LMS/BRP/S18258

2017 Annual Inspection Report of the Burris Park, California, Site

February 2018

U.S. DEPARTMENT OF ENERGY | Legacy Management

This page intentionally left blank

Contents

Table

Appendix

Abbreviations

DOE	U.S. Department of Energy
IC	institutional control
LM	Office of Legacy Management
LTS&M	Long-Term Surveillance and Maintenance
mCi	millicurie
^{90}Sr	strontium-90
UC Berkeley	University of California—Berkeley

1.0 Inspection Summary

The Burris Park, California, Site, (formerly the Burris Park Field Station) is located in the central part of a 57-acre park owned and maintained by Kings County Parks and Grounds Division. The site consists of a 50-foot by 50-foot fenced area surrounding the 42-foot by 42-foot decommissioned test pad reinforced by concrete protective cover. This area once consisted of 6-foot by 6-foot soil-filled concrete plots used to test the effectiveness of removing strontium-90 (^{90}Sr) from the soil. University of California—Berkeley (UC Berkeley) scientists applied 72 millicuries (mCi) of ^{90}Sr evenly to the soil in the late 1950s to conduct these tests under a contract with the Atomic Energy Commission. The site was decommissioned by filling and capping the plots with metal-mesh reinforced concrete in 1963. Although no further remediation is required, in November 2014, the U.S. Department of Energy (DOE) Office of Legacy Management (LM) accepted maintenance-only responsibility for the site and its remaining radioactive contents.

LM conducted site maintenance in 2015 to remove fallen tree debris, perennial vegetation, and old farm equipment, and to repair the fence. No sampling is required at the site; however, LM will conduct radiologic surveys every 5 years to ensure the pad enclosure remains intact and protective of human health and the environment. The next survey is to be conducted in 2019.

At the first site annual inspection conducted by LM in December 2016, the site was found to be in good condition with no immediate maintenance needs or cause for a follow-up inspection identified. Some improvements to reduce the growth of vegetation and burrowing rodents were discussed among the inspection team and are scheduled for fiscal year 2018.

The 2017 annual inspection and subject of this report was conducted on December 7. The site was found to be in good condition and the same concerns observed in 2016 of rodent burrowing remains. Park maintenance staff applied herbicide throughout the year, successfully, deterring vegetation growth. As indicated above, LM has scheduled maintenance in March 2018 to deter animal burrowing and vegetation growth around the pad.

2.0 Inspection Requirements

The *Burris Park, California, Site Long-Term Surveillance and Maintenance Plan* (LTS&M Plan) (DOE 2016) establishes how DOE LM will maintain the site; ensure institutional controls and protective measures are working effectively; and communicate schedules, plans, and outcomes of annual inspections with the regulator, land owner, and other interested parties.

Table 1 is a crosswalk of this inspection report to the LTS&M Plan.

Table 1. LTS&M Requirements for the Burris Park, California, Site

Requirement	Long-Term Surveillance Plan	This Report
Institutional controls	Section 3.1	Sections 2.1–2.4
Management of site records	Sections 3.2, 3.4	Section 4.0
Annual inspections and reports	Section 3.6	Section 3.0
Follow-up or contingency inspections	Section 3.6 and Table 1	Section 3.0
Routine maintenance and repairs	Section 3.6 and Table 1	Sections 2.1–2.4

2.1 Institutional Controls

DOE Policy 454.1, *Use of Institutional Controls* (DOE Policy 454.1), applies the term "institutional controls" (ICs) to include legal instruments (e.g., land-use restrictions), physical or engineering controls (e.g., fences, signs), and methods of providing information to people (e.g., fact sheets, interpretive displays) that help minimize the risk of human and environmental exposure to contaminants and maintain the remedies at a site. The following engineering and physical controls are currently associated with the site under DOE's broad application of ICs: (1) a concrete containment structure, which entombs the remaining 20 mCi of the ^{90}Sr isotope after 57 years of natural radioactive decay; (2) a bronze plaque providing historical information and secured into the southeastern corner of the concrete pad; (3) a chain-linked fence with a locked gate to prevent public access to the concrete enclosure; (4) updated signs that provide current information and contact numbers in the event of an emergency; and (5) an access agreement between LM and Kings County. These ICs, as well as legal instruments, public information, and dissemination mechanisms, are further detailed in the sections below.

2.2 Concrete Enclosure and Historical Plaque

One antique farm tractor remains on the concrete pad due to its immobility and age. The surface of the concrete pad has minor surface cracks, which do not pose a health risk since in 2014 these same cracks were scanned by a radiological control technician and no results were above background. Photograph PL-1 represents the current condition of the IC.

The historical bronze plaque located on the southeast corner of the pad is legible, free of debris, and remains in good condition. No maintenance or deferred maintenance needs for this IC were identified.

2.3 Fence

As reported in the 2016 inspection, fence maintenance occurred to restore this asset to a protective condition. The expected longevity of the fence is about 25 years. During the 2017 inspection, a closer look at the age of the fence revealed a replacement is necessary within the next 10 years. As such, LM will plan to replace the entire fence and gate in 2025. Furthermore, at the base of the fence, erosion and animal burrowing has caused the fence to bow or reveal gaps between the ground and the fence. As such, LM will address this condition by installing a bottom fence rail during its planned maintenance in March 2018. PL-2 through PL-5 show the current condition of this IC.

2.4 Signage

Signs on each side of the fenced area were present and found to be in good condition with no maintenance needs or cause for a follow-up inspection identified. Refer to PL-6.

3.0 Site Inspection Results and Report

The *2017 Annual Inspection Checklist, Burris Park, California, Site,* was developed as a tool to ensure that all aspects of the site were evaluated and results documented. The completed checklist is located in Appendix A. Major items, requirements, and actions in the checklist include protocols for notification of affected parties, ensuring site access, addressing the inspection requirements mandated by the LTS&M Plan, and providing the existing condition and any required maintenance conducted or follow-up work needed before or during the next inspection.

The annual inspection of the site was conducted on December 7, 2017, beginning at 9:00 a.m. Attendees included:

Cliff Carpenter, DOE LM Site Manager

Tim Breshears, Kings County Parks and Grounds Superintendent

Michele Miller, LMS Site Lead

Nathaniel Killebrew, Kings County Burris Park Custodian

Jesse Hendricks, Radiation Safety Technician at UC Berkeley

Historical information, a *Radwaste Solutions* article on Burris Park as a Legacy Site, and the agenda for the impending inspection were sent to all parties involved on November 21, 2017.

Prior to the site inspection, the team toured the Kings County Museum and recognized its close proximity to the Burris Park site. See photographs PL-7 and PL-8.

Overall, the site was found to be in good condition. The vegetation growth has been successfully deterred park maintenance staff by applying herbicide as needed around the pad year-round. However, the concerns observed in 2016 of rodent burrowing remain. As indicated earlier, LM has scheduled maintenance at the site in March 2018 to deter animal burrowing and vegetation growth around the pad and improve the unfavorable condition with the lower section of the fence. LM shared the proposed statement of work with Kings County Parks and Grounds superintendent for review and comment.

Future maintenance activities at the site will include:

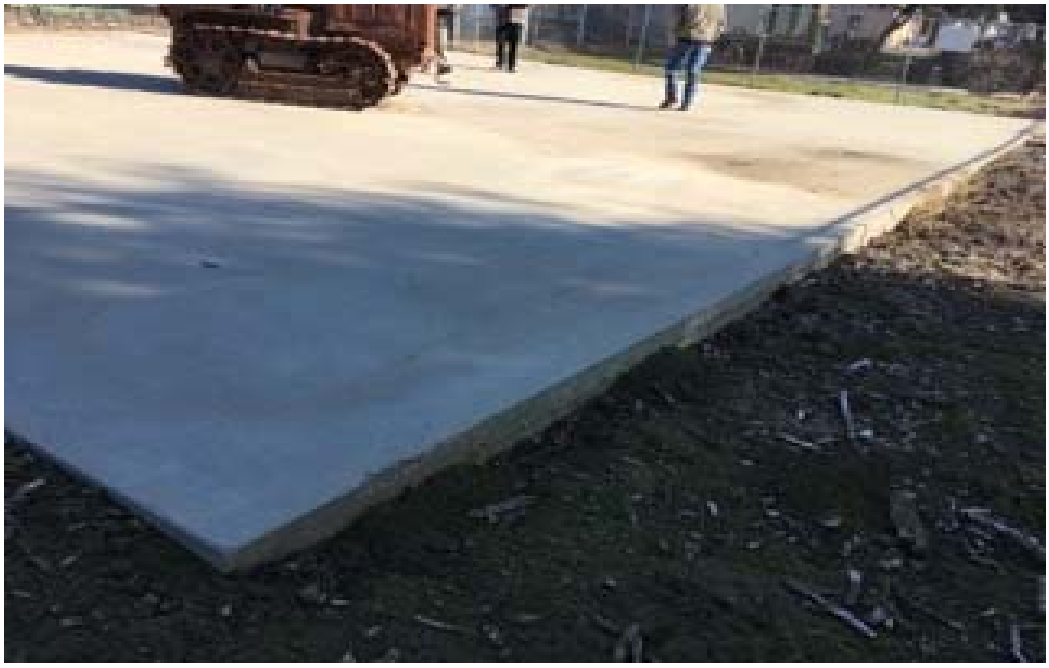
- Managing the physical condition of the site
  - — Removal or deterrence of vegetation with herbicide application by the park maintenance staff, as warranted applying herbicide or pesticide
  - — Replacing fence, gate, and signs
- Conducting periodic radiological surveys to confirm the integrity of the concrete protective cap
  - — Using fillers, sealants, or resurfacing agents to reseal the cap and ensure continued protection of human health and the environment

4.0 Site Records and Public Information

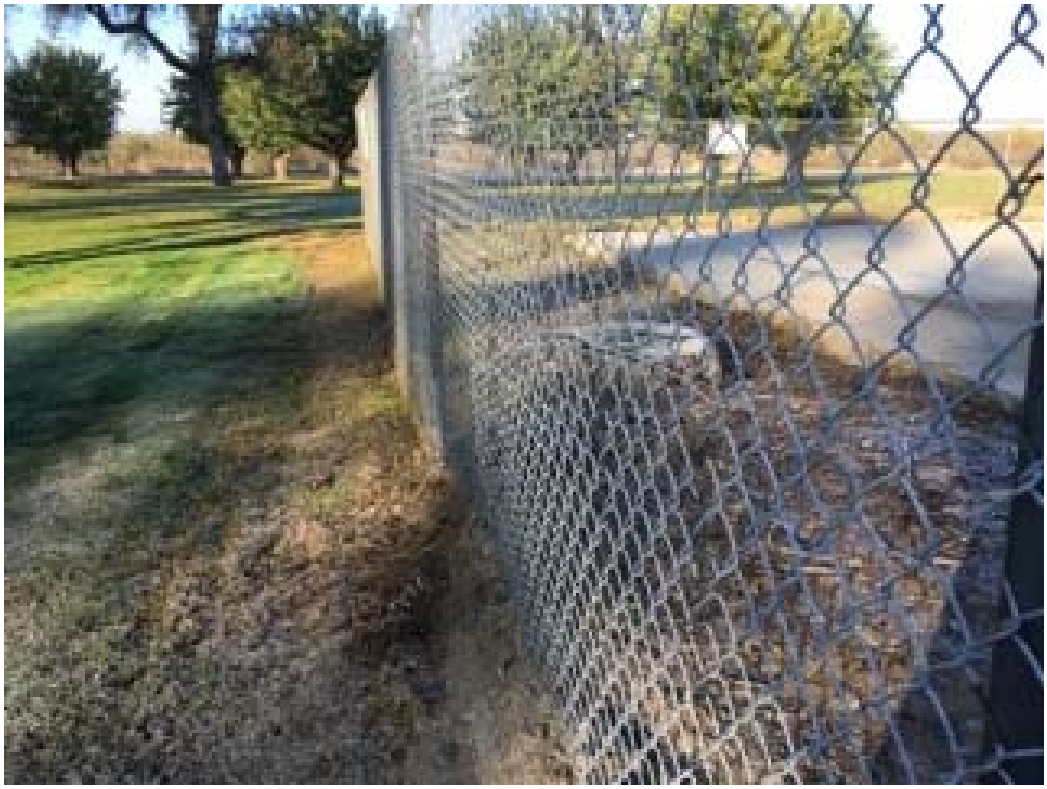
LM maintains a webpage and a fact sheet for the site, both of which are updated annually and are current. A formal access agreement between LM and Kings County has been in place since December 5, 2016. All inspections, maintenance actions, and correspondence are documented and maintained as records. LM complies with National Archives and Records Administration records archiving and destruction protocols.

5.0 Photographs

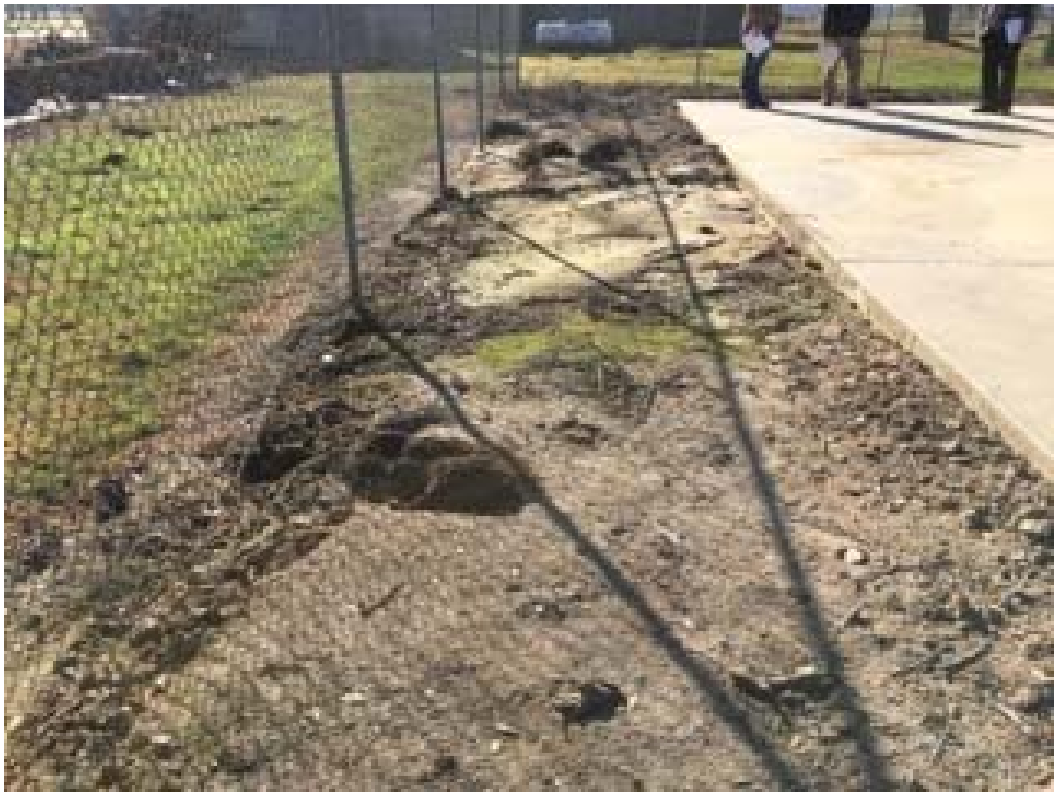
Photo Location Number	Photograph Description
PL-1	Concrete pad surface looking northeast with no vegetation around the pad.
PL-2	Fencing looking west.
PL-3	Fencing and animal burrowing looking north.
PL-4	Fence condition at grade looking south.
PL-5	Fence gate looking northeast.
PL-6	Verified signage posted on all sides of fence.
PL-7	Kings County Museum located adjacent to site.
PL-8	Exhibits inside the Kings County Museum at Burris Park.



PL-1. Concrete pad surface looking northeast with no vegetation around the pad.

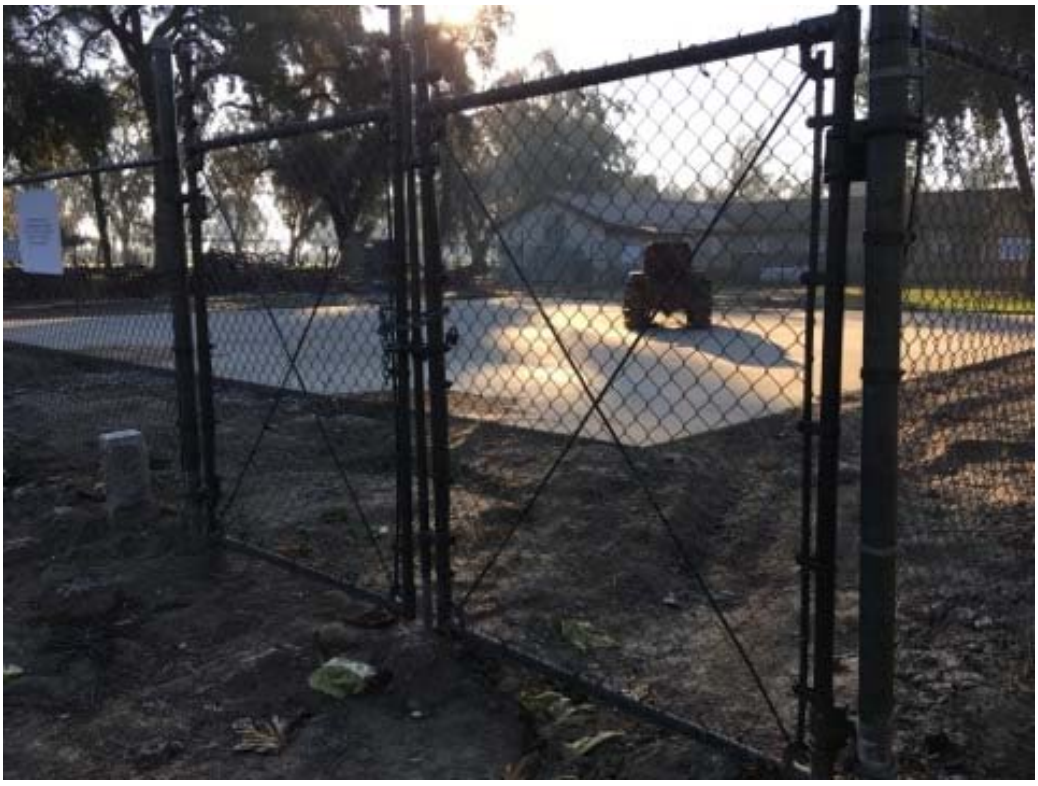


PL-2. Fence looking west.

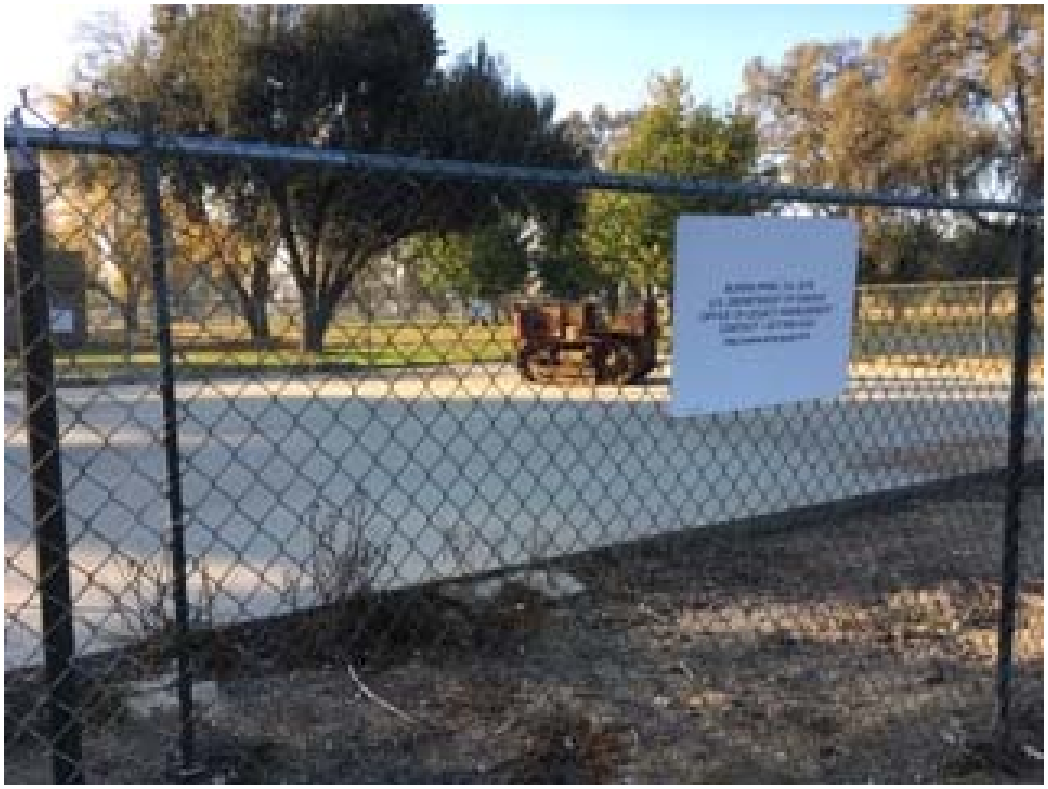


PL-3. Fence and animal burrowing looking north.

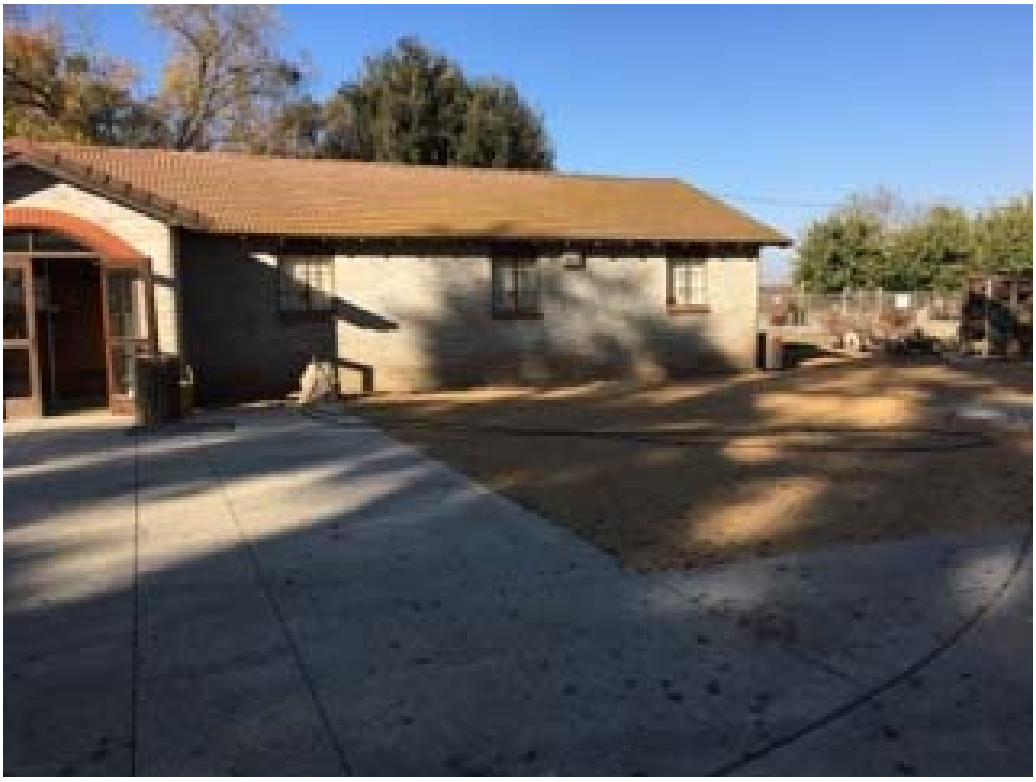
PL-4. Fence condition at grade looking south.



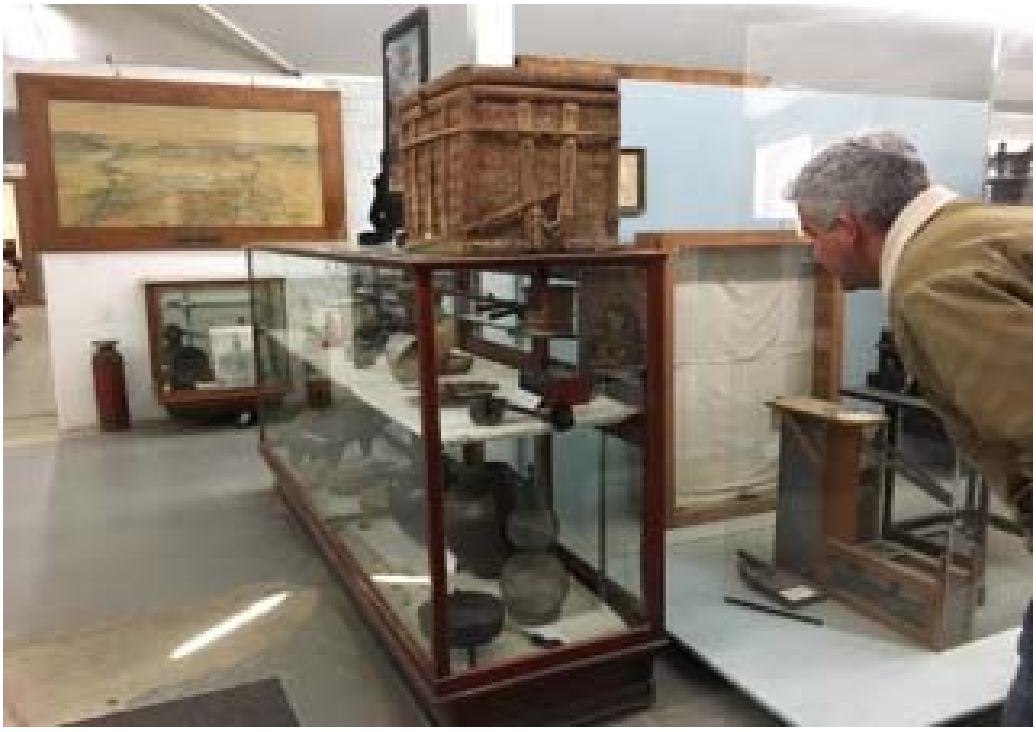
PL-5. Fence gate looking northeast.



PL-6. Verified signage posted on all sides of fencing.



PL-7. Kings County Museum located adjacent to site.



PL-8. Exhibits seen inside the Kings County Museum at Burris Park.

6.0 References

DOE (U.S. Department of Energy), 2016. *Burris Park, California, Site Long-Term Surveillance and Maintenance Plan*, LMS/BRP/S12974, Office of Legacy Management, September.

Appendix A

2017 Annual Inspection Checklist Burris Park, California, Site

This page intentionally left blank

2017 ANNUAL INSPECTION CHECKLIST
BURRIS PARK, CALIFORNIA, SITE

Research and remediation was conducted by the University of California, Berkeley (UC Berkeley) on behalf of the Department of Energy (DOE, formerly the AEC) at the Burris Park, California, site (BPS) in the early 1960's. The site requires long-term surveillance and maintenance, specifically for residual Sr-90 located in the soil beneath the 42ft x 42ft concrete protective barrier. The Burris Park Long-Term Surveillance and Maintenance Plan defines how the DOE Office of Legacy Management will maintain the institutional controls and protective measures. DOE uses the checklist below to complete BPS inspections. Any significant actions required will be scheduled to be completed prior to or during the next inspection.

No.	ITEM	REQUIREMENTS	ACTION
1	Protocols	Notify the following of the date of the inspection: • Kings County Parks and Grounds – Tim Breshears • CDPH Radiation Protection – Roger Lupo • UC Berkeley, ESH – Jim DeZetter	Notifications were made via email on 11/21/2017. CDPH representative unable to attend; and UC Berkeley representative informed LM that an alternate would attend.
2	Access	Access to the site is restricted. The formal access agreement between the DOE and Kings County Parks and Grounds Department has been finalized.	• The access agreement in place was finalized on December 5, 2016. • Adhere to the Burris Park visitor requirements and follow the instructions of our escort.
3	LTSM Plan	Current LTSM Plan (September 2016): • Managing Site Records • Responding to Stakeholder Inquiries	Both the Burris Park LM Web page and the Site Fact sheet are reviewed and updated annually. Both were reviewed November 2017 and are current. No stakeholder inquires to date (Dec 2017) since LM stewardship in November 2014.

No.	ITEM	REQUIREMENTS	ACTION
		• Managing Institutional Controls • Annual Inspection- annual for first 3 years starting in 2016, and on a rolling 5-year schedule, thereafter.	The institutional controls: the fence, and the bronze plaque are in good condition and out-year replacement for the fence has been captured. 2017 is the 2nd formal site inspection per LTSM *Site Inspection addressed under Item 4.*
4	Inspection of Specific Site Surveillance Features	**Site Area** A concrete containment structure with a 42ft x 42ft protective concrete cap entombs the remaining 20 millicuries of Sr-90. Pad will be cleaned as necessary, and inspected for cracks and integrity of structure. A radiological survey will be conducted every 5 years starting in FY19. Soil area extends beyond fence-line and will be returned to within the fence line during the 2018 improvements. Any trees and shrubs will be removed.	Perform a walkover of the site area. Look for any integrity issues, (e.g., cracks, ponding water, burrowing animals, etc.). Visually inspect the protective concrete barrier to ensure that: • The pad does not contain deep cracks or concrete fragments, and • The corners of the pad are intact. Visually evaluate the soil area around the pad to ensure that: • Soil is eroding within and just outside the fence, • No overgrown or deep-rooted, perennial vegetation is present, and • Numerous animal burrowing occurring within the fenced area. Long-term vegetation and animal burrowing mitigation to occur in 2018. The Park Groundskeeper has done a good job of vegetation control.

No.	ITEM	REQUIREMENTS	ACTION
		Site Perimeter Fence The barbed-wire was removed from atop the fence and the fence and entrance gate were repaired in 2015. A lock is installed on the gate to limit access. It is in good condition.	Visually inspect the 50ft x 50ft perimeter fence: • Fence condition: good. • The gate opens and closes easily and is not bent or tilted, • Area outside the fence: minimal clutter, no objects leaning against or attached to the fence, • Checked lock- secure and good condition. • Replacement of tension wire at the bottom of the fence with bottom fence rail.
		Site Information Plaque and Signs The historical plaque was cleaned and checked to ensure it is secured to the pad. Existing signs along the fence present containing DOE's contact information. Locations: • 1 information plaque describing the content of the containment, and • 8 signs, 2 on each side of fence.	Change the gate hinges to swing outward for better access. Maintain a 3ft access around fence. This action is planned in 2018. Visually inspect the signage: • Information plaque is present, secure and legible. • Signs are in good condition, legible, level and secured to the fence. Verified contact information. Signs and plaque are in good condition.

This page intentionally left blank