DRAFT FACT SHEET

DRAFT PERMIT RENEWAL FOR POST-CLOSURE CARE
PAGE-TROWBRIDGE RANCH LANDFILL, UNINVERSITY OF ARIZONA
ORACLE/ORACLE JUNCTION AREA
PINAL COUNTY, ARIZONA
EPA ID. NO. AZD 980 665 814

This fact sheet was prepared in accordance with Arizona Administrative Code (A.A.C) R18-8-271.E(e) and R18-8-271.G. A fact sheet must accompany every Arizona Hazardous Waste Management Act (AHWMA) draft permit that the Arizona Department of Environmental Quality (ADEQ) has prepared. All references to the A.A.C. hereafter refer to the A.A.C. R18-8-260 et. seq., made effective on December 30, 2020, which incorporates and/or modifies parts of Title 40 Code of Federal Regulations (CFR) Parts 260 et. seq.

ADEQ has prepared a draft AHWMA Permit (Draft Permit) for the University of Arizona's (UA) post-closure care of the Page-Trowbridge Ranch Landfill (PTRL). This Draft Permit allows UA to continue post-closure care for PTRL located north of Highway 77, approximately seven miles west of Oracle, and 30 miles north of Tucson.

FACILITY OVERVIEW

PTRL's site location map is shown in Figure 1. The PTRL is located in Township 9 South, Range 14 East, Gila and Salt River Base and Meridian, and includes the southern half of Section 27 and the northern half of Section 34. Land to the north and northeast of the PTRL is owned by the State of Arizona and is used as open range grazing land. Land to the north, northwest, and east is owned by UA and used for agricultural research. Property to the southwest, south, and southeast is owned by Robson Ranch Mountains, L.L.C., for residential development. There are currently 1,165 homes and a clubhouse constructed in the Saddlebrooke Ranch Community.

The PTRL occupies a total of 3.25 acres and consists of two units: Unit A (northern unit, 200 ft by 200 ft) and Unit B (southern unit, 200 ft wide by 500 ft long) as shown in Figure 2. The individual cells within the units were approximately 15 ft deep. PTRL was formally used to dispose of chemical waste and low-level radioactive material generated at UA, Northern Arizona University, Arizona State University, and the Veterans Hospital in Tucson from the early 1960s to 1986. Chemical wastes primarily consisted of solvents, ignitable materials, acids, bases, heavy metals, and pesticides. The PTRL was closed in 1997 after the installation of a final cover system.

The final cover system was constructed over each unit to prevent percolation through the landfill and includes a final earthen cover that supports native vegetation. PTRL is surrounded by a six-foot tall chain-link fence topped with barbed wire for security. Culverts and stormwater channels were installed to divert water from the surface of the landfill. PTRL is not located in a 100-year flood plain nor in a seismic area.

A solar-powered soil vapor extraction (SVE) system was installed at PTRL and has been operating since June 2006 between Unit A and B (Figure 2). The SVE system includes a network of soil vapor monitoring points that can detect potential releases from the landfill units. If a release is detected by the SVE system, actions will be taken in advance of any contaminant reaching groundwater (found approximately 645 ft below ground surface (bgs)). Soil vapor is extracted from one well (SGS-Well) at a rate of approximately 85 ft^3/min and at a depth of 98 to 255 ft bgs. The extracted soil vapor is then directed through an activated carbon treatment system to remove volatile organic compounds (VOCs). The activated carbon treatment system consists of two, 2,000-pound units. The system is monitored weekly to ensure proper operation and samples are taken monthly to check for breakthrough of the activated carbon. These samples are used to determine when the activated carbon needs to be replaced and to monitor the mass removal VOCs from the subsurface. Simultaneously, ambient air is injected into the soil through another well (SGD-Well) at a rate of approximately 40 ft^3/min and at a depth of 435 to 605 ft bgs. The SVE system is shown in Figure 3.

In addition to the soil vapor wells (SGS-Well and SGD-Well), there are four soil vapor monitoring points used to monitor VOCs. These points (SGS-SP, SGD-SP, SGD-MP, and SGD-DP) monitor soil vapor at depths from 76 to 600 ft bgs. Additionally, PTRL has four active groundwater wells used to monitor chemical and radionuclide contaminates (MW-2, MW-3, MW-4, and MW-5). The groundwater monitoring wells reach a depth of approximately 800 ft bgs. For sample collection, a submersible pump is installed in each groundwater well, with power supplied by a generator during sampling. MW-2 and MW-5 are also utilized for soil vapor monitoring with monitoring points that extend to the groundwater table via inflatable packers. The groundwater monitoring wells and soil vapor monitoring points are within the fenced enclosure surrounding the PTRL and have protective steel casings with locking well head covers (Figure 4). A well construction drawing of MW-2 is shown in Figure 5. Groundwater and soil vapor monitoring is conducted semi-annually.

PTRL periodically generates waste in the form of granular activated carbon that is removed from the SVE treatment vessels. This carbon is sent off-site for regeneration. Condensate from the SVE system is managed appropriately in accordance with applicable regulations.

BRIEF SITE HISTORY

In 1962, UA began disposing of low-level radioactive waste in Unit B after receiving and maintaining approval from the Arizona Atomic Energy Commission. Mixed waste, containing hazardous chemical and low-level radioactive waste, was disposed in Unit B starting in the late 1960s until 1986. Unit B was initially used as an open neutralization and burn pit, but was subsequently used to bury 1- and 5-gallon containers (bottles, cans, boxes, and bags) and 55-gallon drums (lab packs) in unlined cells. The quantity of waste disposed in Unit B prior to 1978 is unknown because recordkeeping did not start until then.

In 1982, Unit A was designed and constructed for hazardous chemical waste disposal only in accordance with Resource Conservation and Recovery Act (RCRA) standards at the time. Unit A was used to dispose of plastic liner sealed 55-gallon drums (DOT 17C) in cells lined with a chemically resistant synthetic liner until 1986. The quantity of materials disposed at PTRL

decreased in mid-1983 due to the construction of incineration and neutralization facilities at UA, meaning that less than half of Unit A's capacity was utilized. Based on manifests and UA disposal records, 280 tons of hazardous waste were disposed in Unit A and Unit B between the late 1960s and 1986. An additional 312 tons of radioactive wastes were disposed of in Unit B between 1962 and 1986. This inventory does not include any undocumented radioactive or chemical wastes. No waste has been disposed on-site since 1986.

PTRL was closed in 1997. Closure activities included the construction of a final cover over both units, security fencing, and stormwater run-on and run-off controls. In December 1997, UA submitted their first post-closure application to ADEQ. ADEQ issued the final post-closure permit for UA under RCRA and AHWMA in November 2001.

The first four groundwater monitoring wells (MW-2, MW-3, MW-4, and MW-1) were installed in 1984 and 1985. MW-1 was replaced by MW-5 in 1990. These wells have shown that groundwater predominately flows southwest, with the groundwater table located approximately 645 ft bgs. Groundwater sampling began in November 1984 and has continued to the present day. This monitoring has not indicated the presence of organic or inorganic contaminants in groundwater.

Soil vapor surveys at PTRL were performed in 1988, 1994, 2003, and 2007 to assess contaminant migration potential. These surveys found that VOCs were present in the pore space immediately surrounding the landfill. However, VOC concentrations decrease substantially with increased distance from the landfill units. VOCs are present in shallow soils with higher concentrations found along the western and southern perimeter of the landfill. VOCs were not detected in soil samples deeper than 140 ft bgs and no analytes have been detected deeper than 190 ft bgs.

In June 2006, the SVE system was installed as a corrective action interim measure. The SVE system continues to operate and monitor VOC removal from the subsurface. Sampling from SVE monitoring wells and the system indicates that VOC concentrations are decreasing with time. A human health risk assessment was conducted in 2009. This assessment included a registered well survey, analysis of the risk of contaminate migration based on quantitative risk characterization, and developed a human health risk exposure model for PTRL. The results of this assessment show that the contamination at PTRL does not pose a non-carcinogenic nor an unacceptable cancer risk to people at or around the landfill site. The assessment recommended the continuation of on-site monitoring for soil vapor and groundwater. In July 2011, UA submitted their renewal post-closure permit application, and ADEQ issued the current final post-closure permit in June 2012.

PTRL is currently undergoing the renewal of the Permit in accordance with A.A.C R18-8-264.A (40 CFR §264.117) and A.A.C R18-8-270.A (40 CFR §270.50), but remains under the existing Permit's purview pending the renewal's issuance.

PERMIT DESCRIPTION AND STATEMENT OF BASIS

The Draft Permit prepared by ADEQ consists of four parts (I through IV) and nine attachments (A through I). The Draft Permit requires UA to maintain the PTRL for up to 30 years, or until it is demonstrated that the hazardous waste is removed from the site and that conditions at and surrounding the site are protective of human health and the environment. UA submitted the initial renewal permit application in December 2021.

Part I of the permit contains general permit conditions. These conditions include definitions, permit actions, duties and requirements, confidentiality, document maintenance, and modifications. These conditions are required by A.A.C R18-8-270.A (40 CFR §270.30 and 40 CFR §270.32).

Part II of the permit contains general, post-closure facility conditions. These conditions include maintenance and operation, security, general inspections, contingency plan, recordkeeping and reporting, and any schedules of compliance that may be required. These permit conditions are required by A.A.C R18-8-264.A (40 CFR §264), R18-8-270.A (40 CFR §270), the omnibus requirements of R18-8-270.A and N (40 CFR §270.32(b)) (Omnibus), and R18-8-270.A (40 CFR §270.33) (Schedule of Compliance or SOC). The permit contains four SOC permit conditions:

- Within thirty days (30) of permit issuance, UA must submit a scope of work and project timeline to update the PTRL's Human Health Risk Assessment (HHRA Project) as a Class 1 Permit Modification Request requiring Director Approval.

- Within thirty days (30) of approval of the scope of work and project timeline, UA must submit the HHRA Project's workplans and methods for ADEQ's review and approval as a Class 1 Permit Modification requiring Director approval.

- Within ninety days (90) of completion of the HHRA project work, UA must submit a draft HHRA report for ADEQ's review and approval as a Class 1 Permit Modification requiring Director approval.

- Within fourteen days (14) of approval of the draft HHRA report, UA must submit a final, certified, HHRA report.

Part III of the permit contains specific conditions for groundwater and soil vapor monitoring. These conditions include the detection monitoring plan, well locations, groundwater and soil vapor sampling and analysis, and reporting and recordkeeping. These conditions are authorized by A.A.C R18-8-264.A (40 CFR Subpart F). Generally, the monitoring requirements include:

- Groundwater samples will be collected from four on-site groundwater monitoring wells, semi-annually, and analyzed for VOCs (EPA Method 524.2 and 504.1), sVOCs (EPA Method 8270C), organochlorine pesticides (EPA Method 8081), and inorganic constituents, Manganese and Sodium (EPA Method 200.7), Chloride and Sulfate (EPA

Method 300.0). Samples will also be analyzed for radionuclides including gross alpha (EPA Method 900.0), tritium and carbon (EPA Method 906).

- Soil vapor samples will be collected from six on-site soil vapor monitoring points and two retrofitted groundwater monitoring wells, semi-annually and analyzed for VOCs (TO-15). When the SVE system is operating, samples will be collected monthly to monitor performance.

- Additionally, field measurements will include depth to groundwater, pH, temperature, specific conductance, and visual appearance for groundwater.

- Quality control methods include field duplicates, field blanks, and trip blanks for groundwater and soil vapor. If an exceedance of the alert levels (as stated in the detection monitoring plan) occurs, actions may include resampling, increased monitoring frequency, and analysis of statistical significance. If the exceedance is valid, UA will submit a permit modification to establish a compliance monitoring program.

Part IV of the permit contains conditions regarding corrective action. Particularly, the conditions include discussion of past corrective action projects and general conditions that may apply in the future. Corrective action is authorized by Arizona Revised Statues (A.R.S) §49-922.B and Section 3004(u) of RCRA, as amended by the Hazardous and Solid Waste Amendments. Regulatory basis for corrective action can be found in A.A.C R18-8-264.A (40 CFR Subpart F) and via Omnibus conditions.

The above permit parts refer to the following permit attachments:

- Attachment A – Facility Description
- Attachment B – Post-Closure Plan
- Attachment C – Procedures to Prevent Hazards
- Attachment D – Contingency Plan
- Attachment E – Soil Vapor Extraction Operation and Maintenance
- Attachment F – Groundwater and Soil Vapor Monitoring
- Attachment G – Quality Assurance Project Plan
- Attachment H – CASOC Approved Workplans, Reports [Reserved]
- Attachment I – Arizona Administrative Code

The term of the permit is ten (10) years. After 10 years, UA may submit a renewal permit application to continue post-closure care of PTRL.

APPLICANT REQUESTED VARIANCES

No variances have been requested by the applicant.

PUBLIC PARTICIPATION AND PROCEDURES FOR REACHING FINAL DECISION

The administrative record for the Draft Permit contains the permit application, Draft Permit, and adjacent data and information (such as inspection reports). The last three years of monitoring

reports are available for public review on the ADEQ *My Community* page for PTRL at https://www.azdeq.gov/node/4901. A copy of the complete administrative record is available for public review Monday through Friday (excluding state holidays) from 8:30 a.m. to 4:30 p.m. at:

Arizona Department of Environmental Quality
Records Management Center
1110 West Washington Street, 1st Floor
Phoenix, Arizona 85007
To make an appointment call: (602) 771-4380 or visit
http://www.azdeq.gov/records-center

The Draft Permit and supporting documents can be viewed during the public comment period, found on the Public Notice Calendar at http://www.azdeq.gov/notices using keyword search "Page-Trowbridge" or by selecting the start date for the public comment period.

As required by A.A.C R18-8-271(L) and 40 CFR §124.13, all persons, including applicants, who believe any condition of the Draft Permit or that the tentative decision to prepare and issue this Draft Permit is inappropriate, must raise all reasonable issues and submit all reasonably available arguments and supporting materials by the close of the public comment period. All comments submitted during the public comment period shall discuss and be relevant to the appropriateness of the Draft Permit and the conditions contained within.

The 45-day public comment period commences on April 25, 2022. During the public comment period, any interested person may submit written comments on the Draft Permit (via mail or e-mail). These comments and any supporting materials must be submitted to ADEQ by the last day of the public comment period, **June 9, 2022**, at:

Arizona Department of Environmental Quality
Gav Orman, Permit Writer
ADEQ Waste Permits and Support Unit
1110 West Washington Street,
Phoenix, Arizona 85007
Phone: (602) 771-8727
Email: hazwastepermits@azdeq.gov

All written comments delivered or postmarked by the last day of the public comment period will be considered in ADEQ's final determination regarding the Draft Permit. After all comments have been considered, a final permit decision will be made by the Director. The applicant, each person who has submitted written or oral comments, and each person who has so requested, will receive a notice of this final permit decision. This notice shall reference procedures for appealing a decision on the Draft Permit. The final permit decision shall become effective on the date specified in the final permit notice.

At the time that the final decision is made, the Director shall also issue a response to any significant comments. The response to comments shall consider all items as specified in A.A.C R18-8-271.O and 40 CFR §124.17. The response to comments shall be made available to the public for review. Any person who desires to be placed on the mailing list for all future

permitting activities for this facility may request so in writing to the above address or email pursuant to A.A.C. R18-8-271.I(c)(1)(ix) and 40 CFR §124.10(c)(1)(ix)(a).

In addition to submitting public comments, any person may request the Director to schedule a public hearing. **Written requests for a public hearing must be submitted to ADEQ by no later than the closing of the public comment period, June 9, 2022, and must state the nature of the issues proposed to be raised in the hearing.**

The Director will hold this hearing if:

1. They find, on the basis of requests, a significant degree of public interest in the Draft Permit, or

2. They find that the hearing might clarify one or more issues involved in the permit decision, or

3. A formal written notice of opposition to the Draft Permit is received within the comment period.

PERSONS TO CONTACT FOR ADDITIONAL INFORMATION

For additional information, please contact:

Gav Orman, Permit Writer
ADEQ Waste Permits and Support Unit
1110 West Washington Street,
Phoenix, Arizona 85007
Phone: (602) 771-8727
Direct Email: orman.gav@azdeq.gov
General Email: hazwastepermits@azdeq.gov

Figure 1: Site Location Map

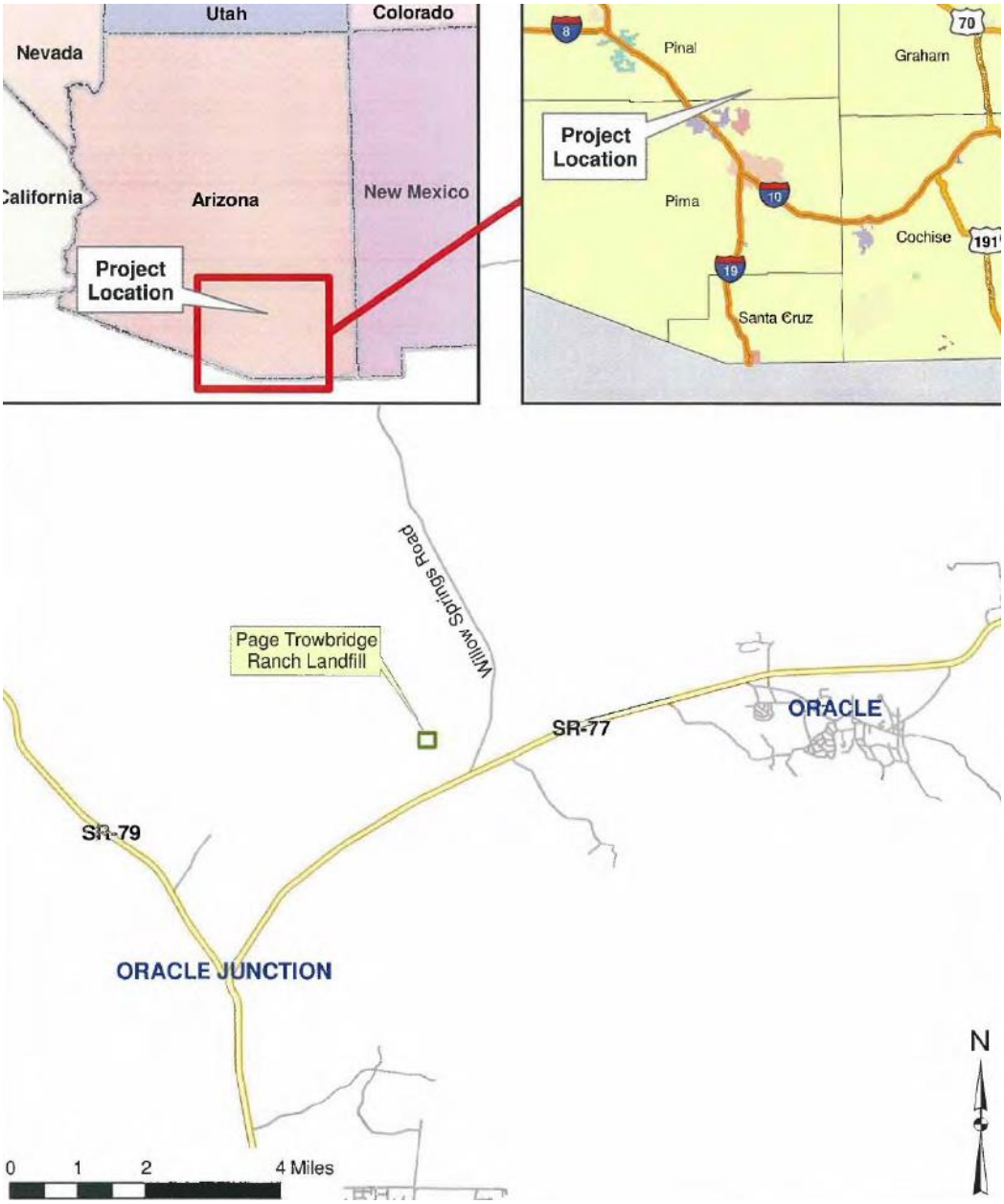

Figure 2: Site Map

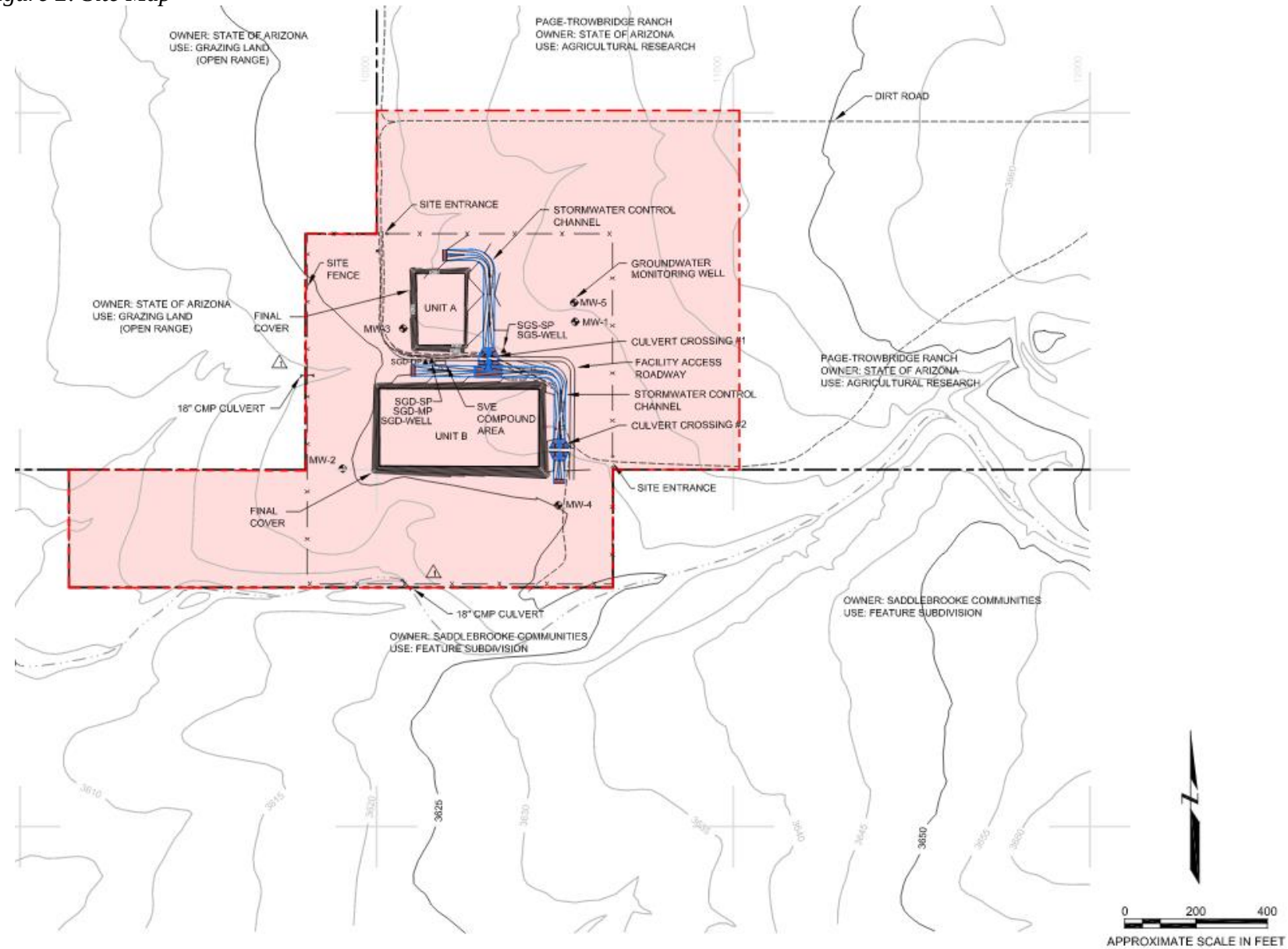

Figure 3: Picture of SVE System

Figure 4: Picture of Well Casings (SGD-DP top and MW-2 bottom)

Figure 5: Construction Drawing of MW-2