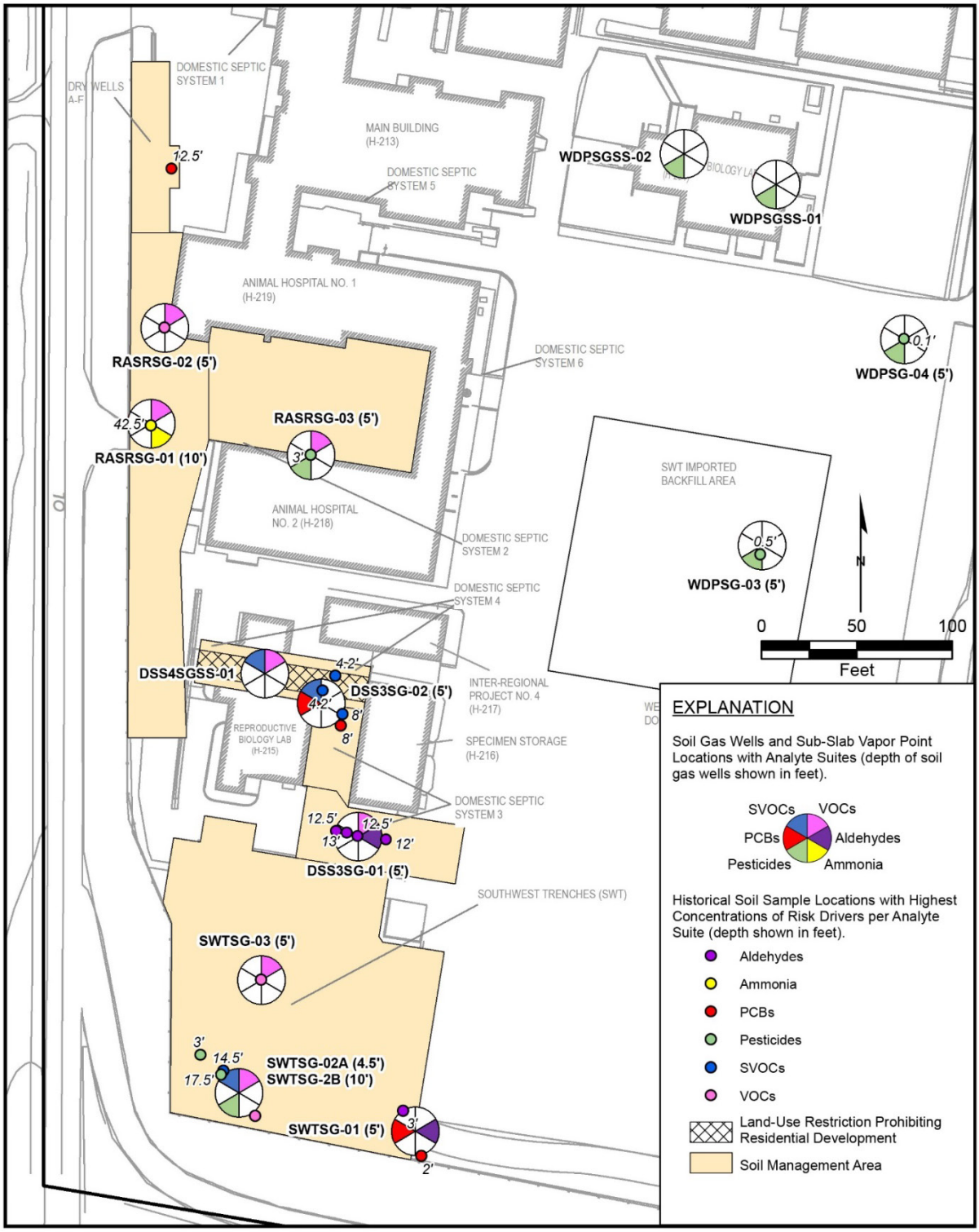
Name/Title:_____

Date:_____

4



Passive VOC Soil Gas Sample Locations in DOE Areas



Soil Gas Well and Subslab Vapor Pin Locations and Analytic Suites